2l7/782-2113

CONSTRUCTION PERMIT – REVISED
NSPS/NESHAP SOURCE

PERMITTEE

Winnebago Reclamation Service
Attn: Thomas Hilbert
5450 Wansford Way, Suite 201B
Rockford, Illinois 61109

Application No.: 02040025 I.D. No.: 201801AAF
Applicant's Designation: Date Received: August 3, 2009
Subject: Open Utility Flare (Flare #1)
Date Issued: August 4, 2011
Location: Winnebago Landfill, 8403 Lindenwood Road, Rockford

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of an open flare (Flare #1) and associated blower assembly, in conjunction with the landfill gas (LFG) management system, as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special conditions:

1. Introduction

a. This permit is issued based upon Flare #1 and associated blower assembly (the affected flare) in conjunction with the LFG management system being constructed to control emissions of LFG from the North Unit of the existing Winnebago Landfill. The affected flare, which is also known as the North Unit Flare, would serve as a backup to the existing gas-to-energy facility, operated by the Winnebago Energy Center (I.D. No. 201801AAN), to control LFG when that facility is not in service or the flow of LFG is more than that facility can handle.

Note: The Winnebago Landfill (the affected Landfill) and the associated gas-to-energy facility, the Winnebago Energy Center (I.D. No. 201801AAN), are considered to be a single source pursuant to 40 CFR 52.21(b)6, 35 IAC 211.6130, and Section 39.5(1) of Illinois' Environmental Protection Act.

b. As a result of changes authorized by Construction Permit 07060048, the affected flare may also be used for control of LFG collected from the South Unit of the existing landfill, serving together with Flare #2 as part of the flare station for the landfill.

c. i. This revised permit increases the permitted emissions of CO, SO_2 and VOM from the affected flare addressing recent data for the composition of the LFG collected at the landfill, which is higher than the value provided in the original application in 2002.

ii. This revised permit also addresses use of the affected flare for control of LFG collected from the Northern Expansion of the landfill. For this purpose, the affected flare would eventually serve as a backup to a new gas-to-energy facility developed by the Permittee to use LFG collected from this expansion (Construction Permit No. 09080052), to control LFG when that new facility is not in service or the flow of LFG is more than that facility can handle.

d. For the purpose of this permit, the existing Winnebago landfill, with North and South Units, is referred as "the affected landfill." The combination of the affected landfill and the associated Winnebago Energy Center facility is referred as "the existing source."

2. Applicable Federal Emission Standards

a. The affected landfill is subject to the New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills, 40 CFR 60 Subpart WWW, and related requirements in the General Provisions of the NSPS, 40 CFR 60 Subpart A.

i. Pursuant to the NSPS, the flare shall be designed and operated in accordance with 40 CFR 60.18 and 40 CFR 60.754(e), as applicable for an open flare. This includes but is not limited to:

A. There shall not be visible emissions from the flare, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 60.18(c)(1)]

B. The flare shall be used only with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater, as determined by the methods specified in 40 CFR 60.18(f)(3) and 60.754(e). [40 CFR 60.18(c)(3)(ii)]

C. The flare shall be designed and operated with an exit velocity less than the maximum allowable velocity, V_{max}, as determined by the method specified in 40 CFR 60.18(f)(6) and 60.754(e). [40 CFR 60.18(c)(4)(i)]

D. The flare shall be operated at all times when landfill gases may be vented to it. [40 CFR 60.18(e)]

E. The Permittee shall monitor the flare to ensure that it is operated and maintained in conformance with the manufacturer's design specifications. [40 CFR 60.18(d)]

ii. Pursuant to 40 CFR 60.756(c)(1), the Permittee shall install, calibrate, maintain, and operate a heat sensing device for the flare, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame, in accordance with the manufacturing specifications.

iii. Pursuant to 40 CFR 60.756(c)(2), the Permittee shall either, install, calibrate, maintain, and operate a gas flow rate measuring device for flare that records flow to the flare at least every 15 minutes or secure the bypass line valve for the flare in the closed position with a car-seal or lock-and-key configuration to ensure that the gas flow is not diverted through the bypass line.

b. The affected landfill is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills, 40 CFR 63, Subpart AAAA and related requirements in the General Provisions of the NESHAP, 40 CFR 63 Subpart A. Pursuant to the NESHAP, 40 CFR 63.1960, the Permittee must develop and implement a written Startup, Shutdown, and Malfunction Plan that addresses the affected flare in accordance with 40 CFR 63.6(e)(3).

c. As the affected landfill is subject to NSPS and NESHAP rules, at all times, the Permittee shall, to the extent practicable, maintain and operate the affected flare in a manner consistent with good air pollution control practice for minimizing emissions, as required pursuant to 40 CFR 60.11(d) and 40 CFR 63.6(e)(1).

3. Applicable State Emission Standards

a. The affected flare is subject to 35 IAC 212.123(a), which provides that no person shall cause or allow emissions of smoke or other particulate matter from any emission unit to exceed 30 percent opacity.

b. The affected flare is subject to 35 IAC 214.301, which provides that no person shall cause or allow the emissions of sulfur dioxide (SO_2) into the atmosphere from any process emission unit to exceed 2000 ppm.

4. Nonapplicability Provisions

a. This permit is issued based on this project not constituting a major modification for the purpose of the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21. This is because the existing source, as limited in Condition 7(c) of Construction Permit 09080052, was not and will continue to not be a major source of emissions under the PSD rules.

Note: Construction Permit 09080052 addresses the Northern Expansion of the landfill. Condition 7(c) of Permit 09080052 currently limits emissions of NO_x, CO and SO_2 from the existing source, i.e., the combination of the affected landfill and the associated gas-to-energy facility, to 225, 235 and 245 tons per year, respectively.

b. This permit is also issued based on the source not being a major source of emissions of hazardous air pollutants (HAPs).

Note: Condition 7(d) of Construction Permit 09080052 currently limits emissions from the source to no more than 8 tons per year for any individual HAP and to no more than 20 tons per year of any combination of HAPs.

5. Design Requirements and Emission Limits

a. The design capacity of the affected flare shall not exceed 2,500 scfm of LFG.

b. i. Emissions from the affected flare shall not exceed the following limits. These limits are based on information provided in the application. Compliance with the annual limits shall be determined from a running total of 12 months of data.

Pollutant	Limits	
	Pounds/Hour	Tons/Year
NO_x	3.2	14.1
CO	3.8	16.6
VOM/NMOC	3.0	13.2
PM/PM_{10}	1.2	5.4
Total HAPs	1.1	4.8

ii. Emissions shall be determined using appropriate emission factors which in order of preference shall be factors from on-site testing, manufacturer's emission data, and factors from USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42).

6. Monitoring Requirements

a. The Permittee shall conduct observation for visible emissions from the affected flare, using USEPA Method 22, to verify compliance with the requirement of 40 CFR 60.18(c)(1) (Condition 2(a)(i)(A)). Observations shall be conducted at least on an annual basis.

7. Sampling and Analysis of Landfill Gas

a. i. The Permittee shall conduct sampling for the composition of the different streams of LFG collected at the affected landfill. The samples of LFG shall be analyzed for sulfur and NMOC content (pound/cubic foot) and net heat content (Btu/cubic foot). This sampling and analysis shall be conducted using appropriate ASTM Methods or other established methods for analysis of LFG. Written notification of testing or submittal of a formal testing protocol is not required for these activities.

ii. Sampling and analysis for NMOC content and heat content of LFG shall be conducted on at least an annual basis.

iii. Sampling and analysis for sulfur content of LFG shall be conducted on at least the following schedule, with the calculations for the sulfur content of collected LFG in pounds per hour made using representative hourly values for the for the volumes of different streams of collected LFG:

A. Samples shall be taken at least on a monthly basis, until five required samples in a row indicate the overall sulfur content of the LFG collected at the landfill on an hourly basis is no more than 22.4 pounds (equivalent to SO2 emissions of 44.8 pounds per hour), at which time sampling and analysis shall be conducted on at least quarterly basis.

B. Thereafter, samples shall be taken at least on a quarterly basis, until either: (1) five required samples in a row indicate the overall sulfur content of the collected LFG on an hourly basis is no more than 14.0 pounds (equivalent to SO_2 emissions of 28.0 pounds per hour), at which time sampling and analysis shall be conducted on at least an annual basis; or (2) Sampling indicates that the sulfur content of collected LFG is 22.4 pounds per hour, in which case sampling and analysis on a monthly basis shall be resumed.

C. If annual sampling shows that the overall sulfur content of the LFG collected at the landfill on an hourly basis is more than 14.0 or 22.4 pounds, sampling and analysis shall be resumed on a quarterly or monthly basis in accordance with the requirements of Condition 6(a)(ii)(A) or (B), respectively.

iv. The Permittee shall keep records for this sampling and analysis activity, including measured data, documentation for the sampling and analysis activities, and supporting

documentation and calculations for the sulfur content of LFG on an hourly basis.

8. Recordkeeping Requirements

a. The Permittee shall comply with the applicable recordkeeping requirements of the NSPS and NESHAP for the affected flare, including 40 CFR 60.757 and 63.1980.

b. The Permittee shall keep the following operating records for the affected flare:

i. A file containing the design specifications for the flare including capacity, scfm, and a demonstration that the flare complies with applicable operating requirements of 40 CFR 60.18 and 40 CFR 60.754(e) (i.e., gas exit velocity).

ii. The LFG consumption of the flare, on a daily basis.

iii. An operating log for the flare that, at a minimum, shall include the following:

A. Status of the flare.

B. Adjustments of flare’s operating parameters.

C. Identification of any period when the flare was to be in service but were out of service with a detailed explanation of the cause and an explanation of actions taken to prevent or reduce the likelihood of similar occurrences in the future.

iv. An inspection/maintenance log which shall include the following:

A. Date of inspection and observed condition of the flare.

B. Date and description of maintenance performed.

c. The Permittee shall keep the following records related to the emissions from the affected flare:

i. A file identifying the maximum level(s) of sulfur in LFG combusted in the flare for which compliance with 35 IAC 214.301 is maintained, with supporting documentation and analysis.

ii. A file containing: 1) The emission factors used by the Permittee for calculating the flare’s emissions; and 2) Engineering calculations for the maximum hourly emissions

of NO_x, CO, SO_2, PM, PM_{10}, VOM, NMOC and HAPs from the flare, with supporting documentation.

iii. Records of emissions of NO_x, CO, SO_2, PM, PM_{10}, VOM and NMOC from the flare (tons/month and tons/year), with supporting calculations.

9. Retention of Records

All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.

10. Reporting and Notification Requirements

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS and NESHAP for the affected flare, including 40 CFR 60.758 and 63.1980.

b. If there is any deviation from the requirements of this permit, the Permittee shall submit a report to the Illinois EPA as follows, unless otherwise specified in the CAAPP permit for the affected landfill. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the deviation or violation and efforts to reduce emissions and future occurrences.

i. Deviations from annual emission limits shall be reported within 30 days.

ii. Deviations from other requirements shall be reported in a quarterly report unless more rapid reporting is required by the CAAPP permit for the landfill.

c. Two copies of all reports, notifications, and correspondence required by this permit shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Tel: 217/782-5811 Fax: 217/782-6348

And one (1) copy shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5407 North University
Peoria, Illinois 61614

Tel: 309-693-5461 Fax: 309-693-5467

11. Other Requirements

This permit does not relieve the Permittee of the responsibility to comply with all Local, State and Federal Regulations which are part of the applicable Illinois State Implementation Plan, as well as all other applicable Federal, State and Local requirements. In particular, this permit does not excuse the Permittee from the obligation to undertake further actions at the source as may be needed to eliminate air pollution, including nuisance due to odors, such as implementation of additional work practices for handling of waste or enhancements to the gas collection system.

12. Authorization to Operate

The Permittee may operate the affected flare pursuant to this revised construction permit until the CAAPP permit for the landfill is revised to address this permit. This condition supersedes Standard Condition 6.

Please note that this permit has been revised at the request of the Permittee to increase the permitted emissions of SO_2 and CO. This accommodates use of the affected flare for control of additional LFG. For SO_2, this also addresses recent data collected for the sulfur content of the LFG, which is higher than the value provided in the original application. The revised permit also makes related changes to requirements for sampling and analysis of LFG, recordkeeping, and reporting requirements for the affected flare. Additionally, the revised permit more clearly addresses the applicability of the NSPS and NESHAP to the affected flare and better coordinates the requirements for the affected flare, as addressed in this permit, with other permits for the source. Finally, this permit also addresses use of the affected flare to control LFG collected from the Northern Expansion.

If you have any questions on this, please call Kunj Patel at 217/782-2113.

Edwin C. Bakowski, P.E. Date Issued: _____
Manager, Permit Section
Division of Air Pollution Control

ECB:CPR:KMP:psj

cc: Region 2