



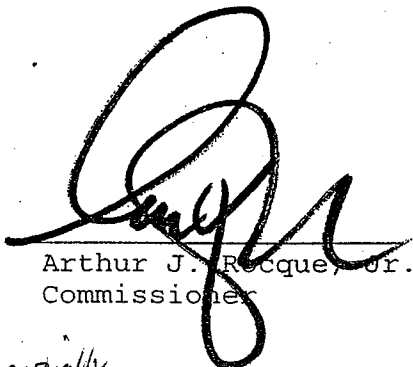
STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT

NEW SOURCE REVIEW PERMIT  
TO CONSTRUCT AND OPERATE  
A STATIONARY SOURCE

Issued pursuant to Title 22a of the Connecticut General Statutes and Section 22a-174-3a of the Regulations of Connecticut State Agencies.

Owner/Operator: Connecticut Resources Recovery Authority  
Address: 100 Constitution Plaza, 17<sup>th</sup> Floor  
Hartford, CT 06106-5127  
Equipment Location: Shelton Landfill, Route 110  
Shelton, CT 06484  
Equipment Description: Landfill with Gas Collection System & John Zink  
18.6MMbtu Enclosed Landfill Flare

Permit Number: 0091  
Town/Premises Numbers: 163/0119  
Original Construction Permit Issue Date: October 18, 2001  
Original Construction and Operating Permit Issue Date: APR 26 2002  
Expiration Date: None

  
Arthur J. Rocque, Jr.  
Commissioner

4/26/02  
Date

*expo-entially*

I CERTIFY THAT THIS IS A TRUE COPY OF THE ORIGINAL

Jamie Dougherty 4/26/02

ORIGINAL

**PERMIT FOR MUNICIPAL SOLID WASTE LANDFILL  
AND GAS COLLECTION AND CONTROL SYSTEM\***

**STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
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The conditions on all pages of this permit and attached appendices shall be verified at all times. Design specifications unless specifically noted elsewhere in this permit need not be verified on a continuous basis. However, demonstration of compliance shall be provided to the Commissioner upon request.

\* The landfill's Gas Collection and Control System (GCCS) consists of the following components: 1) one hundred five (105) landfill gas (LFG) collection wells (sixty-three (63) in the central well field & forty-two (42) around the landfill perimeter), 2) lateral piping from the LFG collection wells to a main header, 3) condensate discharge piping, traps, sump, and storage tank, and 4) an enclosed flare (John Zink 18.6 MMBtu ZTOF Landfill Flare). Additions and/or replacements (with similar equipment) intended to improve capture and control of LFG, and remedial actions required by this permit, shall not trigger any permit modification requirements.

**PART I. DESIGN SPECIFICATIONS AND OPERATIONAL CONDITIONS: Gas Collection and Control System**

**A. Design Specifications**

1. Fuel Type(s): Landfill Gas
2. Maximum Fuel Consumption over any Consecutive Twelve (12) Month Period (MMft<sup>3</sup>): 578
3. Trunk Line Fuel Filter Performance Specifications:
  - a. Trunk Line Capture Efficiency (%): 100
  - b. Removal Efficiency (%) at Maximum Flow: 99.5 (> or = to 3 μm)
  - c. Overall Efficiency (%) at Maximum Flow: 99.5 (> or = to 3 μm)
4. Maximum Fuel Firing Rate (scfm): 1,030
5. Minimum Allowable Combustion Temperature (°F): 1,400
6. Minimum Residence Time (seconds): 0.9 @ 1,600°F
7. Maximum Gross Heat Input (MMBTU/hr): 18.6 (@ Estimated LFG Heat Content of 300 BTU/ft<sup>3</sup>)
8. Minimum Stack Height (ft): 40
9. Maximum Exhaust Gas Flow Rate (acfm): 37,198
10. Minimum Distance from Stack to Property Line (ft): 140
11. Operating Hours: 24 hours/day; 8,760 hours per year

**B. The following operating conditions shall be met at all times:**

1. The enclosed flare's minimum destruction efficiency for non-methane

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**PART I. DESIGN SPECIFICATIONS AND OPERATIONAL CONDITIONS, CONTINUED:**

organic compounds shall be 98% or an NMOC outlet concentration of 20 ppm by volume dry basis as hexane at 3% oxygen.

2. The enclosed flare shall be designed for and operated with no visible emissions as determined by Reference Method 22, Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares, except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours.
  3. The permittee shall install, operate and maintain a flare pilot flame and associated pilot fuel supply to assure the timely, automatic restart of the landfill flare.
  4. The enclosed flare shall be operated with a flame present at all times except as required during maintenance. The presence of a flare flame shall be monitored by a UV scanner or other equivalent device.
  5. The enclosed flare shall be operated in accordance with the manufacturer's specifications and recommendations.
- C. The permittee shall ensure effective and safe operation of the LFG collection system through compliance with the following operational conditions:
1. Monthly checks of all wells to ensure wellhead vacuum and proper wellhead operation is maintained. Should the positive pressure exist at a wellhead, the permittee shall take remedial action in accordance with → 40 CFR 60.755(a)(3).
  2. Monthly confirmation at each central wellhead demonstrating both N<sub>2</sub> levels are below 20% and O<sub>2</sub> levels are below 5%. Should the N<sub>2</sub> level equal or exceed 20% and O<sub>2</sub> level equal or exceed 5%, the permittee shall take remedial action by reducing or shutting off the vacuum to that well until such time as either the oxygen or nitrogen level drops below the relevant threshold.
  3. Monthly monitoring of central wellhead LFG temperature to ensure LFG temperature is maintained below 55°C (131°F). If the temperature of a well exceeds 130°F, the permittee shall shut off the vacuum to the well. If positive pressure is measured at a high temperature well, the permittee may open the valve to the well to relieve the high pressure, regardless of temperature. The permittee shall not place the well under vacuum until such time as the temperature is below 131°F.
  4. Monitoring of landfill surface methane concentrations to demonstrate that methane concentrations at any location on the landfill surface do not exceed 500 ppmv above background in accordance with the provisions of 40 CFR 60.755(c). The permittee shall conduct the first monitoring demonstration, over the entire landfill surface, no later than 30 days

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**PART I. DESIGN SPECIFICATIONS AND OPERATIONAL CONDITIONS, CONTINUED:**

after the receipt of the permit to construct. Subsequent to the initial demonstration, the permittee shall conduct methane landfill surface monitoring quarterly.

All locations exceeding 500 ppmv above background in any round of monitoring shall be monitored and remediated in accordance with the provisions of 40 CFR Part 60.755(c)(4). As long as the actions specified in 40 CFR part 60.755(c)(4) are taken, the exceedance is not a violation of the operational requirements of this permit.

If there are no monitored exceedances of this operational requirement for three (3) consecutive quarterly monitoring periods, thereafter the permittee shall conduct methane landfill surface monitoring annually. However, if there is an exceedance of the 500 ppm above background detected during annual monitoring, the specific location(s) exceeding 500 ppmv above background shall be monitored and remediated in accordance with the provisions of 40 CFR Part 60.755(c)(4). All other locations below the 500 ppm above background threshold may stay on the annual monitoring schedule.

The permittee shall not be required to conduct periodic methane landfill surface monitoring when the landfill is snow covered.

5. Prompt shutdown of GCCS blower whenever the enclosed flare or other in place controls are inoperable in accordance with the provisions set forth in 40 CFR 60.753(e). However, in order to prevent LFG migration, the GCCS blower may be operated when the emergency by-pass is operated.
- D. The permittee shall operate the collection system with negative pressure at each central well field wellhead except as provided in 40 CFR 60.753(b).
- E. All flare operating personnel shall be trained on the operation of the flare according to the manufacturer's operating procedures and trouble shooting techniques.
- F. The GCCS shall be operated and maintained only by personnel properly trained in its operation.

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**PART II. ALLOWABLE EMISSION LIMITS: (GCCS)**

The permittee shall not allow emissions from this source to exceed the emission limits stated herein at any time. Final emission limits may be established upon completion of initial compliance testing required herein and the Commissioner's acceptance of the test results.

<u>Criteria Pollutants</u>	<u>#/MMBtu</u>	<u>TPY</u>
TSP (Flare)	0.02	1.4
PM-10 (Flare)	0.02	1.4
SO <sub>x</sub> (Flare)	0.06	4.9 <sup>1</sup>
NO <sub>x</sub> (Flare)	0.06	4.9
VOC (Flare)	0.007	0.6 ←
VOC (Fugitive Emissions) <sup>2</sup>	NA	3.2 <sup>2</sup>
CO (Flare)	0.20	16.2

<sup>1</sup> The ton per year limitation for SO<sub>x</sub> is not an enforceable permit condition. However should source testing indicate the annual SO<sub>x</sub> emission is greater than five (5) tons per year the permittee shall perform a BACT analysis as required in Part VI, Item I of this permit.

<sup>2</sup> Fugitive VOC emissions are the VOC in the landfill gas not captured by the gas collection system; this annual emission rate need not be verified by the permittee.

Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

- A. Initial Compliance Demonstration Test Data
- B. Manufacturer's Emissions Data
- C. AP-42, Fifth Edition, Section 2.4
- D. SO<sub>x</sub> emissions based on 97% overall oxidation of sulfur compounds contained in the waste gas and 97% overall oxidation of reduced sulfur to oxides of sulfur

**Non-Criteria  
Pollutants**

The Permittee shall not allow emissions of any Hazardous Air Pollutant listed on any Table in Section 22a-174-29 of the Regulations of Connecticut State Agencies (hereinafter referred to as RSCA) and emitted from this flare to exceed the Maximum Allowable Stack Concentration ("MASC") as determined pursuant to the provisions of Section 22a-174-29 of the RSCA and Equation 1:

$$\text{MASC } (\mu\text{g}/\text{m}^3) = \frac{0.885 * (\text{HLV}) * [X + 1.08 * V^{.64}]^{1.56}}{V} \quad \text{<Equation 1>}$$

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**PART II. ALLOWABLE EMISSION LIMITS, CONTINUED:**

where:

HLV= Hazard Limiting Value for each specific HAP emitted from the operation of the flare ( $\mu\text{g}/\text{m}^3$ )

V= The exhaust gas flowrate exiting the stack (actual  $\text{m}^3/\text{second}$ )

X= The distance from the stack to the nearest property line (meters)

or simply:

$$\text{MASC (ug/m}^3\text{)} = 22.1 \times (\text{HLV}) \qquad \text{<Equation 2>}$$

Equation 2 is derived using the maximum exhaust flow rate of 37,198 acfm ( $V = 17.55 \text{ m}^3/\text{sec}$ ) and a minimum property line distance of 140 feet ( $x = 42.67 \text{ meters}$ ).

For any operating period having a duration greater than 30 minutes but less than 8 hours, the Permittee may demonstrate compliance with an adjusted MASC calculated in accordance with Section 22a-174-29(i) of the RCSA; provided that actual emissions during each and every period of eight (8) consecutive hours do not exceed the value of MASC determined using the 8-hr HLV for the Hazardous Air Pollutants emitted.

Nothing in Parts II, III, or IV of this permit shall preclude the Commissioner from requiring other means (e.g. stack testing) to demonstrate compliance with Section 22a-174-29 of the RCSA, as allowed by state or federal statute, law, or regulation.

**PART III. MONITORING, REPORTING AND RECORD KEEPING REQUIREMENTS:**

- A. The permittee shall install, operate and routinely calibrate a device or devices to continuously measure and monitor the volumetric flow of waste gas into this flare.
- B. The permittee shall record the quantity of waste gas burned by this flare during each calendar month. Such records shall include the date of the recording period and the quantity of waste gas, expressed in units of million cubic feet per month.
- C. The permittee shall record the quantity of pilot fuel burned (propane or natural gas) by the flare during each calendar month. Such records shall include the date of the recording period and the quantity of pilot fuel. Fuel records may be used to calculate the amount of pilot fuel burned.

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**PART III. MONITORING, REPORTING AND RECORD KEEPING REQUIREMENTS, CONTINUED:**

- D. The permittee shall install and operate a device or devices to measure and monitor the number of hours of flare operation during each calendar month.
- E. The permittee shall record the number of hours of flare operation during each calendar month. Such records shall include the date of the recording period and the number of flare operating hours during each recording period.
- F. The permittee shall maintain monthly records of all criteria pollutant emissions calculations and supporting documentation to demonstrate compliance with the annual emission limitations set forth in Part II of this permit. Such records shall assure that the annual emissions of each criteria pollutant can be calculated over any rolling 12-month period.
- G. The permittee shall maintain records of all GCCS maintenance and calibration operations listed in Part I. of this permit as detailed in the facility's amended Operations and Maintenance Plan.
- H. The permittee shall maintain a complete record of all monitoring conducted pursuant to Part I. C. of this permit and all testing conducted pursuant to Part IV of this permit as well as any periodic testing required in the facility's amended Operations and Maintenance Plan.
- I. The permittee shall retain any records required under this permit for a period of no less than five (5) calendar years. All records shall be made available to the Commissioner or his agent upon request.
- J. The permittee shall submit a report annually to the CTDEP Compliance Assurance and Coordination Unit of the Bureau of Air Management detailing all - exceedances of operational conditions monitored pursuant to Part I, Item C (1-5) of this permit. Such report shall include the remedial action taken by the permittee. The first of such reports shall be due 13 months after the issuance of the permit to operate.

**PART IV. SOURCE TEST REQUIREMENTS:** (Applicable if -X-Checked)

Source testing shall be required for the following pollutant(s):

- None at this time     TSP<sup>1</sup>     SOx<sup>1</sup>     NOx<sup>1</sup>     CO<sup>1</sup>
- VOC<sup>1,2</sup> (as NMOC)     PM-10     Pb     Other: (HAPS<sup>2,3</sup>)

<sup>1</sup> Flare Outlet Measurement

<sup>2</sup> Flare Inlet Measurement

<sup>3</sup> HAP measurements and MASC compliance demonstrations shall include the following HAPS common to MSW landfills: acetone, acrylonitrile, benzene, bromodichloromethane, butane, carbon disulfide, carbon tetrachloride, carbonyl sulfide, chlorobenzene, chlorodifluoromethane, chloroethane, chloroform, chloromethane, dichlorobenzenes,

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**PART IV. SOURCE TEST REQUIREMENTS, CONTINUED:**

dichlorodifluoromethane, 1,1-dichloroethane, 1,2-dichloroethane, trans 1,2-dichloroethene, dichlorofluoromethane, dichloromethane, dimethylsulfide, ethane, ethanol, ethyl mercaptan, ethylbenzene, ethylene dibromide, fluorotrichloromethane, hexane, hydrogen sulfide, mercury, methyl ethyl ketone, methyl iso-butyl ketone, methyl mercaptan, pentane, propane, 2-propanol, propylene dichloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, 1,1,1-trichloroethane, trichloroethylene, vinyl chloride, vinylidene chloride, and xylenes

**A. Pre-LFG Characterization and Stack Emissions Test, LFG Collection System Remediation and Assessment:**

1. The permittee shall complete the landfill gas collection system remediation in accordance with the following timetable:
  - a. Replacement of Well Head Valves by August 31, 2001 (Designated as Wells GW 2, GW3, GW8, GW15, GW17, GW18, GW19, GW21, GW22, GW23, & GW42 on Drawing 1 of 2, Dated 6/29/01)
  - b. Installation of new side slope wells by October 31, 2001 (Designated as wells GW 70, GW 71, GW72, GW 73, & GW 74 on Drawing 1 of 2, Dated 6/29/01)
  - c. Installation of new perimeter wells by October 31, 2001 (Designated as wells 45, 46, 47, & 48 on Drawing 1 of 2, Dated 6/29/01)
2. The permittee shall conduct a complete assessment of the effectiveness of the central well field within sixty (60) days of receipt of the permit to construct or completion of work under section IV.A. of this permit, whichever occurs later. Such assessment shall be submitted in writing to the Commissioner for review and approval forty-five (45) days after completion of the assessment. The assessment shall provide a determination as to whether or not a minimum of 90% of the LFG wells in the central well field are fully operational at that time. A fully operational well shall be defined as a well where negative pressure is maintained. The amount of vacuum applied to each well head shall be left to the discretion of the permittee.
3. Should the assessment detailed in Item 1 above indicate that less than 90% of the LFG wells in the central well field are fully operational, the permittee shall submit in writing to the Commissioner for review and approval an LFG collection system remediation plan. Such plan shall set forth those steps with associated timelines to bring the central well field to a minimum level of 90% operational effectiveness. Weather permitting, the permittee shall take all reasonable action to assure such LFG collection system remediation is completed within one hundred eighty (180) days of Commissioner's approval of the LFG collection system

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**PART IV. SOURCE TEST REQUIREMENTS, CONTINUED:**

remediation plan. The permittee shall notify the Commissioner in writing within one hundred fifty (150) days of the Commissioner's approval of the LFG collection system remediation plan if the permittee believes that the remediation of the LFG collection system can not be completed within the one hundred eighty (180) day period required above. Such notification shall include a revised timeline for the remediation of the LFG collection system as well as amended timelines for the submittal of a source test protocol, commencement of LFG characterization and source testing, and submittal of the LFG characterization and source test report.

4. Except as provided above, the permittee shall submit, to the Stack Test Group, a source test protocol to conduct the LFG characterization and source emission testing required in Items B and C below within one hundred eighty (180) days of the receipt of the permit to construct. All testing required in Items B and C below shall be completed within sixty (60) days of system start-up or DEP approval of the test protocol, whichever occurs later. The final report of such testing shall be submitted to the Stack Test Group no later than 45 days after the completion of the stack test.
5. All testing shall be conducted in accordance with the general guidelines of Attachment B of this permit unless specifically amended above. The following site-specific testing shall be required:

**B. LFG Characterization<sup>1</sup>**

1. Characterization of LFG with respect to total reduced sulfur, NMOC, methane, oxygen, nitrogen, and hazardous air pollutants (HAPs) common to municipal solid waste (MSW) landfills listed in footnote 3 of Part IV
2. Mass spectral tentative identification of HAPs not specifically listed above
3. Measurements of the GCCS LFG collection rates (scfm) and estimates of the gas collection system capture efficiency and total LFG production

**C. Stack Emissions Testing (Enclosed Flare)<sup>1</sup>**

1. Permit compliance demonstration of VOC (as NMOC) destruction efficiency
2. Permit compliance demonstrations for HAP, TSP, NO<sub>x</sub> and CO flare emission rates and measurement of SO<sub>x</sub> to determine the annual emission rate

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**PART IV. SOURCE TEST REQUIREMENTS, CONTINUED:**

D. Periodic Stack Emissions Testing (Enclosed Flare)<sup>1</sup>

The permittee shall conduct a permit compliance demonstration for NO<sub>x</sub> and CO flare emission rates every five years.

<sup>1</sup> The permittee shall verify that a minimum of 90% of LFG wells in the central well field of the GCCS network are fully operational 24 hours prior to the initiation of LFG characterization and stack emissions testing.

**PART V. APPLICABLE REGULATORY REFERENCES:** (The Regulations of Connecticut State Agencies)

22a-174-3(a), (b), (f); 22a-174-18; 22a-174-19; 22a-174-29(b); 22a-174-22

These references are not intended to be all inclusive - other sections of the Regulations may apply.

**PART VI. SPECIAL REQUIREMENTS:**

- A. The permittee shall operate and maintain the GCCS in accordance with the manufacturer's specifications and written recommendations.
- B. The permittee shall operate the landfill and GCCS at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in Sections 22a-69-1 through 22a-69-7.4 of the RSCA.
- C. The permittee shall comply with state odor regulations, as set forth in Section 22a-174-23 of the Regulations.
- D. The permittee shall maintain the landfill surface (i.e. cover material) and/or replace, modify or supplement all components of the gas collection system as required to assure effective LFG collection to prevent nuisance odors, and to minimize the venting of LFG at the landfill surface.
- E. The permittee shall comply with all applicable sections of 40 CFR Part 62, subpart GGG.
- F. The amended Operations and Maintenance Plan shall be submitted to the Commissioner for review and approval within ninety (90) days of the effective date of the permit to construct.
- G. The replacement, repair, addition, or retirement of any LFG well(s) or components (provided such components, if replaced, are replaced with components of equivalent design and performance specifications), and any remedial action taken pursuant to the terms of this permit, shall not require a modification of this permit.

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**PART VI. SPECIAL REQUIREMENTS, CONTINUED:**

- H. The permittee shall not inject LFG condensate and/or landfill leachate into the enclosed flare.
- I. The permittee shall submit a Top-Down BACT analysis for SO<sub>x</sub> and/or NO<sub>x</sub> if the initial performance test indicates that SO<sub>x</sub> and/or NO<sub>x</sub> emissions exceed 5 TPY or such level as may be required by the Commissioner.
- J. Except as provided in the Public Use and Recreation Plan approved by the Commissioner, the permittee shall restrict the public from uncontrolled access to any location on the premise/landfill.

**PART VII. ADDITIONAL TERMS AND CONDITIONS:**

- A. This permit does not relieve the permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the permittee of other obligations under applicable federal, state and local law.
- B. Any representative of the DEP may enter the permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and - conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
- E. Any document, including any notice, which is required to be submitted to the Commissioner under this permit shall be signed by a duly authorized representative of the permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in the documents and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true,

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PART VII. ADDITIONAL TERMS AND CONDITIONS, CONTINUED:

accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense." Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense in accordance with Connecticut General Statutes §22a-6, under §53a-157 of the Connecticut General Statutes.

- F. Nothing in this permit shall affect the Commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the permittee by the Commissioner.
- G. Within fifteen days of the date the permittee becomes aware of a change in any information submitted to the Commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the permittee shall submit the correct or omitted information to the Commissioner.
- H. The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I. Any document required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to: Office of Assistant Director; Compliance & Field Operations Division; Bureau of Air Management; Department of Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

FIRM NAME: Connecticut Resources Recovery Authority
EQUIPMENT LOCATION: Shelton Landfill, Route 110, Shelton, CT 06484
EQUIPMENT DESCRIPTION (MODEL, I.D. #): Landfill with Gas Collection System and Enclosed Flare (John Zink 18.6 MMbtu ZTOF Flare Landfill Flare)

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PERMIT FOR MUNICIPAL SOLID WASTE LANDFILL  
AND GAS COLLECTION AND CONTROL SYSTEM

STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT

Appendices attached (Applicable if -X- checked)

- B Stack Emission Test Requirements
- C New Source Performance Standards
- E Control Equipment Specifications

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## Appendix B: SOURCE STACK TESTING GENERAL REQUIREMENTS

The owner/operator shall conduct stack testing within sixty (60) days of achieving the maximum production rate, but not later than one hundred-eighty (180) days after initial start up, unless specified otherwise within this permit.

Pursuant to the Regulations of Connecticut State Agencies, the owner/operator of this facility shall submit an Intent-to-Test (ITT) package consisting of an ITT form (Form AE404) and a test protocol. The test protocol shall be consistent with the Bureau's Emission Source Test Guideline specifying the test methodology to be followed and the conditions under which the process and its control equipment will be operated. The process shall be operated at a minimum of 90% of the permitted maximum rated capacity and the control equipment shall be operated as specified in this permit.

All proposed test methods shall comply with appropriate Federal test methods or methods acceptable to the Bureau. The ITT package must demonstrate compliance with applicable requirements of the Code of Federal Regulations (CFR) Title 40 Parts 51, 60 and 61. Any proposed test methods that deviate from those specified in these regulations must be approved by the Bureau prior to stack testing. All sampling ports shall be installed and located in compliance with 40 CFR Part 60 Appendix A, Method 1. Final plans showing the location of all sampling ports shall be submitted with the ITT package to the Air Bureau's Stack Test Group for approval prior to stack testing. Please submit an original and one copy of the ITT package to: Bureau of Air Management, New Source Review Section, 79 Elm Street, 5th Floor, Hartford, Connecticut 06106-5127.

An inspection of the source may be conducted to verify that appropriate instrumentation is available, and to determine the source process parameters, indicative of compliant operation, to be monitored during stack testing. Once the ITT package is approved, the owner/operator shall be notified, in writing, by the Bureau's Stack Test Group.

The source test must be scheduled, monitored by Bureau personnel, and completed within sixty (60) days from the date of Bureau approval of the proposed ITT package. It is the source's responsibility to conduct preparatory testing for tuning or debugging purposes prior to the Bureau-monitored stack testing. An acceptable test report must be submitted to the Bureau within forty-five (45) days of the completion of emissions testing. The owner/operator shall respond to any test report deficiency within fifteen (15) days of notification by the Bureau.

Acceptable test results will be incorporated into the final permit to operate. In the event that the stack test report is unacceptable, or the tested values show that the source is not in compliance with applicable permit conditions or regulations, a final permit to operate will be not be issued until the owner/operator responds to and corrects any deficiencies. The Bureau may issue an Administrative Order if there is a likelihood that the source may demonstrate compliance through a process modification and a retest.

**APPENDIX E**  
**Control Equipment**

Air Pollution Control Equipment (applicable if -X- checked).

The following specifications need not be verified on a continuous basis, however, if requested by the Bureau, demonstration shall be shown.

- None
- Scrubber

Make and Model: \_\_\_\_\_  
Reagent: \_\_\_\_\_  
Reagent Flow Rate: \_\_\_\_\_  
Pressure Drop (in H<sub>2</sub>O): \_\_\_\_\_  
Minimum Gas Flow Rate at Maximum Rated Capacity (acfm): \_\_\_\_\_  
PH: \_\_\_\_\_  
Design Outlet Grain Loading (gr/dscf): \_\_\_\_\_  
Design Removal Efficiency (%): \_\_\_\_\_

A. *Enforceable Conditions* - The following shall be verified at all times.

- Fabric Filter

Pressure Drop, range (in. H<sub>2</sub>O): \_\_\_\_\_

B. *Design Specifications* - The following specifications need not be verified on a continuous basis, however, if requested by the Bureau, demonstration of compliance shall be shown.

- Fabric Filter

Make and Model: \_\_\_\_\_  
Number of Bags in Use: \_\_\_\_\_  
Air/Cloth Ratio: \_\_\_\_\_  
Bag Material: \_\_\_\_\_  
Cleaning Method: \_\_\_\_\_  
Minimum Gas Flow Rate at Maximum Rated Capacity (acfm): \_\_\_\_\_  
Design Removal Efficiency (%): \_\_\_\_\_

- Wet Dust Suppression (ultrasonic or equivalent)

Number of Nozzles: \_\_\_\_\_  
Water Flow Rate: \_\_\_\_\_  
Location: \_\_\_\_\_

- Electrostatic Precipitator (ESP)

Make and Model: \_\_\_\_\_  
Number of Fields: \_\_\_\_\_  
Minimum Gas Flow Rate at Maximum Rated Capacity (acfm): \_\_\_\_\_  
Design Outlet Grain Loading (gr/dscf): \_\_\_\_\_  
Design Removal Efficiency (%): \_\_\_\_\_

APPENDIX E  
Control Equipment

- Afterburner (Enclosed Flare)  
Make and Model: John Zink 18.6 MMBtu ZTOF Landfill Flare  
Minimum Operating Temperature (°F): 1,400  
Minimum Residence Time (sec): 0.9 @ 1,600 °F  
Minimum VOC/HC Destruction Efficiency (%): 98  
Minimum Gas Flow Rate at Maximum Rated Capacity (acfm): 37,198

- Other - Minimum Fuel Pre-Filter Performance Specifications:

Trunk Line Capture Efficiency (%): 100  
Trunk Line Removal Efficiency (%) at Maximum Flow: 99.5 (> or = to 3 micrometers (µm))  
Trunk Line Overall Efficiency (%) at Maximum Flow: 99.5 (> or = to 3 micrometers (µm))

*Control Equipment Malfunction*

1. Equipment or methods which control "air pollutant" "emissions" from a "stationary source" and which are necessary to the operation of such "stationary source" in compliance with applicable "emission standards" and regulations shall be maintained in operation at all times that the "stationary source" is in operation or emitting "air pollutants". This includes instruments required by permit, order, or regulation which measure those source operating parameters which affect air pollutant emissions, air pollution control equipment, or other instruments which measure meteorological data required by permit, order or regulation.
2. No "person" shall deliberately shut down any such control equipment, method or other instruments specified in subsection 22a-174-7(a) while the "source" is in operation except for such necessary maintenance as cannot be accomplished when the "stationary source" itself is not in operation and is not emitting "air pollutants".
3. In the event of breakdown, failure, or deliberate shut down of any control equipment, method, or other instrument specified in subsection 22a-174-7(a) during which time the "stationary source" will be in operation, all reasonable measures shall be taken to assure resumption of the control equipment as soon as possible. Due diligence shall be exercised to minimize "emissions" while the control equipment or method is inoperative. In the event such shutdown of control equipment or methods is expected or may reasonably be expected to continue for longer than 72 hours, and if the "source" is to be operated at any time during that period, the "Commissioner" shall be notified within twenty-four (24) hours or by 10 o'clock a.m. (10:00am) the following business day, whichever is later. Such notice shall include, but is not limited to, the following:
  - a. Identification of the specific equipment or instrument taken out, or to be taken out, of service as well as its location, and, where applicable, registration or permit number;



**APPENDIX E**  
**Control Equipment**

- b. The expected length of time that the "air pollution" control equipment or instrument will be out of service;
  - c. The nature and quantity of "emissions" of "air pollutants" likely to be emitted during the shutdown period;
  - d. Measures such as the use of offshift labor and equipment that will be taken to minimize the length of the shutdown period;
  - e. The reasons that it would be impossible or impractical to shut down the "stationary source" operation during the maintenance period;
4. The "Commissioner" may attach conditions to the operation of the "source" during the period of shutdown or breakdown.

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