



State of Ohio Environmental Protection Agency

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DIV. OF HAZARDOUS
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Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
Joseph P. Koncelik, Director

February 7, 2006

Ms. Allison Knowles
Von Roll America (VRA), Inc.
1250 St. George Street
East Liverpool, OH 43920

**RE: HAZARDOUS WASTE PERMIT MODIFICATION CLASS 1A APPROVAL, RCRA TO
MACT TRANSITION, VON ROLL AMERICA (VRA), INC. OHD 980 613 541 / 02-15-0589**

Dear Ms. Knowles:

Ohio EPA received a request dated November 30, 2005, with addendums dated January 25, and January 27, 2006, for a Class 1A (Class 1 requiring prior approval) hazardous waste permit modification (tracking number - OHD 980613541 - 051205-1A-1) from Von Roll America (VRA), Inc. With this letter, Ohio EPA approves the above referenced Class 1A modification submitted pursuant to Ohio Administrative Code Rule 3745-50-51.

FOR APPROVAL

The following modification has been made to your Ohio Hazardous Waste Facility Installation and Operation Permit renewal, journalized on March 23, 2005, and Part B permit application.

The Class 1A permit modification requests the removal, from the Ohio Hazardous Waste Facility Installation and Operation (RCRA) Permit, conditions, limits, and restrictions that are analogous/duplicative to Hazardous Waste Combustor (HWC) MACT standards included in the facility's Clean Air Act Title 5 permit.

On December 7, 2004, Ohio adopted regulations which integrated the hazardous waste program, pertaining to hazardous waste combustors, with the Maximum Achievable Control Technology (MACT) standards. These standards were promulgated under the joint authority of the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (RCRA). One goal of the final rule promulgating MACT was to avoid imposing duplicative requirements under both RCRA and the CAA, where possible, by:

- 1) placing the standards only in the CAA implementing regulations at 40 CFR part 63 subpart EEE;
- 2) specifying that the analogous standards in the RCRA regulations no longer apply once a facility demonstrates compliance with the HWC MACT standard in subpart EEE; and
- 3) requiring the HWC MACT standards to be incorporated into operating permits issued under Title 5 of the CAA rather than into RCRA permits.

Transition out of RCRA to a Title 5 permit requires facilities to demonstrate compliance with the HWC MACT standards by conducting an initial comprehensive performance test and submitting the test results in a Notification of Compliance (NOC).



VRA conducted MACT comprehensive performance tests (CPTs) on its rotary incinerator during the weeks of September 8-12, 2003; December 15-19, 2003; and April 19-23, 2004. VRA submitted its initial Notification of Compliance (NOC) on March 18, 2004. Semi-volatile metal (SVM) emissions were the only parameter that VRA did not demonstrate compliance with in the initial NOC. Retesting for SVM emissions (cadmium and lead) was conducted in the April, 2004 testing. A revised NOC was submitted on June 18, 2004, including the SVM emission limits.

As a result of Ohio adopting the MACT standards on December 7, 2004, VRA is able to transition out of RCRA. According to Appendix to Rule 3745-50-51 of the Ohio Administrative Code, Section B.8., a permit may be revised to remove permit conditions that are no longer applicable (i.e., because the standards upon which they are based are no longer applicable to the facility). This permit modification request is approved under this rule. A list of the revised permit application pages and the permit conditions that have been removed or revised are included as an attachment to this letter.

Attached are copies of the permit page revisions and the revised pages of the Part B permit application. This has been included to ensure that all involved parties have written confirmation of the changes*. If you have any questions concerning this action, please contact Patricia Natali at the Ohio EPA East Liverpool field office, (330) 385-8447 or Frank Popotnik at the Ohio EPA Northeast District Office, (330) 963.1198.

Sincerely,



William Skowronski
District Chief
Northeast District Office

WTS:ddw

Enclosure

cc: Pamela Allen, Manager, ITTSS, DHWM, CO
Jeremy Carroll, Supervisor, Engineering Unit, DHWM, CO
John Nyers, DHWM, CO
Patricia Natali, DHWM, NEDO
Frank Popotnik, DHWM, NEDO
John Gaitskill, USEPA, Region V
Michelle Tarka, DHWM, NEDO
ec: Sherry Slone, DHWM, NEDO

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key words: C1A, approval, RCRA/MACT transition

*Also, in accordance with Ohio Administrative Code Rule 3745-50-51(D)(1)(a)(ii), *Von Roll America, Inc.* shall send a notice within 90 days of an approved Class 1A Modification to all persons on the Agency mailing list. An updated mailing list can be obtained by contacting Pamela Allen at (614) 644-2980, or by e-mail at pamela.allen@epa.state.oh.us.

Von Roll America, Inc.
Attachment 1
Revised Part B Permit Application and
Permit Conditions Revised or Removed During
Class 1A Modification to Transition from RCRA to CAA

Replace all the following pages to Section D, Process Description, of the Part B permit application with Revision 2, dated November 30, 2005

Cover Page

Table of Contents, page iv

D-73	D-78	D-90	D-96	D-97	D-98	D-99
D-106	D-109	D-110	D-113	D-114	D-115	D-119
D-120	D-121	D-122	D-123	D-124	D-125	D-134
D-135	D-136	D-137	D-138	D-139	D-140	
D-140 redacted		D-141				

Attachment D.41: Cover Page

Attachment D.41: Replace AWFCO and MWFCO tables, both clean copy and redacted copy

Permit Condition	Permit Condition Description
I(A).1(b)	List the key operating parameters for the incinerator
I(A).1(c)	Waste Feed Cut Off System
I(A).1(d)	Types of Waste to be Burned
I(A).1(e)	Principal Organic Hazardous Constituents (POHCs)
I(A)2(a)	Criteria for Permitted, Restricted, and Prohibited Waste
I(A)3(b)	Performance Requirements
I(A)3(d)	Destruction Removal Efficiency for POHCs is 99.99%
I(A)3(e)	HCl emissions 1.8 kg/hr (4 lbs/hr) 3 hr average
I(A)3(f)	Hourly metals Emissions and Feed Rates
I(A)3(g)	Particulate Matter limit and Opacity limit and Opacity monitor in stack
I(A)3(h)	Dioxin/Furan emission limit
I(A)3(i)	Feed Limits
I(A)3(j)	Kiln and SCC temperatures
I(A)3(k)	Fugitive emissions
I(A)3(m)	SCC Parameters
I(A)3(o)	ESP Parameters
I(A)3(p)	Oxygen in Flue gas
I(A)3(q)	Carbon Monoxide (CO) concentration
I(A)3(s)	Four Stage Wet Scrubber
I(A)3(t)	THC limit
I(A)3(u)	Volumetric Flow
I(A)3(w)	Start-up and Shut-down
I(A)3(y)	Modifications to the permit
I(A)4(c)	Monitoring Distributed Control System

Table continues on next page

Von Roll America, Inc.
 Attachment 1, Class 1A Permit Mod
 RCRA to MACT Transition
 Permit Application Pages and
 Permit Conditions Revised or Removed
 Page 2

Permit Condition	Permit Condition Description
I(A)4(d)	Testing of WFCO System (weekly)
I(A)5(b)	Recording data for feed rates and CI totals
I(A)5(d)	Annual testing to ensure compliance with permit limits
I(A)5(e)	Maintain info on Electronic Bulletin Board System
I(A)8(b)	Record WFCO information
Attachment 1	AWFCOs
Attachment 1	MWFCOs
Attachment 2	Metals Feed Rates, with exception to the annual metals feed limits because they are risk based
Attachment 3	Incineration System Operation Parameters



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Bob Taft, Governor
Bruce Johnson, Lieutenant Governor
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March 31, 2006

CERTIFIED MAIL

Ms. Allison Knowles
Von Roll America, Inc.
1250 St. George Street
East Liverpool, OH 43920

**RE: HAZARDOUS WASTE PERMIT MODIFICATION, VON ROLL AMERICA, INC.
RCRA TO MACT TRANSITION, U.S. EPA #OHD 980 613 541 / 02-15-0589**

Dear Ms. Knowles:

Ohio EPA received a request dated November 30, 2005, for a Class 1A (Class 1 requiring prior approval) hazardous waste permit modification (tracking number -OHD 980 613 541 - 051205-1A-1) from Von Roll America (VRA), Inc. The modification requested the removal from the Ohio Hazardous Waste Facility Installation and Operation (RCRA) Permit, conditions, limits, and restrictions that were analogous/duplicative to Hazardous Waste Combustor (HWC) MACT standards included in the facility's Clean Air Act Title 5 permit. The modification was approved on February 7, 2006.

The approval letter stated that copies of the permit page revisions as well as the revised pages of the Part B permit application were included in the letter, however, the permit page revisions were inadvertently not included. The pages are included in this letter to ensure that all involved parties have written confirmation of the changes.

If you have any questions concerning this action, please contact me at the Ohio EPA field office, (330) 385-8447, or the Northeast District Office, (330) 963-1279.

Sincerely,

For

Patricia Natali
Environmental Specialist
Division of Hazardous Waste Management

PN:ddw

cc: Pamela Allen, Manger, ITSS, DHWM, CO
Jeremy Carroll, Supervisor, Engineering Unit, DHWM, CO
John Nyers, DHWM, CO
Frank Popotnik, Supervisor, DHWM, NEDO

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Keywords: C1A mod, MACT, permit pages



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I(A). INCINERATION

I(A).1. Module Highlights

(a) General Description

Wastes are fed to the rotary kiln or primary combustion chamber (PCC) via a variety of feed mechanisms. Solid wastes in the form of slag move slowly from the front wall of the kiln to the discharge end. The slag flows into a slag quench tank located at the base of the secondary combustion chamber (SCC). The flue gas generated in the PCC flows into the SCC for further treatment to complete the combustion process. From the SCC, the flue gas enters the heat recovery boiler which reduces the temperature prior to entry into the spray dryer. The spray dryer unit further cools the flue gas and serves to evaporate neutralized process water from the facility's Four Stage Wet Scrubber. From the spray dryer, the flue gas enters the Electrostatic Precipitator (ESP) which removes the majority of the fly ash entrained in the flue gas. The Four Stage Wet Scrubber is the final flue gas cleaning unit in the incinerator system. It removes acid gas pollutants and fine particulate matter. Stack gas is reheated by the plume suppression system to ensure the stack gases, mostly water vapor and carbon dioxide, will rise to an adequate height above the facility. The stack is the last unit in the system. The height of the exhaust stack for the incinerator is 150 feet. Analyzers are positioned at specific locations within the incineration system to monitor complete combustion of the hazardous waste and ensure compliance with permit emission limits.

A Bailey Distributed Control System (DCS) monitors and controls the incineration system as well as ancillary operations such as waste movements at the facility. Process parameters in critical locations are continuously recorded by the DCS and monitored by the facility's control room operators. The DCS is used to maintain key process parameters such as feed rates and operating conditions such as combustion zone temperature and process flow within permitted ranges. The DCS will automatically stop waste feeds if certain process and operation parameters fall outside the allowable operating range.

Waste handling, feed systems, and systems ancillary to the incineration system are fully described in Section D of the approved PART B permit application.

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This section also includes information about the facility's vapor recovery system used for controlling fugitive emissions during processing and storage of waste on-site and to supply combustion air to the incineration system.

Permitted staging, processing, and storage locations are also described in Section D of the approved PART B permit application. Section D includes descriptions of receiving procedures and the procedures in place for sampling, processing, storing, and tracking wastes on-site. Section B details the times and days the facility can receive waste.

(b) Operating Parameters

Key operating parameters for the incineration system include, but are not limited to:

- (i) ~~combustion temperature for the PGC (minimum and maximum) and the SCC (minimum) to ensure complete combustion~~ RESERVED;
- (ii) negative pressure in the SCC to prevent fugitive emissions;
- (iii) ~~combustion fan operation and steam, air, or oxygen pressure at the nozzles in the SCC to ensure turbulence~~ RESERVED;
- (iv) ~~Carbon monoxide concentration in the outlet of the ESP, as an indicator of complete combustion;~~ RESERVED;
- (v) outlet temperature of the spray dryer/inlet temperature of ESP, as a control for dioxin/furan formation;
- (vi) ~~oxygen concentration at the outlet of the ESP, to ensure complete combustion~~ RESERVED;
- (vii) ~~operation of all three fields of the ESP, to control particulate matter emissions;~~ RESERVED;
- (viii) ~~scrubber water flow to the third stage (or second packed bed) of the scrubber, to control acid gas removal from the flue gas;~~ RESERVED;
- (ix) ~~scrubber pH at the third stage, to control acid gas removal from the~~

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- ~~flue gas; RESERVED;~~
- (x) carbon feed rate to the enhanced carbon injection system (ECIS) which collects dioxins/furans that may have formed during the incineration process;
 - (xi) Reserved
 - (xii) ~~total hydrocarbon concentration (THC) in the stack, as an indicator of complete combustion; RESERVED;~~
 - (xiii) ~~hydrogen chloride (HCl) concentration in the stack, as an indicator of acid gas removal; RESERVED;~~
 - (xiv) ~~opacity measurements at the stack, an indicator of particulate matter; RESERVED;~~
 - (xv) ~~heat release (97.8 MMBTU (million Btu) per hour on a three hour rolling average) or system load of the incineration system, to ensure complete combustion; RESERVED;~~
 - (xvi) annual metal FEED and carbon feed restrictions to the system, to ensure permit limits are not exceeded;
 - (xvii) ~~process flow through the system, to ensure complete combustion; RESERVED;~~
 - (xviii) ~~adequate primary or combustion air to the incinerator, to ensure complete combustion. RESERVED.~~

Operating limits for the incineration system were based on: (1) the trial burn conducted by the facility in 1993, and 1994, AND 2003, (2) manufacturer's recommendations and specifications, and (3) results of performance testing conducted at the facility are AS described in Section D of the approved PART B permit application and listed in Attachment 1 and 3 to this permit.

(c) Description of Waste Feed Cut-Off System

The facility's waste feed cut-off (WFCO) system is part of the Bailey Distributed Control System (DCS). The system is utilized to terminate waste feed to the incineration system when a triggering event ~~such as excess carbon monoxide detected by the continuous emissions monitors (CEMs) analyzer(s)~~ occurs. Operating parameters which have been IDENTIFIED AS RISK BASED OR AS MORE STRINGENT THAN THE CORRESPONDING REQUIREMENT IN

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THE HAZARDOUS WASTE COMBUSTOR (HWC) MACT STANDARDS demonstrated through testing to be indicators of complete combustion, minimal emissions, and efficient operation of the incineration train are listed in Attachment 1 to this permit. When the DCS detects any of these parameters not being met, it is programmed to automatically terminate all hazardous waste feeds to the incineration system, i.e., an automatic WFCO occurs. In addition to those operating limit parameters which result in an AWFCO, there are also parameters (see Attachment 1) that, when the DCS or an operator detects the parameters not being met, require a manual WFCO.

In addition to the parameters listed in Attachment 1 to this permit, several other events trigger the suspension of waste feed to the incineration system. Examples of these parameters are listed below:

- (i) interruption of scrubber water circulation to any of the four stages OF THE FOUR STAGE WET SCRUBBER;
 - (ii) malfunction of the primary or combustion air fan;
 - (iii) water level in the boiler deficient as monitored by the level of water in the steam drum;
 - (iv) failure of the evaporative quench or spray dryer;
 - (v) general loss of electrical power/power failure;
 - (vi) any of the monitoring equipment not operating properly. For example, the monitoring equipment and analyzers for CO, O₂, HCl, THC, total feed rate including the waste feed rate and the auxiliary fuel to the PCC, temperatures in the PCC, SCC, and the inlet to the ESP, process flow, heat release from the system (in MMBTU/HR), pressure in the SCC, pH probe in the scrubber, air, steam, oxygen pressure at the nozzles in the SCC, natural gas burner blower in the SCC.
- (d) Types of Wastes to be Burned

Wastes in a variety of chemical compositions and physical states possessing a wide range of BTU values are scheduled for receipt Monday through Sunday at the facility. Hazardous waste codes approved for acceptance, storage, and treatment are listed in the Part A of the permit application. Prohibited and restricted wastes are described in Section C of the PART B permit application. The wastes received at the facility range from consumer-packaged materials, for which the composition and characteristics of the wastes are well known, to materials derived from clean-up sites where the

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wastes are described in broad compositional ranges. Wastes are received in a variety of container sizes and in bulk form as solids, liquids, slurries, sludges, solid/liquid mixtures, and as specific approved compressed gaseous waste streams listed in Section C-1a(1) of the approved Part B permit application. The wastes may be fed to the incineration system via several feed mechanisms which are described in Section D of the approved PART B permit application. Waste accepted for thermal treatment will have a thermal stability class ranking equal to or higher than Class 1 chemicals as found on the Principal Hazardous Organic Constituent IN THE Thermal Stability Index developed at the University of Dayton Research Institute (UDRI).

(e) Principal Organic Hazardous Constituent (POHC) Selected and Rationale

~~Ohio EPA has adopted the position that if a facility selects a POHC, ranked Class 1 on the thermal stability ranking index developed at the UDRI, and achieves the required destruction and removal efficiency (DRE), that demonstrates the facility can burn chemicals characterized as Class 1 or greater on the index. Because Class 1 contains the most difficult-to-incinerate organic hazardous constituents, the Permittee would not be restricted from feeding organic hazardous constituents to the incinerator listed in the Appendix to OAC Rule 3745-51-11 of the Administrative Code. VRA/WTI has used monochlorobenzene (MCB) which is a liquid, Class 1 compound as the POHC for their annual performance tests for the past several years and successfully achieved DRE. In addition, MCB is a compound with a low heat of combustion which means it is difficult to incinerate as determined in the Heat of Combustion System. RESERVED.~~

I(A).2. Identification Criteria for Permitted, Restricted, and Prohibited Waste
OAC Rule 3745-57-44 and 3745-57-43

Unless otherwise authorized, the Permittee may incinerate the following hazardous wastes, as specified in this permit and only under the terms of this permit. The Permittee may only feed the hazardous wastes as identified below at the facility subject to Permit Conditions I(A).3. through I(A).5., and I(A).8.

- (a) The following criteria must be adhered to when determining the acceptability of wastes at the facility for storage and/or treatment:
- (i) The wastes must be approved by the Ohio EPA, Division of Hazardous Waste Management, in accordance with the conditions set forth in Section C of the approved Part B permit application.
 - (ii) ~~The Permittee must not feed any hazardous waste containing any organic hazardous constituents listed in the Appendix to Rule 3745-~~

~~51-11 of the Administrative Code unless the constituent has a thermal stability class ranking equal to or higher than Class 1. RESERVED.~~

- (iii) ~~According to Section C, the total chlorine content of the materials fed to the incinerator system shall not exceed 2700 pounds per hour (three operating hour average). This would include the second incineration system if and when it is constructed.~~
RESERVED.
 - (iv) The physical state of the waste feed shall be liquid, solid, slurry, or sludge, OR SPECIFIC COMPRESSED GASES. Compressed gases are prohibited from being fed to the incineration system with the exception of gases that may be used as propellant in aerosol cans and specific compressed gaseous waste streams as approved for incineration and listed in Section C-1a(1) of the approved Part B permit application.
 - (v) The Permittee shall not incinerate or treat any State-recognized hazardous waste whose current Ohio EPA hazardous waste code does not appear in the approved Part A permit application or any waste listed in Section C of the approved Part B permit application categorized as being prohibited from incineration or any waste for which the facility is not designed to receive, handle, store, or treat. Permittee may treat federally approved codes the state has not yet promulgated.
 - (vi) ~~The total feed rate, including the waste feed rate and auxiliary fuel to the incineration system, is limited to the range between 49 million BTU/hr and 97.8 million BTU/hr heat input (three hour operating average).~~
RESERVED
- (b) Throughout operation, the Permittee shall conduct sufficient analysis in accordance with Section C of the approved Part B permit application to verify that waste received by the facility conforms with the waste scheduled. Analysis will be conducted to ensure that the waste fed to the incinerator is within the physical and chemical composition limits specified in this permit and the approved Part B permit application.
- (c) Wastes, in accordance with Section C of the approved Part B permit application, that are prohibited from acceptance on-site include:
- (i) waste containing polychlorinated biphenyls (PCBs) in excess of 50 parts per million or, waste that is, or was at one time, regulated by TSCA, 40 CFR 761;
 - (ii) Reserved;

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I(A).3. Construction, Instrumentation, and Operational Performance Requirements
OAC Rule 3745-57-45

VRA is permitted for two commercial hazardous waste incinerators. One is existing and one has yet to be constructed.

- (a) The Permittee shall construct, operate, and maintain the incinerator in accordance with the design plans and specifications contained in the approved Part B permit application. The Permittee shall not feed hazardous wastes to the newly constructed incinerator until Permit Condition A.23 (Certification of Construction or Modification) has been complied with.
- (b) The Permittee shall design, construct, and maintain the incinerator so that when operated, in accordance with the operating requirements specified in this permit, it will meet the performance standards specified in Permit Conditions ~~I(A).3(d) through I(A).3(F) AND I(A).3(h) and OAC Rule 3745-57-43.~~
- (c) The Permittee shall install, test, operate, and maintain all instrumentation and controls including all associated instrument loops, monitors, analyzers, alarms, and the distributed control system, in accordance with the design plans, performance specifications, and maintenance procedures contained in the approved Part B permit application prior to, and while, handling hazardous wastes in the incineration system.
- (d) ~~The incinerator shall achieve a destruction and removal efficiency (DRE) of 99.99 percent for any principal organic hazardous constituents (POHC) fed to the incineration system.~~

~~The designated POHCs, as used in the trial burn to demonstrate a DRE of >99.99%, were (1) carbon tetrachloride, (2) monochlorobenzene, (3) 1,2,4-trichlorobenzene, and (4) trichloroethylene. Annual DRE testing shall include monochlorobenzene or any POHC as defined by Section I(A).1(e) of this permit. The DRE value shall be determined using the method specified in OAC Rule 3745-57-43(A)(1). RESERVED.~~

- (e) ~~The Permittee shall control hydrogen chloride (HCl) emissions such that the rate of emissions is no greater than the larger of either (1) 1.8 kilograms per hour (four lbs/hr) on a three hour average measured in the stack or (2) 1.0% of the HCl in the stack gas prior to entering any pollution control equipment in accordance with OAC Rule 3745-57-43(B). HCl shall be monitored and recorded in accordance with Attachments 1 and 3 to this permit. RESERVED.~~

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- (f) The Permittee shall comply with annual and hourly emission limits for twelve metals: barium, mercury, silver, thallium, nickel, selenium, antimony, arsenic, beryllium, cadmium, chromium and lead; as listed in Attachment 2 to this permit.
- (g) ~~The incinerator shall not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot (gr/dscf)) when corrected for the amount of oxygen in the stack gas, in accordance with the formula specified in OAC Rule 3745-57-43(C) or 0.05 gr/dscf at 12% CO₂.~~
- (i) ~~Opacity, an indicator of particulate matter in the flue gas, monitored as specified in Permit Condition I(A).5 and Attachments 1 and 3 to this permit, shall not exceed 20% on a six minute average.~~
RESERVED.
- (h) The Permittee must test the performance of the incineration system to demonstrate continued polychlorinated dibenzodioxins and polychlorinated dibenzofurans (PCDD/PCDF) control using the test protocols employed during the October 2002 testing event, or the approved Hazardous Waste Combustion MACT Comprehensive Performance Test Plan, or an equivalent test plan as specifically approved by Ohio EPA.
- (i) Frequency of testing must include one test six months, eighteen months, thirty months, forty-five months and sixty months after the facility submits its Notice of Compliance (NOC) for MACT. Testing must include at least one condition under normal operating conditions. The Permittee must submit certified test results of each test to the Director or delegated representative within 90 days of the completion of the test event.
- (ii) To evaluate the incinerator's performance, a rolling average based on five individual test events, will be tracked. The average will be calculated from data collected during the October 2002 Annual Performance Test (two conditions); the CPT (two conditions); and the test performed six months after the completion of the CPT. All data collected ~~form~~ FROM these tests will be averaged and compared to the previously demonstrated average performance level of 0.055 ng/dscm, TEQ basis, corrected to 7% oxygen achieved during the 26 individual stack test runs in 1993 and 1994 subsequent to the installation of the ECIS. All subsequent test data following the CPT will be added to the data grouping and the value from the oldest test period will drop out. If the Permittee demonstrates a performance

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consistent with the average dioxin emission of 0.055 ng/dscm, TEQ basis, corrected to 7% oxygen, the testing frequency will be reduced to that required by the Hazardous Waste Combustion MACT rules. However, at any time when the new rolling average is greater than 0.1 ng/dscm, the Permittee must notify the Director immediately. The Permittee will initiate an evaluation for the cause of the average increase and develop a report as to the possible cause with recommendations for corrective action if warranted. The Ohio EPA may consider any such test results as new "information" under OAC Rule 3745-50-51(A)(2). The comparison of the five test period rolling average with the 1993-1994 ECIS test period average is only to monitor incinerator performance with previously demonstrated emission levels.

~~The stack emissions of dioxin/furans must not exceed 0.20 ng/dscm corrected to 7% oxygen, expressed as toxic equivalents (TEQs):~~

Unless otherwise authorized, the Permittee shall only feed the wastes described in Permit Condition I(A).2. to the incinerator: (1) after the waste feed permissives as described in Section D of the approved Part B permit application and these permit conditions have been met and (2) under the following conditions according to OAC Rule 3745-57-45(B).

- (i) The Permittee shall only feed waste into the PGG PRIMARY COMBUSTION CHAMBER (PCC) OR KILN using the feed mechanisms located in the incinerator feed building and described in Section D of the approved Part B permit application. ~~The waste feed rates are listed below. These feed rates are monitored and recorded in accordance with Attachments 1 and 3 to this permit:~~

~~ANNUAL AND HOURLY FEED RATES FOR TWELVE METALS, BARIUM, MERCURY, SILVER, THALLIUM, NICKEL, SELENIUM, ANTIMONY, ARSENIC, BERYLLIUM, CADMIUM, CHROMIUM AND LEAD, ARE LISTED IN ATTACHMENT 2 TO THIS PERMIT. THE FEED RATES SHALL NOT BE EXCEEDED AND SHALL BE MONITORED AND RECORDED ON A CONTINUOUS BASIS AND IN ACCORDANCE WITH ATTACHMENTS 1 AND 3 TO THIS PERMIT.~~

- ~~(i) Maximum combined sludge and slurry lance feed rates shall not exceed 20,099 lb/hr (one hour average) or 19,602 lb/hr (four hour average). The feed rate of pumpable materials, including waste feed and auxiliary fuel, to the incineration system shall be monitored and recorded on a continuous basis.~~

- ~~(ii) Maximum combined container and bulk solids feed rates shall not exceed 16,576 lb/hr (one hour average) or 15,265 lb/hr (four hour average). The feed rate of non-pumpable materials to the incineration system including waste feed and auxiliary fuel must be monitored and logged on a regular basis not to exceed once per charging cycle or once every fifteen minutes, whichever period is greater.~~

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- ~~(iii) Maximum total waste feed shall not exceed 29,651 lb/hr (one hour average) or 28,565 lb/hr (four hour average).~~
- ~~(iv) Annual and hourly feed rates for twelve metals, barium, mercury, silver, thallium, nickel, selenium, antimony, arsenic, beryllium, cadmium, chromium and lead, are listed in Attachment 2 to this Permit. The feed rates shall not be exceeded and shall be monitored and recorded on a continuous basis.~~
- ~~(v) The total feed rate, including the waste feed rate and auxiliary fuel to the incinerator, is limited to the range between 49 million BTU/hr to 97.8 million BTU/hr heat input (three hour rolling average).~~
- (j) The combustion zone, defined as midway down the PCC to midway up the secondary combustion chamber (SCC), is the region in the incineration system where volatilized organic compounds are thermally destroyed. The temperature is monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit, and shall be maintained as follows:
 - ~~(i) maximum temperature in the PCC shall not exceed 2,200°F instantaneous and 2,174°F on a four hour rolling average;~~
 - ~~(ii) minimum temperature in the PCC shall not drop below 1,800°F instantaneous and 1,830°F on a four hour rolling average;~~
 - ~~(iii) minimum temperature in the SCC shall not drop below 1600°F.
RESERVED.~~
- (k) The Permittee shall control fugitive emissions from the combustion zone of the incineration system by:
 - (i) maintaining a constant negative pressure/draft throughout the incineration system and associated heat recovery and flue gas cleaning equipment via the induced draft (ID) fan; ~~and ID fan discharge volume damper as monitored and recorded in accordance with Attachments 1 and 3 to this permit;~~ and
 - (ii) The incineration system has fugitive emission mechanisms associated with the PRIMARY Combustion Chamber (PCC).

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- (l) Atomization fluid pressure (e.g., steam, air) to the front wall lances shall be no less than 45 psig and monitored and recorded in accordance with Attachments 1 and 3 to this permit. The limit of 45 psig was recorded during the Permittee's initial trial burn and will be maintained until and unless additional testing demonstrates that complete combustion can be achieved at atomization pressures other than 45 psig.

If the atomization pressure for any of the feed lances at the front wall fall below 45 psig, the feed for that lance will be cutoff until such time the pressure can be maintained.

- (m) The following conditions apply to the Secondary Combustion Chamber (SCC):

- (i) ~~The pressure in the SCC will be maintained below atmospheric pressure (below 0 inches water column) at all times and shall be monitored and recorded on a continuous basis in accordance with Attachments 1 and 3 to this permit.~~

The water level in the slag quench tank at the base of the SCC shall be maintained automatically by a level probe and automatic valve. A visible and audible alarm shall warn the operator if the water level falls below the bottom edge of the outlet in the bottom of the SCC.

- (ii) RESERVED.

- (iii) ~~Pressure at the steam, air, or oxygen nozzles in the SCC shall be maintained at greater than or equal to 100 psig and monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~

- (iv) ~~The natural gas burner blower in the SCC shall operate at all times when waste is in the incineration system. The fan damper will be opened at those times, greater than or equal to ten (10%) percent and monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~

- (n) The outlet temperature of the spray dryer (inlet temperature of the ESP) must be between 250°F and 450°F at all times waste is in the incineration system and shall be monitored and recorded on a continuous basis and in accordance with Attachments 1 and 3 to this permit.

- (o) ~~The following conditions apply to the Electrostatic Precipitator (ESP):~~
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- (i) ~~The ESP shall be maintained at its design particulate removal efficiency and in automated computer control mode whenever hazardous waste is being fed to the incineration system. The Permittee shall be required to utilize a "Digicon Optipulse" controller or equivalent, as determined by the Director, to control the electrical fields of the ESP.~~
- (ii) ~~The controller will monitor, for each of the three ESP fields, at a minimum, the following parameters:~~
 - a) ~~primary voltage - must be > 90v AC and at least 50% of the rated primary current;~~
 - b) ~~ESP fields 1 and 2 must be in the range of 0 to 100 amps;~~
 - c) ~~ESP field 3 must be in the range of 0 to 150 amps; and~~
 - d) ~~spark rate must be < 200 sparks per minute.~~
- (iii) ~~All three fields of the ESP will be energized when burning hazardous waste and monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~
- (iv) ~~Whenever the ESP is out of service for more than seventy two hours, start up procedures, as specified by the manufacturer, shall be successfully completed and documented prior to resumption of hazardous waste feed to the incineration system.~~
- (p) ~~Oxygen concentration in the flue gas leaving the ESP shall be greater than 3% percent by dry volume basis and shall be monitored and recorded on a continuous basis in accordance with Attachments 1 and 3 to this permit.~~
RESERVED
- (q) ~~Carbon monoxide concentration in the flue gas leaving the ESP shall not exceed 100 ppm by volume on a dry basis over a one hour rolling average. This operating parameter shall be monitored as specified in Permit Condition t(A).5 and Attachments 1 and 3 to this permit.~~
RESERVED.
- (r) The enhanced carbon injection system (ECIS) must be operating at all times waste is in the incineration system and will be monitored and recorded in accordance with Attachments 1 and 3 to this permit. The Permittee shall continue to feed activated carbon at the two injection points in the ECIS at,

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or above, the rates demonstrated during the Comprehensive Performance Test/Trial Burn conducted in September 2003 (Condition 1) and December 2003 (Condition 2). The feed rate for carbon to the ECIS is an average of the feed rate demonstrated by the two mentioned tests.

- (i) The Permittee shall utilize "NORIT PAC 20R" activated carbon, or equivalent, as determined by the Director. Equivalency will be determined by comparing Iodine No. (800 mg/g minimum); ash (15% maximum by weight); moisture (4% maximum by weight as packed); and screen size (65-80%, U.S. Sieve series through 325 mesh).
 - (ii) The activated carbon feed rates, used during the performance testing of the incineration system to demonstrate control of dioxins/furans, shall be maintained at all times waste is in the incineration system.
 - (iii) The activated carbon feed system must be calibrated monthly to ensure feed rates to the ECIS are maintained in accordance with the requirements of this permit at the two locations described in the June 25, 1993 submittal from WTI in paragraph two (Process Description) of the attachment entitled "Enhanced Carbon Injection System" and as illustrated in the associated drawing, number P-06-2-31001.
 - (iv) The results of the calibration shall be recorded in the facility's operating record.
- (s) ~~The following conditions apply to the Four Stage Wet Scrubber:~~
RESERVED
- (i) ~~The pH of the scrubbant at the top of the second packed bed (third stage of the scrubber), monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit, shall be maintained at a minimum pH of 7.0:~~
 - (ii) ~~To ensure adequate particulate matter control, the pressure drop across the fourth stage ring jets of the Venturi scrubber, monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit, shall be maintained at no less than 13.4 inches water column (one minute average):~~

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(iii) RESERVED

(iv) ~~To ensure proper acid gas removal and the proper liquid to gas ratios, HCl shall be monitored at the stack in accordance with Attachments 1 and 3 to this permit.~~

(v) ~~In the event of a malfunction of the HCl monitor in the stack and during daily calibration, a flow rate of 397 gpm (one minute average) in the third stage (second packed bed) shall be maintained and monitored as specified in Permit Condition I(A).5. and Attachments 1 and 3 to this permit.~~

(t) ~~The total hydrocarbon (THC) concentration in the flue gas (measured as propane) at the stack and monitored and recorded as specified in permit condition I(A).5. and Attachments 1 and 3 to this permit, shall not exceed 100 ppm (one minute average).~~

RESERVED.

(u) ~~The maximum total volumetric flow rate through the incineration system, as monitored and recorded on a continuous basis at the induction fan (ID) or other flow monitoring equipment, shall not exceed 65,000 scfm. The volumetric flow rate shall be determined from the calibration chart of the ID fan or by means of other flow monitoring equipment as approved by the Director. This process flow will be monitored and recorded in accordance with Attachments 1 and 3 to this permit.~~

RESERVED.

(v) The reheat or plume suppression system must be operated continuously while waste is in the incineration system, except during maintenance. The unit may be shut down for up to 24 hours at a time not to exceed ten times in one calendar year. The system will be monitored and recorded in accordance with Attachments 1 and 3 to this permit.

(i) Shut down of the plume suppression system for periods greater than 24 hours or more often than ten times during the calendar year while burning hazardous waste shall only be allowed upon written authorization from the Ohio EPA.

(w) Start-Up and Shut-Down

The Permittee shall comply with the requirements of OAC Rule 3745-57-45(C). In addition, the incineration system will be inspected thoroughly prior to each start-up. This inspection will ensure that the system is in

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proper working condition before the start-up procedure is initiated. Burners in the PRIMARY COMBUSTION CHAMBER (PCC) PGG front wall will be used to heat up the combustion zone gradually. These burners will burn auxiliary fuel, as described in Permit Condition I.(A).2.(g), during the start-up and shutdown procedures. Once the combustion zone reaches the proper temperatures, as listed in Attachment 3 to this permit, and the incineration system is fully operational, waste may be introduced into the PCC.

Shutdown can be initiated automatically by the distributed control system (DCS) or manually by the operator. The shutdown procedure will begin with the termination of waste feed to the system. Except in the case of an emergency shutdown, the system will remain operational in order to complete the combustion of all waste in the incineration system. The burners in the front wall will be used to maintain temperatures in the combustion zone until incineration of the remaining waste is complete.

(x) Cessation of Operation

The Permittee shall comply with the requirements of OAC Rule 3745-57-45(F).

- (y) Requests for changes to the incineration system, associated heat recovery or flue gas cleaning equipment, or operation procedures as detailed in this permit or the approved Part B permit application, which would affect the achievement of the performance standards contained in Permit Condition I.(A).3, ~~OAC Rule 3745-57-43~~ or any other permit conditions, shall be submitted for evaluation to the Ohio EPA. No such changes shall be made at the facility unless the Permittee has received approval in accordance with the Ohio Hazardous Waste Rules.

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- (z) For purposes of permit enforcement, compliance with the operating requirements specified in this permit and in OAC Rule 3745-57-45 will be regarded as compliance with the required performance standards in this permit and ~~OAC Rule 3745-57-43~~. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, may justify modification, revocation, or reissuance of the permit pursuant to OAC Rule 3745-50-51, in accordance with OAC Rule 3745-57-43(D).

I(A).4. Inspection Requirements
OAC Rule 3745-57-47

The Permittee shall conduct regular and timely inspections of the facility and its operations in accordance with the Inspection Schedule, found in Section F of the approved Part B permit application, AND ALL applicable permit conditions, and ~~OAC Rule 3745-57-47~~, and shall complete the following as part of these inspections. All inspection data shall be recorded and the records must be placed in the operating log in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73.

- (a) The Permittee shall thoroughly, visually inspect the incinerator and associated equipment (including pumps, valves, conveyors, pipes, etc.) for leaks, spills, corrosion and deterioration, fugitive emissions, and signs of tampering in accordance with Section F of the approved Part B permit application and ~~OAC Rule 3745-57-47(B)~~.

During start up procedures at the facility, the Permittee shall comply with the requirements of OAC Rule 3745-57-45(C). The incineration system will be inspected thoroughly prior to each start-up. This inspection will ensure that the system is in proper working condition before the start-up procedure is initiated.

- (b) The Permittee shall thoroughly, visually inspect the integrity of the secondary containment, roadways, the containment sumps in the storm water collection "B" and "C" areas (as described in Section B of the approved Part B permit application), and the facility's security fence at a frequency outlined in Section F of the approved PART B permit application.
- (c) The Permittee shall continuously monitor the distributed control

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system (DCS) including the analyzers, monitors, temperature probes, pH meters, scales, micro-motion meters, alarms, etc. for proper operation and recording of data.

- (d) ~~The Permittee shall test the emergency waste feed cut-off system and associated alarms weekly and as specified in Permit Condition I(A).5(a) in order to verify operability in accordance with OAC Rule 3745-57-47(C). The monitoring systems will be tested by simulating an upset condition of each monitoring parameter which will engage the waste feed cutoff system. RESERVED.~~
- (e) The Permittee shall test the emergency response equipment and communications in accordance with Section F of the approved PART B permit application.
- (f) The inspection records shall be placed in the operating log in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73.

I(A).5. Monitoring Requirements
OAC Rule 3745-57-47

- (a) The Permittee shall maintain, calibrate, and operate monitoring equipment at all times while incinerating hazardous waste as specified in the approved PART B permit application, the terms and conditions of this permit, and Attachment 3 to this permit.
- (b) The Permittee shall record the monitoring equipment data while incinerating hazardous waste for all materials fed to the incineration system. The data shall be placed in the operating log in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73. This will include:
 - (i) ~~pumpable materials, including by-pass or auxiliary fuels, monitored and recorded on a continuous basis; METAL FEED RATES FOR TWELVE METALS LISTED IN ATTACHMENT 2 TO THIS PERMIT.~~
 - (ii) ~~nonpumpable materials, monitored continuously and logged on a regular basis not to exceed once per charging cycle or once every fifteen minutes, which ever is greater; RESERVED~~
 - (iii) ~~total chlorine content of all material fed to the incineration system, monitored and recorded on a continuous basis (three hour average); and~~

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(iv) ~~metal feed rates for twelve metals listed in Attachment 2 to this permit.~~

(c) Upon request of the Ohio EPA, the Permittee shall perform sampling and analysis of the waste and exhaust emissions to verify that the operating requirements established in this permit ~~achieve the performance standards in accordance with OAC Rule 3745-57-47(A)(3).~~ ARE BEING MET.

(d) Periodic Incineration System Testing

The Permittee shall test the incineration system ~~on an annual basis, or more frequently as directed by the Ohio EPA, to verify that the operating requirements established in this permit result in compliance with the performance standards located in OAC Rule 3745-57-43, Attachment 2 to this permit; and all applicable sections of this permit and the approved Part B permit application. Testing may also be conducted to determine whether amendment of the performance standards contained in this permit, or additions thereto, is indicated as necessary.~~

AT A MINIMUM, THE PERMITTEE WILL CONDUCT TESTING FOR THE PERFORMANCE STANDARDS IN THIS PERMIT AT A FREQUENCY REQUIRED BY THE MACT STANDARDS AND LISTED IN THE CLEAN AIR ACT TITLE V PERMIT.

(e) Electronic Bulletin Board System (BBS)

The Permittee shall maintain a separate computer interface with Ohio EPA-DHWM in order to provide timely information regarding the operating status of the incineration system using data from the DISTRIBUTED CONTROL SYSTEM (DCS) ~~DCS~~. The electronic bulletin board system (BBS) shall enable DHWM to evaluate ~~compliance with operating limits including, but not limited to: (1) temperatures at specific locations within the incineration system; AND (2) concentrations (ppm) of carbon monoxide, one minute and hourly averages; (3) concentration of pollutants such as hydrogen chloride, nitrogen oxides, and total hydrocarbons at the stack; (4) oxygen concentrations as measured at the outlet of the ESP; (5) pH in the 3rd stage of the scrubber; (6) negative pressure in the SCC; and (7) (2) AWFCOs, the time of occurrence, the cause, and time at which waste feed was permitted and resumed.~~

I.(A).6. Waste Feed Cut-Off Requirements
OAC Rule 3745-57-45

(a) The Permittee shall construct and maintain the systems specified in Section D of the approved Part B permit application and Permit Condition I(A).3. The Permittee shall not feed hazardous wastes

to the incinerator unless all monitoring systems listed in Permit Condition I(A).3 and Attachments 1 and 3 to this permit are on-line, properly operating, and monitoring according to conditions specified in Attachment 3 to this permit.

- (b) The incineration system shall be operated and maintained to automatically cut off the hazardous waste feed to the incinerator at the levels specified in Attachment 1 to this permit. Hazardous wastes shall be fed to the incinerator only when all instruments required by this condition are on line, operating properly and monitoring the specified parameters according to Attachment 1 and 3 to this permit.
- (c) In case of a malfunction of the automatic waste feed cut-off system, the Permittee shall perform manual shut downs in accordance with the procedures in the approved Part B permit application and the terms and conditions of this permit, such as I(A).3(w) AND (x). The Permittee shall not restart the incinerator until the problem causing the malfunction has been located and corrected. At that time, the Permittee shall conduct an inspection of all systems in accordance with Permit Condition I(A).4(a)

I(A).7. Closure
OAC Rule 3745-57-51

The Permittee shall follow the procedures in the Closure Plan in Section I of the approved Part B permit application and the terms and conditions of this permit.

I(A).8. Record keeping

- (a) The Permittee shall record and maintain, in the operating record for the facility, all monitoring and inspection data compiled under the requirements of this permit and in accordance with OAC Rule ~~3745-57-47(D)~~ 3745-54-73 and all applicable sections of the approved Part B permit application.
- (b) ~~The Permittee shall record in the operating record for the facility, the date and time of all automatic waste feed cut offs RELATED TO THE PARAMETERS IN THIS PERMIT, including the triggering parameters, reason(s) for the cut-off, and corrective actions taken. The Permittee shall also record all failures of the automatic waste feed~~

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~~cut-off system to function properly and corrective actions taken.~~ RESERVED.

I(A).9. Re-generable Activated Carbon Adsorption Cleaning System

The Permittee shall maintain the re-generable activated carbon adsorption cleaning system to ensure a removal of, at a minimum, 95% of the total organic vapors from the exhaust gas prior to being discharged from the system to the atmosphere and in accordance with the terms and conditions of this permit and Section D of the approved Part B permit application.

- (a) Based on calculations performed by the manufacturer of the activated carbon elements or boxes, the boxes should meet the designed absorption removal efficiency for a minimum of sixty continuous days based on the operating conditions at the facility
- (b) The results of the analysis performed on the carbon boxes and the replacement of the carbon boxes shall be recorded in the facility's operating record.

I(A).10 Treatment Residual

Unless the Permittee can show otherwise, per OAC Rule 3745-51-03(D), residue from the incinerator is hazardous waste and the Permittee is considered the generator.

- (a) The Permittee shall sample and analyze the treatment residue generated from the incineration system and all ancillary systems in accordance with the procedures outlined in Section C of the approved Part B permit application.
- (b) The Permittee shall manage the treatment residue generated from the incineration system in accordance with procedures outlined in Section D of the approved Part B permit application and all applicable Ohio hazardous waste regulations.

End of Permit Conditions

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ATTACHMENT 1 - WASTE FEED CUT-OFFS

AUTOMATIC WASTE FEED CUT-OFFS	
PARAMETER	OPERATING LIMIT - TESTED WEEKLY
PGC TEMPERATURE	< 2174 F AND > 1830 F (FOUR HOUR ROLLING AVERAGE)
PGC TEMPERATURE	> 1800 F AND < 2200 F INSTANTANEOUS
SCC TEMPERATURE	MUST BE ABOVE 1600 F
SCC PRESSURE	MUST BE BELOW 0 INWG (TWO SECOND DELAY)
SCC STEAM PRESSURE	> OR = 100 PSIG
SCC COMBUSTION AIR FAN	FAN MUST BE RUNNING
NATURAL GAS BURNER BLOWER	NATURAL GAS BURNER BLOWER SHALL OPERATE AT ALL TIMES WASTE IS BEING INCINERATED. FAN DAMPER OPEN AT THOSE TIMES > OR = 10% SEE 1(A).3(m)(iv)
DRY 02 AT ESP OUTLET	> 3% (60 SECOND DELAY)
SPRAY DRYER OUTLET TEMPERATURE	MUST BE ABOVE 250 F AND BELOW 450 F
pH AT SCRUBBER 3RD STAGE	pH MUST BE > 7.0
*FLOW INTO 2ND PACKED BED SCRUBBER (THIRD STAGE)	MUST BE > 397 GPM (ROLLING HOURLY AVERAGE)
THC AT STACK	< 100 PPM (ONE MINUTE AVERAGE)
PROCESS FLOW	< 65,000 SCFM
CO AT ESP OUTLET	< 100 PPM (ONE HOUR AVERAGE)
ESP FIELDS	ALL THREE POWER CONSOLES ON AND OPERATING ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND PERMIT CONDITION 1(A).3.(e)(ii)
INCINERATION PROCESS HEAT RELEASE (SYSTEM LOAD)	MUST BE BELOW 97.8 MMBTU/HR (THREE HOUR ROLLING AVERAGE)
*HCl AT STACK	MUST BE < FOUR LBS/HR (THREE HOUR AVERAGE)
RING JET PRESSURE DROP	MUST BE > 13.4 INWG (ONE MINUTE AVERAGE)
ID FAN SINGLE SPEED MOTOR	MUST BE ON AS INDICATED BY THE DCS AND MAINTAIN A NEGATIVE DRAFT IN THE INCINERATION TRAIN
FRONT WALL LANCES	ATOMIZATION PRESSURE AT LANCES MUST BE > 45 PSIG
*FLOW TO SCRUBBER 2ND PACKED BED BECOMES A PERMIT LIMIT DURING TIMES WHEN THE HCl ANALYZER IS BEING CALIBRATED OR IS MALFUNCTIONING.	

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MANUAL WASTE FEED CUT-OFFS	
PARAMETER	OPERATING LIMIT - TESTED WEEKLY
ECIS	ACTIVATED CARBON FEED RATE AND LOCATION ACCORDING TO PERMIT
PLUME SUPPRESSION REHEAT FAN	MUST BE OPERATING ACCORDING TO PERMIT APPLICATION
FEED RESTRICTION MAXIMUM TOTAL WASTE	29,651 LBS/HR AT ANY TIME; OR 28,565 LBS/HR (FOUR HOUR ROLLING AVERAGE)
FEED RESTRICTION: MAXIMUM SOLIDS FEED RATE; CONTAINERS AND BULK	16,576 LBS/HR AT ANY TIME; OR 15,265 LBS/HR (FOUR HOUR ROLLING AVERAGE)
FEED RESTRICTION: MAXIMUM COMBINED SLUDGE AND SLURRY LANCE FEED RATES	20,099 LBS/HR AT ANY TIME; OR 19,602 LBS/HR (FOUR HOUR ROLLING AVERAGE)
FEED RESTRICTION: CHLORINE FEED	< 2700 LBS/HR (THREE HOUR AVERAGE)
FEED RESTRICTIONS: METALS FEEDS	HOURLY AND ANNUAL FEED RATES FOR TWELVE METALS, SEE ATTACHMENT 2 TO THIS PERMIT
OPACITY AT STACK	<20% (SIX MINUTE AVERAGE)
MONITORING EQUIPMENT FOR SELECT OPERATING PARAMETERS	SELECT MONITORING EQUIPMENT LISTED IN PERMIT CONDITION I(A).6 OPERATING PROPERLY
FACILITY POWER	GENERAL POWER FAILURE
AUXILIARY FUEL	MUST BE AVAILABLE AT ALL TIMES WASTE IS BEING FED TO THE INCINERATOR

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ATTACHMENT 2 - PERMIT CONDITIONS REGARDING THE EMISSIONS OF METALS, INCINERATOR FEED RATE OF METALS, AND THE CONTINUOUS MONITORING OF METALS IN THE FLUE GAS:

A) Metals Emissions and Feed Rates

- 1) The Permittee shall comply with the ~~hourly and~~ annual metals emission rate limitations listed below in Condition A.5. of this Attachment. Until such time as an appropriate method is approved by the Ohio EPA for the continuous or semi-continuous monitoring of metals emissions in the incinerator flue gas, the Permittee shall establish compliance with these limits by tracking the amount of metals contained in the wastes fed into the incinerator. The appropriate metals feed rates are given in Condition A.5. of this Attachment. Compliance shall be tracked and demonstrated on the basis of 60-minute rolling averages, defined as the arithmetic mean of the 60 most recent 1-minute average values, unless an equivalent method is approved by the Director. For the purposes of this Condition, the "amount of metals contained in the waste" includes measured, estimated, and/or default maximum values in accordance with the Permittee's existing waste characterization program.
- 2) If and when the Ohio EPA approves the use of continuous or semi-continuous flue gas metals emission monitoring for demonstrating compliance with the metals emission limits in Condition A.5. of this Attachment, the Permittee shall track and demonstrate compliance with the ~~hourly and~~ annual emission limits shown in Condition A.5. of this Attachment. At such times as the Permittee is demonstrating compliance with the emission limits in this manner, the metals feed limits will not apply. During periods of malfunction of the continuous monitoring system, the Permittee shall use the feed limits to demonstrate compliance, as described in Conditions A.1. and A.4. of this Attachment.
- 3) When demonstrating compliance via the multiple metals continuous emission monitor system, compliance shall be tracked and demonstrated on the basis of hourly rolling averages, based on samples being taken and analyzed once every 2 minutes or less, where each rolling average is calculated as the arithmetic mean of all sample concentration values recorded over the previous 60 minutes, unless otherwise directed by the Director. After sufficient operating data is collected to demonstrate that an alternate time-averaging technique is equivalent, the Permittee may petition the Director to use an equivalent averaging technique.

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- 4) During periods of malfunction of the continuous monitoring system (for the purposes of this permit, "malfunction" includes any period of time when valid emission data cannot be collected), the Permittee shall demonstrate compliance as follows:
- a) For data interruptions of 12 minutes or less, metals emissions will be considered to be equivalent to the value recorded immediately prior to the interruption;
 - b) For interruptions longer than 12 minutes, compliance with the metals emission limits will revert to feed tracking, as described in Condition A.1. of this Attachment, with the first 60-minute rolling average being generated at the 60th minute after the monitor became inoperative.
- 5) The following metals feed or emission limits shall apply, as described in Conditions A.1. and A.2. of this Attachment:

Metal	Hourly Emission Rate	Hourly Feed Rate Limit	Annual Emission Limit	Annual Feed Rate Limit
Ba	1.13 lb/hr	265 lb/hr	682 lbs/yr	2.96 E+5 lbs/yr
Hg	0.65 lb/hr	0.65 lb/hr	355 lbs/yr	355 lbs/yr
Ag	26 lb/hr	26 lb/hr	954 lbs/yr	2.27 E+5 lbs/yr
Tl	0.53 lb/hr	2.65 lb/hr	6.6 lbs/yr	2870 lbs/yr
Ni	156 lb/hr	156 lb/hr	4170 lbs/yr	1.36 E+6 lbs/yr
Se	34.9 lb/hr	34.9 lb/hr	102 lbs/yr	3.4 E+4 lbs/yr
Sb	2.6 lb/hr	9.4 lb/hr	11.1 lbs/yr	82,300 lbs/yr
As	0.05 lb/hr	3.8 lb/hr	43.8 lbs/yr	3.3 E+4 lbs/yr
Be	0.091 lb/hr	0.30 lb/hr	2.50 lbs/yr	2630 lbs/yr
Cd	0.122 lb/hr	11.7 lb/hr	107 lbs/yr	1.0 E+5 lbs/yr
Cr	0.018 lb/hr	478 lb/hr	15.8 lbs/yr	1.56 E+6 lbs/yr
Pb	0.029 lb/hr	100 lb/hr	254 lbs/yr	8.7 E+5 lbs/yr

- 6) Compliance with either the hourly and annual metals feed limits or the hourly and annual emission limits, as described in Conditions A.1. through

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ATTACHMENT 3 - INCINERATION SYSTEM OPERATION PARAMETERS

System Parameter	Instrument (DCS Tag#) and Monitoring System	Operating Limit and Monitoring Frequency	Calibration Frequency	Back-up System
Front Wall Lances	FI-3110, 3120, 3130, 3140, 3150, 3160 Pressure switches	Atomizing steam, air or oxygen pressure > 45 psi Monitored continuously	annually or as needed	WFCO
Primary Air Fan	FI-3440A Flow meter	Must be operating Monitored continuously	NA	WFCO
PGC Temperature	TI-4300, Redundant thermocouples	Must be < 2174 F and > 1830 F (four hour rolling average), and > 1800 F and < 2200 F instantaneous Recorded continuously	every 5 weeks	WFCO
SGC Temperature	TI-4310, Redundant thermocouples	Must be above 1600 F Recorded continuously	every 5 weeks	WFCO
SGC Pressure	PI-4300, Pressure transmitter	Must be below 0 inwc (2 second delay) Recorded continuously	every 5 weeks	WFCO
SGC Steam Pressure	PI-4500a PI-4500b, Pressure transmitter	> or = to 100 psi Recorded continuously	annually or as needed	WFCO
SGC Combustion Air Fan (Natural Gas Burner Blower)	HS-4001, DCS Switch	Natural Gas Burner Blower Fan on and damper open > or = to 10% Monitored continuously	NA	WFCO
Slag Quench Tank	LI-4610, Level indicator	water level in tank monitored continuously	annually or as needed	none
Boiler	LI-5010, Level indicator FI-5010B FI-5010A, Flow indicators	Drum level Feed water flow Steam flow Monitored continuously	annually or as needed	Level switch for drum
ESP Fields	EI-6700, 6710, 6720, ESP Optipulse Controller	-See Permit Condition (A).3.(e) Monitored continuously	NA	WFCO
CO at ESP Outlet	AI-6652B, CO analyzer	One hour average < 100 ppm Recorded continuously	daily annual RATA	WFCO
Dry O2 at ESP Outlet	AI-6651-56, O2 analyzer	> 3% (60 second delay) Recorded continuously	daily annual RATA	WFCO

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System Parameter	Instrument (DCS Tag#) and Monitoring System	Operating Limit and Monitoring Frequency	Calibration Frequency	Back-up System
Spray Dryer Outlet Temperature/ ESP Inlet Temperature	TI - 6002, Redundant thermocouples	Must be above 250 F; and Must be below 450 F Recorded continuously	every 5 weeks	WFCO
Scrubber Liquid-Flows	FI-7001 FI-7204 FI-7304 FI-7404; Flow meter	1 st stage, quench flow 2 nd stage, 1 st packed bed flow 3 rd stage, 2 nd packed bed flow ^a 4 th stage, ring jet flow Monitored continuously	annually or as needed	Pump pressure transmitter and WFCO (see Attachment 1, flow to 3 rd stage)
pH of Scrubber at 3 rd Stage	AI-7307; pH probe	>7 pH Monitored continuously	as-needed	WFCO
Ring Jet Pressure Drop, 4 th Stage Scrubber	PDI-7405; Pressure transmitter	Must be > 13.4 inwc Recorded continuously	monthly	WFCO
THC at Stack	AI-7850; THC analyzer	<100 ppm (one minute average) Recorded continuously	daily annual RATA	WFCO
HCl at Stack	AI-7820; HCl analyzer	Must be < 4 lbs/hr Recorded continuously	daily annual RATA	^a Flow rate to the 3 rd stage of the scrubber
Opacity at Stack	AI-7815; Opacity analyzer	<20% (six minute average) Recorded continuously	daily annual RATA	None
Process Flow	FI-7805; Flow meter	< 65,000 scfm Recorded continuously	daily	WFCO
Incineration Process Heat Release (system load)	HI-7610-AVG2; Distributed control system (DCS)	Must be below 97.8 MMBTU/HR on a 3 hour rolling average; Recorded continuously	yearly	WFCO
ID Fan	HS-7610, Distributed control system (DCS)	Must be operating Monitored continuously	NA	WFCO
ECIS	HS-5740 HS-7140 Manual check	Activated carbon feed rate Recorded regularly	monthly	WFCO

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System Parameter	Instrument (DCS Tag#) and Monitoring System	Operating Limit and Monitoring Frequency	Calibration Frequency	Back-up System
Feed Restriction	Micro-motion meters, positive displacement pumps, and scales	Total feed rate, 29,651 lbs/hr (one hour average) or 28,565 lbs/hr (four hour average) Monitored and recorded continuously	Monthly and/or according to manufacturer's recommendation	WFCO
Feed Restriction	Scales	Solid waste feed rate, 16,576 lbs/hr (one hour average) or 15,265 lbs/hr (four hour average) Monitored and recorded continuously	According to manufacturer's recommendation	WFCO
Feed Restriction	Real Time Monitor	Chlorine feed rate 2700 lbs/hr (three hour average) Monitored and recorded continuously	NA	WFCO
Feed Restriction	Real Time Monitor	Metal feed rates as listed in Attachment 2 Monitored and recorded continuously	NA	WFCO
Plume Suppression (Reheat Fan)	HS - 7710, DCS	Plume suppression must be operated continuously except during maintenance	NA	Manual reset
By-Pass or Auxiliary Fuel	Front wall gas burners, HS-3520; auxiliary fuel, HS-3120	Must be available at all times waste is being fed to the incinerator	According to manufacturer's recommendation	WFCO

* FLOW TO SCRUBBER 2ND PACKED BED BECOMES A PERMIT LIMIT DURING TIMES WHEN THE HCl ANALYZER IS BEING CALIBRATED OR IS MALFUNCTIONING.

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