



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

IN THE MATTER OF:

**State of Maine and
NEWSME Landfill Operations, LLC
d/b/a Juniper Ridge Landfill
Penobscot County
Old Town, Maine
A-921-75-D-X**

**Departmental
Findings of Fact and Order
Sales and Use Tax
Exemption Certification**

After review of the tax exemption certification application and supporting documents, pursuant to Maine's Sales and Use Tax Law, 36 M.R.S.A. § 1760(30), and the Department of Environmental Protection's (Department) *Rules for the Processing of Applications*, 06-096 CMR 2, the Department has considered the application of NEWSME Landfill Operations, LLC, with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

A. History

The State of Maine owns and NEWSME Landfill Operations, LLC operates a solid waste disposal facility known as Juniper Ridge Landfill (JRL) located at 2828 Bennoch Road in Old Town, Maine. Operation of this facility requires Department licensing of, among other things, air pollutant emissions.

B. Application

On January 23, 2014 JRL filed an application seeking sales and use tax exemption for the following equipment:

- 1. Sulfa Treat Media Vessels
- 2. Thiopaq Bio-Desulfurization System

The application was deemed complete for processing by the Department on January 23, 2014.

2. OTHER FINDINGS

A. Decision Obligations.

Pursuant to the Property Tax Law, 36 M.R.S.A. § 656(3), the Department shall issue a determination by April 1st regarding certification for any air or water pollution control facility for which it has received a complete application by December 15th of the preceding year. Pursuant to the Department's *Rules for the*

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Processing of Applications, 06-096 CMR 2.14(1) and (2), this Decision shall set forth a findings of fact with sufficient explanation to make interested persons aware of the basis for the determination that the applicant has met the licensing criteria set forth in the appropriate statute or rule; or deny the application and set forth in the findings the explanation for the basis of the disapproval.

In making tax exemption certification decisions, the Department's responsibility is to determine whether an item is eligible for certification pursuant to the laws of the State of Maine. In a case where an exemption certification is approved, Maine Revenue Service has the responsibility of auditing receipts and determining the amount of reduction of sales and use tax liability. Municipal tax assessors perform the same function regarding property tax.

B. Air Pollutants.

Sulfur Dioxide (SO₂) is an industrial air pollutant because it is defined as a regulated pollutant in *Definitions Regulation*, 06-096 CMR 100.

C. Decision Making Process.

The decision as to whether a facility is eligible for exemption is made by determining the facility's "primary purpose". That determination is made as follows:

1. If the facility serves no pollution control function, then the primary purpose is not pollution control and the exemption is denied.
2. If the facility serves dual or multiple functions, the "primary" function must be determined.
3. If the facility's only function or its primary function is pollution control, then the primary purpose of the facility is pollution control and exemption must be granted.
4. If pollution control is merely a secondary function, then other factors, including taxpayer motivation, must be considered.
5. If the primary motivation for installation of the facility is pollution control, then the Department may conclude that the primary purpose is pollution control and exemption may be granted.
6. If neither the primary function nor the primary motivation is determined to be pollution control, then the primary purpose cannot be pollution control and the exemption is denied.

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D. Functions.

1. Clarification of Terms

This document addresses the control of total reduced sulfur (TRS) present in the landfill gas. Based on actual periodic TRS grab sample tests performed at the facility, the speciation results show that hydrogen sulfide (H₂S) is the primary TRS constituent of the landfill gas (LFG) (approximately 99%) with the remaining 1% consisting of additional various sulfur containing compounds. The combustion of TRS gases results in the formation of SO₂. The SO₂ emissions are directly correlated to the amount of sulfur in the landfill gas prior to combustion.

2. Sulfa Treat Media Vessels

The Sulfa Treat Media Vessels are boxes or tanks filled with iron oxide coated granular clay material (treatment media). The landfill gas is passed through the treatment media which adsorbs sulfur compounds in the gas prior to combustion in the facility's flares. Installation and operation of either the Sulfa Treat Media Vessels or the Thiopaq Bio-Desulfurization System is required for compliance with the facility's air emission license.

The Department has determined that the Sulfa Treat Media Vessels have only one function, to reduce emissions of SO₂ from the combustion of the landfill gas. Therefore, air pollution reduction was found to be the primary function of the Sulfa Treat Media Vessels.

All associated treatment media, piping, electrical, concrete, insulation, and structural installations necessary for the construction and operation of the Sulfa Treat Media Vessels are also considered part of this facility.

The Sulfa Treat Media Vessels are not a facility "such as an air conditioner, dust collector, fan or similar facility designed, constructed or installed solely for the benefit of the person for whom installed or the personnel of such person" (or company) and it was not designed or installed for the reduction or control of automobile exhaust emissions.

3. Thiopaq Bio-Desulfurization System

JRL has proposed installation and operation of a Paques THIOPAQ[®] Bio-Desulfurization (Thiopaq) System to control TRS compounds in the LFG sent to the flares, thereby controlling emissions of SO₂.

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The Thiopaq system works by sending LFG through an adsorption tower (absorber) where it mixes with an aqueous caustic soda solution containing sodium hydroxide (NaOH) and thiobacillus bacteria (the extracting liquid). The absorption tower operates counter-currently with the LFG entering at the bottom of the column and flowing upwards while the extracting liquid is sprayed downwards from a nozzle at the top of the tower.

After the extraction liquid has mixed with the LFG and removed sulfur compounds, it flows to the aerobic bioreactor tanks (bioreactors). In the bioreactors, thiobacillus bacteria biologically convert the H₂S into elemental sulfur. The bacteria consume the absorbed sulfide ions and excrete elemental sulfur which is filtered out of the circulating solution. The hydroxide ion that is produced regenerates the caustic soda solution to be reused in the absorption tower.

From the bioreactors, the solution flows to a decanter. Sulfur is separated from the liquid with a centrifuge that will produce a sulfur cake. The sulfur cake can be beneficially used as a fertilizer or in industrial processes. The extracting liquid is re-circulated to the absorber column.

The Thiopaq system is designed to remove TRS in the LFG to below 1,000 ppmv on a 12-month rolling average basis. It is designed for a flow rate of up to 5,000 scfm. This is more than the projected maximum LFG flow rate of 3,550 scfm.

The Department has determined that the Thiopaq Bio-Desulfurization System has only one function, to reduce emissions of SO₂ from the combustion of the landfill gas. Therefore, air pollution reduction was found to be the primary function of the Thiopaq Bio-Desulfurization System.

All associated chemicals, piping, electrical, concrete, insulation, and structural installations necessary for the construction and operation of the Thiopaq Bio-Desulfurization System are also considered part of this facility.

The Thiopaq Bio-Desulfurization System is not a facility "such as an air conditioner, dust collector, fan or similar facility designed, constructed or installed solely for the benefit of the person for whom installed or the personnel of such person" (or company) and it was not designed or installed for the reduction or control of automobile exhaust emissions.

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E. Motivation for installation.

1. Since the primary function of the Sulfa Treat Media Vessels is pollution control, it is not necessary to evaluate the motivation for installation of this equipment.
2. Since the primary function of the Thiopaq Bio-Desulfurization System is pollution control, it is not necessary to evaluate the motivation for installation of this equipment.

Based on the Findings of Fact in this Order, the Department makes the following CONCLUSIONS:

1. The Department hereby finds that the equipment listed in Section 1.B.1 above is an air pollution control facility qualifying for an exemption from sales and use tax pursuant to 36 M.R.S.A., Section 1760 (30).
2. The Department hereby finds that the equipment listed in Section 1.B.2 above is an air pollution control facility qualifying for an exemption from sales and use tax pursuant to 36 M.R.S.A., Section 1760 (30).

THEREFORE, the Department APPROVES the equipment as explained above as described in the application of JRL.

DONE AND DATED IN AUGUSTA, MAINE, THIS *13* DAY OF *February*, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Marc Allen Robert Corne for*
PATRICIA W. AHO, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/23/14
Date of application acceptance: 1/23/14

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Poland, Bureau of Air Quality.

