INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
HAZARDOUS WASTE MANAGEMENT PERMIT

Name of Permittee: Vertellus Integrated Pyridines LLC

Facility Location: 1500 S. Tibbs Avenue, Indianapolis

EPA Identification Number: IND000807107

Issuance Date: 

Expiration Date: 

Authorized Activities

Pursuant to Indiana Environmental Statutes (IC 13) and the rules promulgated thereunder and codified in Title 329 of the Indiana Administrative Code, Article 3.1 (329 IAC 3.1), the State permit conditions (hereinafter called the permit) of the Resource Conservation and Recovery Act of 1976 (RCRA) permit are issued to Vertellus Integrated Pyridines LLC (hereinafter called the Permittee) to operate a hazardous waste facility located in Indianapolis, Indiana, Section 17, Township 15N, Range 3E at latitude 39° 44' 19" N and longitude 86° 13' 06" W, Maywood Quadrangle, on the U.S. Geological Survey topographic map.

The State RCRA program is authorized under 40 CFR Part 271 and Section 3006 of RCRA to administer the hazardous waste management program in lieu of the Federal program, including administration of most of the Hazardous and Solid Waste Amendments (HSWA) of 1984.
The Permittee is authorized to conduct the following hazardous waste management activities:

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Federal regulations 40 CFR Parts 260 through 270 have been incorporated by reference. Where exceptions to incorporated Federal regulations are necessary, these exceptions will be noted in the text of the State rule. 329 IAC 3.1-1-7

The conditions of this permit were developed in accordance with the following applicable provisions of 329 IAC 3.1:

- ID & Listing of Hazardous Waste
  329 IAC 3.1-6

- Standards for Owners and Operators of Treatment, Storage, and Disposal Facilities
  329 IAC 3.1-9
  40 CFR 264 Subparts A, B, C, D, and E

- Ground Water Protection
  329 IAC 3.1-9
  40 CFR 264 Subpart F

- Closure and Post-Closure
  329 IAC 3.1-9
  40 CFR 264 Subpart G

- Financial Requirements
  329 IAC 3.1-15
☐ Use and Management of Containers
   329 IAC 3.1-9
   40 CFR 264 Subpart I

☑ Tank Systems
   329 IAC 3.1-9
   40 CFR 264 Subpart J

☑ BIF
   329 IAC 3.1-9
   40 CFR 266 Subpart H

☐ Surface Impoundments
   329 IAC 3.1-9
   40 CFR 264 Subpart K

☐ Waste Piles
   329 IAC 3.1-9
   40 CFR 264 Subpart L

☐ Land Treatment
   329 IAC 3.1-9
   40 CFR 264 Subpart M

☐ Landfills
   329 IAC 3.1-9
   40 CFR 264 Subpart N

☐ Incinerators
   329 IAC 3.1-9
   40 CFR 264 Subpart O

☑ Corrective Action for Solid Waste Management Units
   329 IAC 3.1-9
   40 CFR 264 Subpart S
☐ Drip Pads
329 IAC 3.1-9
40 CFR 264 Subpart W

☐ Air Emission Standards for Process Vents
329 IAC 3.1-9
40 CFR 264 Subpart AA

☑ Air Emission Standards for Equipment Leaks
329 IAC 3.1-9
40 CFR 264 Subpart BB

☑ Air Emission Standards for Tanks Surface Impoundments and Containers
329 IAC 3.1-9
40 CFR 264 Subpart CC

☑ Hazardous Waste Permit Programs
329 IAC 3.1-13
40 CFR 270 Subparts A, B, C, and D

☑ Inspection and Investigation
329 IAC 3.1-1-3 and 329 IAC 3.1-1-4

☑ Enforcement
329 IAC 3.1-1-5
Permit Approval

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any Attachments) and the applicable rules and requirements contained in 329 IAC 3.1 and 40 CFR 260 through 270 as specified in the permit. Applicable rules are those which are in effect on the date of issuance of this permit. 329 IAC 3.1-13; 40 CFR 270.32

This permit is based on the assumption that the information submitted in the permit application attached to the Permittee's letter dated June 11, 2014 (VFC # 70117541, 70117542), and any subsequent amendments (VFC # 80009661, 80009660, 80042550) is accurate and that the facility has been or will be constructed and/or operated as specified in the application. Virtual File Cabinet (VFC) documents may be viewed online at www.IN.gov/IDEM/.

Any inaccuracies found in the application may be grounds for the modification, revocation and reissuance, or termination of this permit (329 IAC 3.1-13-7), and potential enforcement action. The Permittee must inform the Indiana Department of Environmental Management (IDEM) of any deviation from, or changes in, the information in the application which would affect the Permittee's ability to comply with the applicable rules or permit conditions.

Pursuant to IC 13-15-5-3 and IC 4-21.5-3-5(f), this permit takes effect 15 days from receipt of this notice. If you wish to challenge this decision, IC 13-15-6-1 and IC 4-21.5-3-7 require that you file a Petition for Administrative Review. If you seek to have the effectiveness of the permit stayed during administrative review, you must also file a Petition for Stay. The petition(s) must be submitted to the Office of Environmental Adjudication, Government Center North, Room 103, 100 North Senate Avenue, Indianapolis, Indiana 46204, within 15 days after your receipt of this notice. The petition(s) must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision, or otherwise entitled to review by law. Identifying the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, or date of this notice will expedite review of the petition. Additionally, IC 13-15-6-2 requires that a Petition for Administrative Review must include:

1. The name and address of the person making the request.
2. The interest of the person making the request.
3. Identification of any persons represented by the person making the request.
4. The reasons, with particularity, for the request.
5. The issues, with particularity, proposed for consideration at the hearing.

6. Identification of the terms of the permit which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing licenses of the type granted or denied by the Commissioner.

Pursuant to IC 4-21.5-3-1(f) any document serving as a petition for review or review and stay must be filed with the Office of Environmental Adjudication. Filing of such a document is complete on the earliest of the following dates:

1. the date on which the petition is delivered to the Office of Environmental Adjudication, Government Center North, Room 103, 100 North Senate Avenue, Indianapolis, Indiana 46204;

2. the date of the postmark on the envelope containing the petition, if the petition is mailed by United States mail; or

3. the date on which the petition is deposited with a private carrier, as shown by a receipt issued by the carrier, if the petition is sent by private carrier.

The portions of the permit for which a Petition for Stay has been filed will take effect at the expiration of the additional 15 day period unless or until an Environmental Law Judge stays the permit in whole or in part. This permit will remain in effect until the expiration date unless revoked and reissued, modified, or terminated (329 IAC 3.1-13-7), or continued in accordance with IC 13-15-6-3.

This permit terminates and supersedes any other State hazardous waste management permit.

Issued this ______ day of _____________ 2019

By:

Rebecca E. Joniskan, Chief
Permits Branch
Office of Land Quality
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I. STANDARD CONDITIONS

A. EFFECT OF PERMIT

The Permittee is allowed to store and treat hazardous waste in accordance with the conditions of this RCRA permit. Any storage and treatment of hazardous waste not authorized in this permit or the regulations is prohibited.

Pursuant to 329 IAC 3.1 and 40 CFR 260 through 270 (for HSWA Provisions), compliance with the conditions of this RCRA Permit generally constitutes compliance for purposes of enforcement, with the Indiana Environmental Management Act and RCRA, as amended by HSWA, except for those requirements not included in the Permit which become effective by statute, or which are promulgated under 329 IAC 3.1 and 40 CFR 260 through 270, restricting the placement of hazardous wastes in or on the land.

Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of Federal, State, or local laws or regulations.

Compliance with the terms of this permit does not constitute a defense to any Order issued or any action brought under Section 3013 or Section 7003 of RCRA; Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 601), commonly known as CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601(a)), commonly known as SARA, or any other law providing for protection of public health or the environment. 329 IAC 3.1-13; 40 CFR 270.4; IC 13

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 329 IAC 3.1-13-7. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY

The provisions of the permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit will not be affected thereby. In the event that a condition of this permit is stayed for
any reason, all provisions of the permit severable from the stayed provisions will take effect. With regard to stayed provisions of the permit, the Permittee shall continue to comply with the related applicable and relevant permitted standards from the previously issued federal or state permit until final resolution of the stayed condition, unless the Commissioner of the Indiana Department of Environmental Management (Commissioner) determines that compliance with the related applicable and relevant standards would be technologically incompatible with other conditions of this permit which have not been stayed. 329 IAC 3.1-13; 40 CFR 270.32

D. DUTIES AND REQUIREMENTS

1. **Duty to Comply** The Permittee must comply with all conditions of the RCRA permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of IC 13 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. 329 IAC 3.1-13; 40 CFR 270.30(a); 270.61

2. **Duty to Reapply** The Permittee must submit a complete application for a new permit at least 180 days before this permit expires unless: a) the Permittee no longer wishes to operate a hazardous waste management facility and all remaining corrective action obligations have been met; or, b) permission for submittal on a later date has been granted by the Commissioner. The Commissioner shall not grant permission for applications to be submitted later than the expiration date of the existing permit. 329 IAC 3.1-13; 329 IAC 3.1-13-3(h)

3. **Permit Expiration** The duration of this permit shall not exceed the expiration date of the permit, except as provided by 329 IAC 3.1-13-15. This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application for a new permit and through no fault of the Permittee, the Commissioner has not issued a new permit with an effective date under 329 IAC 3.1-13-14 on or before the expiration date of the previous permit.
329 IAC 3.1-13-16

4. **Need to Halt or Reduce Activity Not a Defense** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. 329 IAC 3.1-13; 40 CFR 270.30(c)
5. **Duty to Mitigate** In the event of non-compliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. 329 IAC 3.1-13; 40 CFR 270.30(d)

6. **Proper Operation and Maintenance** The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. 329 IAC 3.1-13; 40 CFR 270.30(e)

7. **Duty to Provide Information** The Permittee shall furnish to the Commissioner, within a reasonable time, any relevant information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Commissioner, upon request, copies of records required to be kept by this permit. 329 IAC 3.1-13; 40 CFR 270.30(h); 264.74

8. **Inspection and Entry** The Permittee shall allow the Commissioner, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   a. Enter at reasonable times upon the Permittee’s premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit (329 IAC 3.1-13; 40 CFR 270.30(i)(1));

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit (329 IAC 3.1-13; 40 CFR 270.30(i)(2));

   c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit (329 IAC 3.1-13; 40 CFR 270.30(i)(3)); and
d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by IC 13, any substances or parameters at any location. 329 IAC 3.1-13; 40 CFR 270.30(i)(4)

9. Monitoring and Reporting

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from 329 IAC 3.1-6; 40 CFR 261, Appendix I. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, (Third Edition as amended by updates) (as referenced in 40 CFR 260.11); Standard Methods for the Examination of Water and Wastewater, (the 19th Edition, 1995); or an equivalent method as specified in the attached Waste Analysis Plan. 329 IAC 3.1-13; 40 CFR 270.30(j)(1)

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or record or for a period of time greater than 3 years as specified elsewhere in this permit. This period may be extended by request of the Commissioner at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. 329 IAC 3.1-13; 40 CFR 270.30(j)(2) and 40 CFR 264.74(b)

c. Records of monitoring information shall include:

i. The date(s), exact place, and times of sampling or measurements (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(i));

ii. The individual(s) who performed the sampling or measurements (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(ii));

iii. The date(s) analyses were performed (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(iii));

iv. The individual(s) and laboratory who performed the analyses (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(iv));
v. The analytical technique(s) or method(s) used. Analytical technique(s) or method(s) is defined as encompassing both the sampling technique (method) and method of chemical analysis used. This information must be provided in the Waste Analysis Plan (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(v)); and

vi. The result(s) of such analyses, including QA/QC documentation (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(vi)).

d. Monitoring results shall be reported to the Commissioner at the intervals specified elsewhere in this permit. 329 IAC 3.1-13; 40 CFR 270.30(l)(4)

10. Reporting Planned Changes The Permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. 329 IAC 3.1-13; 40 CFR 270.30(l)(1)

11. Certification of Construction or Modification The Permittee may not treat, store or dispose of hazardous waste in a modified portion of the facility except as provided in 40 CFR 270.42 until:

a. The Permittee has submitted to the Commissioner by certified mail or hand delivery a letter signed by the Permittee and a qualified professional engineer stating that the facility has been constructed or modified in compliance with the permit (329 IAC 3.1-13; 40 CFR 270.30(l)(2)(i)); and

The Commissioner has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit (329 IAC 3.1-13; 40 CFR 270.30(l)(2)(ii)(A)); or

Within 15 days of the date of submission of the letter described in I.D. 11.a., the Permittee has not received notice from the Commissioner of his or her intent to inspect, prior inspection is waived and the Permittee may commence treatment, storage, or disposal of hazardous waste (329 IAC 3.1-13; 40 CFR 270.30(l)(2)(ii)(B)).

12. Transfer of Permits This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 329 IAC 3.1-13; 40 CFR 270.40(b) or 40 CFR 270.41(b)(2) to identify the new Permittee and incorporate such other requirements as may be necessary under IC 13. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator, in writing, of the
requirements of 329 IAC 3.1 and IC 13, including all applicable corrective action requirements. 329 IAC 3.1-13; 40 CFR 270.40

13. **Reporting Anticipated Noncompliance** The Permittee shall give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Such notification does not excuse the Permittee’s duty to comply with permit requirements. 329 IAC 3.1-13; 40 CFR 270.30(l)(2)

14. **Compliance Schedules** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. 329 IAC 3.1-13; 40 CFR 270.30(l)(5)

15. **Twenty-four Hour Reporting** The Permittee shall report to the Commissioner any noncompliance with the permit which may endanger health or the environment. Any such information must be reported orally to IDEM’s 24 hour emergency telephone number (888) 233-7745, within 24 hours from the time the Permittee becomes aware of the circumstances. This report must include the following:

a. Information concerning the release of any hazardous waste which may endanger public drinking water supplies.

b. Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of material(s) involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
vii. Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain: a description of the noncompliance and its cause; the period of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Permittee need not comply with the 5 day written notice requirement if the Commissioner waives the requirement and the Permittee submits a written report within 15 days of the time the Permittee becomes aware of the circumstances. 329 IAC 3.1-13-1; 40 CFR 270.30(l)(6)

16. Other Noncompliance The Permittee shall report all instances of noncompliance not otherwise required to be reported under Condition I.D.15, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Condition I.D.15. 329 IAC 3.1-13; 40 CFR 270.30(l)(10)

17. Other Information When the Permittee becomes aware that the facility failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Commissioner, the Permittee shall promptly submit such facts or information. 329 IAC 3.1-13; 40 CFR 270.30(l)(11)

18. Submittal of Reports or Other Information All reports or other information required to be submitted by the terms of this permit must be sent to:

Indiana Department of Environmental Management
Office of Land Quality
Hazardous Waste Permit Section
Attn: Chief Hazardous Waste Permit Section
IGCN 1101
100 N. Senate Avenue
Indianapolis, IN 46204
(800) 451-6027

19. All other requirements contained in 40 CFR 270.30 not set forth herein are hereby fully incorporated in this permit.

E. SIGNATORY REQUIREMENT All reports or other information requested by the Commissioner shall be signed and certified. 329 IAC 3.1-13; 40 CFR 270.11
F. CONFIDENTIAL INFORMATION The Permittee may claim confidential any information required to be submitted by this permit. Confidential claims must be submitted in accordance with 329 IAC 6.1; 329 IAC 3.1-13-4; 329 IAC 6.1; IC 13-14-11-1

G. WASTE MINIMIZATION The Permittee must certify at least annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that the Permittee generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment. The certifications must be recorded, as they become available, and maintained in the operating record. 40 CFR 264.73(b)(9)

H. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE Except as noted in the regulations, until closure is completed and certified by the owner/operator and a qualified professional engineer, the Permittee must maintain at the facility the most recent version of the following documents required by this permit:

1. Waste Analysis Plan and any document(s) referenced therein to describe on-site procedures (329 IAC 3.1-9, 40 CFR 264.13);

2. Personnel Training documents and records (329 IAC 3.1-9, 40 CFR 264.16(d) and (e));

3. Contingency Plan (329 IAC 3.1-9, 40 CFR 264.53(a));

4. Closure Plan (329 IAC 3.1-9, 40 CFR 264.112(a)(2));

5. Cost estimate for facility closure (329 IAC 3.1-15-3);

6. Operating record (329 IAC 3.1-9, 40 CFR 264.73);

7. Inspection schedules (329 IAC 3.1-9, 40 CFR 264.15(b)(2));

8. Record of facility inspections kept for at least 3 years from the date of the inspection (329 IAC 3.1-9, 40 CFR 264.15(d));

9. Copies of all manifests for shipments of hazardous waste received at and originating from this facility, kept for at least 3 years (329 IAC 3.1-7, 329 IAC 3.1-9-2(6), 40 CFR 262.40, 40 CFR 264.71);
10. Notifications from generators subject to 40 CFR Part 268, Subtitle C, that specify treatment standards (40 CFR 264.73, 268.7);

11. Waste minimization certifications must be part of the operating record (40 CFR 264.73(b)(9));

12. Corrective Action reports and records as required by Permit Conditions VI of this permit, maintained for at least 3 years after all Corrective Action Activities have been completed;

13. Records regarding closed-vent systems and control devices, and equipment leaks, and/or tank, surface impoundments and containers as required by Permit Condition IV. of this permit.
II. GENERAL FACILITY CONDITIONS

A. **DESIGN AND OPERATION OF FACILITY** The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

B. **GENERAL WASTE ANALYSIS** The Permittee must comply with the procedures described in the attached Waste Analysis Plan, Attachment C, which is incorporated herein by reference.

C. **SECURITY** The Permittee must comply with the security provisions described in the Procedures to Prevent Hazards, Attachment F, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.14(b) and (c)

D. **GENERAL INSPECTION REQUIREMENTS** The Permittee must follow the inspection schedule in the Procedures to Prevent Hazards, Attachment F. The Permittee must remedy any deterioration or malfunction discovered by an inspection. 329 IAC 3.1-9; 40 CFR 264.15(c)

E. **PERSONNEL TRAINING** The Permittee must conduct personnel training. This training program must follow the attached outline in the Personnel Training Plan, Attachment H, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.16

F. **GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE** The Permittee must comply with the requirements of 329 IAC 3.1-9 and 40 CFR 264.17.

G. **PREPAREDNESS AND PREVENTION**

1. **Required Equipment** The Permittee must equip the facility with the equipment set forth in the attached Contingency Plan, Attachment G, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.32

2. **Testing and Maintenance of Equipment** The Permittee must test and maintain the equipment specified in Attachment G (see the previous permit condition) as necessary to ensure its proper operation in time of emergency. Such testing and maintenance activities are set forth in the inspection schedule in Attachment F. 329 IAC 3.1-9; 40 CFR 264.33
3. **Access to Communications or Alarm System** The Permittee must maintain access to the communications or alarm systems. 329 IAC 3.1-9; 40 CFR 264.34

4. **Required Aisle Space** The Permittee must maintain sufficient aisle space. 329 IAC 3.1-9; 40 CFR 264.35

5. **Arrangements with Local Authorities** The Permittee must attempt to make arrangements with State and local authorities. If State or local officials refuse to enter into preparedness and prevention arrangements, the Permittee must document this refusal in the operating record. 329 IAC 3.1-9; 40 CFR 264.37

**H. CONTINGENCY PLAN**

1. **Implementation of Plan** The Permittee must immediately comply with the provisions of the Contingency Plan, Attachment G, and follow the emergency procedures described by 329 IAC 3.1-9-2(3) and (4) and 40 CFR 264.56 whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which threaten or could threaten human health or the environment.

2. **Copies of Plan** The Permittee must maintain a copy of the Contingency Plan at the facility and submit a copy to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services. 329 IAC 3.1-9; 40 CFR 264.53

3. **Amendments to Plan** The Permittee must review and immediately amend, if necessary, the Contingency Plan, when required by 329 IAC 3.1-9 and 40 CFR 264.54.

4. **Emergency-Coordinator** The Permittee must comply with the requirements of 329 IAC 3.1-9 and 40 CFR 264.55, concerning the Emergency Coordinator.

**I. MANIFEST SYSTEM** The Permittee must comply with the manifest requirements. 329 IAC 3.1-9; 40 CFR 264.71, 264.72, 264.76

**J. RECORD KEEPING AND REPORTING** In addition to the record keeping and reporting requirements specified elsewhere in this Permit, the Permittee must comply with the following record keeping and reporting requirements:
1. **Operating Record** Maintain a written operating record at the facility. 329 IAC 3.1-9; 40 CFR 264.73

2. **Sampling and Analysis Records** Keep original or exact copies of all sampling and analysis records available for inspection. 329 IAC 3.1-9; 40 CFR 264.74

3. **Biennial Report** Comply with the biennial report requirements. 329 IAC 3.1-9; 40 CFR 264.75

K. **CLOSURE**

1. **Performance Standard** The Permittee must close the facility as required by 329 IAC 3.1-9, 40 CFR 264.111 and the Closure Plan, Attachment I, which is incorporated herein by reference.

2. **Amendment to Closure Plan** The Permittee must amend the Closure Plan whenever necessary, and whenever requested by the Commissioner. 329 IAC 3.1-9; 40 CFR 264.112(c)

3. **Notification of Closure** The Permittee must notify the Commissioner in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only treatment or storage tanks, container storage, or combustion units to be closed. 329 IAC 3.1-9; 40 CFR 264.112(d)

4. **Time Allowed for Closure** After receiving the final volume of hazardous waste, the Permittee must treat or remove from the site all hazardous waste in accordance with the schedule specified in the Closure Plan, Attachment I. After receiving the final volume of hazardous waste, the Permittee must complete closure activities in accordance with the schedule specified in the Closure Plan. 329 IAC 3.1-9; 40 CFR 264.113

5. **Disposal and/or Decontamination of Equipment** When closure is completed, the Permittee must properly decontaminate and/or dispose of all facility equipment contaminated with hazardous waste as required by the Closure Plan. 329 IAC 3.1-9, 40 CFR 264.114

6. **Certification of Closure** When final closure is completed, the Permittee and a qualified professional engineer must certify to the Commissioner that the facility has been closed in accordance with the specifications in the Closure Plan. 329 IAC 3.1-9; 40 CFR 264.115
For a partial closure, the Permittee shall submit a permit modification no later than 45 days after certification approval that removes the unit from service, replaces the unit, proposes new unit to be permitted, or requests to the Commissioner that a time extension to submit the permit modification be granted for good cause.

L. **COST ESTIMATE FOR FACILITY CLOSURE**  The Permittee’s closure cost estimate, prepared in accordance with 329 IAC 3.1-15-3, is specified in the Closure Plan. The Permittee must comply with the following:

1. Adjust the closure cost estimate for inflation within 60 days prior to each anniversary date of the establishment of the financial instrument. 329 IAC 3.1-15-3(b)

2. When using the financial test or corporate guarantee, adjust the closure cost estimate for inflation within 30 days after the close of the Permittee’s fiscal year and before the submission of updated information to the Commissioner. 329 IAC 3.1-15-3(b)

3. Revise the closure cost estimate whenever there is a change in the facility’s closure plan. 329 IAC 3.1-15-3(c)

4. Keep at the facility the latest closure cost estimate. 329 IAC 3.1-15-3(d)

M. **FINANCIAL ASSURANCE FOR FACILITY CLOSURE**  The Permittee must maintain financial assurance in at least the amount of the cost estimates required by Permit Condition II.L., and provide documentation as required. Changes in financial assurance mechanisms must be approved by the Commissioner. 329 IAC 3.1-15-4

N. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS**  The Permittee must comply with 329 IAC 3.1-15-9 whenever necessary.

O. **LIABILITY REQUIREMENTS**  The Permittee must maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. 329 IAC 3.1-15-8
P. **LAND DISPOSAL RESTRICTIONS**

1. The Permittee shall comply with all the applicable self-implementing requirements of 40 CFR Part 268 and all applicable land disposal requirements which become effective by federal statute.

2. The Permittee shall comply with the dilution prohibition requirements described in 40 CFR 268.3.

3. The Permittee shall comply with all testing, tracking, and recordkeeping requirements for treatment facilities described in 40 CFR 268.7.

4. The Permittee shall comply with all the applicable prohibitions on storage of restricted wastes specified in 40 CFR 268 Subpart E.

5. If the Permittee applies to the Administrator of the EPA for an exemption from land disposal restrictions described in 329 IAC 3.1-12-2, the Permittee must submit copies of such request and all supporting documents to the IDEM Commissioner. If the Permittee obtains an exemption from the administrator of the EPA, the Permittee must apply to the Commissioner for concurrence that such an exemption is consistent with the policies outlined in IC 13.
III. TANK STORAGE & TREATMENT CONDITIONS

A. WASTE IDENTIFICATION

1. The Permittee may store and treat a total volume of 580,860 gallons of the hazardous wastes listed in Permit Condition VII. in tanks, subject to the terms of this permit.

2. The Permittee is prohibited from storing hazardous waste that is not identified in Permit Condition VII.

3. The Permittee is allowed to selectively blend hazardous waste to meet a fuel specification (considered treatment of hazardous waste) only in Tank 69.

B. LOCATION OF TANKS  The tanks are located as shown in the site plan, Figure B-2, in Attachment B.

C. DESIGN OF TANKS  The Permittee must operate, and maintain all tanks as specified in the Tank Storage Plan, Attachment D, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.191 and 264.192

D. GENERAL OPERATING REQUIREMENTS

1. The Permittee must not place hazardous wastes in the tank system if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail. 329 IAC 3.1-9; 40 CFR 264.194(a)

Hazardous waste or treatment reagents must not be placed in a tank system if they could cause the tank system to rupture, leak, corrode, or otherwise fail within the projected life expectancy of the tank, to which the hazardous waste or treatment reagent is regularly and routinely exposed. The projected life expectancy is the time period in which the tank shell thickness is reduced to a point where it no longer meets industrial standards. The Permittee must be able to document and demonstrate, upon inspection by Agency representatives, compliance with the following:

Demonstrate compliance with 40 CFR 264.194(a) for tanks by maintaining minimum design shell and bottom plate thicknesses or other tank structural integrity maintenance mechanism based on accepted industrial tank standards such as American Petroleum Institute (API), American Society of Mechanical Engineers (ASME) and
Underwriters Laboratory (UL). Compliance may be demonstrated by any of the following methods:

a. Routine and systematic tank wall thickness testing utilizing industrial standards and methodology conducted at a time interval of no more than 5 years between each testing.

b. Valid corrosivity testing data confirming that the waste or reagents in the tank will not cause failure within the projected life, based on the projected maximum corrosion rate.

c. Any other method which is determined to be essentially equivalent to either of the above methods and is an accepted industrial practice.

Tanks that fail any of the above test methods must be immediately removed from service and replaced, repaired or serviced.

2. The total normal venting capacity must be at least the sum of the venting requirements for solvent movement and thermal effect. The total inbreathing (vacuum) venting capacity must be 3600 cubic feet of free air per hour (CFH) and the total outbreathing (pressure) venting capacity must be 3600 cubic feet of free air per hour (CFH). The actual capacity of the vent must be determined by Section 1.5 of the API Standard 2000.

3. The maximum input and output of the tank system must not exceed 450 gallons per minute.

4. The Permittee must prevent spills and overflows from the tank or containment systems using the methods described in Procedures to Prevent Hazards, Attachment F. 329 IAC 3.1-9; 40 CFR 264.194(b)

E. SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES

1. The Permittee must not place ignitable or reactive waste in a tank system or in the secondary containment system, unless the procedures described in Attachment D are followed. 329 IAC 3.1-9; 40 CFR 264.198(a)

2. The Permittee must document compliance with Permit Condition III.E.1. and place this documentation in the operating record (Permit Condition II.J.1.). 329 IAC 3.1-9; 40 CFR 264.17(c)
3. The Permittee must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's Flammable and Combustible Liquids Code. 329 IAC 3.1-9; 40 CFR 264.198(b)

F. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES

1. The Permittee must not place incompatible wastes in the same tank system or place hazardous waste in a tank system that previously held an incompatible waste or material unless the procedures specified in Attachment D are followed. 329 IAC 3.1-9; 40 CFR 264.199(b)

2. The Permittee must document compliance with Permit Condition III.F.1. and place this documentation in the operating record (Permit Condition II.J.1.). 329 IAC 3.1-9; 40 CFR 264.17(c)

G. CONTAINMENT AND DETECTION OF RELEASES

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, the Permittee must provide secondary containment as specified in the Tank Storage Plan, Attachment D, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.193

2. In the event of a leak or a spill from the tank system, from a secondary containment system, or if a system becomes unfit for continued use, the Permittee must remove the system from service immediately and complete the following actions (329 IAC 3.1-9; 40 CFR 264.196):

   a. Stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

   b. Remove waste from the system within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, notify the Commissioner and demonstrate that a longer time period is required.

   If the collected material is a hazardous waste, it must be managed in accordance with all applicable requirements. The Permittee must note that if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean
Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 CFR Part 302.

c. Contain visible releases to the environment. The Permittee must immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water.

d. Close the system in accordance with the Closure Plan, Attachment I, unless the following actions are taken:

i. For a release caused by a spill that has not damaged the integrity of the system, the Permittee must remove the released waste and make any necessary repairs to fully restore integrity of the system before returning the tank system to service.

ii. For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee must repair the primary system prior to returning it to service.

e. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault.

H. INSPECTION SCHEDULES AND PROCEDURES

1. The Permittee must inspect the tank system, in accordance with Attachment F.

2. The Permittee must inspect the overfill controls, in accordance with the schedule in Attachment F. 329 IAC 3.1-9; 40 CFR 264.195(a)

3. The Permittee must inspect the following components of the tank system once each operating day (329 IAC 3.1-9; 40 CFR 264.195(b));
a. Aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

b. Data gathered from monitoring equipment (e.g., pressure or temperature gauges) to ensure that the tank system is being operated according to its design; and

c. Construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots).

4. The Permittee must document compliance with the above inspection requirements and place this documentation in the operating record for the facility. 329 IAC 3.1-8; 40 CFR 264.195(d)

I. RECORD KEEPING AND REPORTING

1. The Permittee must report to the Commissioner, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment. A leak or spill of one pound or less of hazardous waste immediately contained and cleaned-up need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, this report satisfies the requirements of this Permit Condition. 329 IAC 3.1-9; 40 CFR 264.196(d)

2. Within 30 days of detecting a release to the environment from the tank system or secondary containment system, the Permittee must report the following information to the Commissioner (329 IAC 3.1-9; 40 CFR 264.196(d)(3)):

a. Likely route of migration of the release;

b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, provide the Commissioner with a schedule of when the results will be available before the required 30 day reporting period expires;

d. Proximity of downgradient drinking water, surface water, and populated areas; and
e. Description of response actions taken or planned.

3. The Permittee must submit to the Commissioner all certifications of major repairs within 7 days after returning the tank system to use. 329 IAC 3.1-9; 40 CFR 264.196(f)

J. CLOSURE REQUIREMENTS

1. At closure of a tank system, the Permittee must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, structures, and equipment contaminated with waste, and manage them as hazardous waste, unless the Permittee can demonstrate in accordance with 329 IAC 3.1-6 and 40 CFR 261.3(d) that the solid waste is not a hazardous waste. The procedures in the Closure Plan, Attachment I must be followed. 329 IAC 3.1-9; 40 CFR 264.197(a)

2. At closure or replacement of a tank or tanks within the tank system, the Permittee must remove or decontaminate all waste residues and contaminated containment system components (liners, etc.), and manage them as hazardous waste, unless the Permittee can demonstrate in accordance with 329 IAC 3.1-6 and 40 CFR 261.3(d) that the solid waste is not a hazardous waste. The procedures in the Closure Plan, Attachment I must be followed.

3. If the Permittee demonstrates that not all contaminated soils can be practicably removed or decontaminated as required by Permit Condition III.J.1., then the Permittee must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (329 IAC 3.1-9, 40 CFR 264.310). In addition, for the purposes of closure, post-closure and financial responsibility, such a tank system is then considered to be a landfill and the Permittee must meet all of the requirements for landfills specified in 329 IAC 3.1-9, 329 IAC 3.1-15 and 40 CFR 264 Subpart G. 329 IAC 3.1-9; 40 CFR 264.197(b)

4. Upon certification by the Permittee and an independent registered professional engineer that part or all of this tank storage facility has been properly closed, those provisions of this permit which allow for the continued operation of the closed portion of the facility are terminated. The amount of wastes allowed to be stored is reduced to reflect the partial closure of this facility. Waste types which were only authorized for tank storage at the closed portion of the facility are deleted from this Permit.
IV. AIR EMISSION STANDARD CONDITIONS

A. EQUIPMENT LEAKS

The Permittee must comply with all applicable requirements of 40 CFR Part 264, Subpart BB, regarding air emission standards for equipment. Subpart BB application information is referenced in Attachment D, D-2d(1)(d). The documentation of compliance under Subpart BB must be kept with, or made readily available with, the facility operating record. 40 CFR 264.1050

B. TANKS

The Permittee must comply with all applicable requirements of 40 CFR Part 264, Subpart CC, regarding air emission standards for (tanks, surface impoundments and/or containers). Air pollutant emissions from tanks shall be controlled with a closed vent system to a control device as set forth in the Process Description, Attachment D. 40 CFR 264.1084

D. RECORDKEEPING

The Permittee must comply with all applicable recordkeeping and reporting requirements described in 40 CFR 264.1064, 264.1065, 40 CFR 264.1089, and 264.1090.

E. DUTY TO COMPLY WITH FUTURE REQUIREMENTS

The Permittee must comply with all self-implementing provisions of any future air regulations promulgated by RCRA, as amended by HSWA.
V. BOILER CONDITIONS

A. GENERAL

The Permittee may burn hazardous waste in three boilers designated as the 70K Boiler, 30K Boiler, and 28K Boiler, subject to the terms of this permit. Boiler 70K is a Model MCF4-64 water-tube boiler manufactured by the Murray Iron Works Company. The boiler is rated at a maximum thermal input of 91.8 million British thermal units per hour (Btu/hr) and steam production of 70,000 pounds per hour (lb/hr) at a pressure of 300 pounds per square inch gauge (psig). The 30K Boiler and 28K Boiler are both Babcock and Wilcox type FM water-tube boilers. The 30K boiler is rated at a maximum thermal input of 39.3 million Btu/hr and the 28K Boiler is rated at 36.8 million Btu/hr. Steam production for the 30K Boiler is 30,000 lb/hr and the 28K Boiler is 28,000 lb/hr, both at a pressure of 250 psig. None of the three boilers have air pollution control devices.

Permit conditions for the boilers were established based on trial burns conducted in October 1999, May 2000, and October 2005 and a comprehensive performance test (CPT) conducted in December, 2009. A Part 70 operating permit was issued by the Office of Air Quality of IDEM on May 9, 2018. (The expiration date of the Part 70 operating permit is May 9, 2023.)

With the submittal of the 2010 Notification of Compliance, 40 CFR Part 266 Subpart H applies (40 CFR 266.100(b)(1)), unless the Permittee chooses to apply it as allowed by 40 CFR 266.100(b)(3). The Permittee has elected to comply with the standards found at 40 CFR 266.105, 266.106, 266.107; and 40 CFR 270.22 and 270.66. The regulations include the following standards:

1. Standards to control particulate matter (PM)
2. Standards to control metals emissions, except for mercury
3. Standards to control hydrogen chloride and chlorine gas emissions
4. Permitting requirements

B. PERFORMANCE STANDARDS

The Permittee must comply with the performance standards specified in this permit when burning hazardous waste in any of the boilers. The draft risk assessment shows that boiler operation in compliance with these standards will not result in excess risk or hazard due to associated air emissions.
1. The Permittee shall control combined hydrogen chloride (HCl) and chlorine emissions from the boiler such that the rates of emissions from the stack are no greater than 0.03 pounds per hour (lb/hr) of HCl and 0.03 lb/hr of chlorine for the 70K Boiler, 0.03 lb/hr of HCl and 0.02 lb/hr of chlorine for the 30K Boiler, and 0.03 lb/hr of HCl and 0.02 lb/hr of chlorine for the 28K Boiler, as required by 40 CFR 266.102(e)(5)(ii)(A).

2. The emissions of particulate matter (PM) from each boiler must not exceed 0.08 grains per dry standard cubic foot (gr/dscf) of stack gas, corrected to 7 percent by volume of oxygen, in accordance with the formula specified in 40 CFR 266.105.

3. The emissions of hexavalent chromium must be no greater than 2.30 grams per hour (g/hr) for the 70K Boiler, 1.90 g/hr for the 30K Boiler, and 0.922 g/hr for the 28K Boiler, as required by 40 CFR 266.102(e)(4)(ii)(A).

4. The Permittee is prohibited from burning hazardous waste not identified in Permit Condition VII.

5. Feed Streams

Hazardous waste must not be fed into the boiler unless the device is operating within the conditions specified in Section V.C of this permit.

Whenever hazardous waste is being fed to a boiler, the Permittee must control fugitive emissions from the combustion zone of that unit by maintaining the combustion chamber in a completely sealed state and conducting routine inspections to detect any leaks that may occur. 40 CFR 266.102(e)(7)(i)

The Permittee can operate the three boilers in seven different operating modes as specified below:

- Mode A: Burning hazardous waste in three boilers simultaneously
- Mode B: Burning hazardous waste in Boiler 70K and 30K only.
- Mode C: Burning hazardous waste in Boiler 70K and 28K only
- Mode D: Burning hazardous waste in Boiler 30K and 28K only
- Mode E: Burning hazardous waste in Boiler 70K only
- Mode F: Burning hazardous waste in Boiler 30K only
- Mode G: Burning hazardous waste in Boiler 28K only
For each operating mode specified above, the Permittee must comply with the following feed rate limits of PM, chloride, and ten BIF metals in the hazardous waste feed stream. These limits shall be monitored on a HRA basis as defined in 40 CFR 266.102(e)(6)(i)(B):

Table V.B.1 Compound-Specific Feed Rate Limit Operation Modes A, B, C, and D

<table>
<thead>
<tr>
<th>Mode/Boiler Compound/Feed Rate</th>
<th>Mode A</th>
<th>Mode B</th>
<th>Mode C</th>
<th>Mode D</th>
</tr>
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<tr>
<td>PM</td>
<td>70K: 4,926 g/hr</td>
<td>70K: 4,926 g/hr</td>
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<tr>
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<td>Total Chromium</td>
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<td>28K: 9.63 g/hr</td>
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<td>Mode/Boiler/Compound/Feed</td>
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<td></td>
</tr>
<tr>
<td>PM</td>
<td>70K: 4,926 g/hr</td>
<td>30K: 3,045 g/hr</td>
<td>28K: 2,954 g/hr</td>
<td></td>
</tr>
<tr>
<td>Chloride</td>
<td>70K: 4,300 g/hr</td>
<td>30K: 2,625 g/hr</td>
<td>28K: 2,550 g/hr</td>
<td></td>
</tr>
<tr>
<td>Antimony</td>
<td>70K: 89.28 g/hr</td>
<td>30K: 67.68 g/hr</td>
<td>28K: 67.68 g/hr</td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td>70K: 20.52 g/hr</td>
<td>30K: 11.34 g/hr</td>
<td>28K: 10.80 g/hr</td>
<td></td>
</tr>
<tr>
<td>Barium</td>
<td>70K: 84.96 g/hr</td>
<td>30K: 100.08 g/hr</td>
<td>28K: 100.08 g/hr</td>
<td></td>
</tr>
<tr>
<td>Beryllium</td>
<td>70K: 3.06 g/hr</td>
<td>30K: 1.20 g/hr</td>
<td>28K: 1.20 g/hr</td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td>70K: 21.24 g/hr</td>
<td>30K: 5.00 g/hr</td>
<td>28K: 5.00 g/hr</td>
<td></td>
</tr>
<tr>
<td>Total Chromium</td>
<td>70K: 16.68 g/hr</td>
<td>30K: 11.24 g/hr</td>
<td>28K: 11.10 g/hr</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>70K: 91.44 g/hr</td>
<td>30K: 70.20 g/hr</td>
<td>28K: 70.20 g/hr</td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td>70K: 0.48 g/hr</td>
<td>30K: 0.67 g/hr</td>
<td>28K: 0.67 g/hr</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>70K: 38.52 g/hr</td>
<td>30K: 29.95 g/hr</td>
<td>28K: 29.95 g/hr</td>
<td></td>
</tr>
<tr>
<td>Thallium</td>
<td>70K: 2.21 g/hr</td>
<td>30K: 1.73 g/hr</td>
<td>28K: 1.73 g/hr</td>
<td></td>
</tr>
</tbody>
</table>
The compound-specific feed rate limits specified in Tables V.B.1 and V.B.2, above, can be monitored by knowing the concentrations of the hazardous waste feed stream for each constituent and by monitoring and recording the hazardous waste feed rate for each boiler in each operating mode. It is not necessary to continuously record the feed rates of each constituent. The Permittee shall prepare a daily summary log. The daily summary log shall include, but not be limited to: 1) the concentration of each BIF constituent specified, for the hazardous waste burned in the boiler(s); 2) the compound-specific feed rate limit for each boiler in each operating mode specified, above; 3) the corresponding hazardous waste feed rate criteria to comply with the constituent-specific feed rate limit for each BIF constituent; 4) the lowest hazardous waste feed rate required by the hazardous waste feed rate criteria; 5) the automatic waste feed cut-off (AWFCO) value of the hazardous waste feed rate set by the facility; 6) the maximum hazardous waste feed rate that occurred during the day (on a HRA basis); and 7) the AWFCO status for the day. If AWFCO is activated, then the Permittee shall include all of the exceedances above the permitted hazardous waste feed rate limit in the daily summary log. The Permittee can store the daily summary log in the electronic format without generating a daily printed summary log. However, the Permittee must evaluate the daily summary log each day to determine the compliance status of the regulated parameters and maintain these logs as part of the facility operating record. The daily evaluation can be performed either by manually reviewing the daily summary log or by receiving a warning signal generated by the computer system if any of the operating parameters exceeded the permit limit.

The Permittee shall comply with the annual feed rate limits for the constituents specified below (yearly total from all three boilers regardless of the operating mode):

<table>
<thead>
<tr>
<th>Compound</th>
<th>Annual Feed Limit (grams per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>48,284</td>
</tr>
<tr>
<td>Arsenic</td>
<td>35,039</td>
</tr>
<tr>
<td>Cadmium</td>
<td>21,513</td>
</tr>
<tr>
<td>Lead</td>
<td>53,261</td>
</tr>
<tr>
<td>Mercury</td>
<td>1,948</td>
</tr>
</tbody>
</table>

The Permittee must record in the operating record the annual total feed of the constituents specified in this permit, for all three boilers. Starting from the effective date of this RCRA permit, at each anniversary of that date, the Permittee shall calculate the annual total feed of antimony, arsenic, cadmium, lead, and mercury for all three boilers.
C. OPERATING CONDITIONS and AUTOMATIC WASTE FEED CUT-OFF

1. For each boiler, hazardous wastes shall not be introduced into the boiler unless the operating conditions in this permit are being met, all of the instruments required to verify compliance with such conditions are functioning properly, and the parameters measured by the instruments are being recorded as required by this permit. The Permittee shall cease feeding hazardous waste to the boiler when either the hazardous waste feed or any operating conditions exceed limits designated in this permit. The draft risk assessment shows that boiler operation in compliance with these operating conditions will not result in excess risk or hazard due to associated air emissions.

2. While burning hazardous wastes, each boiler shall be operated with the AWFCO system, as described in the trial burn plan, functioning so that hazardous waste feed is automatically and completely cut off when any hazardous waste feed or operating condition specified in this permit is not met.

   a. The minimum combustion chamber temperature specified in this permit for each boiler shall be maintained at all times while hazardous waste or hazardous waste residues remain in the combustion chamber, as required by 40 CFR 266.102(e)(7)(ii)(A).

   b. All operating conditions for which limits are established in this permit shall continue to be monitored during the cut-off, and the hazardous waste feed shall not be restarted until the boiler is operating under all conditions specified in this permit.

   c. The Permittee shall cease burning hazardous waste when changes in combustion properties, or feed rates of the hazardous waste, other fuels, or changes in the design or operating conditions of the boiler deviate from the limit specified in this permit, as required by 40 CFR 266.102(e)(7)(iii).

   d. The Permittee shall not inject a containerized or non-pumpable hazardous waste into the boiler.

   e. Whenever hazardous waste is being fed to the boilers, the Permittee must operate forced draft fans properly to induce appropriate combustion gas velocity.

   f. The following conditions of operation for each boiler shall be met at all times when hazardous waste is being introduced into the boiler. These conditions shall be met at each boiler during all operating modes specified in Section V.B of this permit:
i. The hourly rolling average (HRA) is defined in 40 CFR 266.102(e)(6)(i)(B).

ii. The total hazardous waste feed, on an annual basis, shall not be more than 26,063,000 pounds for the 70K Boiler, 15,922,000 pounds for the 30K Boiler, and 15,446,000 pounds for the 28K Boiler.

Table V.C.1 Automatic Waste Feed Cut-Off Set Points

<table>
<thead>
<tr>
<th>Operating Parameter</th>
<th>Operating Conditions</th>
<th>Monitoring/Recording/AWFCO Basis</th>
<th>Response to Deviations from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Hazardous Waste Feed Rate</td>
<td>70K Boiler: 3,719 lb/hr</td>
<td>HRA</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 2,272 lb/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 2,204 lb/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Combustion Chamber</td>
<td>70K Boiler: 1,739 °F</td>
<td>HRA</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 1,859 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 1,803 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Combustion Chamber</td>
<td>70K Boiler: 1,241 °F</td>
<td>HRA</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 1,303 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 1,264 °F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Steam Production Rate</td>
<td>70K Boiler: 70,820 lb/hr</td>
<td>HRA</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 34,810 lb/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 33,770 lb/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Steam Production</td>
<td>70K Boiler: 24,490 lb/hr</td>
<td>HRA</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 14,270 lb/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 13,840 lb/hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Carbon Monoxide Emission</td>
<td>70K Boiler: 100 ppmv</td>
<td>HRA</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 100 ppmv</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 100 ppmv</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Carbon Monoxide Emission</td>
<td>70K Boiler: 3,000 ppmv</td>
<td>Instantaneous</td>
<td>Immediate AWFCO</td>
</tr>
<tr>
<td></td>
<td>30K Boiler: 3,000 ppmv</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28K Boiler: 3,000 ppmv</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the event that these operating conditions are not met at any time when hazardous waste or hazardous residues are present in the boiler, an AWFCO shall be activated immediately (i.e., within a minute), and the Permittee must cease burning hazardous waste in the boiler until such time as the operating conditions specified for the boiler are again being met. The Permittee shall monitor the operating parameters during the cut off, and the hazardous waste feed shall not be restarted until the levels of those parameters comply with the permit limits, as defined in 40 CFR 266.102(e)(7)(ii)(C).

The Permittee must continuously monitor and record the operating parameters on a HRA basis. In addition, the Permittee shall continuously monitor carbon monoxide on an instantaneous basis. The Permittee is also required to continuously monitor and record oxygen in the flue gas on a HRA basis. All monitors must record data in units corresponding to the limits specified in Table V.C.1.

In the event the AWFCO system malfunctions, the Permittee must immediately cease feeding hazardous waste to the combustion chamber.

The Permittee shall not burn in the boilers the following hazardous waste listed for dioxin or hazardous waste derived from any of these wastes: F020, F021, F022, F023, F026, and F027.

The Permittee shall not burn hazardous waste containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm (dry weight basis).

The Permittee shall not burn radioactive or nuclear hazardous waste.

The Permittee shall not burn medical waste as defined by 329 IAC 11-2-21.4.

The Permittee must not combust the prohibited inorganic metal-bearing hazardous wastes (listed in Appendix XI of 40 CFR Part 268), unless the hazardous waste, as generated, can be demonstrated to comply with one or more of the criteria specified in 40 CFR 268.3(c), to prepare fuel for the boilers.

D. TRIAL BURN

1. At least 12 months before the expiration date of this permit, the Permittee must conduct a trial burn as specified by 329 IAC 3.1-13-1, 40 CFR 270.66(d). At least 12 months before conducting the trial burn, the Permittee must submit the trial burn plan to the Commissioner for approval in accordance with 329 IAC 3.1-13-1, 40 CFR 270.42.
The trial burn test must be designed to collect all data needed to demonstrate conformance with 329 IAC 3.1-11-1, 40 CFR §266.105 and the operating conditions specified in the permit.

2. Upon completion of the trial burn, the Permittee must submit a certification, as specified in 329 IAC 3.1-13-1, 40 CFR 270.66(d)(4), that the trial burn has been performed in accordance with the approved trial burn plan. The Permittee shall also submit, to the Commissioner, a copy of all data collected during the trial burn and the results of the determinations required under this permit within 90 days after completion of the trial burn. All submittals must be certified in accordance with 329 IAC 3.1-13-1, 40 CFR 270.11.

E. INSPECTIONS

The Permittee shall visually inspect, on a daily basis, the boilers and associated equipment (pumps, valves, pipes and other ancillary equipment), when they contain or manage hazardous waste, to identify leaks, spills, fugitive emissions and signs of tampering, in accordance with Attachment F. 329 IAC 3.1-11-1, 40 CFR 266.102(e)(8)(iii)

F. RECORDKEEPING

The Permittee must keep in the operating record of the facility all information and data which indicates that the operations of the boilers are in compliance with the limits and conditions established in this permit in accordance with 40 CFR 266.102(e)(10).

G. RISK ASSESSMENT

A risk assessment was conducted prior to the issuance of this permit. The Permittee shall review and update relevant information, as necessary, for the human health risk assessment evaluation in conjunction with the renewal application for this permit.

H. CLOSURE REQUIREMENTS

1. At closure, the owner or operator must remove all hazardous waste and hazardous waste residues from each boiler unit.

2. At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with 329 IAC 3.1-9 and 40 CFR 264.3(d) that the residue removed from the boiler is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of 329 IAC 3.1-7, 3.1-9, 3.1-10, 3.1-14, 3.1-15, 40 CFR 262 through 264.
3. Upon certification by the owner/operator and an independent registered professional engineer that part or all of each boiler unit has been properly closed, those provisions of this permit which allow for the continued operation of the closed portion of the facility are terminated.
VI. CORRECTIVE ACTION CONDITIONS

A. STANDARD REQUIREMENTS

1. Corrective Action At The Facility

In accordance with Section 3004(u) of RCRA (IC13-22-2-5) and the regulations promulgated pursuant thereto, the Permittee must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste(s) and hazardous constituent(s) from any solid waste management unit (SWMU) or area of concern (AOC) at the facility, regardless of the time the waste was placed in such units.

2. Corrective Action Beyond The Facility Boundary

In accordance with Section 3004(v) of RCRA (IC 13-22-2-5) and the regulations promulgated pursuant thereto, the Permittee must implement corrective action(s) beyond the facility property boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to IDEM’s satisfaction that, despite the Permittee’s best efforts, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be addressed under the RCRA Facility Investigation, Corrective Measures Study, and Corrective Measures Implementation phases, as determined to be necessary on a case-by-case basis.

3. Applicable Guidance

The Permittee shall use the principles and procedures set forth in IDEM’s 2012 Remediation Closure Guide, and all revisions and additions thereto, or other risk-based methodologies approved by IDEM’s Office of Land Quality Permits Branch, as the basis for selecting risk-based endpoints that will be used for the investigations, studies, interim measures, and corrective measures under the permit. Additional guidance includes IDEM’s Remediation Program Guide and USEPA’s “Test Methods for Evaluating Solid Waste” (SW-846, 3rd edition, or most recent edition, and the most recent updates).
4. Notification

a. Field Activities

The Permittee must notify IDEM at least 7 days before engaging in any field activities, such as well drilling, installation of equipment, or sampling. At IDEM's request, the Permittee must provide IDEM or its authorized representative split samples of all samples collected by the Permittee pursuant to this permit. Similarly, at the Permittee's request, IDEM will allow the Permittee or its authorized representatives to take split or duplicate samples of all samples collected by IDEM under this permit.

b. Submittals

One hard copy and one PDF copy on CD of all reports, plans, and other submissions relating to or required by this permit must be sent to:

Indiana Department of Environmental Management
Office of Land Quality
Hazardous Waste Permit Section
IGCN 1101
100 N. Senate Avenue
Indianapolis, IN 46204

B. IDENTIFICATION OF SWMUs

1. Definitions

   a. "Area of Concern (AOC)" means a unit or area, existing or historical, that could potentially produce unacceptable exposures or be a potential source of ground water contamination, but the unit or area does not meet the definition of a solid waste management unit.

   b. "Facility" means all contiguous property under the control of the owner/operator of a facility seeking a permit under RCRA Subtitle C.

   c. "Hazardous waste," as defined in IC 13-11-2-99, means a solid waste or combination of solid wastes that may cause or significantly contribute to an increase in: mortality, serious irreversible illness, or an incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment. This term is further defined in 40 CFR Part 261.3.

e. "Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes or hazardous constituents into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents.

f. "Solid waste" means any garbage, refuse, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, or agricultural operations or from community activities. This term is further defined in 40 CFR Part 261.2.

g. "Solid Waste Management Unit (SWMU)" means any discernable unit, permitted or unpermitted, existing or historical, at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

2. SWMUs and AOCs Requiring Corrective Action

Based on the information contained in the administrative record, corrective was incorporated into the CERCLA program per the 1992 Amended Administrative Order by Consent (AAOC). A list of SWMUs, and maps showing the location of these SWMUs, is provided in Attachment J, Appendix J-1. For any existing or future SWMU's not addressed by CERCLA, the Permittee must demonstrate that the SWMU will be addressed under the CERCLA program, or address the SWMU(s) under this section of the permit.

3. Coordination with U.S. EPA

Per the AAOC (Attachment J, Appendix J-2), under the CERCLA program, the U.S. EPA will address RCRA Corrective Action obligations which relate to the release(s) of hazardous substances, hazardous wastes, or constituents, pollutants or contaminants covered by the AAOC.
C. NEWLY IDENTIFIED SWMUs OR RELEASES

1. Notification Requirements

The Permittee must notify IDEM, within 30 days of discovery, of the following information for any new SWMU identified at the facility, in accordance with 329 IAC 3.1-13-1 and 40 CFR 270.14(d):

a. the location of the unit on the site topographic map;

b. designation of the type of unit;

c. general dimensions and structural description (supply any available drawings);

d. when the unit was operated; and

e. specifications of all waste(s) that have been managed at the unit.

2. Release Information

The Permittee must submit to IDEM, within 30 days of discovery, all available information pertaining to any release of hazardous waste(s) and hazardous constituent(s) from any new or existing SWMU.

3. Corrective Action

IDEM will review the information provided as required in the above permit conditions, and may as necessary, require further investigations or corrective measures. The Permittee must submit a written RFI Work Plan to IDEM in accordance with Condition VI.D.2.

D. CORRECTIVE ACTION ACTIVITIES

The major tasks and required submittal dates are shown below:

1. Interim Measures (IM)

   a. The Permittee may undertake interim measure activities to prevent or minimize the further spread of contamination while long-term remedies are pursued. An IM Work Plan must be submitted to IDEM for approval before the Permittee initiates any remedial activity. The
interim measure(s) must be capable of being integrated into any long-term solution at the facility.

b. While performing work pursuant to Permit Condition VI., if the Permittee identifies an immediate threat to human health or the environment, the Permittee must immediately notify IDEM orally and in writing within 7 days summarizing the immediacy and magnitude of the potential threat to human health or the environment.

This notification should be made to:

Indiana Department of Environmental Management
Office of Land Quality
Attn: Chief Hazardous Waste Permit Section
IGCN 1101
100 North Senate Avenue
Indianapolis, IN 46204
800-451-6027 or 317-232-8603

Upon receiving this information, IDEM will determine if an IM Work Plan is necessary. If one is necessary, IDEM will send a notice to the Permittee requiring the submission of an IM Work Plan. Within 21 days after receiving this notice, the Permittee must submit to IDEM a work plan for approval that identifies the interim measure(s).

The work plan should be consistent with and integrated into any long-term solution at the facility. In addition, the following Interim Measure schedule must be initiated:

i. Within 5 days of identifying an immediate threat to human health or the environment, the Permittee must provide an alternate water supply to parties that have a contaminated water supply well;

ii. Within 7 days of identifying an immediate threat to human health or the environment, the Permittee must submit a report to IDEM detailing the activity pursued and a plan for further Interim Measures activity;

iii. Within 7 days following IDEM's transmission of comments, the Permittee must revise the plan in accordance with the comments; and
iv. Within 7 days following IDEM's approval or modification of the plan, the Permittee must implement the revised plan in accordance with the schedule therein.

2. **RCRA Facility Investigation (RFI)**

The Permittee must conduct an RFI to thoroughly evaluate the nature and extent of the release of hazardous waste(s) and hazardous constituent(s) from all SWMUs and AOCs identified as requiring an RFI.

a. **RFI Work Plan**

The Permittee must submit a written RFI Work Plan to IDEM within 90 days after written notification by IDEM that further investigation is necessary.

IDEM will approve, modify and approve, or disapprove and provide comments on the work plan in writing to the Permittee. Within 60 days of receipt of such comments, the Permittee must provide a response to IDEM's comments.

b. **RFI Implementation**

Within 30 days of IDEM's written approval of the RFI Work Plan, the Permittee must implement the plan according to the terms and schedule contained therein.

c. **RFI Report**

Within 90 days after the completion of the RFI, the Permittee must submit an RFI Report to IDEM. The RFI Report must describe the procedures, methods, and results of the RFI. The report must contain adequate information to support further corrective action decisions at the facility. After the Permittee submits the RFI Report, IDEM will either approve or disapprove the report in writing. If IDEM disapproves the report, IDEM will notify the Permittee in writing of the deficiencies. The Permittee has 60 days after receipt of IDEM's comments to submit a revised RFI Report to IDEM.
3. **Determination of No Further Action**

   a. **Permit Modification**

   After completion of the RFI, and based on its results and other relevant information, the Permittee may submit an application to IDEM for a permit modification under 40 CFR 270.42 to terminate the corrective action tasks for all or a portion of the facility. Other work on SWMUs, solid waste management areas, which is a group of SWMUs in an area to be addressed as a single unit, and/or AOCs identified in the modification (for a determination of no further action) will be stayed pending a decision by IDEM. This permit modification must demonstrate that there are no releases of hazardous waste(s), including hazardous constituents, from SWMUs or AOCs that are the subject of the modification at the facility that pose a threat to human health or the environment.

   If, based upon review of the Permittee's request for a permit modification, the results of the completed RFI, and other information, IDEM determines that releases or suspected releases that were investigated either are nonexistent or do not pose a threat to human health or the environment, IDEM will grant the requested modification.

   b. **Further Investigations**

   A determination of no further action will not preclude IDEM from requiring further investigations, studies, or remediation at a later date, if new information (including different risk assumptions) or subsequent analysis indicates that a release or likelihood of a release from a SWMU or AOC at the facility is likely to pose a threat to human health or the environment. In such a case, IDEM will initiate a modification to rescind the determination made in accordance with the above permit condition. Additionally, IDEM may determine that there is insufficient information on which to base a determination, and may require the Permittee to perform additional investigations as needed to generate the needed information.

4. **Corrective Measures Study (CMS) and Remedy Selection**

   If IDEM determines, based on the results of the RFI and other relevant information, that corrective measures are necessary, IDEM will notify the Permittee in writing that the Permittee must conduct a CMS. The purpose of the CMS is to develop and evaluate the corrective action alternative(s) that
will satisfy the performance objectives specified by IDEM. The CMS must be conducted within 60 days of notification by IDEM that the CMS is required. This period of time may be extended by IDEM if necessary to adequately complete the CMS. Note that this process can be significantly shortened by the selection of presumptive remedies (i.e., remedies that are known to be effective).

a. **CMS Report**

Within 60 days after the completion of the CMS, the Permittee must submit a CMS Report to IDEM. The CMS Report must summarize the results of the investigations for each remedy studied and must include an evaluation of each corrective measure alternative, including cost estimates. After the Permittee submits the CMS Report, IDEM will either approve, modify and approve, or disapprove the Report. If IDEM disapproves the report, IDEM will notify the Permittee in writing of the deficiencies. The Permittee has 60 days after receipt of IDEM’s comments to submit a revised CMS Report to IDEM. The CMS Report, as approved, becomes an enforceable condition of this permit.

b. **CMS Remedy Selection**

IDEM will approve a corrective measure for implementation based on the following factors. The corrective measure selected for implementation must: (1) be protective of human health and the environment; (2) attain media cleanup standards; (3) control the source(s) of releases so as to reduce or eliminate further releases of hazardous waste(s) (including hazardous constituent(s)); (4) minimize the transfer of contamination from one environmental medium to another; and (5) comply with all applicable standards for management of wastes.

If two or more of the corrective measures studied meet the threshold criteria set out above, IDEM will choose among alternatives for implementation by considering remedy selection factors including: (1) long-term reliability and effectiveness; (2) the degree to which the corrective measure will reduce the toxicity, mobility or volume; (3) the corrective measure’s short-term effectiveness; (4) the corrective measure’s implementability; and (5) the relative cost associated with the alternative. In selecting the corrective measure(s), IDEM may also consider such other factors as may be presented by site-specific conditions.
5. **Permit Modification**

Within 30 days of IDEM's approval of a corrective measure, the Permittee will initiate a permit modification, pursuant to 40 CFR 270.41 or 40 CFR 270.42, respectively, for the implementation of the corrective measure(s) selected. No permit modification fees are required for any modifications submitted under this condition.

6. **Corrective Measures Implementation (CMI)**

   a. If the corrective measure(s) recommended in the Corrective Measures Study Report is (are) not the corrective measure(s) approved by IDEM after consideration of public comments, IDEM will inform the Permittee in writing of the reasons for such decision. Within 30 days after the effective date of the permit modification, the Permittee must implement the corrective measure(s).

   b. **Financial Assurance**

      As part of the permit modification of this permit to incorporate the CMI, the Permittee must provide financial assurance in the amount specified in the IDEM-approved CMS Report as required by 40 CFR 264.101(b) and (c). The demonstration of financial assurance shall be in accordance with 329 IAC 3.1-15-4.

7. **Incorporation of Plans and Reports**

All approved plans and reports prepared for this permit will be incorporated into this permit on the date IDEM or his/her designee approves such plan or report.
## VII. WASTE CODES

<table>
<thead>
<tr>
<th>Waste Types</th>
<th>Hazardous Waste Codes</th>
<th>Hazardous Waste Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spent Solvents</td>
<td>F003; F005; D001; D018; D038</td>
<td>Listed, ignitable, and toxicity</td>
</tr>
<tr>
<td>Distillation Residues</td>
<td>D001; D018; D038</td>
<td>Ignitable and toxicity</td>
</tr>
<tr>
<td>Off-Site Waste</td>
<td>F003; F005; D001; D004; D005; D006; D007; D008; D009; D011; D018; D023; D024; D025; D026; D035; D038; U001; U002; U003; U008; U012; U019; U051; U056; U122; U154; U159; U161; U182; U191; U196; U220; U293</td>
<td>Listed, ignitable, and toxicity</td>
</tr>
</tbody>
</table>
VIII. COMPLIANCE SCHEDULE

A. Within 90 days of the effective date of the permit renewal, the Permittee shall establish financial assurance in accordance with 329 IAC 3.1-15-4 for the boiler units. In the interim, the Permittee must continue to demonstrate financial assurance to EPA for the approved cost estimate until financial assurance in accordance with 329 IAC 3.1-15-4 is effective.

B. Within 60 days of the effective date of the permit renewal, the Permittee shall provide a list of off-site Vertellus facilities from which hazardous waste may be received. This list will be retained in Waste Analysis Plan of this permit.

C. Within 120 days of the effective date of the permit renewal, the Permittee shall provide an updated closure cost estimate in 2020 dollars.
ATTACHMENT A
PART A
The Part A application is maintained on file at the facility and may be located in IDEM's Virtual File Cabinet under the following document #s 70117541 and 80009661.
ATTACHMENT B
FACILITY DESCRIPTION
ATTACHMENT B

FACILITY DESCRIPTION

The material in this section provides a general description of the Vertellus Integrated Pyridines LLC (hereinafter Vertellus) Indianapolis facility and its hazardous waste management operations. This information addresses the requirements under 329 IAC 3.1. The format of this and subsequent sections follows the “RCRA Part B Permit Application Checklist Comments”, revised January 1999. The checklist headings in each Table of Content are followed by the relevant federal citations determined from the most recent rules published in the Federal Register. All applicable provisions of 329 IAC 3.1 are incorporated herein.

B-1 General Description (40 CFR 270.14(b)(1))

Vertellus is located in a primarily industrial area on the southwest side of Indianapolis, Indiana. The street and mailing address is:

Vertellus Integrated Pyridines LLC
1500 South Tibbs Avenue
Indianapolis, IN 46241-4537

The facility is comprised of the 80-acre Maywood plant on the south side of Minnesota Street, and the 40-acre Oak Park plant on the north side of Minnesota Street.

The Indianapolis facility is primarily a manufacturer of synthetic pyridine derivatives including pyridine, picolines (methyl pyridines), vinyl pyridines, niacinamide and other related compounds. These products are manufactured primarily for sale to other industries as chemical intermediates to be used in turn by them in the manufacture of pharmaceutical and agricultural products as well as cosmetics and other products.

Typical organic chemical technologies are employed at the facility for the manufacture of the desired products. A variety of reaction chemistries are employed utilizing solvents for solution reactions and/or for extraction purposes. Crude reaction mixtures resulting from these
reaction chemistries are processed at the facility to isolate and purify the desired products. These "work-up" procedures are also typical of the organic chemical industry and include extractions, distillations, and crystallization technologies.

Manufacturing process wastes generated at the facility from the processing technologies discussed above and from off-site include:

1.) Wastewater. Wastewaters from the manufacturing processes are accumulated, stored and treated in tanks prior to discharge under permit number 285901 to the Citizens Water Authority public owned treatment works (POTW) located on Belmont Avenue about two miles from the facility. Manufacturing process wastewaters are generally of three types:

a. Aqueous layers from solvent extraction of wet crude products.

b. Aqueous layers from phase separation of crude product mixtures.

c. Aqueous filtrates from crystallization processes.

The wastewaters are not hazardous waste based upon RCRA definitions for listed wastes. Certain wastewaters are characteristic corrosive (ph >12.5; D002) and EP Toxic for pyridine and benzene (D018 and D038). One process wastewater is characteristic reactive (D003, cyanide bearing). These wastewaters, however, are treated in tanks (primary neutralization and cyanide destruction, respectively) and steam stripped in order to meet the City Ordinance and OCPSF discharge limits. No D002 waste is stored in the permitted tanks.

2.) Spent Solvents. In some cases solvents are recovered from the work-up of reactions and are not suitable, due to contamination, for direct reuse in the same or different processes supporting the manufacturing operations. These used or "spent" solvents are recycled for energy recovery by bulking with other wastes for burning in the facility's industrial boilers. A list of the spent solvents generated and their corresponding EPA Hazardous Waste Numbers are as follows:
Solvent | EPA Hazardous Waste No.
---|---
Xylene | F003
Acetone | F003
Methyl Isobutyl Ketone | F003
Methanol | F003
Toluene | F005
Methyl Ethyl Ketone | F005
Benzene | F005
Other | D001

3.) **Boiler Ash.** From time to time (approximately twice per year) ash is removed from the boilers, where the fuel resulting from the bulk ing of F003, F005 wastes with other wastes are burned. The boiler ash (F003, F005) waste is managed in containers prior to offsite shipment to a RCRA Subtitle C facility.

4.) **Distillation Residues.** A considerable number of the products manufactured by Vertellus are purified by distillation. At the end of the purification by this technique, a byproduct residue from the distillation is generated. All these organic residues have significant BTU values and are bulked with other wastes for burning in the facility’s industrial boilers and are therefore recycled for energy recovery. Some of the still bottom residues are characteristic hazardous wastes (D001) with flash points below 140°F. However, the majority of Vertellus product distillation bottoms are not characteristic hazardous wastes based upon the definitions of ignitability, corrosivity, reactivity, and toxicity.

5.) **Corrosive Wastes.** Certain processes generate as a by-product waste stream a wastewater containing sodium hydroxide (caustic). This material has a pH greater than 12.5 and would be a RCRA D002 corrosive waste. These materials are managed in day tanks and are discharged to Vertellus’ wastewater treatment facility along with other wastewaters.
Wastewater may also be stored in containers for off-site disposal. No D002 waste is stored in permitted tanks.

6.) **Incidental Wastes.** The potential for leaks and spills from on-site processing equipment due to equipment malfunction or failures (e.g., valves, flanges, pumps, etc.) and operator error exists at any organic chemical manufacturing facility. Depending on the magnitude of the incident and whether or not material was released to the ground (as opposed to being contained), an unknown quantity of contaminated soils will be excavated and managed in containers onsite in order to prepare it for offsite disposal to a RCRA Subtitle C facility. These types of materials would include a variety of listed and characteristic hazardous wastes which potentially could result from leaks and spills of raw materials, products, intermediates or wastes. The waste codes are D001, D002, D003, D018, D035, D038, F003, F005, U001, U002, U003, U008, U012, U019, U051, U056, U122, U154, U159, U161, U182, U191, U196, U220, and U239.

7.) **Wastes from Other Facilities.** Liquid wastes from off-site Vertellus facilities are accepted for on-site tank storage and are bulked with other wastes for energy recovery in the facility's industrial boilers. These off-site wastes are thoroughly characterized before acceptance and managed in much the same manner as described above for spent solvents and distillation residues. The waste codes are D001, D003, D004, D005, D006, D007, D008, D009, D011, D018, D023, D024, D025, D026, D035, D038, F003, F005, U001, U002, U003, U008, U012, U019, U051, U056, U122, U154, U159, U161, U182, U191, U196, U220, and U239.

**B-2 Topographic Map**
**B-2a General Requirements (40 CFR 270.14(b)(19))**

Maps presenting general requirements of the facility description are provided in Figures B-1 through B-11. These maps are dated, show north orientation, and have scales of 1 inch equal to not more than 200 feet. The information shown on each map is summarized below:
Figure B-1 and B-2 (Drawing Nos. 882999-001 and 882999-002) – location of access control, buildings and structures, loading and unloading facilities, and hazardous waste management units.

Figure B-3 (Drawing No. 822900-10) – legal boundary of the facility and surrounding land use.

Figure B-4 (see end of Facility Description) - wind rose

Figure B-5 (Drawing No.29PLMP01-021) – topography of facility and surrounding area to a distance of 1,000 ft, and surface waters.

Figure B-6 (Drawing No. 932919-014V) – location of ground water pumps and monitoring wells for Superfund program.

Figure B-7, B-8, B-10, B-11 (Drawing Nos. 29UNG01-300, 45UNG01-300, 942999-901, 942999-902) – location of sewers and runoff control systems.

Figure B-9 (see end of Facility Description) – 100-year floodplain area.

Many of the above features are described in detail in subsequent sections of the permit application. The facility does not employ any injection wells, nor are there any located within 1,000 feet of the facility’s boundaries. No physical barriers have been installed for flood control.

B-3 Location Information

B-3b Floodplain Standard (40 CFR 270.14(b)(11)(iii) and 264.18(b))

The subject facility is located outside the 100-year floodplain, as shown on the Federal Insurance Administration map, Figure B-9.

B-4 Traffic Information (40 CFR 270.14(b)(10))

Onsite traffic patterns are shown in Figure B-1 and B-2.
Roads within both plants are two-way. Main roads are constructed of a packed stone base covered with six inches of concrete asphalt, topped with one inch of surface asphalt. These roads are constructed to bear a maximum weight of 80,000 pounds, or 20,000 pounds per axle.

All personnel driving on-site are required to have a valid driver’s license. Traffic controls inside the facility consist of a posted speed limit of 10 mph and a stoplight at the Minnesota Street gates. The on-site traffic volume of other than hazardous waste vehicles is such that the vehicles carrying hazardous waste will not be subject to delays.

Off-site vehicles may be used to transfer hazardous waste to and from the facility. They enter through the facility gate on South Tibbs Avenue and proceed to their respective area within the plant.
FIGURE B-1

Drawing 882999-001
FIGURE B-2

Drawing 882999-002
FIGURE B-3

Drawing 882900-10
FIGURE B-4

Wind Rose
<table>
<thead>
<tr>
<th>Wind Speed (Knots)</th>
<th>Display</th>
<th>Date</th>
<th>Company Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 21</td>
<td>wind speed</td>
<td>10/30/2002</td>
<td>Midwestern Regional Climate Center</td>
<td>1986-1995 Annual Wind Rose</td>
</tr>
<tr>
<td>17 - 21</td>
<td>unit knots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 - 16</td>
<td>avg. wind speed</td>
<td>8.32 knots</td>
<td>calf winds</td>
<td>3.33%</td>
</tr>
<tr>
<td>7 - 10</td>
<td>orientation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 - 0</td>
<td>direction (blowing from)</td>
<td>plot year-date-time</td>
<td>1981</td>
<td>Jan 1 - Dec 31 Midnight - 11 PM</td>
</tr>
<tr>
<td>1 - 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURE B-5

Drawing 29PLMP01-021
FIGURE B-6

Drawing 932919-014V
FIGURE B-7

Drawing 29UNG01-300
FIGURE B-8

Drawing 45UNGO1-300
FIGURE B-9

100 Year Floodplain
FIGURE B-10

Drawing 942999-901
FIGURE B-11

Drawing 942999-902
ATTACHMENT C
WASTE ANALYSIS PLAN
ATTACHMENT C

WASTE ANALYSIS PLAN
ATTACHMENT C
WASTE ANALYSIS PLAN

This section describes the chemical and physical nature of the hazardous wastes stored at
the Vertellus facility and the Waste Analysis Plan for sampling, testing, and evaluating the
wastes to assure sufficient information is available for their safe handling and burning for energy
recovery. This information is submitted in accordance with the requirements of the Code of
Federal Regulations 40 CFR 270.14(b), 264.198, 264.199, 264.13, 264.17, 266.102(a)(2)(ii), and
266.102(b) as incorporated by reference in 329 IAC 3.1.

Vertellus only stores on-site wastes and wastes from Vertellus subsidiaries. The
generated waste streams are mixed in permitted storage tanks 64, 66, and 69 prior to being
burned in Boilers 70K, 30K, and 28K. A commercially available liquid auxiliary fuel (e.g., fuel
oil) may be added to the material in these tanks. The waste stream burned in the boilers is
referred to as waste fuel and is classified as a hazardous waste. Since these three boilers burn
hazardous waste, they are subject to the Boiler and Industrial Furnace (BIF) requirements of 40
CFR Part 266 Subpart H and the Hazardous Waste Combustor Maximum Achievable Control
Technology (HWC MACT) requirements of 40 CFR 63 Subpart EEE.

The HWC MACT regulations at 40 CFR 63.1217(f) state that area sources of hazardous
air pollutants (HAPs) have the option of complying with the HWC MACT standards for
specified pollutants or the RCRA Boiler and Industrial Furnace (BIF) standards for hazardous
waste burning boilers. The emission standards associated with this option are the standards for
semi-volatile metals (SVM) (i.e., cadmium and lead), low volatile metals (LVM) (i.e.,
chromium), hydrogen chloride and chlorine gas (HCl/Cl2), and particulate matter (PM). As an
area source of HAPs, Vertellus has elected to comply with the BIF standards of 40 CFR 266.106
for SVM and LVM, 40 CFR 266.107 for HCl/Cl2, and 40 CFR 266.105 for PM. Therefore,
Vertellus will continue to analyze the liquid hazardous waste for these parameters. EPA revised
the risk assessment for the boilers at the site. Based upon the revised risk assessment (completed
in 2015), the emission rates for mercury are more stringent than those in the HWC MACT
requirements of 40 CFR 63.1217. Therefore mercury sampling and analysis has been
incorporated into the sampling and analysis plan for demonstrating compliance with the mercury emission rates in this permit.

The on-site and off-site generated waste that is burned in the boilers will not contain any dioxin/furan waste codes (F020 – F023, F026, and F027), Polychlorinated Biphenyls (PCBs) in amounts greater than 50 ppm, radioactive or nuclear waste material, or medical waste. These prohibited materials cannot be burned in the boilers unless a specific permit modification is obtained to allow such.
C-1 Chemical and Physical Analyses (40 CFR 264.13(a), 266.102(a)(2)(ii), 266.102(b), 270.14(b)(2))

Permit Condition VII. lists the codes for the hazardous wastes to be stored at the facility and their associated hazard characteristics. The three waste categories that are stored at Vertellus are spent solvents, distillation residues, and wastes from Vertellus, Vertellus subsidiaries, and Vertellus customers. All three waste categories are used as waste fuel, hereinafter referred to as “fuel”. Where a waste category contains listed wastes, the classification is based on the listing (e.g., F003 and F005). Where a waste category contains unlisted wastes, the classification is based on the known characteristics of the wastes (e.g., D001 ignitable). All waste categories are considered to be non-wastewaters according to Land Disposal Restriction regulations.

A. Waste generated on-site

1) Spent Solvents. In some cases solvents are recovered from the workup of reactions and are not suitable, due to contamination, for direct reuse in the same or different processes supporting the manufacturing operations. These used or “spent” solvents are recycled for energy recovery by mixing them with other fuels for use in the facility’s industrial boilers. A list of the spent solvents generated and their corresponding EPA Hazardous Waste Numbers are as follows:

<table>
<thead>
<tr>
<th>Solvent</th>
<th>EPA Hazardous Waste No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>F003</td>
</tr>
<tr>
<td>Methanol</td>
<td>F003</td>
</tr>
<tr>
<td>Methyl Isobutyl Ketone</td>
<td>F003</td>
</tr>
<tr>
<td>Solvent</td>
<td>EPA Hazardous Waste No.</td>
</tr>
<tr>
<td>Xylene</td>
<td>F003</td>
</tr>
<tr>
<td>Benzene</td>
<td>F005</td>
</tr>
<tr>
<td>Methyl Ethyl Ketone</td>
<td>F005</td>
</tr>
<tr>
<td>Toluene</td>
<td>F005</td>
</tr>
<tr>
<td>Other Ignitable Wastes</td>
<td>D001</td>
</tr>
</tbody>
</table>

2) Distillation Residues. A considerable number of the products manufactured by Vertellus are purified by distillation. At the end of the purification by this technique a byproduct residue from the distillation is generated. All these organic residues have significant BTU value and are
mixed with other fuels for use in the facility’s industrial boilers and are therefore recycled for energy recovery. Certain still bottom residues with flash points below 140°F are characteristic hazardous wastes (D001) or are characteristic hazardous waste for pyridine (D038). However, the majority of Vertellus products distillation bottoms are not characteristic hazardous wastes based upon the definitions of ignitability, corrosivity, reactivity, or toxicity.

Chemical and physical properties of the various hazardous wastes generated by plant operations have been determined primarily by Vertellus’ in-house laboratory, using standard methods, or where such methods do not exist, Vertellus developed site specific methods. Additionally, outside contract laboratories have been used to supplement in-house capabilities. Table C-2 contains the historical average for each parameter for waste samples taken from the boiler feed line.

<table>
<thead>
<tr>
<th>Table C-2</th>
<th>Historical Averages of the Waste Constituents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constituent</strong></td>
<td><strong>Result</strong></td>
</tr>
<tr>
<td>Water</td>
<td>4.3 %</td>
</tr>
<tr>
<td>Heat Content</td>
<td>14,090 BTU/lb.</td>
</tr>
<tr>
<td>Ash</td>
<td>0.09 %</td>
</tr>
<tr>
<td>Total Chloride</td>
<td>168 mg/kg</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.95</td>
</tr>
<tr>
<td>Chromium</td>
<td>1.2 mg/kg</td>
</tr>
<tr>
<td>pH*</td>
<td>11</td>
</tr>
<tr>
<td>Pyridine Bases</td>
<td>1.6 %</td>
</tr>
<tr>
<td>Flash Point</td>
<td>70°F</td>
</tr>
<tr>
<td>Free Liquids</td>
<td>100 %</td>
</tr>
<tr>
<td>TCLP</td>
<td>Variable</td>
</tr>
<tr>
<td>CCWE</td>
<td>Variable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table C-2 (cont.)</th>
<th>Historical Averages of the Waste Constituents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constituent</strong></td>
<td><strong>Result</strong></td>
</tr>
<tr>
<td>Total Organics</td>
<td>95.7 %</td>
</tr>
<tr>
<td>Color</td>
<td>Dark brown to Black</td>
</tr>
<tr>
<td>Viscosity</td>
<td>46 SSU</td>
</tr>
</tbody>
</table>

CCWE - Constituent Concentrations in Waste Extract
* Maximum value observed, pH cannot be averaged
SSU – Saybolt Seconds Universal
Note: The table above includes information not required by the day-to-day characterization of each waste stream.
Table C-3 provides a summary of the initial characterization for constituents and results for the waste fuel which is burned for energy recovery in the boilers.

**Table C-3**

**Summary of Initial Characterization Data**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>11.5</td>
</tr>
<tr>
<td>Flash Point</td>
<td>72°F</td>
</tr>
<tr>
<td>TCLP Metals</td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td>4.7 mg/kg</td>
</tr>
<tr>
<td>Cadmium</td>
<td>BDL</td>
</tr>
<tr>
<td>Chromium</td>
<td>0.88</td>
</tr>
<tr>
<td>Lead</td>
<td>BDL</td>
</tr>
<tr>
<td>Mercury</td>
<td>BDL</td>
</tr>
<tr>
<td>Selenium</td>
<td>4.5 mg/kg</td>
</tr>
<tr>
<td>Silver</td>
<td>BDL</td>
</tr>
<tr>
<td>TCLP Volatiles</td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>12,000 mg/L</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>BDL</td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td>BDL</td>
</tr>
<tr>
<td>Chloroform</td>
<td>BDL</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
<td>BDL</td>
</tr>
<tr>
<td>1,1-Dichloroethene</td>
<td>BDL</td>
</tr>
<tr>
<td>Methyl ethyl ketone (MEK)</td>
<td>BDL</td>
</tr>
<tr>
<td>Tetrachloroethene</td>
<td>BDL</td>
</tr>
<tr>
<td>Trichloroethene</td>
<td>BDL</td>
</tr>
<tr>
<td>Vinyl chloride</td>
<td>BDL</td>
</tr>
<tr>
<td>TCLP Semi-Volatiles</td>
<td></td>
</tr>
<tr>
<td>1,4-Dichlorobenzene</td>
<td>BDL</td>
</tr>
<tr>
<td>2,4-Dinitrotoluene</td>
<td>BDL</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
<td>BDL</td>
</tr>
</tbody>
</table>

**Table C-3 (cont.)**

**Summary of Initial Characterization Data**

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachlorobutadiene</td>
<td>BDL</td>
</tr>
<tr>
<td>Hexachloroethene</td>
<td>BDL</td>
</tr>
<tr>
<td>Nitrobenzene</td>
<td>BDL</td>
</tr>
<tr>
<td>Pyridine</td>
<td>3,500 mg/L</td>
</tr>
<tr>
<td>2-Methylphenol</td>
<td>BDL</td>
</tr>
<tr>
<td>3-Methylphenol</td>
<td>BDL</td>
</tr>
<tr>
<td>4-Methylphenol</td>
<td>BDL</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>BDL</td>
</tr>
<tr>
<td>2,3,5-Trichlorophenol</td>
<td>BDL</td>
</tr>
<tr>
<td>2,4,6-Trichlorophenol Volatiles Total</td>
<td>BDL</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Acetone</td>
<td>140 mg/kg</td>
</tr>
<tr>
<td>Benzene</td>
<td>8,600 mg/kg</td>
</tr>
<tr>
<td>Ethyl benzene</td>
<td>61 mg/kg</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td>27 mg/kg</td>
</tr>
<tr>
<td>Styrene</td>
<td>BDL</td>
</tr>
<tr>
<td>Toluene</td>
<td>87,000 mg/kg</td>
</tr>
<tr>
<td>Xylenes (total)</td>
<td>1,300 mg/kg</td>
</tr>
<tr>
<td>Semi-Volatiles Total</td>
<td></td>
</tr>
<tr>
<td>2-Picoline</td>
<td>4,200 mg/kg</td>
</tr>
<tr>
<td>Pyridine</td>
<td>9,500 mg/kg</td>
</tr>
<tr>
<td>Methanol</td>
<td>35,714 mg/kg</td>
</tr>
<tr>
<td>Acetonitrile</td>
<td>43,586 mg/kg</td>
</tr>
</tbody>
</table>

BDL: Below Detection Limit
Note: Only the analytes detected among the complete lists of total volatiles and semi volatiles are included in the above table.

B. Waste generated off-site

1) Wastes from Other Facilities. Liquid wastes identified in Permit Condition VII. from off-site facilities that are Vertellus subsidiaries may be accepted for on-site tank storage and are mixed with other fuels for energy recovery in the facility’s industrial boilers. These off-site fuels are thoroughly characterized before acceptance and managed in much the same manner as described above for spent solvents and distillation residues. Specific methods and documentation for characterization of off-site wastes are described in Section C-2e. Each incoming waste stream will be characterized and results kept on site for three years (as of the date of the permit application submittal, waste from off-site have not been accepted at Vertellus).

C-1b Waste in Tanks (40 CFR 264.190(a), 264.191(b)(2), 264.192(a)(2))

Solvents and waste with free liquids will be stored in tanks with secondary containment prior to burning for energy recovery. Table C-2 above provides historical averages of the chemical compositions and physical properties, including specific gravity, of wastes to be stored in tanks. Hazardous characteristics of the wastes to be handled in the tanks include toxicity and ignitability.
The tanks 64, 66, and 69 were designed in accordance with the code “API 650 Welded Steel Tanks for Oil Storage” and are double walled for secondary containment. Tanks are constructed of carbon steel, ASTM types A-7 and A-283-C or D. The Compass Corrosion Guide rates mild steel as having good to excellent chemical resistance to pyridine-based materials and F003/F005 spent solvents, at ambient temperatures. No off-site waste will be accepted for storage that is more corrosive to carbon steel than on-site waste that is stored. Waste will not be accepted having constituents with less than a good or excellent corrosion rating for carbon steel. The off-site waste corrosion rating will be based on an assessment of constituent concentration(s) that will be documented before the waste is accepted for storage. This estimate will remain as part of the operating record.

Vertellus may use fuel oil Nos. 1, 2, 4, 5, and 6 as auxiliary fuel. These fuels will be mixed with the hazardous waste in one of the storage tanks prior to burning. The constituent composition of the fuel oil Nos. 1, 2, 4, 5, and 6 will most closely meet the constituent composition indicated in Table C-5. This composition was obtained from the preamble to the comparable fuels regulations for No. 6 fuel oil (see 61 FR 17358 Table 6). To ensure compliance with the hazardous waste feed rates for metals, HCl/Cl, or ash, Vertellus will follow the sampling, analysis, and approval criteria as that for off-site waste detailed in C-2e.

**C-1h Waste in Boiler and Industrial Furnaces (40 CFR 266.120(b), 270.66(c))**

The waste feed stream consists of distillation residues, spent solvents, and other fuels. The waste fuel is an organic liquid at ambient temperatures and has a typical heat content of approximately 15,000 Btu/lb. Table C-2 above provides historical analytical results obtained from the testing of the waste fuel. Table C-4 provides the average, maximum, minimum concentration, the standard deviation, the number of data points, and the 99.5% upper tolerance level for the following constituents for the last five (5) years (as of the January 2015 sampling): antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, thallium, total chloride, and ash.
### Table C-4

**Waste Fuel Analytical Data Summary**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Average (ppm)</th>
<th>Maximum (ppm)</th>
<th>Minimum (ppm)</th>
<th>Standard Deviation</th>
<th>Data Points</th>
<th>99.5% UTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>0.21</td>
<td>0.50</td>
<td>0.05</td>
<td>0.19</td>
<td>12</td>
<td>0.93</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.29</td>
<td>1.00</td>
<td>0.05</td>
<td>0.35</td>
<td>12</td>
<td>1.59</td>
</tr>
<tr>
<td>Barium</td>
<td>0.24</td>
<td>0.50</td>
<td>0.05</td>
<td>0.18</td>
<td>12</td>
<td>0.89</td>
</tr>
<tr>
<td>Beryllium</td>
<td>0.14</td>
<td>0.48</td>
<td>0.02</td>
<td>0.13</td>
<td>12</td>
<td>0.61</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.15</td>
<td>0.48</td>
<td>0.02</td>
<td>0.14</td>
<td>12</td>
<td>0.69</td>
</tr>
<tr>
<td>Chromium</td>
<td>2.90</td>
<td>4.40</td>
<td>0.23</td>
<td>1.61</td>
<td>12</td>
<td>8.89</td>
</tr>
<tr>
<td>Lead</td>
<td>0.26</td>
<td>1.00</td>
<td>0.02</td>
<td>0.37</td>
<td>12</td>
<td>1.62</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.01</td>
<td>0.05</td>
<td>0.003</td>
<td>0.01</td>
<td>23</td>
<td>0.06</td>
</tr>
<tr>
<td>Silver</td>
<td>0.26</td>
<td>0.50</td>
<td>0.04</td>
<td>0.19</td>
<td>12</td>
<td>0.97</td>
</tr>
<tr>
<td>Tellurium</td>
<td>0.10</td>
<td>0.48</td>
<td>0.02</td>
<td>0.14</td>
<td>12</td>
<td>0.63</td>
</tr>
<tr>
<td>Total Chlorine</td>
<td>143</td>
<td>474</td>
<td>35</td>
<td>155,25</td>
<td>12</td>
<td>719</td>
</tr>
<tr>
<td>Ash (%)</td>
<td>0.08</td>
<td>0.26</td>
<td>0.006</td>
<td>0.07</td>
<td>12</td>
<td>0.35</td>
</tr>
</tbody>
</table>

UTL - Upper Tolerance Limit

The 40 CFR Part 261 Appendix VIII organic hazardous constituents that are reasonably expected to be present in the waste fuel are acetaldehyde, acetonitrile, benzene, ethylbenzene, formaldehyde, methanol, pyridine, toluene, and xylene. Table C-3 above provides the approximate concentration (mg/kg) of Appendix VIII organic hazardous constituents in the waste fuel. The waste fuel is not blended prior to burning. However, continuous mixing of the waste fuel does occur in tank 69. As the waste fuel is feed to the boilers, a split steam of the waste feed is returned to tank 69 from each boiler. This aids in providing a homogeneous waste feed mixture to the boiler(s). The constituent composition of the liquid non-hazardous waste auxiliary fuel will most closely meet the constituent composition indicated in Table C-5. This composition was obtained from the preamble to the comparable fuels regulations for No. 6 fuel oil (see 61 FR 17358 Table 6).

### Table C-5

**EPA's No. 6 Fuel Oil Constituent Composition Criteria**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Concentration Limit (mg/kg at 10,000 Btu/lb.)</th>
<th>Maximum Detection Level (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony, Total</td>
<td>6.5</td>
<td>0.20</td>
</tr>
<tr>
<td>Arsenic, Total</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Barium, Total</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Beryllium, Total</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Cadmium, Total</td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>Chromium, Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Unit</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Lead, Total</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Mercury, Total</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>Silver, Total</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Thallium, Total</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Total Halogens as Chlorine</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**C-2 Waste Analysis Plan (40 CFR 270.14(b)(3), 264.13(b) and (c), 266.102(a)(2)(ii), 266.104(a)(2), and 268.7)**

The following sections detail the rationale, the procedures used for sampling, and the methods used for analyzing the waste fuel.

**C-2a Parameters and Rationale (40 CFR 264.13(b)(1))**

Table C-6 lists the analysis parameters and the rationale for their selection for waste fuel that is generated and burned on-site.

<table>
<thead>
<tr>
<th>Feed Stream</th>
<th>Analysis Parameters</th>
<th>Analysis Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Fuel</td>
<td>BIF Metals (Sb, As, Ba, Be, Cd, Cr, Hg, Pb, Ag, and Tl)</td>
<td>40 CFR 266.106</td>
</tr>
<tr>
<td></td>
<td>Total Chlorine/Chloride</td>
<td>40 CFR 266.107</td>
</tr>
<tr>
<td></td>
<td>Ash Content</td>
<td>40 CFR 266.105</td>
</tr>
</tbody>
</table>

Table C-7 provides the fingerprint analysis parameters and the rationale for their selection. Since the on-site process generating the waste streams have not change, significantly from the initial characterization, only the fingerprint waste testing parameters are done for on-site waste.

<table>
<thead>
<tr>
<th>Feed Stream</th>
<th>Analysis Parameters</th>
<th>Analysis Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Fuel</td>
<td>Water Content</td>
<td>Information to ensure proper operation of boiler</td>
</tr>
<tr>
<td></td>
<td>Ash Content</td>
<td></td>
</tr>
</tbody>
</table>

The initial waste stream characterization parameters and the rationale for parameter selection are provided in Table C-8 for new waste stream(s) that are generated on-site and
waste(s) that are generated off-site. The analytical parameters are to verify that the new waste stream(s) or incoming waste stream(s) are consistent with Vertellus storage and treatment capabilities and waste stream(s) are consistent with the permit standards under 40 CFR 266.105, 40 CFR 266.106, 40 CFR 266.107.

### TABLE C-8

**Initial Characterization Waste Testing Parameters and Rationale for New Waste Streams and Off-Site Waste Streams**

<table>
<thead>
<tr>
<th>New Waste Stream and Off-Site Waste Stream</th>
<th>Analysis Parameters</th>
<th>Analysis Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic Liquid Waste</td>
<td>BIF Metals (Sb, As, Ba, Be, Cd, Cr, Hg, Pb, Ag, and Ti)</td>
<td>40 CFR 266.106</td>
</tr>
<tr>
<td></td>
<td>Total Chlorine/Chloride</td>
<td>40 CFR 266.107</td>
</tr>
<tr>
<td></td>
<td>Ash Content</td>
<td>40 CFR 266.105</td>
</tr>
<tr>
<td></td>
<td>Appendix VIII Organic Compounds</td>
<td>Information to ensure proper treatment of the waste stream(s) and ensure prohibited materials are excluded from the waste fuel</td>
</tr>
<tr>
<td></td>
<td>Water Content</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heat of Combustion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Flash Point</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compatibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Density</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table C-9 provides a list of fingerprint parameters and the rationale for their analysis for off-site waste prior to unloading.

### Table C-9

**Fingerprint Testing Parameters and Rationale for Off-site Waste Streams Prior to Unloading**

<table>
<thead>
<tr>
<th>Feed Stream</th>
<th>Analysis Parameters</th>
<th>Analysis Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Fuel</td>
<td>Water Content</td>
<td>Information to ensure proper operation of boiler and incoming waste matches the manifest</td>
</tr>
<tr>
<td></td>
<td>Ash Content</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Density</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pH</td>
<td></td>
</tr>
</tbody>
</table>
**C-2b Test Methods (40 CFR 264.13(b)(2))**

Table C-10 provides the analytical parameter and the corresponding test method(s) that are used to evaluate the parameters described in Table C-6 and Table C-7. These methods provide the information required to properly treat and store the wastes. The Vertellus quality assurance and quality control (QA/QC) program has been established for in-house analyses of waste samples. In general, the three components of the control procedures incorporated into the analytical operations are precision, accuracy, and control charts. A regular program of duplicate and replicate analyses is carried out to establish precision. Accuracy is guaranteed by analyzing check standards and showing the degree of difference between observed and true (or known) values. Vertellus’ Quality Assurance Project Plant (QAPP) is located in Figure C-1. The most recent version is maintained on-site. The QAPP provides a listing of frequencies for analysis of QC standards and duplicates.

<table>
<thead>
<tr>
<th>Analytical Parameter</th>
<th>In House Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>83-008</td>
</tr>
<tr>
<td>Ash</td>
<td>93-202</td>
</tr>
<tr>
<td>pH</td>
<td>82-009C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>94-204</td>
</tr>
</tbody>
</table>

Compatibility is done by mixing equal parts of the incoming sample with a sample from the tank and waiting ten (10) minutes for any adverse effects to occur (i.e. generation of heat, polymerization, etc.).

Where necessary to supplement in-house analysis, the services of contract laboratories are employed. Table C-11 provides the test methods to be used by Summit Environmental Technologies Inc. in examining the wastes. A copy of Summit’s Standard Operating Procedures (SOPs) is provided in Figure C-2. The most recent version is available upon request.

<table>
<thead>
<tr>
<th>Analytical Parameter</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>ASTM 5530-94(2009)</td>
</tr>
<tr>
<td>Ash</td>
<td>ASTM D482-02</td>
</tr>
<tr>
<td>pH</td>
<td>SW846-9045D</td>
</tr>
<tr>
<td>Density</td>
<td>ASTM D1475-13</td>
</tr>
<tr>
<td>Metals</td>
<td>SW84-6010C or 6020A</td>
</tr>
</tbody>
</table>
Table C-12 provides the test methods to be used by Galbraith Laboratories in examining the waste fuel. A copy of Galbraith’s QAPP is provided in Figure C-3. The most recent version is available upon request. Galbraith primarily follows SW-846 and ASTM protocols for testing.

**Table C-12**

<table>
<thead>
<tr>
<th>Analytical Parameter</th>
<th>Preparation Method</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Arsenic</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Barium</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Beryllium</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Cadmium</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Chromium</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Lead</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Mercury</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-7470A</td>
</tr>
<tr>
<td>Silver</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Thallium</td>
<td>SW846-3050B, 3051, or 3052</td>
<td>SW846-6010B or 6020A</td>
</tr>
<tr>
<td>Total Chlorine/Chloride</td>
<td>SW846-3050</td>
<td>SW846-9056A</td>
</tr>
<tr>
<td>Ash Content</td>
<td>N/A</td>
<td>ASTM D482-13</td>
</tr>
<tr>
<td>Heat of Combustion</td>
<td>N/A</td>
<td>ASTM D5865-13</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Density</td>
<td>N/A</td>
<td>ASTM D1475-13</td>
</tr>
<tr>
<td>Total Sulfur</td>
<td>N/A</td>
<td>ASTM D2622-10</td>
</tr>
</tbody>
</table>

N/A- Not Applicable
C-2c Sampling Methods (40 CFR 264.13(b)(3))

The following methods are used to obtain representative samples of liquid waste from each of the storage tanks, feed line to the boiler(s), or incoming shipment and are based on the ASTM E-300-03 standard, “Recommended Practice for Sampling Industrial Chemicals”:

* Tk-64, 66, 69: Representative sample(s) are taken after the circulating pump has circulated the contents for two hours. The sample(s) may be drawn from the feed pumps, feed lines, sample port on the side of the tank(s), or by dipping from the top of the tank(s). They will be analyzed for the parameters listed in Table C-6 or Table C-7.

* Waste fuel: Representative samples are taken at the sample port prior to the injection port of the boiler(s). They will be analyzed for the parameters listed in Table C-6.

* Vertellus waste streams: Representative sample(s) are taken from the sample port on the side of the tank(s), or by dipping from the top of the tank(s). These samples are analyzed for the parameters listed in Table C-7.

* Off-site waste: Each off-site waste shipment received at Vertellus will be sampled and analyzed for the parameters listed in Table C-8. Representative samples will be obtained by Vertellus personnel. The incoming hazardous waste will be sampled at the unloading connection on the truck or from the hatch on top of the tanker. If sampled from the top of the tanker, a coliwasa will be used.

* Initial Waste Analysis: Representative samples will be obtained either from new waste streams generated at Vertellus or from off-site generators. They will be analyzed for the parameters listed in Table C-8.

Sample ports are flushed into a bucket to purge the any residual material in the pipe or nozzle, prior to withdrawing the sample. The sample container is filled over the flush bucket to catch any spillage. The contents of the flush bucket are drained to a portable tank or container for temporary (<90 day) accumulation prior to pumping into the permitted tank system. If a coliwasa is used, it will be decontaminated by either rinsing with a compatible solvent, washing with soap and water, or both prior to being reused.
Procedures for the use of proper sample containers, preservation methods, and holding times are described in Table C-13. All samples of waste to be tested are delivered to the Vertellus Laboratory. All samples have tags with the date, time, and identification of the source. Vertellus utilizes a Laboratory Information Management System (LIMS) to track samples, record results, and retrieve results for samples taken in-house. LIMS is the in-house chain-of-custody (COC) for the internal samples. LIMS maintains the following information:

1. Date and time the sample was taken.
2. Location and description of the sample taken.
3. Date and time the sample was received at the lab.
4. The date, time, and name of the analyst that entered the results for the sample.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Container Type</th>
<th>Preservation Method</th>
<th>Maximum Holding Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metals</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>6 months</td>
</tr>
<tr>
<td>Total Chlorine/Chloride</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>28 days</td>
</tr>
<tr>
<td>Ash</td>
<td>Quart glass or 4 ounce glass</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>VOC</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>14 days</td>
</tr>
<tr>
<td>SVOC</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>Extract in 10 days, Analysis within 40 days</td>
</tr>
<tr>
<td>PCBs</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>Extract in 10 days, Analysis within 40 days</td>
</tr>
<tr>
<td>Dioxins/Furans</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>Extract in 10 days, Analysis within 40 days</td>
</tr>
<tr>
<td>Water</td>
<td>Quart glass or 4 ounce glass</td>
<td>Not applicable</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>Quart glass or 4 ounce glass</td>
<td>Not applicable</td>
<td>None</td>
</tr>
<tr>
<td>Density</td>
<td>Quart glass or 4 ounce glass</td>
<td>Not applicable</td>
<td>None</td>
</tr>
<tr>
<td>Heat of Combustion</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>30 days</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>30 days</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>28 days</td>
</tr>
<tr>
<td>Compatibility</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>None</td>
</tr>
<tr>
<td>Sulfur</td>
<td>Quart glass</td>
<td>Not applicable</td>
<td>28 days</td>
</tr>
</tbody>
</table>
For samples that are sent off-site for analysis, a COC will accompany the sample(s) to the respected laboratory. An example of the COC is provided below as Example-1. All samples sent to an outside laboratory will have a tag detailing the following:

1. Date and time the sample was taken.
2. Where the sample was taken.
3. Description of the contents of the sample.
4. Name of the employee taking the sample.
### EXAMPLE-1

**Example Chain-Of-Custody Record**

<table>
<thead>
<tr>
<th>Project No.:</th>
<th>Project Name:</th>
<th>Parameters for Analysis</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampler’s name (printed)</td>
<td>Signature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample Material/Sample #</th>
<th>Date</th>
<th>Time</th>
<th>Comp</th>
<th>Grab</th>
<th>Sample Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relinquished by: (signature)</th>
<th>Received by: (signature)</th>
<th>Date/time</th>
<th>Received for Laboratory by: (signature)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Relinquished by: (signature)</th>
<th>Received by: (signature)</th>
<th>Date/time</th>
<th>Date/time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
**C-2d  Frequency of Analysis (40 CFR 264.13(a)(3), 264.13(b)(4))**

Waste fuel will be characterized initially and re-characterized on the following basis: when the generating process or the waste itself changes. Table C-7 fingerprinting analysis will be done on each transfer of waste fuel into Tanks 64, 66, or 69. Table C-8 analyses may be performed should significant process changes occur which may affect the hazardous characteristics of the waste. The frequency of analysis for on-site waste will be done as follows:

1. From May 2015 through December 2015, the hazardous waste being burned for energy recovery will be sampled twice a month.
2. Starting in January 2016, the hazardous waste being burned for energy recovery will be sampled as follows:
   a. The hazardous waste being burned for energy recovery will be sampled once per quarter.
   b. If a sample result is above the maximum UTL, the hazardous waste being burned for energy recovery will be sampled twice a month until such time that the reported value for the constituent(s) of concern is below the maximum UTL for two (2) consecutive samples.

In general, sample results are typically received within 20 days. However, exceptions will occur due to holidays, transit damage, or laboratory issue. Causes requiring a new sample will be noted in the site operating record. Any delays or issues that arise, as noted above, will not affect the sampling frequencies described in this section.

When a constituent of concern has a reported value above the maximum UTL or the last reported value, the highest reported value will be used in calculating the maximum allowable feed rate. This will continue until the reported value is below the maximum UTL for the constituent(s). The statistical analysis of the data, using the UTL values, and using values above the UTL are described in section C-2g below.
C-2e Additional Requirements for Wastes Generated Off-Site (40 CFR264.13(b)(5) and (c), 264.73(b))

Prior to approving an off-site waste stream for shipment to the facility, the generator is required to complete a waste profile sheet describing the waste stream. Vertellus conducts a review of the waste profile sheet provided by the generator to determine if the waste stream is acceptable for burning in the boilers. The criteria used by Vertellus to determine the acceptability of the waste stream includes evaluating the waste codes to ensure their inclusion on the Part A, ensuring that it is not a prohibited waste stream (i.e., dioxin/furan, PCB, radioactive, nuclear waste, or medical waste), and evaluating the waste stream content of the BIF regulated parameters in Table C-6 (i.e., ash, metals, and chlorine) and Table C-8. Once the waste stream is approved by Vertellus, the generator can then start scheduling shipments into the facility.

The generator is required to re-characterize their waste stream on an annual basis. At a minimum, the generator is required to recertify the existing waste profile sheet on file for each waste stream being sent to the facility. Alternatively, the generator is required to complete and certify a new waste profile sheet for each waste stream being sent to the facility and a sample maybe sent out for analysis of Table C-8 parameters. An example waste profile sheet is provided as Example-2 at the end of this section.

When a tanker truck arrives onsite, the paperwork will be requested and compared to the waste profile sheet already approved by Vertellus before the waste was shipped. Next, a sample will be collected, as detailed above in Section C-2c and placed into a glass bottle. The sample is then transported to the on-site laboratory for analysis. Each sample will be analyzed for the fingerprint parameters listed in Table C-9 to confirm that the material matches that designated on the manifest. If a discrepancy exists, the generator will be contacted to resolve the discrepancy. If the discrepancy cannot be resolved with the generator, the material will be rejected.

Prior to placement into a tank, a compatibility determination will be made between the material present in the tank (unless empty) and the material in the tanker truck. The compatibility determination will be conducted by laboratory analysis using proportionate
volumes of each material which will be mixed under a laboratory hood. Incompatibility between the materials will be indicated by vigorous reactions, significant temperature increases, significant viscosity increases, excessive generation of fumes, excessive generation of solids, or similar unexpected occurrences.

Once approved for acceptance by the facility, the tanker truck will be weighed and directed to the unloading area for Tanks 64, 66, and 69. The material will be unloaded into one of the tanks by use of a pump. In the event of a power outage, the unloading equipment is designed to fail in a safe condition.

Once the tanker truck has been unloaded into the appropriate tank, the truck will be weighed, the manifest signed, and the truck released from the facility. 40 CFR 264.72 will be followed for any manifest discrepancies.

Vertellus will not accept any off-site was that has concentrations higher in metals, HCl/Cl, or ash content that are greater than the values in the following table.

Table C-14

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>0.50 ppm</td>
</tr>
<tr>
<td>Arsenic</td>
<td>1.0 ppm</td>
</tr>
<tr>
<td>Barium</td>
<td>0.50 ppm</td>
</tr>
<tr>
<td>Beryllium</td>
<td>0.10 ppm</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0.10 ppm</td>
</tr>
<tr>
<td>Chromium</td>
<td>4.0 ppm</td>
</tr>
<tr>
<td>Lead</td>
<td>1.0 ppm</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.020 ppm</td>
</tr>
<tr>
<td>Silver</td>
<td>0.50 ppm</td>
</tr>
<tr>
<td>Thallium</td>
<td>0.20 ppm</td>
</tr>
<tr>
<td>Ash</td>
<td>0.1 %</td>
</tr>
</tbody>
</table>
Vertellus will not accept any off-site waste that has a specific gravity greater than 1.02 or characteristic waste D002.
Example-1
Example Waste Profile Sheet

WASTE PROFILE #: ______________________

DO NOT LEAVE BLANK SPACES.

I. Generator Information

Generator Name: ____________________________________________________________
EPA ID #: __________________________________________________________________
Mailing Address: __________________________________________________________
Plant Address: __________________________________________________________________
Business Contact: _________________________________________________________
Phone #: ___________________________________________________________________
Technical Contact: _________________________________________________________
Phone #: ___________________________________________________________________

II. General Waste Information

Waste Material Name: _______________________________________________________
Describe process that generates waste: __________________________________________
SIC/NAICS Code(s): ___________________________________________________________________
Is your company the original generator of the waste? o Yes o No
If not, provide the name of the original generator: ________________________________
Rate of Generation: __________________________________________________________
Current accumulation: Drums __ Bulk __________________ (Gal.)

III. Waste Stream Chemical Composition*

<table>
<thead>
<tr>
<th>COMPONENTS INCLUDING 40 CFR 261 APPENDIX VIII HAZARDOUS CONSTITUENTS</th>
<th>CONCENTRATION RANGE (UNITS)</th>
<th>AVERAGE % MUST TOTAL 100%</th>
<th>TLV (IF PUBLISHED): ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*40 CFR 261 Appendix VIII constituents should be identified for combustion facilities, even if not present in high enough concentrations to significantly contribute to the 100% composition.

IV. Specific Analysis of Waste

<table>
<thead>
<tr>
<th>CONCENTRATION RANGE</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Content</td>
<td></td>
</tr>
</tbody>
</table>

| From to             |         |

<p>| From to             |         |</p>
<table>
<thead>
<tr>
<th>Organic Bound</th>
<th>CONCENTRATION RANGE</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iodine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphorus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Metals (Actual Content)**

<table>
<thead>
<tr>
<th>Metal</th>
<th>Concentration</th>
<th>Metal</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td></td>
<td>Mercury</td>
<td></td>
</tr>
<tr>
<td>Antimony</td>
<td></td>
<td>Nickel</td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td></td>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>Barium</td>
<td></td>
<td>Selenium</td>
<td></td>
</tr>
<tr>
<td>Beryllium</td>
<td></td>
<td>Silicon</td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td></td>
<td>Silver</td>
<td></td>
</tr>
<tr>
<td>Chromium</td>
<td></td>
<td>Sodium</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
<td>Thallium</td>
<td></td>
</tr>
</tbody>
</table>

Does this waste contain PCBs?  o No  o Yes
If yes, give the concentration regardless of amount and attach supporting documentation:

Does this waste contain insecticides, pesticides, herbicides, or rodenticides?  o No  o Yes
If yes, identify each in the space below and the concentrations:

(Include Safety Data Sheets for each)

Does this waste contain Dioxins/Furans?  o No  o Yes
Is this waste radioactive?  o No  o Yes
Does this waste contain nuclear waste material?  o No  o Yes
Does this waste contain medical waste?  o No  o Yes
Does this waste contain free cyanide >250 ppm?  o No  o Yes
Does this waste contain free sulfide >250 ppm?  o No  o Yes
V. TOXICITY

Check Applicable Data

- Eye
- Inhalation
- Dermal
- Ingestion
- Other Carcinogen
  (suspected or known)

VI. PHYSICAL PROPERTIES

Physical state at 70°F (Circle) Liquid Semisolid Solid Slurry Sludge Gas

Viscosity _______ CPS at _______°F

Is material pumpable?  o No  o Yes

Varies (Explain):

Is waste multi-layered?  o No  o Yes

If yes, please describe and quantify each layer:

1. (Top) ____________________________ %

2. (Middle) ____________________________ %

3. (Bottom) ____________________________ %

Dissolved Solids: ____________ %

Suspended Solids: ____________ %

Settleable Solids: ____________ %

Particle size: Will the solid portion of this waste pass through a 1/8-inch screen?  o No  o Yes

BTU/lb.: ____________________________

Ash Content: ____________ %

Flash Point: ____________ °F

Vapor Pressure at 70°F: ____________________________

Specific Gravity: ____________________________

pH: ____________________________

Corrosivity: ____________________________ npy

Color: ____________________________

What is the Reactivity Group Number(s) for this waste? ____________________________
Is this material stable?  o No  o Yes
If no, explain: _________________________________________________________________

Is this material shock sensitive?  o No  o Yes
If yes, explain: _________________________________________________________________

Special Handling Information: ______________________________________________________

VII. EPA INFORMATION

Is this waste hazardous as defined by RCRA 40 CFR Part 261?  o No  o Yes
If yes, list the applicable EPA Hazardous Waste Code(s): ________________________________________________

If the answer to the above is yes, list CERCLA reportable quantities, found in 40 CFR §302.4:

If the waste is not hazardous as defined by federal regulations but is hazardous as defined by state regulations in which waste was generated, please provide the state hazardous waste code(s):

VIII. DOT INFORMATION

In accordance with the Department of Transportation 49 CFR Parts 171 through 177, complete the following:

DOT Proper Shipping Name: ____________________________________________________________

DOT Hazard Class: __________________________________________________________________

DOT UN or NA Number: ____________________________

Container Label(s): ____________________________ (For containers of 110 gallons or less)

Additional Description: ____________________________

Placards: ____________________________

Is this waste a soil and/or debris?  No:  Yes, Soil: ______  Yes, Debris: ______  Yes, Both: ______
ACCOUNTABILITY STATEMENT
I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.

Authorized Signature  Printed (or typed) Name and Title  Date
C-2f Additional Requirements for Ignitable, Reactive or Incompatible Wastes (40 CFR 264.13(b)(6), 264.17)

The subject waste management facilities will not be used for mixing reactive or incompatible wastes. Ignitable wastes will be analyzed using the methods presented in Table C-11, to ensure safe handling during storage. The procedures to prevent hazards, described fully in Attachment F-5 of this permit application, have been found to adequate to prevent ignition of the ignitable wastes.

C-2g Additional Requirements Pertaining to BIFs: 40 CFR 266.102(e)(6)(ii)(C), 266.102(e)(6)(iii)

Initial Trial Burn testing was performed on Boilers 70K and 30K during October and November 1999. A Trial Burn was performed on Boilers 70K and 30K during October 2005. In December 2009, a Trail Burn was performed on Boilers 70K, 30K, and 28K to demonstrate compliance with 40 CFR 63 Subpart EEE and 40 CFR 266 Subpart H. The Trial Burn Report associated with the testing done in December 2009 and the revised risk assessment done by EPA established the operating limits for Boilers 70K, 30K, and 28K in Tables C-15 through C-21 below.

Tables C-15 through C-21 present the operating limits associated with Boilers 70K, 30K, and 28K for the BIF metals, total chlorine/chloride, and ash. These limits were established based on the results of the Trial Burn, the revised risk assessment and the different modes of operation applicable to the boilers. Mode A - 70K/30K/28K operating limits in Table C-15 represent the simultaneous operation of the three boilers at maximum operating conditions on a 24-hour per day, 365-day per year basis. The additional modes of operation adjust the allowable constituent feed rates based on the risk assessment results to account for periods when one or two boilers are not burning hazardous waste. Each of the additional modes reflects operations on a 24-hour per day, 365-day per year basis. The additional modes of operation include Mode B - 70K/30K (Table C-16), Mode C - 70K/28K (Table C-17), Mode D - 30K/28K (Table C-18), Mode E - 70K (Table C-19), Mode F - 30K (Table C-20), and Mode G - 28K (Table C-21).
### Table C-15
**Operating Mode A - 70K/30K/28K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>31.86</td>
<td>18.86</td>
<td>18.25</td>
</tr>
<tr>
<td>Arsenic</td>
<td>6.80</td>
<td>4.03</td>
<td>3.89</td>
</tr>
<tr>
<td>Barium</td>
<td>8.50</td>
<td>5.00</td>
<td>4.86</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.02</td>
<td>0.60</td>
<td>0.58</td>
</tr>
<tr>
<td>Cadmium</td>
<td>4.25</td>
<td>2.51</td>
<td>2.43</td>
</tr>
<tr>
<td>Chromium</td>
<td>9.40</td>
<td>7.76</td>
<td>3.76</td>
</tr>
<tr>
<td>Lead</td>
<td>35.64</td>
<td>21.06</td>
<td>20.41</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.060</td>
<td>0.030</td>
<td>0.030</td>
</tr>
<tr>
<td>Silver</td>
<td>14.69</td>
<td>8.68</td>
<td>8.42</td>
</tr>
<tr>
<td>Thallium</td>
<td>0.85</td>
<td>0.50</td>
<td>0.49</td>
</tr>
<tr>
<td>Ash</td>
<td>4,926</td>
<td>3,045</td>
<td>2,954</td>
</tr>
<tr>
<td>Chlorine</td>
<td>4,300</td>
<td>2,625</td>
<td>2,550</td>
</tr>
</tbody>
</table>

### Table C-16
**Operating Mode B - 70K/30K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>47.88</td>
<td>28.26</td>
<td>0</td>
</tr>
<tr>
<td>Arsenic</td>
<td>11.16</td>
<td>6.48</td>
<td>0</td>
</tr>
<tr>
<td>Barium</td>
<td>84.96</td>
<td>50.04</td>
<td>0</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.02</td>
<td>0.60</td>
<td>0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>6.37</td>
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<tr>
<td>Chromium</td>
<td>10.74</td>
<td>8.82</td>
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</tr>
<tr>
<td>Lead</td>
<td>47.52</td>
<td>28.08</td>
<td>0</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.087</td>
<td>0.043</td>
<td>0</td>
</tr>
<tr>
<td>Silver</td>
<td>22.03</td>
<td>13.03</td>
<td>0</td>
</tr>
<tr>
<td>Thallium</td>
<td>1.27</td>
<td>0.75</td>
<td>0</td>
</tr>
<tr>
<td>Ash</td>
<td>4,926</td>
<td>3,045</td>
<td>0</td>
</tr>
<tr>
<td>Chlorine</td>
<td>4,300</td>
<td>2,625</td>
<td>0</td>
</tr>
</tbody>
</table>
### Table C-17
**Operating Mode C - 70K/28K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>47.88</td>
<td>0</td>
<td>28.26</td>
</tr>
<tr>
<td>Arsenic</td>
<td>11.16</td>
<td>0</td>
<td>6.41</td>
</tr>
<tr>
<td>Barium</td>
<td>84.96</td>
<td>0</td>
<td>50.04</td>
</tr>
<tr>
<td>Beryllium</td>
<td>1.02</td>
<td>0</td>
<td>0.58</td>
</tr>
<tr>
<td>Cadmium</td>
<td>6.37</td>
<td>0</td>
<td>3.04</td>
</tr>
<tr>
<td>Chromium</td>
<td>10.74</td>
<td>0</td>
<td>8.82</td>
</tr>
<tr>
<td>Lead</td>
<td>47.52</td>
<td>0</td>
<td>28.08</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.087</td>
<td>0</td>
<td>0.043</td>
</tr>
<tr>
<td>Silver</td>
<td>22.03</td>
<td>0</td>
<td>13.03</td>
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<tr>
<td>Thallium</td>
<td>1.27</td>
<td>0</td>
<td>0.75</td>
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<tr>
<td>Ash</td>
<td>4,926</td>
<td>0</td>
<td>2,954</td>
</tr>
<tr>
<td>Chlorine</td>
<td>4,300</td>
<td>0</td>
<td>2,550</td>
</tr>
</tbody>
</table>

### Table C-18
**Operating Mode D - 30K/28K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>0</td>
<td>33.91</td>
<td>33.91</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0</td>
<td>4.32</td>
<td>4.32</td>
</tr>
<tr>
<td>Barium</td>
<td>0</td>
<td>50.04</td>
<td>50.04</td>
</tr>
<tr>
<td>Beryllium</td>
<td>0</td>
<td>0.60</td>
<td>0.58</td>
</tr>
<tr>
<td>Cadmium</td>
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<td>2.51</td>
<td>2.43</td>
</tr>
<tr>
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<td>Lead</td>
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<td>35.10</td>
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</tr>
<tr>
<td>Mercury</td>
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<td>0.050</td>
<td>0.049</td>
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<tr>
<td>Silver</td>
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<td>14.98</td>
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<tr>
<td>Thallium</td>
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<td>0.86</td>
<td>0.86</td>
</tr>
<tr>
<td>Ash</td>
<td>0</td>
<td>3,045</td>
<td>2,954</td>
</tr>
<tr>
<td>Chlorine</td>
<td>0</td>
<td>2,625</td>
<td>2,550</td>
</tr>
</tbody>
</table>
### Table C-19
**Operating Mode E - 70K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>89.28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Arsenic</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Barium</td>
<td>84.96</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beryllium</td>
<td>3.06</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>21.24</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chromium</td>
<td>16.68</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lead</td>
<td>91.44</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.155</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Silver</td>
<td>38.52</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thallium</td>
<td>2.21</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ash</td>
<td>4,926</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chlorine</td>
<td>4,300</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Table C-20
**Operating Mode F - 30K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>0</td>
<td>67.68</td>
<td>0</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0</td>
<td>11.34</td>
<td>0</td>
</tr>
<tr>
<td>Barium</td>
<td>0</td>
<td>100.08</td>
<td>0</td>
</tr>
<tr>
<td>Beryllium</td>
<td>0</td>
<td>1.20</td>
<td>0</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0</td>
<td>5.00</td>
<td>0</td>
</tr>
<tr>
<td>Chromium</td>
<td>0</td>
<td>11.24</td>
<td>0</td>
</tr>
<tr>
<td>Lead</td>
<td>0</td>
<td>70.20</td>
<td>0</td>
</tr>
<tr>
<td>Mercury</td>
<td>0</td>
<td>0.099</td>
<td>0</td>
</tr>
<tr>
<td>Silver</td>
<td>0</td>
<td>29.95</td>
<td>0</td>
</tr>
<tr>
<td>Thallium</td>
<td>0</td>
<td>1.73</td>
<td>0</td>
</tr>
<tr>
<td>Ash</td>
<td>0</td>
<td>3,045</td>
<td>0</td>
</tr>
<tr>
<td>Chlorine</td>
<td>0</td>
<td>2,625</td>
<td>0</td>
</tr>
</tbody>
</table>
Table C-21
Operating Mode G - 28K

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Boiler 70K (g/hr)</th>
<th>Boiler 30K (g/hr)</th>
<th>Boiler 28K (g/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony</td>
<td>0</td>
<td>0</td>
<td>67.68</td>
</tr>
<tr>
<td>Arsenic</td>
<td>0</td>
<td>0</td>
<td>10.80</td>
</tr>
<tr>
<td>Barium</td>
<td>0</td>
<td>0</td>
<td>100.80</td>
</tr>
<tr>
<td>Beryllium</td>
<td>0</td>
<td>0</td>
<td>1.20</td>
</tr>
<tr>
<td>Cadmium</td>
<td>0</td>
<td>0</td>
<td>5.00</td>
</tr>
<tr>
<td>Chromium</td>
<td>0</td>
<td>0</td>
<td>11.10</td>
</tr>
<tr>
<td>Lead</td>
<td>0</td>
<td>0</td>
<td>70.20</td>
</tr>
<tr>
<td>Mercury</td>
<td>0</td>
<td>0</td>
<td>0.098</td>
</tr>
<tr>
<td>Silver</td>
<td>0</td>
<td>0</td>
<td>29.95</td>
</tr>
<tr>
<td>Thallium</td>
<td>0</td>
<td>0</td>
<td>1.73</td>
</tr>
<tr>
<td>Ash</td>
<td>0</td>
<td>0</td>
<td>2,954</td>
</tr>
<tr>
<td>Chlorine</td>
<td>0</td>
<td>0</td>
<td>2,550</td>
</tr>
</tbody>
</table>

Feed Rate Considerations

The feed rate of individual constituents in the waste fuel feed stream is determined by knowing the concentration of the constituent in the waste fuel and the feed rate of the waste fuel. For constituents with concentrations specified on a part per million basis, the constituent feed rate is calculated using the following equation:

\[
\text{Constituent Feed Rate (g/hr)} = \text{Waste Feed Rate (lb/hr)} \times \frac{453.6 \text{ grams}}{1 \text{ pound}} \times \frac{\text{Concentration (ppm)}}{1 \times 10^6}
\]

For constituents with concentrations specified on a percent basis, the constituent feed rate is calculated using the following equation:

\[
\text{Constituent Feed Rate (g/hr)} = \text{Waste Feed Rate (lb/hr)} \times \frac{453.6 \text{ grams}}{1 \text{ pound}} \times \frac{\text{Concentration (\%)}}{100}
\]

Aggregate Risk and Multiple Stacks Considerations

The results of the December 2009 Trial Burn were used to perform site-specific direct and indirect human health and ecological risk assessments. The risk assessments were conducted using the operating limits specified in Tables C-15 through C-21. The risk assessments were
performed for each of the specified modes of operation. Therefore, because the risk assessments included direct and indirect exposure pathways for the specified mode, the aggregate risk and multiple stacks criteria have been satisfied. Demonstrating compliance with the feed rate limits also demonstrates compliance with the aggregate risk and multiple stacks criteria.

**Boiler Feed Stream Statistics**

Vertellus uses the feed rate limits specified in Tables C-15 through C-21 for Boilers 70K, 30K, and 28K pursuant to the specific mode of operation being used. Compliance with the feed rate limits is demonstrated by continuous monitoring and recording methods. The feed rate of the hazardous waste stream is continuously monitored and recorded. The measurement of the concentrations of the regulated parameters in the waste is used to demonstrate compliance with the feed rate limits.

The method used for demonstrating compliance with the feed rate limits is based on a statistical approach. This approach is appropriate for consistent feed streams for which there is a reasonable expectation for each constituent. Vertellus will use a rolling five (5) year database to calculate the UTL for each constituent (starting with data collected as of May 2015). All data in the 5 year data set meeting the labs Quality Assurance/ Quality Control (QA/QC) protocol will be used in calculating the UTL.

The UTL is a statistical method value that a fixed percentage of the sample population will not exceed. Details on the UTL methodology are further discussed in the following sections.

**General UTL Information**

The UTL is generally defined as an estimate of the probability that a fixed percentage of a sample population will not exceed a certain value. The primary UTL value that will be used by Vertellus is the one-sided upper 99 percent tolerance bound that exceed at least 99 percent of the sample population. In other words, it can be stated with 99 percent confidence that 99 percent of the waste sample results will not exceed the UTL. Vertellus may use alternative confidence levels, as appropriate, including 95% and 97.5% based on the number of samples collected in the
last year. The following formula is used to calculate the minimum number of samples for each confidence level:

\[
\frac{\text{Number of samples}}{\text{year}} = \alpha_{\text{cal}} \times Y
\]

Where:
\[
\alpha_{\text{cal}} = \quad \text{One minus the confidence level to calculate the UTL, at a 95% confidence level for the UTL, } \alpha_{\text{cal}} = 1 - 0.95 = 0.05
\]
\[
Y = \quad \text{The number of days waste is generated on-site}
\]

The number of samples per year used for each confidence level is presented in Table C-22 below, values are rounded up for fractions.

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Minimum Number of Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>99%</td>
<td>4</td>
</tr>
<tr>
<td>97.5%</td>
<td>10</td>
</tr>
<tr>
<td>95%</td>
<td>19</td>
</tr>
</tbody>
</table>

The UTL methodology is a statistical method for demonstrating compliance. The calculated UTL value is considered to be the “known” concentration for each measured constituent in the waste feed stream. The UTL values are then used to demonstrate compliance with the feed rate limits. Because the UTL methodology is a statistical approach to demonstrating compliance, there is always a finite possibility that a constituent concentration in any given sample will exceed the UTL. This is an accepted fact when using statistical characterizations and can be expected to occur periodically.

In order to use the UTL methodology, several pieces of information must be known. For the applicable data set, the number of values, mean, and standard deviation must be known.
Also, the data set must be normally distributed to use the UTL methodology. A computer spreadsheet program has been developed to perform the required calculations for the UTL determinations.

The general procedure for implementing the UTL methodology begins with an evaluation of the data received from the laboratory. This data is evaluated for outliers and any errors in the sampling, analytical, or reporting methods. Data can be eliminated based on poor analytical quality, sampling errors, and analytical errors. The data set is then analyzed for normal distribution and a new UTL is calculated. The maximum feed rate of the waste is then evaluated. Each of these items is discussed further in the following sections.

Outlier Analysis

Each new data point is evaluated against the data set to determine if it is an outlier. The outlier evaluation is conducted in accordance with ASTM Method E178-02 Standard Practice for Dealing with Outlying Observations. A copy of this method is included in Figure C-4 of this WAP. Pursuant to this method, a value is calculated for the new data point and this value (referred to as $T_n$) is compared to a critical value ($T_c$) obtained from a table in the ASTM method. If the calculated $T_n$ value is greater than the critical $T_c$ value, there is statistical evidence that the new data point is an outlier. The $T_n$ value is calculated using the following equation:

$$T_n = \frac{(X_n - \bar{X})}{S_d}$$

Where:
- $T_n$ = Calculated value for the new data point;
- $X_n$ = New data point value being tested;
- $n$ = Number of valid data points in the data set;
- $\bar{X}$ = Arithmetic average of the data set; and
- $S_d$ = Standard deviation of the data set.

Any new data point determined to be an outlier by this methodology is investigated to determine if an error in sampling or analysis occurred. If an error in sampling or analysis is discovered, the associated data point is not added to the data set. If no error in sampling or
analysis is discovered, the data point is added to the data set. The results of this investigation will be documented.

The arithmetic average of the data set is calculated by summing each value in the data set and dividing by the number of data points. The following equation is used to calculate the arithmetic average of the data set:

$$\bar{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

Where:
- $\bar{X}$ = Arithmetic average of the data set for parameter X;
- $X_i$ = The $i^{th}$ data value for parameter X; and
- n = Number of valid data points in the data set.

The standard deviation of a data set represents the variability of the data points in the data set as compared to the arithmetic average of the data set. The following equation is used to calculate the standard deviation of the data set:

$$S_d = \sqrt{\frac{\sum_{i=1}^{n} (X_i - \bar{X})^2}{(n-1)^2}}$$

Where:
- $S_d$ = Standard deviation of the data set;
- $X_i$ = The $i^{th}$ data value for parameter X;
- $\bar{X}$ = Arithmetic average of the data set for parameter X; and
- n = Number of valid data points in the data set.

Normality Analysis

The data set is evaluated to determine if the data is normally distributed. A normal distribution of data can be represented as a "bell-shaped" curve with the right and left sides of the mean value being mirror images of each other. This type of distribution is also called a Gaussian distribution.

The raw data set is evaluated for normality by using the Coefficient of Variation test. The Coefficient of Variation test is presented in Section 3.3 of the Statistical Analysis of
Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, USEPA, March 2009, EPS 530/R-09-007. The Coefficient of Variation is calculated as follows:

\[ CV = \frac{S_d}{\bar{X}} \]

Where:
- \( CV \) = Coefficient of Variation;
- \( S_d \) = Standard deviation of the data set; and
- \( \bar{X} \) = Arithmetic average of the data set.

The calculated Coefficient of Variation is compared to the numeric value of 1. If the calculated Coefficient of Variation is less than 1, the data set is assumed to be normally distributed.

If the raw data is not normally distributed, the data is log-transformed and re-evaluated for normality. The following equations are used to calculate the log-transferred data.

The log-transferred arithmetic average of the data set is calculated by summing the log value of each value in the data set and dividing by the number of data points. The following equation is used to calculate the log-transferred arithmetic average of the data set:

\[ \bar{Y} = \frac{\sum_{i=1}^{n} \log(X_i)}{n} \]

Where:
- \( \bar{Y} \) = Log-Transferred Arithmetic average of the data set for parameter \( X \);
- \( X_i \) = The \( i^{th} \) data value for parameter \( X \); and
- \( n \) = Number of valid data points in the data set.

The log-transferred standard deviation of a data set represents the variability of the log value of data point in the data set as compared to the log-transferred arithmetic average of the data set. The following equation is used to calculate the log-transferred standard deviation of the data set:
\[ S_y = \sqrt{\frac{\sum_{i=1}^{n} (\log(X_i) - \overline{Y})^2}{(n - 1)}} \]

Where:
- \( S_y \) = Log-Transferred Standard deviation of the data set;
- \( X_i \) = The \( i \)th data value for parameter X;
- \( \overline{Y} \) = Log-Transferred Arithmetic average of the data set for parameter X; and
- \( n \) = Number of valid data points in the data set.

The log-transferred coefficient of variation is calculated as follows:

\[ CV_{log} = \sqrt{e^{S_y^2} - 1} \]

Where:
- \( CV_{log} \) = Log-Transferred Coefficient of Variation; and
- \( S_y \) = Log-Transferred Standard deviation of the data set.

The calculated Log-Transferred Coefficient of Variation is compared to the numeric value of 1. If the calculated Log-Transferred Coefficient of Variation is less than 1, the data set is assumed to be normally distributed.

**UTL Calculation**

The UTL is calculated only for normally distributed data sets. If data was required to be log-transformed in order to become normally distributed, the UTL is calculated using the log-transformed data. The UTL is calculated using the following equation:

\[ \text{UTL}_{(1-\alpha, \rho, \alpha)} = \overline{X} + [K_{(1-\alpha, \rho, \alpha)} \times S_d] \]

Where:
- \( \text{UTL} \) = Upper Tolerance Limit;
- \( 1 - \alpha \) = Level of confidence (i.e., 0.95, 0.99, and 0.995);
- \( \rho \) = Decimal fraction of samples predicted to fall below the UTL (the coverage) (i.e., 95%);
- \( n \) = Number of valid data points in the data set;
- \( \overline{X} \) = Arithmetic average of the data set;
- \( K \) = The factor for a one-sided tolerance limit at the appropriate confidence level, coverage, and number of data points; and
- \( S_d \) = Standard deviation of the data set.

Figure C-5 contains a the table of \( K \) values being used.
Maximum Feed Rate Analysis

The UTL values for each appropriate parameter are then used to calculate the maximum allowable waste feed rates. This calculated value is then compared to the allowable maximum waste feed rate limits: for Boiler 28K, the maximum hazardous waste feed rate limit is 1,987 lb/hr; for Boiler 30K, the maximum hazardous waste feed rate limit is 2,017 lb/hr; and, for Boiler 70K, the maximum hazardous waste feed rate limit is 4,018 lb/hr.

If the calculated value for each parameter is greater than the feed rate limit, compliance with the limit has been demonstrated. If the calculated value for a parameter is less than the hazardous waste feed rate limit, then boiler operations are required to be reduced to the lowest calculated hazardous waste feed rate value in order to maintain compliant operations. If necessary, compliance with the hazardous waste feed rate limitations may be demonstrated directly using the analytical results times the actual waste feed rates when the statistical methodology is not being used.

The maximum allowable hazardous waste feed rate is calculated with UTL values in units of µg/g (ppm) using the following equation:

\[
\text{Max Hazardous Waste FR} = \frac{\text{Permit Limit} \times 10^6}{\text{UTL} \times 453.6}
\]

Where:
- \(\text{Max Hazardous Waste FR}\) = Maximum allowable hazardous waste feed rate (lb/hr);
- \(\text{Permit Limit}\) = Established feed rate limit of constituent (g/hr);
- \(10^6\) = µg’s in one gram;
- \(\text{UTL}\) = Upper Tolerance Limit (µg/g); and
- \(453.6\) = Grams in one pound.

The maximum allowable waste feed rate is calculated for UTL values with units of percent (%) using the following equation:
Max Hazardous Waste FR = \frac{\text{Permit Limit} \times 100}{\text{UTL} \times 453.6}

Where:
- Max Hazardous Waste FR = Maximum allowable hazardous waste feed rate (lb/hr);
- Permit Limit = Established feed rate limit (g/hr);
- 100 = Conversion factor for percent;
- UTL = Upper Tolerance Limit (%); and
- 453.6 = Grams in one pound.

If the sampling and analysis indicates that the UTL or permit limit has been exceeded, then the following will occur:

UTL Exceedance:

1. Determine if the reported value is an error in sampling or analysis.
2. If the error is associated with sampling or analysis, the data point will not be added to the data set.
3. If no error in sampling or analysis occurred, but only the UTL limit was exceeded, then the value will be added to the data set.
4. Use the reported value that exceeded the UTL for calculating the maximum hazardous waste feed rate limit (MHWFRL).
5. Increase the sampling frequency as detailed in section C-2d until the reported value is below the UTL. If another reported value is higher than the current value being used in the MHWFRL calculation, use the highest reported value for calculating the MHWFRL.
6. Once the reported value is below the UTL, the new UTL may be used for calculating the MHWFRL or continue with the MHWFRL established in 5 above.
FIGURE C-1
VERTELLUS QUALITY ASSURANCE PROJECT PLAN
VFC # 80042550

FIGURE C-2
COPY OF SUMMIT SOPS
VFC # 80042550

FIGURE C-3
COPY OF GALBRAITH LABORATORIES QAPP
VFC # 80042550

FIGURE C-4
COPY OF METHOD ASTM E178-02
VFC # 80042550

FIGURE C-5
K-VALUES
VFC # 80042550
ATTACHMENT D
PROCESS INFORMATION
ATTACHMENT D

TANK STORAGE
BOILERS (BIF)
**D Process Information**

This section provides information for the permitted tanks-64, 66, 69, and the hazardous waste boilers-28K, 30K, and 70K.

**D-2 Tank Systems (40 CFR 270.16, 264.191 through 264.199)**

The Vertellus facility utilizes three tanks for permitted hazardous waste storage. Tanks 64 and 66 were used to manage hazardous waste prior to June 20, 1988, therefore, they are “existing” tank systems under §264.191. Tank 69 was constructed in October 1999 and is a “new” tank system under §264.192.

**D-2a Tank Systems Description (40 CFR 270.14(b)(1), 264.194(a))**

The subject tank systems are installed on concrete and compacted sand foundations that are designed to prevent the tanks from contacting soil or standing liquids. The exterior surfaces of tanks are painted to prevent corrosion from contact with precipitation. None of the subject tanks are buried, partially buried, or submerged. Additional information on tank foundations is presented in Section D-2d below. The waste streams stored in the tanks are spent solvents as described in Attachment C, distillation residues as described in Attachment C, and off site wastes similar to these waste streams.

The subject tanks were designed in accordance with the code “API 650 Welded Steel Tanks for Oil Storage”. Tanks are constructed of carbon steel, ASTM types A-7 and A-283-C or -D. Features of the tanks are summarized in Table D-2a(1) and are described for each tank below.

Tank Nos. 64 and 66 are double-wall cylindrical vertical heated tanks with hemispherical heads and flat bottoms constructed of carbon steel. Tank Nos. 64 and 66 are equipped with suction heaters for heating the material withdrawn from the tank. Dimensions are provided in Table D-2a(1). Each tank has an inner volume of about 253,000 gallons and a working capacity of about 240,430 gallons based on a high level about 1.5 feet below the top of the sidewall.
These tanks are supported by concrete foundations. Each tank has a caged ladder providing access to the tank roof. Plan, elevation, and section views of Tank Nos. 64 and 66 showing dimensions of the tanks and fittings are provided in Figure D-1 (Drawing No. 882907-132), the design drawing for these tanks.

Tank 69 is a double-wall cylindrical vertical heated tank with a cone head and flat bottom constructed of carbon steel. Dimensions are provided in Table D-2a(1). The tank has an inner volume of about 99,690 gallons and a working capacity of about 99,083 gallons based on a high level about 1.5 feet below the top of the sidewall. An agitator is mounted on the top. The tank is supported by a concrete foundation. A spiral staircase proved access to the tank roof. Plan, elevation, and section views of Tank 69 showing dimensions of the tank and fittings are provided in Figure D-2 (Drawing No. 012903-069v-1 through 012903-069v-8), the design for this tank. The List of Drawing with the Certification Statement is in Figure D-12.

The roof and closure devises of each tank are visually inspected at least annually as required by 40 CFR Subpart CC. All three tanks are connected by a closed-vent system to a flare. The Visible Emissions Assessment completed by Keramida Environmental, Inc. and the design drawings associated with the flare are included in Figure D-13.

**D-2a (1) Dimensions and Capacity if Each Tank (40 CFR 270.16(b))**

Dimensions and capacity of each tank are described in Table D-2a(1) below.

<table>
<thead>
<tr>
<th>Tank No.</th>
<th>Waste(1) Type</th>
<th>Specific Gravity</th>
<th>Working Capacity (gal)</th>
<th>Normal Inbreathing Capacity (Cu ft/hr)</th>
<th>Normal Outbreathing Capacity (Cu ft/hr)</th>
<th>Diameter x height</th>
<th>Thickness (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Shell</td>
</tr>
<tr>
<td>64</td>
<td>Fuels</td>
<td>0.9-1.4</td>
<td>240430</td>
<td>&lt;3600</td>
<td>&lt;3600</td>
<td>34.7 x 36</td>
<td>0.25</td>
</tr>
<tr>
<td>66</td>
<td>Fuels</td>
<td>0.9-1.4</td>
<td>240430</td>
<td>&lt;3600</td>
<td>&lt;3600</td>
<td>34.7 x 36</td>
<td>0.25</td>
</tr>
<tr>
<td>69</td>
<td>Fuels</td>
<td>0.9-1.4</td>
<td>99080</td>
<td>&lt;3600</td>
<td>&lt;3600</td>
<td>21.7 x 36</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Wastes are described in detail in Attachments B and C.
D-2a (2) Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls (40 CFR 270.16(e), 264.194(b))

A detailed description of safety cutoff mechanisms is provided at the end of this section as a single type of mechanism is used for all three tanks. Piping is generally mild steel, except where indicated in the design drawings in this section. The length and attachment of internal fill pipes for Tank Nos. 64, 66, and 69, are indicated on the design drawings referenced in Section D-2a. Check valves are as shown in the drawings in Figure D-3 (Drawing No. 29PID01-016). Couplings used to connect a portable tank or tanker to the feed system consist of stainless steel cam-lock fittings where shown in the drawings cited below. Pressure control for closed tanks is provided by rupture disks. The vent settings are 13.1 inches water pressure (approximately 0.5 psig pressure) and 5.5 inches water vacuum. All closed tanks have welded roofs. Tanks 64, 66 and 69 are heated by steam bayonets or coils, as indicated in the design drawings referenced in Section D-2a. The waste is heated to improve flow and atomization in the boilers. The flow of steam to the bayonets is regulated by a pneumatic control device placed outside the tank at eye level that responds to a thermocouple placed inside the tank. The control device acts as a thermostat with a set point of 100 degrees F. Normal operating temperatures are between 70 and 100 degrees F. Types of valves and pumps are indicated for all closed tanks in Figure D-3 (Drawing No. 29PID01-016). The following narrative provides a tank-by-tank description of feed, cutoff, and bypass systems.

Tank Nos. 64, 66 and 69 are each piped to receive waste from the transfer pump at the loading area adjacent to Tank No. 69. The pump, piping and feed connection are located on the west side of and within Tank 69’s pump pad. This pump allows each tank to be filled via the containers placed in the loading area, via a flow hose from the truck to the loading pipe. The feed connection is through a safety cutoff valve activated by a high level sensor at a level 1.5 feet below the top of the tank sidewall.

Tank Nos. 64 and 66 are piped to receive and deliver waste from/to themselves (recirculating) and from/to the boilers. The delivery flow is accomplished through a suction heater connection at each tank. Tanks 64 and 66 have one pump at this connection. The return
flow is received through two dedicated feed connections on each tank, one from the boilers and one from the pump discharge (recirculating).

Tank Nos. 69 is piped to receive and deliver waste from/to itself (recirculating) and from/to the boilers. The delivery flow is accomplished through a bottom valve on the tank. Tank No. 69 has two parallel pumps. The return flow is received through two dedicated feed connections on the tank, one from the boilers and one from the pump discharge (recirculating).

Tank Nos. 64, 66 and 69 are each piped to receive wastes from tank farms at Plant 27, Plant 40, Plant 41, Plant 47, and Plant 48. Wastes are pumped from tanks to a dedicated feed connection on each tank. Certified drawings of the feed piping from generator tanks are maintained onsite. The feed connection is through a safety cutoff valve activated by a high level sensor at a level 1.5 feet below the top of the tank sidewall. Details regarding valves and piping for Tank Nos. 64, 66 and 69 are provided in Figures D-3 and D-4 (Drawing Nos. 29PID01-016 and 882907-002A).

All closed tanks are equipped with an automatic safety cutoff system. High level conditions are sensed by a 120 volt powered Sensall model 394 ultrasonic gap level switch. This model will by design revert to a fail-safe state upon electronic failure. When sensing a true high level condition, this switch will de-activate a 120 volt Asco 3-way solenoid valve which in turn will allow air to bleed from the actuator of a Rockwell Model EH450-7 shut off valve, positioning that valve to a closed position. Since this Rockwell valve is constructed with a heavy spring return, shutoff is assured upon air, power, solenoid, and level switch failure. Shutoff does not deactivate the pump. Pump shutoff is manually performed. System integrity for each tank switch can be tested either by pressing a high level simulation test button which is located at ground level for the tanks, or by using a magnet to activate the level sensor. Either action will force the ultrasonic level switch to assume a high level state, which in turn will force the shutoff valve to assume a closed position. Assurance that the valve reached a closed position during the test is made possible by watching the response of an indicator on the simulator panel that should turn on when the valve reaches a closed position. Valve closure is audible.
Pump capacities for transfers into the tanks range from 100 to 250 gallons per minute. No waste is transferred into the tanks between the trigger of the high level alarm and valve closure. Standard Operating Procedure (SOP) requires an operator to check available tank volume before transferring waste into the tank. SOP likewise requires the presence of an operator during all transfers; this provides the alternative to automated monitoring should the system fail. Waste transfers are not allowed if insufficient capacity exists, however, this should never be a problem as tank inventory management is carefully controlled on a daily basis. Before any transfers are allowed into the tanks, an operator will make a determination that the tank has sufficient capacity for the transfer, checking both the available volume in the tank and the volume to be transferred.

The tanks are designed in accordance with API 650 to withstand pressures of 2.5 psig. Closed tank pressure is controlled by rupture disks. Rupture disk settings are 13.1 inches water pressure (approximately 0.5 psig) and 5.5 inches water vacuum. Each of the tanks is fitted with vapor lines fed to a flare under negative pressure, well below the design pressure. Vapor transfer lines remain open to allow transfer among the tanks and to the flare.

Normal venting capacity is a value that is less than the maximum venting capacity. The maximum venting capacity was used to design the flare and it was estimated to be approximately 3,600 cfm (cubic feet per hour). The estimate was determined by assuming a maximum pumping rate into the tank system and it did not account for any waste consumption as fuel by the boilers. Therefore, although fuel would be removed from the tank system at a rate of approximately 50 gpm (gallons per minute) in order to feed the boilers, it was assumed that 40 gpm would be returned to the system as returned boiler feed. Pumping from other areas of the plant into the tank system is estimated to be 410 gpm maximum. Therefore, the estimated total venting by the tank system is 450 gpm (approximately 3,600 cfm). This rate can be shown to be an overestimate of normal venting based on standing and working losses as determined by AP-42. API Standard 2000 is inappropriate to determine a normal venting rate since this particular standard is used for sizing relatively inexpensive conservation vents and is not suitable for use in designing combustion control devices.
API Standard 2000 was consulted for use in determining emergency venting requirements for the tank system. Given the wetted surface area of the tanks, the following equation can be used to determine the emergency venting requirement in standard cubic feet per hour (SCFH):

\[ SCFH = 1107 \times F \times A^{0.82} \]

A is the wetted surface area up to 30 feet of the tank height, and it equals 3,299 square feet. F is an environmental factor taken from Table 4 of the Standard. From Table 4, credit is given to the fact that these are not bare metal tanks exposed directly to flames from the outside. Instead, these are double walled tanks that have an interstitial space of approximately 2-inches. This air space separates the inner tank and its contents from the outer tank and potential fire, thus providing effective insulation that prevents the waste tank from coming into direct contact with a fire. The thermal conductance provided by the outer tank shell and air space is less than 0.33 Btu/hour/square foot/degree F. Accordingly, the environmental factor F is equal to 0.025. The emergency venting equation is therefore solved as follows:

\[ SCFH = 1107 \times 0.025 \times 3299^{0.82} \]

Emergency Venting Required = 21,240 SCFH

Each tank system is equipped with a 4-inch diameter rupture disc. As determined by the equation above and the size of the rupture disc, the disc pressure setting is 0.5 psig to meet the venting requirement of 21,240 SCFH.

**D-2a(3) Diagram of Piping, Instrumentation, and Process Flow (40 CFR 270.16(d))**

A simplified process flow diagram for all the hazardous waste tanks is provided in Figure D-4. Piping, instrumentation, and process flow for each individual tank are diagramed in detail on the following figures:

<table>
<thead>
<tr>
<th>Tank</th>
<th>Figure</th>
<th>Drawing No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>64, 66</td>
<td>D-4</td>
<td>882907-002A</td>
</tr>
<tr>
<td>64, 66,69, unloading</td>
<td>D-3</td>
<td>29PID01-016</td>
</tr>
<tr>
<td>69</td>
<td>D-2</td>
<td>012903-069v-1 through 8</td>
</tr>
</tbody>
</table>
The tank feed system drawing was submitted as part of the application. An updated
drawing of the tank feed system showing all feed pumps from generator tanks will be maintained
as part of the operating record.

Instrumentation includes level sensors as described in Section D-2a. The instrument
outputs are monitored locally during transfers and daily inspections as described in D-2e and F-
2b(2), Attachments D and F, respectively. Process flow is described in Section D-2a.

D-2a (4) Ignitable, Reactive, and Incompatible Wastes (40 CFR 270.16(j), 264.17(b),
264.198, 264.199

Ignitable wastes may be managed in all tanks. Ignitable wastes are stored according to
NFPA 30 requirements. Closed tank pressure is controlled by rupture disks. Rupture disk
settings are 0.5 psig pressure and 5.5 inches water vacuum. Vertellus’ tanks are designed in
accordance with API 650 to withstand pressures of 2.5 psig and temperatures of 200°F. Each of
the tanks is fitted with vapor lines fed to a flare under negative pressure, well below the design
pressure. Tanks are heated for the purpose of reducing the viscosity of the liquid waste in the
tanks. Typically, temperatures above 70°F are adequate for this purpose. Operating
temperatures range between 70 and 100 degrees Fahrenheit, well within design temperature
ranges.

Reactive and/or incompatible wastes will not be managed in the tanks.

D-2b Existing Tank Systems
D-2b(1) Assessment of Existing Tank System Integrity (40 CFR 264.191, 270.16(a))

This assessment is required for existing tank systems which do not have secondary
containment meeting the requirements of 264.193. All of the subject tank systems that are at
least 15 years old have been retrofit with secondary containment designed to meet the
requirements of 264.193. Integrity assessments are included as Figures D-5 and D-6. Each
tank’s exterior moisture barrier consists of primer and paint. The December 4, 1997 report,
“Hazardous Waste Storage Tank Life-Span Assessment” (Life-Span report) indicated that carbon steel was rated “compatible” with Vertellus’ hazardous waste. This document is provided as Figure D-14. The report indicated a corrosion rate of less than 0.002 inches per year as “excellent”. The expected corrosion rate will be re-evaluated if there is a significant change in the waste stream as described in the WAP (Attachment C) or if inspections show an increasing rate of corrosion. The minimum thickness listed in Table 3 of the Life-Span report will be maintained. Any thickness measurements collected as a part of the facility’s existing mechanical integrity program will be maintained in the operating file.

D-2c New Tank Systems

D-2c(1) Assessment of New Tank System’s Integrity (40 CFR 264.192(a), 270.16(a) and (e))

Integrity assessment of tank 69 is included as Figure D-6. The tank’s exterior moisture barrier consists of primer and paint. The December 4, 1997 Life-Span report indicated that carbon steel was rated “compatible” with Vertellus’ hazardous waste. The report indicated a corrosion rate of less than 0.002 inches per year as “excellent”. The expected corrosion rate will be re-evaluated if there is a significant change in the waste stream as described in the WAP (Attachment C) or if inspections show an increasing rate of corrosion. The minimum thickness listed in Table 3 of the Life-Span report will be maintained. Tank wall thickness will be measured, recorded, and maintained as part of the operating record at any time it is necessary to enter a tank which has not been measured within the past five years. Any thickness measurements collected as a part the facility’s existing mechanical integrity program will be maintained in the operating file.

D-2c(2) Description of Tank System Installation and Testing Plans and Procedures (40 CFR 264.192(b) and (e), 270.16(f))

Tank 69 was inspected by an independent registered professional engineer prior to putting the tank into service. See Figure D-6 for the results of the inspection.
D-2d  Containment and Detection of Releases (40 CFR 264.193)

D-2d (1)  Plans and Description of the Secondary Containment System (40 CFR 261.193(b) through (f), 270.16(g))

D-2d (1) (a) Tank Age Determination (40 CFR 264.193(a), 270.16(g))

New inner primary tanks for tanks 64 and 66 were installed in 1988 within the existing tanks. The inner primary tank for tank 69 was installed in 1999.

D-2d (1)(b) Requirements for Secondary Containment and Leak Detection (40 CFR 264.193(b) and (c), 270.16(g))

Secondary containment systems have been retrofit to all the subject tank systems. The containment system types are summarized in Table D-2d (1)(b). The containment system assessments are summarized in Figure D-7 and Figure D-6. The assessments are certified by a registered professional engineer and provide an engineering evaluation of tank secondary containment. The following discussion indicates how these systems satisfy the requirements of 264.193 (b) and (c).

<table>
<thead>
<tr>
<th>Tank No. or Component</th>
<th>Secondary Containment</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>Double-walled tank</td>
</tr>
<tr>
<td>66</td>
<td>Double-walled tank</td>
</tr>
<tr>
<td>69</td>
<td>Double-walled tank</td>
</tr>
<tr>
<td>Welded connections</td>
<td>Exempt with daily inspection</td>
</tr>
<tr>
<td>Non-welded connections</td>
<td>External liner</td>
</tr>
</tbody>
</table>

Double walled tanks have an outer shell meeting the same design as the inner lining and constructed of the same material type and thickness. The containment shell is placed upon an existing foundation that has supported the subject tank system. The double-walled tanks are equipped with a bottom containment shell and drain nozzles. The drains are inspected daily for
the presence of any release of hazardous waste as described under F-2b(2)(d). The inspector will place a container underneath the valve to prevent any release to the environment. Plans showing details of the double-walled tank construction are provided in Figures D-1 and D-2.

Spilled or leaked waste accumulating in any of the containment systems will be removed within 24 hours of detection. Liquid wastes can be removed using the system gravity drain or by pumping or vacuuming from the sump or low spot. Small amounts of liquid waste contained with absorbents will be manually removed by shoveling. Spill containment measures are described in the Contingency Plan of this permit application. Spilled and leaked material will be managed as hazardous waste using the onsite management capabilities described in this permit, or using an offsite contractor or TSD facility that is permitted to handle the subject material.

**D-2d (1)(c) Requirements for an External Liner, Vault, Double-walled Tank, or Equivalent Device (40 CFR 264.193(d) and (e), 270.16(g))**

The secondary containment systems for the subject tank systems will satisfy the specific requirements for each type of containment, as required at 40 CFR 264.193(e). Double-walled tanks have been designed as an integral structure, as indicated on the plans referenced in D-2d(1)(b) above. These tanks have external corrosion protection, in the form of primer and paint, and are compatible with the wastes to be handled as described in D-2a. Double-walled tanks have a leak detection system capable of detecting a release within 24 hours, as described in D-2d(1)(b) above. The outer shell bottom of the tanks are protected from corrosion by providing a water seal at the tank bottom and concrete foundation interface.

All coatings applied to any tank system secondary containment are inspected daily. If any inspection reveals that the integrity of the coating is compromised (e.g., separated from the substrate, visibly abraded, cracked, etc.), the coating shall be repaired or replaced with a functionally equivalent coating within fifteen (15) days weather permitting. The nature of the damage to the coating and schedule for repairs or replacement shall be maintained in the facility’s operating record.
Coatings applied to any secondary containment system must be compatible with the waste. The information as to the type of coating being used will be provided to IDEM. Use of an alternative coating must be approved by IDEM.

**D-2d(1)(d) Secondary Containment and Leak Detection Requirements for Ancillary Equipment (40 CFR 264.193(f) and 270.16(g))**

The three tanks are now within a concrete pad that encompassed the entire back tank farm and associated ancillary equipment. The concrete pad was installed as a part of the Superfund remedy for the site. Ancillary equipment associated with the subject tank systems includes piping, pumps, valves, flanges, and other connections. Generally, this equipment is welded and above ground piping and connections are inspected daily. Pumps are located inside the secondary containment systems. Secondary containment for ancillary equipment has been inspected and certified by a registered professional engineer, as documented in Figures D-5 and D-6. This certification includes an engineering evaluation of the foundation.

There are three separate containment systems for transfer pumps at the tanks (64, 66, and 69). Plans showing details of the pump containment systems are provided in the Figure D-9 and Figure D-8 (Tank 64, 66). All of the systems employ a concrete base that is designed to support the load of the ancillary equipment and is installed on a foundation of compacted fill sufficient to resist settlement, compression, or uplift. The containment of pumps consists of a chemical resistant epoxy coating on the concrete base, and a sump to collect accumulated liquids. Sumps are inspected daily for the presence of any release of hazardous waste, as described under Section F-2b(2)(d) in Attachment F.

Non-welded connections located outside the above containment systems are equipped with drip pans, and covers for outside areas, for secondary containment. The drip pans consist of 10-gauge carbon steel type A-36 with welded seams, painted with alkyd resin primer and topcoat. The drip pans are used at valves for tanks 64, and 66. The pans are inspected daily for the presence of any release of hazardous waste, as described under F-2b(2)(d). Plans showing details of the steel pans are provided in Figures D-10 and D-11.
Vertellus has included the requirements for 40 CFR 264 Subpart BB in the facility-wide Leak Detection and Repair (LDAR) program. Equipment identification, monitoring data, and repair data is maintained onsite in a LDAR database system. Each piece of equipment is assigned a tag/identification number along with location, type, and service. The method of compliance is visual inspections along with equipment monitory using Reference Method 21 as required in 40 CFR 264.1063. Monitoring data is collected by using an electronic data logger and the data is downloaded daily into the databases by the monitoring technician. Work orders for all leaks found by monitoring or by visual inspection are entered into the maintenance work order system so that repairs are completed in the timeframes specified in 40 CFR 264 Subpart BB.

Spilled or leaked waste accumulating in any of the containment systems will be removed within 24 hours of detection. Liquid wastes can be removed by pumping or vacuuming from the sump or low spot, or by absorbing and shoveling out of the containment area. Spill containment measures are described in the Contingency Plan, of this permit application. Spilled and leaked material will be managed as hazardous waste in accordance with permitted onsite management capabilities and using approved offsite TSD facilities. Containment systems located outside covered structures will be managed to remove accumulated precipitation within 24 hours of detection. After a waste determination in accordance with the waste analysis plan shows that it does not contain hazardous waste, accumulated precipitation will be drained or pumped to the plant sewer system, unless there is visible evidence of contamination by a simultaneous leak or spill of hazardous waste. In the latter situation, all accumulated liquid in the containment system will be managed as hazardous waste, as described above.

The secondary containment system is provided with a leak detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system daily.
Exterior containment systems will be decontaminated after removal of leaked or spilled material as described in the Contingency Plan. This decontamination ensures that accumulated precipitation can be sewered in accordance with Vertellus’ wastewater treatment discharge permit. The decontamination material is managed as a hazardous waste.

The containment volume of each pump pad at tanks 64 and 66 is 2,340 gallons. The containment volume of the pump pad at tank 69 is 7,001 gallons. Feed rates to the boilers are approximately 400 to 700 gallons per hour. Tank lines and pumps are inspected during transfers between tanks to detect any sudden loss of waste. Tank levels are monitored in the control room and ancillary equipment is inspected during non-transfer periods. Each pump containment system is designed to contain routine spills or leaks that may originate from the pump.

The containment volume of the loading/unloading area containment is 7,001 gallons (12’ x 39’ x 2’ x 7.48 gallons/cubic foot). Maximum tanker capacity is 5,000 gallons, well within the containment capacity.

**D-2(e) Controls and Practices to Prevent Spills and Overflows (40 CFR 264.194(a) and (b), 264.195, 270.16(i))**

Overfill prevention and maintenance of freeboard are discussed in the description of feed systems, D-2d above.

Vertellus employs spill prevention controls consisting of check valves in transfer piping and dry disconnect couplings at transfer pumps. Vertellus’ spill prevention practices include the inspection procedures described in Attachment F, pumping to one tank from only one source at a time, and the following Standard Operating Procedure for pumping material between tanks (fixed or portable):

1.) Before pumping of material begins:
   a. Check personal safety equipment regulations for proper safety equipment to be worn.
b. Check and record gauge on sending tank.
c. Check and record gauge on receiving tank.
d. Check that receiving tank will hold the amount of material which will be moved.
e. Walk transfer line from pump to see that valves to receiving tank are open and all other valves are closed.
f. Check that valves on bottom (outlet) of receiving tank are closed.
g. Walk line from pump to see that valves on suction line from sending tank are open and all other valves are closed.
h. While steaming look for leaks.

2. Begin pumping material:
   a. Open outlet valve on sending tank.
   b. Check receiving tank to be sure that material is going into the tank. Listen to the tank. Do not rely on change in gauge.
   c. Walk lines from sending tank to receiving tank to check for leaks. If any leaks are discovered, immediately stop pumping. Check lines, close valves, and report the situation to foreman/supervisor.
   d. Repeat line check periodically during pumping period.

3. After pumping has finished and transfer is complete:
   a. Close valve on outlet of sending tank.
   b. Clean lines from sending to receiving tank.
   c. Shut off pump.
   d. Close all valves on line from pump to sending tank.
   e. Close all valves on line from pump to receiving tank.
   f. While steaming look for leaks.
D-9 Boiler and Industrial Furnaces (BIFs)

There are three boilers that burn hazardous waste and are subject to the Boiler and Industrial Furnace (BIF) requirements of 40 CFR Part 266, Subpart H and the Hazardous Waste Combustor (HWC) Maximum Achievable Control Technology (MACT) requirements of 40 CFR Part 63, Subpart EEE. The HWC MACT requirements are not applicable to this permit renewal application.

The HWC MACT regulations at 40 CFR 63.1217(f) state that area sources of hazardous air pollutants (HAPs) have the option of complying with the HWC MACT standards for specified pollutants or the RCRA Boiler and Industrial Furnace (BIF) standards for hazardous waste burning boilers. The emission standards associated with this option are the standards for semi-volatile metals (SVM) (i.e., cadmium and lead), low volatile metals (LVM) (i.e., chromium), hydrogen chloride and chlorine gas (HCl/Cl₂), and particulate matter (PM). As an area source of HAPs, Vertellus has elected to comply with the BIF standards for SVM, LVM, HCl/Cl₂, and PM (40 CFR 266.105 for PM, 40 CFR 266.106 for metals, and 40 CFR 266.107 for HCl/Cl₂). However, compliance with the applicable emission limits and feed rate limits for these HAPs has been demonstrated for Boilers 70K, 30K, and 28K under the HWC MACT standards and the BIF requirements.

Compliance with the emission standards for mercury and carbon monoxide (CO) have been demonstrated under the HWC MACT requirements and are incorporated into the facility’s Title V Air Permit. Therefore, pursuant to 40 CFR 266.100(b), 270.22, and 270.66, the BIF standards for mercury and CO are no longer applicable to Boilers 70K, 30K, and 28K.

Detailed Engineering Description

This section provides descriptions of the equipment and systems associated with Boilers 70K, 30K, and 28K. The equipment and systems are described in details adequate to provide an understanding of the system design and operation, and to satisfy the requirements of 40 CFR
270.66(c)(3). The process flow diagrams for the boilers are provided in Figure D-16 and the piping diagrams are included in D-17.

**Boiler 70K**

The 70K boiler was manufactured by the Murray Iron Works Company. The boiler is a model MCF4-64 and is of the typical water-tube configuration. The boiler has a maximum steam production rating of 70,000 pounds per hour at a maximum operating pressure of 300 psig. The boiler is rated at a maximum thermal input of 91.8 million Btu's per hour. The boiler is operated under positive pressure and has sealed wall construction to eliminate fugitive emissions from the combustion chamber. Four rotary soot blowers are installed in the boiler to prevent soot and slag buildup on the outside of the boiler tubes and the economizer. The soot blowers are generally operated four times per day.

**Boiler 30K**

The 30K boiler was manufactured by the Babcock and Wilcox Company. The boiler is a type FM and is of the typical water-tube configuration. The boiler has a maximum steam production rating of 30,000 pounds per hour at a maximum operating pressure of 250 psig. The boiler is rated at a maximum thermal input of 39.3 million Btu's per hour. The boiler is operated under positive pressure and has sealed wall construction to eliminate fugitive emissions from the combustion chamber. Two manual rotary soot blowers are installed in the boiler to prevent soot and slag buildup on the outside of the boiler tubes and the economizer. The soot blower is generally operated four times per day.

**Boiler 28K**

The 28K boiler was manufactured by the Babcock and Wilcox Company. The boiler is a type FM and is of the typical water-tube configuration. The boiler has a maximum steam production rating of 28,000 pounds per hour at a maximum operating pressure of 250 psig. The boiler is rated at a maximum thermal input of 36.8 million Btu's per hour. The boiler is operated under positive pressure and has sealed wall construction to eliminate fugitive emissions from the
combustion chamber. Two manual rotary soot blowers are installed in the boiler to prevent soot and slag buildup on the outside of the boiler tubes and the economizer. The soot blower is generally operated four times per day.

**Feed Systems**

Waste fuel is fed to the boilers from inventory tanks 64, 66, and 69. The waste fuel is recirculated from the tanks to the boilers and back to the inventory tanks. Near the boilers, a slip stream is taken from the recirculation line and fed to the boilers. This slip stream is routed through a mass flow meter and control valve.

The boilers are capable of burning natural gas, waste fuel, and process gas. Process gas is never burned with the waste fuel stream. Natural gas is always burned during hazardous waste operations. This allows for smooth operations when switching from hazardous waste being feed to the boiler(s) to burning natural gas only in the boiler(s).

**D-9a Waivers/Exemptions: 40 CFR 270.22(a)(2)(i), 266.104(a)(4), 266.110**

Vertellus has included the applicable information required under D-9a(1) through D-9a(5).

**D-9a(1) Waiver of DRE Trial Burn for Boilers: 40 CFR 270.22(a)(2)(i), 266.104(a)(4), 266.110**

This section is no longer applicable, since it is covered under Vertellus’ Title V permit for the HWC MACT requirements.

**D-9a(2) Low Risk Waste Exemption: 40 CFR 270.22(a)(2)(ii), 266.104(a)(5), 266.109(a)**

Vertellus is not seeking a low risk waste exemption.
D-9a(3) Waiver of Particulate Matter Standard: 40 CFR 270.22(a)(4), 266.109(b)

Vertellus is not seeking a waiver of the particulate matter standard.

D-9a(4) Waiver of Trial Burn for Metals: 40 CFR 270.22(a)(3), 266.106(b), 266.106(e)

Vertellus complies with 40 CFR 266.106(e). As a result of the site specific risk assessment, EPA modified the Adjusted Tier I Feed Rate Screening Limits to reduce the risk from site emissions.

The information required by 40 CFR 270.22(a)(3)(iv) and (v) is addressed in the site specific risk assessment. Detailed information is provided in the Revised Certification of Compliance (RCOC)(January 2000), Air Dispersion Modeling Protocol (July 1999), Phase I Risk Assessment Protocol (August 1999), and the Risk Assessment (January 2001).

The boilers also burn natural gas. As provided in the approved trial burn plans the contribution to the metal(s) concentration is assumed to be zero. As described in the WAP Section C-1b, fuel oils (#1-6) to be burned in the boilers would be mixed with the hazardous waste in tanks prior to burning.

The concentration of each metal, historical average, and statistical upper limit is provided in Table C-2 of Attachment C.

The Adjusted Tier I Feed Rates will not be exceeded during the averaging period by calculating the maximum hazardous waste feed rate for each metal and comparing it to the maximum hazardous waste feed rate demonstrated for 40 CFR 63 Subpart EEE (see D-9d). Section C-2g of Attachment C details specifically how the UTL limit of each metal is used to calculated the hazardous waste feed rate limit.
**D-9a(5) Waiver of Trial Burn for HCl/Cl₂: 40 CFR 270.22(a)(5), 266.107(b), 266.107(e)**

The concentration of HCl/Cl₂, historical average, and statistical upper limit is provided in Figure C-6 of Attachment C.

The adjusted Tier I feed rates will not be exceeded during the averaging period by calculating the maximum hazardous waste feed rate for HCl/Cl₂ and comparing it to the maximum hazardous waste feed rate demonstrated for 40 CFR 63 Subpart EEE (see D-9d). Section C-2g of Attachment C details specifically how the UTL limit of HCl/Cl₂ is used to calculated the hazardous waste feed rate limit.

The RCOC contains the details for deriving the Adjusted Tier I Feed Rate Screening Limits for HCl/Cl₂. The feed rate screening limits are calculated as follows:

\[
Adjusted \ Tier \ I \ Limit \ (g/hr) = \frac{RAC \ (\mu g/m^3)}{Dilution \ Factor \ (\mu g/m^3/g/s)} \times 3600 \ seconds \times \frac{1}{1 \ hour}
\]

The Reference Air Concentration (RAC) values for hydrogen chloride and chlorine (free) are obtained from 40 CFR Part 266 Appendix IV. The Adjusted Tier I Limits, RAC, and dilution factors for the adjusted Tier I parameters are presented in Table D-9a(5) 1.

<table>
<thead>
<tr>
<th>Table D-9a(5) 1</th>
<th>Adjusted Tier I Metal Feed Rate Screening Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter</strong></td>
<td><strong>RAC (µg/m³)</strong></td>
</tr>
<tr>
<td>Chlorine (free)</td>
<td>0.4</td>
</tr>
<tr>
<td>Hydrogen chloride</td>
<td>7</td>
</tr>
<tr>
<td>Total Chlorine</td>
<td>7.4</td>
</tr>
<tr>
<td>Dilution Factor (µg/m³/g/s)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

A Demonstration of Similarity for Boilers 28K and 30K was submitted to the EPA on November 20, 1998. This document compared the feed streams, design, operations, and maintenance of these two units and determined that they were similar. The EPA approved the determination with the stipulation that the Boiler 28K limits would be three percent lower than
the established Boiler 30K limits. Therefore, the Boiler 30K values are adjusted by three percent to arrive at the Boiler 28K values.

The boilers also burn natural gas. As provided in the approved trial burn plans the contribution to the HCL/Cl\textsubscript{2} concentration is assumed to be zero. As described in the WAP Section C-1b, fuel oils (#1-6) to be burned in the boilers would be mixed with the hazardous waste in tanks prior to burning.

**D-9b Pretrial Burn Requirements for New BIFs: 40 CFR 270.66(b)(1), 266.102(d)(4)(i), 266.102(e)**

Vertellus currently operates Boiler 70K, Boiler 30K, and Boiler 28K in accordance with the standards for permitted facilities, and the boilers are not considered new boilers.

**D-9c Trial Burn Plan Requirements for All BIFs: 40 CFR 266.102(d)(4)(ii), 270.66(b)(2), (c) and (e)**

Pursuant to the HWC MACT regulations in 40 CFR Part 63 Subpart EEE, Vertellus submitted a combined Comprehensive Performance Test (CPT) Plan for Boilers 70K, 30K, and 28K. The CPT Plan was submitted to and approved by the Indiana Department of Environmental Management (IDEM).

The CPT Plan presented the procedures for demonstrating compliance with the applicable HWC MACT emission standards during the CPT. The CPT Plan also described information collected during the CPT that was used to demonstrated compliance with the applicable BIF standards contained in the existing RCRA permit. Therefore, the HWC MACT CPT Plan satisfied the RCRA Trial Burn Plan requirements, and it was submitted in lieu of a separate Trial Burn Plan for Boilers 70K, 30K, and 28K.
D-9d Trial Burn Results: 40 CFR 270.66(d) and (f), 270.22(a)(6)

The CPT was designed and conducted to satisfy the HWC MACT standards in 40 CFR Part 63 Subpart EEE and the RCRA BIF Trial Burn requirements in 40 CFR 270.66. The CPT was completed in February 2010, and the results are documented in the Notification of Compliance (NOC) Report that was subsequently submitted to the IDEM and EPA. A copy of the NOC is included with this permit renewal application as Figure D-15.

The HWC MACT regulations at 40 CFR 63.1217(f) state that area sources of HAPs have the option of complying with the HWC MACT standards for specified pollutants or the RCRA BIF standards for hazardous waste burning boilers. The emission standards associated with this option are the standards for SVM (i.e., cadmium and lead), LVM (i.e., chromium), HCl/Cl₂, and PM. As an area source of HAPs, Vertellus has elected to comply with the BIF standards for SVM, LVM, HCl/Cl₂, and PM. The results of the CPT presented in the NOC demonstrate compliance with the emission limits and feed rate limits for these HAPs under the HWC MACT standards and the BIF requirements.

Compliance with the emission standards for mercury and carbon monoxide (CO) have been demonstrated under the HWC MACT requirements and incorporated into the facility’s Title V Air Permit. Therefore, pursuant to 40 CFR 266.100(b), 270.22, and 270.66, the BIF standards for mercury and CO are no longer applicable to Boilers 70K, 30K, and 28K.

Proposed operating limits for the hazardous waste permit renewal are included in the NOC Report and are summarized in Tables D-9d-1 through D-9d-3. However, the feed rate limits presented in the NOC for ash, cadmium, lead, chromium, and chlorine are not being proposed for the permit renewal, because the current risk-based limits under RCRA are being retained. The CPT data presented in the NOC for Boilers 70K, 30K, and 28K demonstrate compliance with the applicable emission limits and feed rate limits for these HAPs under the HWC MACT standards and BIF requirements.
### Table D-9d-1

**Summary of Proposed Permit Limits for Boiler 70K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Permit Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Waste Feed Rate, HRA, Maximum (lb/hr)</td>
<td>4,018</td>
</tr>
<tr>
<td>Combustion Chamber Temperature, HRA, Minimum (°F)</td>
<td>1,258</td>
</tr>
<tr>
<td>Steam Production Rate, HRA, Maximum (Klb/hr)</td>
<td>70.35</td>
</tr>
<tr>
<td>Steam Production Rate, HRA, Minimum (Klb/hr)</td>
<td>36.34</td>
</tr>
<tr>
<td>Total Chlorine/Chloride Feed Rate, HRA, Maximum (g/hr)</td>
<td>4,300</td>
</tr>
<tr>
<td>Ash Feed Rate, HRA, Maximum (g/hr)</td>
<td>4,926</td>
</tr>
<tr>
<td>Metal Feed Rates, HRA, Maximum (g/hr)</td>
<td>See section C-2g</td>
</tr>
</tbody>
</table>

### Table D-9d-2

**Summary of Proposed Permit Limits for Boiler 30K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Permit Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Waste Feed Rate, HRA, Maximum (lb/hr)</td>
<td>2,017</td>
</tr>
<tr>
<td>Combustion Chamber Temperature, HRA, Minimum (°F)</td>
<td>1,252</td>
</tr>
<tr>
<td>Steam Production Rate, HRA, Maximum (Klb/hr)</td>
<td>32.54</td>
</tr>
<tr>
<td>Steam Production Rate, HRA, Minimum (Klb/hr)</td>
<td>17.53</td>
</tr>
<tr>
<td>Total Chlorine/Chloride Feed Rate, HRA, Maximum (g/hr)</td>
<td>2,625</td>
</tr>
<tr>
<td>Ash Feed Rate, HRA, Maximum (g/hr)</td>
<td>3,045</td>
</tr>
<tr>
<td>Metal Feed Rates, HRA, Maximum (g/hr)</td>
<td>See section C-2g</td>
</tr>
</tbody>
</table>

### Table D-9d-3

**Summary of Proposed Permit Limits for Boiler 28K**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Permit Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Waste Feed Rate, HRA, Maximum (lb/hr)</td>
<td>1,987</td>
</tr>
<tr>
<td>Combustion Chamber Temperature, HRA, Minimum (°F)</td>
<td>1,252</td>
</tr>
<tr>
<td>Steam Production Rate, HRA, Maximum (Klb/hr)</td>
<td>33.74</td>
</tr>
<tr>
<td>Steam Production Rate, HRA, Minimum (Klb/hr)</td>
<td>15.69</td>
</tr>
<tr>
<td>Total Chlorine/Chloride Feed Rate, HRA, Maximum (g/hr)</td>
<td>2,550</td>
</tr>
<tr>
<td>Ash Feed Rate, HRA, Maximum (g/hr)</td>
<td>2,954</td>
</tr>
<tr>
<td>Metal Feed Rates, HRA, Maximum (g/hr)</td>
<td>See section C-2g</td>
</tr>
</tbody>
</table>
D-9e Post-Trial Burn Requirements of New BIFs: 40 CFR 270.66(b)(3)(ii), 266.102(d)(4)(iii), 266.102(e) 

Not applicable.

D-9f Data in Lieu of a Trial Burn: 40 CFR 270.22(a)(6), 270.66(c)(3)

Pursuant to 40 CFR 270.22(a)(6), Vertellus is requesting use of the 2009 stack test data to show compliance with the existing permit limits. The NOC presents the results of the stack tests conducted for Boilers 70K, 30K, and 28K. A copy of the NOC is included in Figure D-15.

D-9g Alternate Hydrocarbon Limit for Industrial Furnaces with Organic Matter in Raw Materials: 40 CFR 270.22(b), 266.104(f)

Not applicable.

D-9h Alternative Metals Implementation Approach: 40 CFR 270.22(c), 266.106(f)

Not applicable.

D-9i Monitoring Requirements: 40 CFR 266.102(e)(6), 266.102(e)(8)

Vertellus complies with the metals, HCl/Cl₂, and ash feed rates by monitoring the concentrations of these constituents and the hazardous waste feed rate to the boilers. As detailed in Section C-2g, the statistical average of each constituent is used to determine the maximum hazardous waste feed rate. As long as the rolling hourly average (RHA) of the hazardous waste feed, described in Section D-9j, does not exceed the calculated maximum hazardous waste feed rate, then compliance with the feed rate limits for metals, HCl/Cl₂, and ash has been demonstrated.
D-9j Automatic Waste Feed Cut-Off System: 40 CFR 270.22(d), 266.102(e)(7)(ii)

The rolling hourly average (RHA) of the hazardous waste feed rate is used to control metal, hydrochloric acid, chlorine, and particulate matter emissions. Section C-2g of the Waste Analysis Plan in Attachment C, provides the details for calculating the hazardous waste feed rates. The automatic waste feed cut-off (AWFCO) system is incorporated into the operating system of each boiler. The primary function of the AWFCO system is to prevent the feeding of hazardous waste if the hazardous waste feed rate is outside the allowable limit for each boiler.

The AWFCO system consists of a flow meter, a continuous monitoring system (CMS), and an automatic shutoff valve. The AWFCO system is designed to automatically and completely stop the hazardous waste feed to the boiler when the hazardous waste feed rate exceeds its associated limit. The AWFCO system will not allow waste feeds to be initiated or resumed unless the specified parameter set points are met.

The CMS monitors the RHA of the hazardous waste feed rate. The RHA of the hazardous waste feed rate is established by calculating the 1-minute average hazardous waste feed rate from 15 second instantaneous hazardous waste feed rate values during the minute. The 1-minute average is then added to the fifty nine previous 1-minute averages to calculate the RHA of the hazardous waste feed rate. If the RHA of the hazardous waste feed rate exceeds the established set point for the boiler, an electronic signal is sent to the automatic shutoff valve to close. The CMS records both the 1-minute average and the RHA every minute. This information is stored electronically on a computer server.

D-9k Direct Transfer: 40 CFR 266.111, 270.22(e), Part 264 Subparts I and J

Vertellus does not use transfer operations to feed hazardous waste from transport vehicles directly to the boilers. Therefore, information documenting conformance with the direct transfer requirements is not provided.
D-91 Bevill Exclusion: 40 CFR 266.112, Part 266 Appendices VII and IX, 270.22(f)

Vertellus is not claiming that their boiler residues are excluded from regulation under the provisions of 40 CFR 266.112. Therefore, information demonstrating conformance with these provisions is not provided.
Figure D-1

Drawing 882907-132
Figure D-2

Drawings 012903-69v-1 through 012903-69v-8
SUPPLY 4 PIECES 3" X 3" 3/8" ANGLE X 12" LG.

NOTE: FURNISH AND INSTALL EMERGENCY VESSELS.
Figure D-3

Drawing 29PID01-016
Figure D-4

Drawing 882907-002A
Figure D-5
Final Report

Tanks 64 and 66 Tank Certifications
VFC # 70117542 Page 40
&
VFC # 8009660 Page 9
Figure D-7

Tanks 64 and 66 Containment Assessment Report
VFC #70117542 Page 129
Figure D-8

Drawing 882907-502
Figure D-9

Drawing 972901-500
Figure D-10

Drawing 882907-303
Figure D-11

Drawing 882907-304
Figure D-12

Drawing Certification Statement
VFC # 70117542
Figure D-13

Flare Information

VFC # 70117542 Page 148
Figure D-14

Hazardous Waste Storage Tank Life Span Assessment

VFC # 70117542   Page 160
Figure D-15

Notification of Compliance Report
VFC # 80335350
Figure D-16

Process Flow Diagrams for Hazardous Waste Boilers
Figure D-17

Piping Diagrams for Hazardous Waste Boilers
ATTACHMENT F
PROCEDURES TO PREVENT HAZARDS
ATTACHMENT F

PROCEDURES TO PREVENT HAZARDS
ATTACHMENT F

PROCEDURES TO PREVENT HAZARDS

Information provided in this section includes security procedures, inspections, and preparedness and prevention procedures. This material addresses the requirements under 329 IAC 3.1.

F-1 Security (40 CFR 264.14, 270.14(b)(4))

F-1a Security Procedures and Equipment (40 CFR 264.14, 270.14(b)(4))

In addition to the general security provisions of fencing, gates, and guards, discussed below, several features contribute to the safety and security of the facility. The facility is sufficiently lighted throughout, and guards and supervisors are equipped with hand-held, two-way radios to report conditions immediately. The base station for the facility paging system is located in the guardhouse at the Oak Park Main Gate (Tibbs Avenue). An internal telephone system with phones in most plant areas is provided. This same system is used for communication outside the plant. The Vertellus facility is equipped with both a 24-hour surveillance system and a barrier and means to control entry. Tanks 64, 66, 69 and boiler 28K, 30K and 70K are located on the Oak Park portion of the facility.

F-1a(1) 24-Hour Surveillance System (40 CFR 264.14(b)(1))

Security is maintained by a staff of security guards, who primarily monitor entry and exit from the entire facility and provide security measures within the plant premises. The main entrance gate at the east end of Oak Park (Tibbs Avenue entrance) is operated by remote control from the guardhouse. The exit/entrance gates at the south end of Oak Park and north end of Maywood are operated by remote control from either the Maywood guardhouse or the main gate guardhouse. The main gate guardhouse is occupied respectively by two guards 24 hours a day, 7 days a week throughout the year. Guards normally work a 12-hour shift. One of the guards stationed at Oak Park makes a check of the facility at scheduled intervals while the other remains in the guardhouse.
F-1a (2)(a) Barrier (40 CFR 264.14(b)(2)(i))

The Oak Park plant is enclosed with a 6-foot high chain-link fence, topped with barbed wire. A 6-foot high chain-link fence with barbed wire encloses the south end of the Maywood site. There are gates for railroad access on the west side of the Oak Park Plant that are normally locked, in addition to south and east gates that are controlled by security. There is a gate for railroad access in the southwest corner of the Maywood plant that is normally locked, and also a gate on the east side of the Maywood plant (Tibbs Avenue) that is normally locked, in addition to the north gate that is controlled by security. All locked gates can be opened by security personnel.

F-1a(2)(b) Means to Control Entry (40 CFR 264.14 (b)(2)(ii))

As stated in Section F-1a(1), entry to the facility is controlled by guards. All company employees and designated contractors have been issued identification badges which are color-coded to denote classification of employees. The identification badges are keys for access into the facility at all times by swiping them at the control pads. This maintains a log of all employees on-site at anytime during the day, since upon exiting the facility the employee is also required to log out using their identification badges at the control pads.

Visitors and non-badge contractors entering the plant must sign a log sheet and obtain visitor passes. All visitors are required to have an escort. All vehicles entering the plant must obtain a vehicle permit from the guard or must have company identification on the outside of the vehicle and must sign the vehicle in and out each time it passes through the gate. The guard is required to check all riders in a vehicle and verify their credentials.

F-1a(3) Warning Signs (40 CFR 264.14(c))

Signs which are legible from a distance of 25 feet are posted at the fence gates and several other fence locations around the facility; these signs are visible from all angles of approach, and bear the legend “Danger-Unauthorized Personnel Keep Out”. In addition, this is a smoke free facility and “No Smoking” signs are posted at the entry gates to the facility.
F-2 Inspection Schedule (40 CFR 264.15, 270.14(b)(5))

F-2a General Inspection Requirements (40 CFR 264.15(a) and (b), 264.33, 270.14(b)(5))

Vertellus conducts inspections of monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards. Personnel are trained in the types of problems to look for in conducting these inspections. The following table lists the equipment to be inspected, the frequency of the inspection, and the type(s) of problem(s) to look for during the inspection.

Table of Inspection Requirements

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Frequency</th>
<th>Types of Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Shower</td>
<td>Weekly</td>
<td>Working or Not Working</td>
</tr>
<tr>
<td>Eye Wash</td>
<td>Weekly</td>
<td>Working properly</td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Weekly</td>
<td>Working properly</td>
</tr>
<tr>
<td>Fire Extinguisher</td>
<td>Weekly</td>
<td>Present and in good working order</td>
</tr>
<tr>
<td>Emergency Spill Kits</td>
<td>Weekly</td>
<td>All items accounted for per each individual inspection form</td>
</tr>
<tr>
<td>Tank Labels</td>
<td>Daily</td>
<td>Present and legible</td>
</tr>
<tr>
<td>Tank Condition</td>
<td>Daily</td>
<td>Signs of corrosion or leaking, water stops in good condition, outside of tank clean</td>
</tr>
<tr>
<td>Tank Secondary Containment</td>
<td>Daily</td>
<td>Material in the interstitial space</td>
</tr>
<tr>
<td>Ancillary Equipment</td>
<td>Daily</td>
<td>Signs of corrosion or leaking</td>
</tr>
<tr>
<td>Pumps</td>
<td>Daily</td>
<td>Signs of leaks</td>
</tr>
<tr>
<td>Pump Containment Pad</td>
<td>Daily</td>
<td>Cracks, gaps, or material on pad</td>
</tr>
<tr>
<td>Overfill Protection</td>
<td>Daily</td>
<td>High level alarm test, auto shutoff valve working properly</td>
</tr>
<tr>
<td>Surrounding Area</td>
<td>Daily</td>
<td>Area clean of debris and material</td>
</tr>
</tbody>
</table>

Completed inspection records will be maintained at the facility for at least three years after the date of the record. Examples of inspection forms are provided in Figure F-1.

F-2a (1) Types of Problems (40 CFR 264.15(b)(3))

Types of problems are listed in the schedule in section F-2a. The items listed are considered important because of their role in preventing, detecting, or responding to environmental or human health hazards.
F-2a (2) Frequency of Inspection (40 CFR 264.15(b)(4))

Inspections are conducted according to the schedule listed in section F-2a. Safety inspection frequencies are based on the rate of possible deterioration of equipment; including the manufacturer’s recommendations and applicable codes, and the possibility of an environmental or health hazard if the subject incident goes undetected between inspections.

F-2b Specific Process Inspection Requirements (40 CFR 264.15(b)(4), 270.14(b)(5))

F-2b(2) Tank Inspection (40 CFR 264.195)

Hazardous waste management tanks are inspected daily. Each inspector receives specific field training by a training instructor before commencing inspection responsibilities. This training, along with written inspection procedures and the inspection sheets, some of which require specific “OK” or “NG” answers, provide the necessary background for inspectors to judge the condition of equipment or structures as “acceptable” or “unacceptable.”

Information requested on the form includes the inspector’s name, date and time of inspection, status of items inspected, and additional notes, which include date and nature of repairs, if necessary. Items to be inspected are included on the report forms to serve as a reminder to the inspector and to ensure a complete inspection. The inspector is required to check the status of each item on the report and indicate its condition. If the condition of one of the items is unacceptable, complete information is recorded regarding remedial action taken and the date such action is completed. Inspection plan includes:

1. Daily testing of the high level alarms.
2. Level gauges will be maintained per the manufacturer’s specifications.
3. Alarms are monitored daily.
4. Double walled tanks interstitial spacing must be inspected daily. When opening the valve to check for any leaks, a container must be placed underneath the valves to prevent any release to the environment.
F-2b(2)(a) Tank System External Corrosion and Releases (40 CFR 264.195(b)(1))

The tank systems are inspected daily for external corrosion. The base of the tank is inspected daily for evidence of any waste released to the environment. The secondary containment is inspected daily for evidence of a release from the primary tank.

F-2b(2)(b) Tank System Construction Materials and Surrounding Area (40 CFR 264.195(b)(3))

The containment systems and accessible areas immediately surrounding the tank systems are inspected daily for cracks, erosion, or evidence of waste release. These inspections include the condition of vinyl or epoxy coatings. The integrity of the coating is compromised if it is separated from the substrate, visibly abraded, cracked or otherwise obviously harmed.

F-2b(2)(c) Tank System Overfilling Control Equipment (40 CFR 264.195(a))

The overfill control equipment, including tank gauges, overflow lines, high level alarms, and automatic shutoff valves, are inspected daily for proper operation. The inspector determines the type of material in the tank by reviewing the operating log for the tank. The inspection sheet in Figure F-3 shows the following items addressing these inspections: item 7 on sheet A6. Procedures for testing high level alarms are provided in section D-2a (2) of Attachment D.

F-2b(2)(d) Tank System Monitoring and Leak Detection Equipment (40 CFR 264.195(b)(2))

Boiler operators check level gauges monthly by comparing physical outages with control box meters. If a discrepancy is found, an instrumentation technician is employed to reset the gauge. Level gauges that cannot be recalibrated will be replaced.

Leak detection is accomplished by daily inspections of the tank containment systems ancillary equipment. The double-walled tanks are inspected daily by opening valves. During this inspection, a container is held underneath the valves to contain any leaks accumulated in the outer shell. Containment systems are described in detail in Attachment D. Each system is inspected for evidence of any waste release or accumulated
precipitation. The inspection sheet in Figure F-1 shows the following items addressing these inspections: items 3 and 5 on inspection sheet A6.

**F-2b(9) Boilers and Industrial Furnaces**

The inspection of Boilers 28K, 30K, and 70K and their associated equipment and systems is performed on a periodic basis. These inspections relate to each of the following areas:

- Structural and Operational Equipment; and

Each boiler’s structural and operational equipment is inspected daily for leaks, spills, fugitive emissions, and signs of tampering. The AWFCO systems are tested monthly.

The daily inspection forms include the inspector’s name, date and time of inspection, status of items inspected, comments, and date and nature of repairs, if necessary. Items to be inspected are included on the forms to serve as a reminder to the inspector and to ensure a complete inspection. The inspector is required to check the status of each item on the forms and indicate its condition. If the condition of any item is unacceptable, complete information is recorded regarding remedial actions taken and the date such action is completed.

The inspection form for the boiler structure and associated equipment is presented in Figure F-1. The form for the weekly safety equipment check is presented in Figure F-2.

AWFCO tests are performed monthly. The current procedure for conducting the AWFCO test is included in Figure F-3. The Boiler Operators are responsible for performing the AWFCO testing and for following the test procedure. Upon completion of the test, the operating data demonstrating the performance of the AWFCO systems is maintained electronically. If the AWFCO system does not function properly during the test, hazardous waste feeds to that boiler are halted until remedial actions are taken and testing of the AWFCO system is re-performed.

**F-3 Waiver or Documentation of Preparedness and Prevention Requirements (40 CFR 264.32(a) through (d), 270.14(b))**

**F-3a Equipment Requirements (40 CFR 264.32, 270.14(b))**

**F-3a(1) Internal Communications (40 CFR 264.32(a))**
Internal emergency communications are conducted by the public address system located in buildings and throughout the outside plant area. The base station for this system is located in the Oak Park Main Gate guardhouse. Communications between authorized emergency personnel are conducted by portable two-way radio as described in the Contingency Plan. Emergencies are also communicated using Emergency Telephones or the fire alarm system, both described in the Contingency Plan, and the plant telephone system.

**F-3a(2) External Communications (40 CFR 264.32(b))**

External emergency communications are conducted by telephone, by the incident commander (emergency coordinator) or his designee as indicated in the Contingency Plan. Telephones are located in all the buildings onsite. The nearest phone to tanks numbered 64, 66, and 69 is located in the building east of the tanks (Building 9 on Figure B-2). The nearest phone to Boilers 28K, 30K, and 70K is located in the control room directly adjacent to the boilers.

**F-3a(3) Emergency Equipment (40 CFR 264.32(c))**

The Vertellus facility is equipped with portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment. The emergency equipment is listed and described in the Contingency Plan.

**F-3a(4) Water for Fire Control (40 CFR 264.32(d))**

Water for fire control is supplied separately to the Maywood and Oak Park plants. The Oak Park plant has a supply loop fed from two mains, an eight inch main from Minnesota Street and a ten inch main from Tibbs Avenue. Supply pressure is maintained by a 750 gpm electric pump with two diesel pumps, 1,000 gpm and 1,500 gpm, for backup. The Maywood plant is fed by a ten inch main from Minnesota Street, using a 1,500 electric pump with a 1,500 gpm diesel pump for backup. Pressures and flow rates are checked as necessary to assure proper operation in the event of an emergency.

**F-3b Aisle Space Requirement (40 CFR 264.35)**
The Vertellus facility employs a network of paved roads to provide access to all process and storage areas, as shown in Attachment B, Figures B-1 and B-2. Unpaved areas are largely covered with gravel which will support traffic in an emergency. Roadways and aisles will be maintained unobstructed in an emergency using the procedures described in the Contingency Plan.

**F-4 Preventive Procedures, Structures, and Equipment (40 CFR 270.14(b)(8))**

**F-4a Unloading Operations (40 CFR 270.14(b)(8)(i))**

Unloading operations occur around the storage tanks as shown in Attachment B, Figure B-2 (Drawing No. 882999-002). Precautions to reduce hazards during unloading to the storage tanks include: trucks hauling waste are parked, brakes engaged, and wheels chocked before unloading; and waste level in the receiving tank is continuously monitored during unloading. The waste level is read by observation of a level gauge showing footage filled in the tank. An extendable grounding line is attached to the truck frame before unloading.

**F-4b Runoff (40 CFR 270.14(b)(8)(ii))**

The Vertellus facility is relatively flat and areas surrounding the waste handling operations are graded to drain runoff to inter-plant sewer drains. The tank containment systems employ curbs and dikes, as described in Attachment D, to prevent run on into the systems and contain runoff formed inside the systems. After the tank areas have been inspected for leaks according to F-2b, and if no leaks have been found, runoff collected within the containment systems will be drained or pumped to the wastewater treatment system on-site. If leaks are found during the inspection of the area, any run-off collected in the system prior to removal of the leaked material will be managed as hazardous waste.

**F-4c Water Supplies (40 CFR 270.14(b)(8)(iii))**

The above engineering controls to manage runoff also reduce the potential for contamination of groundwater and surface water by precipitation. The containment systems also prevent direct discharge of hazardous waste to the environment and the Contingency Plan provides means to mitigate any adverse effects of such a discharge.
F-4d Equipment and Power Failure (40 CFR 270.14(b)(8)(iv))

Waste handling equipment will be routinely inspected and serviced, as equipment maintenance records or equipment malfunctions warrant. Vertellus has sufficient spares to replace key components in the event of a failure. Waste handling systems include check valves to prevent backflow in the event of a pump outage. Storage operations do not depend on electric power to contain waste or control reactions, therefore loss of power would not result in any release of wastes to the environment.

F-4e Personnel Protection Equipment (40 CFR 270.14(b)(8)(v))

Available personnel protection equipment is detailed in the Contingency Plan. Use of protective equipment is also covered in the initial and annual Personnel Training Program (Attachment H) and satisfies the Occupational Safety and Health Standards of 29 CFR 1910 Subpart I – Personal Protective Equipment. The following is a list of equipment maintained in the facility’s emergency response truck:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respirators</td>
<td>3</td>
</tr>
<tr>
<td>Carton Respirator Cartridges &amp; Filters (assorted for various contaminants)</td>
<td>1</td>
</tr>
<tr>
<td>Safety Helmets</td>
<td>3</td>
</tr>
<tr>
<td>Face Shields</td>
<td>3</td>
</tr>
<tr>
<td>Goggles</td>
<td>3</td>
</tr>
<tr>
<td>Rain Suits</td>
<td>3</td>
</tr>
<tr>
<td>Pair Boots</td>
<td>3</td>
</tr>
<tr>
<td>Channelock Pliers</td>
<td>3</td>
</tr>
<tr>
<td>Flashlights</td>
<td>3</td>
</tr>
<tr>
<td>Shovels, non-sparking</td>
<td>3</td>
</tr>
<tr>
<td>Gloves, Plastic/cloth</td>
<td>12 each</td>
</tr>
<tr>
<td>Picks</td>
<td>2</td>
</tr>
<tr>
<td>Bags Dryrite</td>
<td>1</td>
</tr>
<tr>
<td>Carton Absorbent Pigs</td>
<td>3</td>
</tr>
<tr>
<td>Carton Absorbent Pillows</td>
<td>3</td>
</tr>
<tr>
<td>Quart Bottles</td>
<td>6 each</td>
</tr>
<tr>
<td>5 Gallon Cans (Open Top)</td>
<td>2</td>
</tr>
</tbody>
</table>
Sensidyne Gas Detector w/ assorted Analyzer Tubes (In Environmental Office) 1
Assortment of Cone Shaped Plugs for Leaks 1 bag
Self Contained Breathing Apparatus, 30 Minute Pressure Demand 2
(Provides breathable air at 2216 psi supply for routine & Emergency tasks)

F-5 Prevention of Reaction of Ignitable, Reactive and Incompatible Wastes (40 CFR 270.14(b)(9))
F-5a Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Wastes (40 CFR 264.17(a), 270.14(b)(9))

Ignitable wastes are stored in the storage tanks. No reactive wastes are stored onsite. Wastes are compatible with the tank materials, as discussed in Attachment D, and no incompatible wastes are managed onsite. Therefore, the only source of ignition is external to the waste handling systems. To prevent possible sources of external ignition, smoking is prohibited onsite. “No Smoking” signs are posted at entrances to the facility. Welding may only be performed with a permit from the Vertellus Safety Department and following Vertellus SOPs. Tank systems are grounded to prevent static sparks.

F-5b General Precautions for Handling Ignitable or Reactive Wastes and Mixing of Incompatible Wastes (40 CFR 264.17(b), 270.14(b)(9))

Vertellus is not permitting any units for handling reactive or incompatible wastes. General precautions for handling ignitable wastes were discussed in F-5a above. Ignitable wastes may be bulked together, and mixed with non-ignitable material, prior to burning in the onsite boilers. Other precautions taken in the process area while handling ignitable wastes are: no smoking is allowed in the process area; and welding activities may only occur with a permit. The bulking and mixing operations do not generate any significant heat or pressure. The tank systems are grounded to prevent static sparks.

F-5e Management of Ignitable Wastes in Tanks (40CFR 264.198, 270.16(j))

Ignitable wastes may be stored in any of the subject tanks. Operations include bulking wastes to be burned, which may or may not result in an ignitable mixture. This operation may occur in any of the subject tanks. None of the bulking operations generate significant heat, pressure, or chemical reaction. The tank systems and facility procedures have been designed to protect wastes from sources of ignition, as described in F-5a above.
The National Fire Protection Association (NFPA) buffer zone requirements for tanks are for design and construction of new tanks, and include a provision for continued operation of existing systems (NFPA-30, Chapter 1, Section 1.6). The NFPA code recommends that existing tanks may continue to be used providing that the tanks do not constitute a safety hazard that could result in explosion or sudden escalation of a fire. As indicated above and in F-5a, the design and operation of these tanks prevent any such hazard. In addition, the local fire authority periodically inspects the facility and has not cited any violations of NFPA standards regarding the operation of existing tanks containing ignitable material.
FIGURE F-1

Examples of Daily Inspection Sheets
PERMITTED STORAGE TANKS - Plant 29

Inspector: ____________________________ Date: _____ / _____ / _____

Time: ________________ Day: M T W Th F Sa Su

A check mark in the "OK" box denotes an acceptable finding or a check in the "NG" box denotes an unacceptable finding. "NG" findings must be reported to the unit supervisor.

<table>
<thead>
<tr>
<th>Tank Number</th>
<th>64</th>
<th>66</th>
<th>69</th>
<th>Piping to Permitted Hazardous Waste Tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tank Proper Labels/Markings</td>
<td>OK</td>
<td>NG</td>
<td>OK</td>
<td>NG</td>
</tr>
<tr>
<td>2. Tank Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrosion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water stops in good condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean (no material on tank)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stained (needs painted)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Tank Secondary Containment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double Wall Tank (interstitial space check)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Monitoring Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Reading</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Temperature Reading</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>5. Ancillary Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piping, valves, gauges, flanges, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Pumps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal Leaks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Body Leaks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Containment Pad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Containment Pad (needs recoated)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Overfill/Spill Control Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Level Alarm Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto Shutoff Valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Gauge Reading (feet)</td>
<td>See PHD</td>
<td>See PHD</td>
<td>See PHD</td>
<td></td>
</tr>
<tr>
<td>Tank Working Capacity (feet)</td>
<td>31.92</td>
<td>31.92</td>
<td>32.07</td>
<td></td>
</tr>
<tr>
<td>8. Surrounding Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housekeeping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes:
INDUSTRIAL BOILERS BURNING HAZARDOUS WASTE - Plant 29

Inspector: ________________________________ Date: _____ / _____ / _____

Time: ________________________________ Day: M T W Th F Sa S

A check mark in the "OK" box denotes an acceptable finding or a check in the "NG" box denotes an unacceptable finding. "NG" findings must be reported to the unit supervisor.

<table>
<thead>
<tr>
<th>Boiler Number</th>
<th>28K</th>
<th>30K</th>
<th>70K</th>
<th>Piping inside Boiler House</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OK</td>
<td>NG</td>
<td>OK</td>
<td>NG</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td>NG</td>
<td>OK</td>
<td>NG</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td>NG</td>
<td>OK</td>
<td>NG</td>
</tr>
</tbody>
</table>

1. Boilers Evidence of:
   - Corrosion
   - Leaking
   - Fugitive Emissions

2. Secondary Containment
   - Free of spill material

3. Ancillary Equipment
   - Piping
   - Valves
   - Flanges

Additional Notes:
FIGURE F-2

Weekly Safety Equipment Check Sheet
# WEEKLY SAFETY EQUIPMENT CHECK

**UNIT:** Boilers  
**Cost Center:** 29-910

<table>
<thead>
<tr>
<th>EQUIPMENT</th>
<th>LOCATION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Shower and Eye Washes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Shower</td>
<td>Inside East Double Doors</td>
<td>Do not flow test outside units when temperature is below 35° degrees F</td>
</tr>
<tr>
<td>Eye Wash</td>
<td>Inside East Double Doors</td>
<td></td>
</tr>
<tr>
<td>Safety Shower</td>
<td>Split Stream North Wall</td>
<td>Do not flow test outside units when temperature is below 35° degrees F</td>
</tr>
<tr>
<td>Eye Wash</td>
<td>Split Stream North Wall</td>
<td></td>
</tr>
<tr>
<td>Safety Shower</td>
<td>East of Tank Farm</td>
<td>Do not flow test outside units when temperature is below 35° degrees F</td>
</tr>
<tr>
<td>Eye Wash</td>
<td>East of Tank Farm</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency Lights:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>East Side Boiler Room above door</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>West Side Boiler Room above door</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Pump Room North door</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Pump Room South door</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Split Stream Control Room</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Split Stream Building South Wall</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Split Stream Building North Wall</td>
<td></td>
</tr>
<tr>
<td>Emergency Lights</td>
<td>Boiler Room Office</td>
<td></td>
</tr>
<tr>
<td><strong>Self Contained Breathing Apparatus:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scott Air Pack</td>
<td>Outside North Split Stream Office Door</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fire Extinguishers:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-910-1</td>
<td>On Pole by 11K Boiler</td>
<td></td>
</tr>
<tr>
<td>29-910-2</td>
<td>Left Side Center Door Boiler Room</td>
<td></td>
</tr>
<tr>
<td>29-910-3</td>
<td>Right Side of East Door Boiler Room</td>
<td></td>
</tr>
<tr>
<td>29-910-4</td>
<td>North Door of Pump Room</td>
<td></td>
</tr>
<tr>
<td>29-910-5</td>
<td>Split Stream Building Control Room</td>
<td></td>
</tr>
<tr>
<td>29-910-6</td>
<td>Split Stream Building South</td>
<td></td>
</tr>
<tr>
<td>29-910-7</td>
<td>Split Stream Building West Door</td>
<td></td>
</tr>
<tr>
<td>29-910-8</td>
<td>Split Stream Building East Door</td>
<td></td>
</tr>
<tr>
<td>29-910-9</td>
<td>South Side 50 Series Tank Farm</td>
<td></td>
</tr>
<tr>
<td>29-910-10</td>
<td>Boiler Office Hallway</td>
<td></td>
</tr>
<tr>
<td>29-910-11</td>
<td>On Pole Southwest Corner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compressor Building</td>
<td></td>
</tr>
<tr>
<td>EQUIPMENT</td>
<td>LOCATION</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Fire Extinguishers: (Cont.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-910-12</td>
<td>On Pole East of Tank 65</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Spill Kit:</td>
<td>Lab Plant Boiler Room</td>
<td></td>
</tr>
<tr>
<td>15 Bags Floor Dry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Work Suits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-55 Gallon Drums</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-5 Gallon Buckets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Dozen Rubber Gloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Boxes Dry Pigs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Shovel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Squeegee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Spill Kit:</td>
<td>Mini Barn</td>
<td></td>
</tr>
<tr>
<td>15 Bags Floor Dry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Work Suits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-55 Gallon Drums</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-5 Gallon Buckets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Dozen Rubber Gloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Boxes Dry Pigs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Shovel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Squeegee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURE F-3

Monthly AWFCO Test Procedures
MONTHLY AWFCO TEST PROCEDURES

All tests will require reducing the federate of hazardous waste to a stable rate, approximately 500 lbs/hr, and putting the reserve boilers in standby. This will minimize the risk of losing a boiler or having a low steam pressure during testing. Note the time you begin the test procedures for later reference. The tag name(s), i.e. 70OILLMT, are listed for each test.

TEST #1 HAZARDOUS WASTE FEEDRATE TEST

1. Place natural gas in cascade control mode.
2. Stabilize feed rate to approximately 500 lbs/hr being careful not to increase CO which could affect later tests.
3. Call up Group 213 and set 70OILLMT to “0”.
4. Confirm cut off occurred on the alarm summary screen.
5. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
6. Rest the 70OILLMT to original value.

TEST #2 RHA CO AND INSTANTANEOUS CO TESTS

1. Stabilize feed rate to approximately 500 lbs/hr being careful not to increase CO.
2. Call up Group 213
3. Observe the current CO RHA value on 70CONUM.
4. To test the CO trip, set the 70COMXHR value 10 PPM less than the current 70CONUM value.
5. Confirm cut off occurred on the alarm summary screen.
6. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
7. Rest the 70COMXHR to 75 PPM.
8. Set the value of 70COMXNW to “0”.
9. Confirm cut off occurred on the alarm summary screen.
10. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
11. Rest the 70COMXNW to 2775.
TEST #3 COMBUSTION TEMPERATURE TESTS

1. Place natural gas in cascade control mode.
2. Stabilize feed rate to approximately 500 lbs/hr being careful not to increase CO which could affect later tests.
3. Call up Group 214.
4. Observe the current temperature values on 70TMPNUM, 70TPMNHR, and 70TPMXHR.
5. To test the minimum temperature AWFCO, set 70TPMNHR at 100°F higher than the current 70TMPNUM value,
6. Confirm cut off occurred on the alarm summary screen.
7. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
8. Rest the 70TPMNHR to the value observed in step 4.
9. To test the maximum temperature AWFCO, set 70TPMXHR at 100°F lower than the current 70TMPNUM value,
10. Confirm cut off occurred on the alarm summary screen.
11. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
12. Rest the 70TPMXHR to the value observed in step 4.

TEST #4 STEAM PRODUCTIN TESTS

1. Place natural gas in cascade control mode.
2. Stabilize feed rate to approximately 500 lbs/hr being careful not to increase CO which could affect later tests.
3. Call up Group 214.
4. Observe the current steam production values on 70STMNUM, 70STMMIN, and 70STMMAX.
5. To test the minimum steam production AWFCO, set 70STMMIN at 100 lb/hr higher than the current 70STMNUM value,
6. Confirm cut off occurred on the alarm summary screen.
7. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
8. Rest the 70STMMIN to the value observed in step 4.
9. To test the maximum steam production AWFCO, set 70STMMAX at 100 lb/hr lower than the current 70STMNUM value,
10. Confirm cut off occurred on the alarm summary screen.
11. After confirming alarm, leave in alarm for at least a minute to make sure the cut off is recorded in the electronic database.
12. Rest the 70STMMAX to the value observed in step 4.

This procedure was written for the 70K but is applicable to the 28K and 30K boilers. For the 28K refer to Groups 209 and 210 respectfully. Use the following tag names in place of the 70K tag names: 28OILLMT, 28CONUM, 28COMXHR, 28COMXNW, 28TMPNUM, 28TPMNHR, 28TPMXHR, 28STMNUM, 28STMMIN, and 28STMAX. For the 30K refer to Groups 211 and 212 respectfully. Use the following tag names in place of the 70K tag names: 30OILLMT, 30CONUM, 30COMXHR, 30COMXNW, 30TMPNUM, 30TPMNHR, 30TPMXHR, 30STMNUM, 30STMMIN, and 30STMAX. Any boiler burning hazardous waste in a given month must have the monthly AWFCO testing completed.
ATTACHMENT G
CONTINGENCY PLAN
EMERGENCY RESPONSE PLAN

INDIANAPOLIS FACILITY

2018

IN CASE OF EMERGENCY OR AN UNCONTROLLED RELEASE

CONTACT SECURITY

247-8141

Extension 311
INTRODUCTION AND EXECUTIVE SUMMARY

Vertellus Integrated Pyridines LLC (Vertellus) owns and operates a chemical manufacturing facility located at 1500 S. Tibbs Ave., Indianapolis, Indiana 46241. The EPA identification number for the Vertellus facility is IND 000807107.

This facility is primarily a manufacturer of synthetic pyridine and pyridine derivatives including picolines and vinyl-pyridines. Hazardous wastes are stored and treated at this site. The hazardous waste container storage area has an estimated maximum capacity of 1504 55-gallon drums. The nine hazardous waste treatment and storage tanks have a maximum capacity of 638,576 gallons.

This Emergency Response Plan is to assist in planning and responding to a suspected or actual emergency involving the facility. The safety of the surrounding population and responding personnel is critical in every emergency response. It is critical for emergency responders to train their personnel on the proper response to a suspected or actual emergency.

*Additionally, the U.S. Department of Homeland Security offers information regarding “Chemical Sector Resources” and includes many resources and information for chemical plant emergency response readiness and preparation. Find this information at http://www.dhs.gov/chemical-sector-resources.

This Emergency Response Plan is applicable for the various types of emergency situations that could occur at Vertellus. Management recognizes that every situation is unique and that an initial response to a given emergency will require judgmental decisions on the part of the persons involved and supports this, provided it is rational, maximizes safety, and promotes effective control. Management does not endorse heroic actions or reckless responses that unnecessarily increase the risk of injury, environmental upset, or damage to property.

This plan is designed to minimize hazards to human health and/or the environment from fires, explosions, or any unplanned releases of hazardous waste or hazardous waste constituents to air, soil, or surface water. This plan describes actions to be taken by Vertellus and facility personnel, specifications and locations of on-site emergency equipment, and arrangements with off-site authorities and contractors for emergency services. Any response action should be taken with the following concerns in mind:

- Protect your life and health and the lives/health of fellow employees and the neighboring community
- Protect the environment
- Protect property

This plan complies with the following regulations and codes:

- 40 CFR 262 Subpart M Preparedness, Prevention and Emergency Procedures for Large Quantity Generators
- 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 355 Emergency Planning and Notification
- 40 CFR Part 68 (RMP)
- Emergency Planning and Community Right to Know Act (EPCRA)

This plan will be reviewed and amended (if necessary) annually, and also if necessary under any of the following situations:

- Applicable regulations are revised;
- If the plan fails in an emergency;
- The facility changes design, construction, operation, maintenance, or other circumstances in a way that increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency; or
- The list of Emergency Responders changes; or
- The list of emergency equipment changes.

Vertellus shall provide a copy of this Emergency Response Plan to all off-site authorities and applicable agencies listed below within 30 days of being amended or other timeframe specified by regulations for the facilities governed by 29 CFR 1910.119 (the OSHA PSM Standard), and also to Contractors that may be called to provide emergency service. Vertellus will also respond to any questions posed by any of those listed below.

- LEPC
- Fire Departments
- City Police
- County Sheriff’s Department
- State Police
- Hospitals
- Other as deemed necessary or as requested
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1. **Contact Information**

1.1. **Vertellus Responders**

<table>
<thead>
<tr>
<th>Emergency Responder</th>
<th>Office</th>
<th>Cell Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility Address</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertellus Integrated Pyridines LLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500 S. Tibbs Avenue</td>
<td>317-247-8141</td>
<td>NA</td>
</tr>
<tr>
<td>Indianapolis, IN 46241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39°48’27.32”N 86°19’56.34”W</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Incident Commander (RCRA Emergency Coordinator)</strong></td>
<td>317-247-8141</td>
<td>Wilkes -317-319-7080</td>
</tr>
<tr>
<td>- Dave Wilkes - Primary</td>
<td>Wilkes - Ext. 6570</td>
<td></td>
</tr>
<tr>
<td><strong>Operations Officer- Primary</strong></td>
<td>317-247-8141</td>
<td>Wilkes -317-319-7080</td>
</tr>
<tr>
<td>- David Wilkes</td>
<td>Wilkes - Ext. 6570</td>
<td></td>
</tr>
<tr>
<td><strong>Operations Officer-- Plant Operations Coordinators</strong></td>
<td>While on duty at plant, all can be contacted either by radio, via the Security Desk, or at 317-247-8141.</td>
<td></td>
</tr>
<tr>
<td>- Robert Rhodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Kevin Bray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Greg Cunningham</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Larry Ballard</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Safety Officer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- David DeLong</td>
<td>While on duty at plant, all can be contacted at 317-247-8141 or via Security Desk</td>
<td>DeLong-463-224-4717</td>
</tr>
<tr>
<td><strong>Radiation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Larry Ballard- Radiation Safety Officer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Kevin Bray- Radiation Safety Officer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental Officers</strong></td>
<td>317-247-8141</td>
<td></td>
</tr>
<tr>
<td>- Jim Gross- Primary</td>
<td>Gross- Ext. 6652</td>
<td>Gross- 317-760-3232</td>
</tr>
<tr>
<td>- Tamra Kress</td>
<td>Kress- Ext 6511</td>
<td>Kress- 317-590-0640</td>
</tr>
<tr>
<td><strong>Communications Officers</strong></td>
<td>317-247-8141</td>
<td></td>
</tr>
<tr>
<td>- Ray Hull- Primary</td>
<td>Hull Ext.- 6737</td>
<td>Hull- 317-294-2106</td>
</tr>
</tbody>
</table>
### Technical Officers
- Roger Weigand - Primary
- Gary Adams - Plant 27
- Dave Wilkes - Utilities
- Ray Hull (Spec Chem, 40, Packaging)

<table>
<thead>
<tr>
<th>317-247-8141</th>
<th>Weigand- 317-509-3413</th>
</tr>
</thead>
<tbody>
<tr>
<td>6619</td>
<td>Adams Ext.- 6783</td>
</tr>
<tr>
<td>6570</td>
<td>Wilkes Ext.- 6737</td>
</tr>
<tr>
<td></td>
<td>Hull Ext.- 294-2106</td>
</tr>
</tbody>
</table>

### Headcount Hotline
- Human Resources Dept. Heather Boerger/Susie Simmons

<table>
<thead>
<tr>
<th>317-247-8141</th>
<th>Boerger: Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>2426</td>
<td>1) 317-447-5842</td>
</tr>
<tr>
<td>2511</td>
<td>Simmons: Cell</td>
</tr>
<tr>
<td></td>
<td>2) 317-741-1257</td>
</tr>
</tbody>
</table>

### Emergency Public Information Officer
- Daryl Quinn

| 317-248-6557 | 1) 317-946-7460 |

---

### 1.2 Federal Agencies

#### Federal Agencies

<table>
<thead>
<tr>
<th>Agency</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Response Center (NRC)</td>
<td>800-424-8802, Fax 202-267-1322</td>
</tr>
<tr>
<td>Environmental Protection Agency Region 5 – 24 Hour Emergency Response</td>
<td>800-621-8431</td>
</tr>
<tr>
<td>US Nuclear Regulatory Commission Operations Center</td>
<td>301-816-5100, 800-522-3025</td>
</tr>
</tbody>
</table>

*Report incidents involving nuclear gauges in Plant 47 by the Radiation Safety Officer.*

Department of Homeland Security

*Reports of significant security incident should be reported to DHS.*

Significant NON Cyber incident report to NICC via email nicc@dhs.gov or phone 1-202-282-9201—non cyber

Significant Cyber incident report to US-CERT online at www.us-cert.gov or phone 1-888-282-0870—cyber
Federal Aviation Administration 847-294-8400 (Great Lakes Region) 866-835-5322

### 1.3. State Agencies

<table>
<thead>
<tr>
<th>Indiana</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana Department of Environmental Management</td>
<td>317-233-7745</td>
</tr>
<tr>
<td>Indiana OSHA</td>
<td>317-232-2693</td>
</tr>
<tr>
<td>302 West Washington St. Indpls., IN 46204 Hazardous Materials Department <em>Report incidents involving nuclear gauges in Plant 47 by the Radiation Safety Officer</em></td>
<td></td>
</tr>
<tr>
<td>Indiana State Fire Marshal</td>
<td>317-232-2222</td>
</tr>
<tr>
<td>Indiana Department of Health</td>
<td>317-233-7153</td>
</tr>
</tbody>
</table>

### 1.4. Outside Responders: CALL 911 IN AN EMERGENCY

<table>
<thead>
<tr>
<th>Name/Organization</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division of Homeland Security, City of Indianapolis</td>
<td>201 N. Shadeland Ave. Indianapolis, IN 46219</td>
<td>317-327-3900</td>
</tr>
<tr>
<td>Citizens Energy - Belmont POTW</td>
<td></td>
<td>Incident Response Line 317-402-8636 Belmont Control Room 317-639-7120</td>
</tr>
<tr>
<td>Methodist Hospital</td>
<td>P.O. Box 1367 Indianapolis, IN 46206</td>
<td>317-962-2000</td>
</tr>
<tr>
<td>Organization</td>
<td>Address</td>
<td>Contact Information</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Indianapolis Power and Light        |                                | Main Line: 317-261-8222  
Emergency (Load Dispatch Operator): 317-261-8627                                  |
| Public Health Department            | 3901 Meadows Drive, Indianapolis, IN 46205 | Normal business hours phone is 317-221-2266  
After-hours phone numbers are either 317-491-5686 or 317-491-5681.                     |
| Indianapolis Metropolitan Police Department | 50 N. Alabama Indianapolis, IN 46204 | 911  
Dispatch: 317-216-4633                                                                |
| Marion County LEPC                  |                                | Non-emergency phone is 317-221-2266  
**Number for reporting releases is 317-252-3230**                                      |
| Wayne Township Fire Department      |                                | 911                                                                                  |
| Citizens Energy (Natural Gas)       |                                | 800-777-2060                                                                         |
| Citizen Energy (Water) Company      |                                | Normal business hours: 317-639-1501  
After hours: 317-631-1431  
Dispatch: 317-263-3555.                                                            |

1.5. Schools

If an emergency could affect a school, contact IMPD dispatch with emergency information. IMPD will make the appropriate contacts to affected schools and the Metropolitan School District (MSD) Township Police Department.
Schools Within 1 Mile of the Indianapolis Facility - MSD Wayne Township

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maplewood Elementary School</td>
<td>317-243-6733</td>
</tr>
<tr>
<td>Stout Field Elementary School</td>
<td>317-247-4677</td>
</tr>
</tbody>
</table>

1.6. Railroad Crossings

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSX Transportation</td>
<td>800-232-0144</td>
</tr>
<tr>
<td>Norfolk Southern</td>
<td>877-201-4265</td>
</tr>
</tbody>
</table>

1.7. Local Business

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolls Royce</td>
<td>To report emergencies, call 230-5555.</td>
</tr>
<tr>
<td></td>
<td>For non-emergencies, call 230-3177 or <a href="mailto:HSEIndy@rolls-royce.com">HSEIndy@rolls-royce.com</a></td>
</tr>
<tr>
<td>Knight Trucking Company</td>
<td>317-486-1770</td>
</tr>
<tr>
<td>TPS Services</td>
<td>317-248-7979</td>
</tr>
</tbody>
</table>

1.8. Miscellaneous Contact

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Towing Companies:</td>
<td></td>
</tr>
<tr>
<td>Hix Towing</td>
<td>(317) 783-3111</td>
</tr>
<tr>
<td>Zore’s</td>
<td>(317) 247-8484</td>
</tr>
<tr>
<td>IU Health Occupational Services- Park Fletcher</td>
<td>(317) 241-8266</td>
</tr>
<tr>
<td>Vega Americas (radiation incident response)</td>
<td>1-800-367-5383</td>
</tr>
</tbody>
</table>
1.9. Emergency Phones (Red Phones)

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPST Guard Desk</td>
<td>536-6722</td>
</tr>
<tr>
<td>Human Resources</td>
<td>536-6725</td>
</tr>
<tr>
<td>Plant 27 Blue Room</td>
<td>536-6731</td>
</tr>
<tr>
<td>Plant 27 DAB Control Room</td>
<td>536-6727</td>
</tr>
<tr>
<td>Plant 27 Base Stills Control Room</td>
<td>536-6740</td>
</tr>
<tr>
<td>Plant 38 Fine Chem Control Room</td>
<td>536-6734</td>
</tr>
<tr>
<td>Plant 40 VP Plant</td>
<td>536-6728</td>
</tr>
<tr>
<td>Plant 47 Wheeler Plant Control Room</td>
<td>536-6724</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant 48 AP Plant Control Room</td>
<td>536-6726</td>
</tr>
<tr>
<td>Plant 47 Wheeler Plant /MRM</td>
<td>536-6723</td>
</tr>
<tr>
<td>Conference Room</td>
<td></td>
</tr>
<tr>
<td>IT Conference Room</td>
<td>536-6739</td>
</tr>
<tr>
<td>R&amp;D Conference Room 350</td>
<td>536-6735</td>
</tr>
<tr>
<td>Site Conference Room</td>
<td>536-6737</td>
</tr>
<tr>
<td>Maintenance Conference Room</td>
<td>536-6732</td>
</tr>
<tr>
<td>Boiler Control Room</td>
<td>536-6729</td>
</tr>
<tr>
<td>WWTP Control Room</td>
<td>536-6733</td>
</tr>
</tbody>
</table>
2. Definitions and Acronyms

**Assembly Area** – The predetermined gathering area also known as “Muster Point,” or “Rally Point,” which is the safe area where personnel congregate during an emergency to be accounted for.

**Communications Officer** - during an incident, provides a myriad of communication duties including note taking, alerting others, liaison between support functions.

**Contamination Reduction Zone (Warm Zone)**, The area between the Exclusion Zone and the Support Zone. This zone contains the personnel decontamination station. This zone may require a lesser degree of personnel protection than the Exclusion Zone. This separates the contaminated area from the clean area and acts as a buffer to reduce contamination of the “clean” area.

**Control Zones** – One of the three hazardous substance/material incident zones; Support Zone, Contamination Reduction Zone, and Exclusion Zone.

**CPR** – Cardiopulmonary resuscitation is a combination of rescue breathing and chest compressions delivered to victims thought to be in cardiac arrest.

**Crosswind** – The direction perpendicular to the wind direction

**Essential Operating Personnel** – Personnel employed by VERTELLUS who are assigned essential operating duties.

**EH&S** – Environmental, Health and Safety – part of the VERTELLUS EHS Department.

**Environmental Officer** - during an incident, provides environmental technical expertise and guidance.

**EOC** – Emergency Operations Center: The physical location in which the coordination of information and resources to support the Incident Command activities normally takes place. Located separately from the on-scene Field Command Post/Incident Command Post.

**Employee** – Personnel employed directly by VERTELLUS.

**ESD** – Emergency Shutdown Device

**Evacuation Route** – The predetermined path taken by personnel during an emergency evacuation to an Assembly Area.

**Exclusion Zone** (Hot Zone), The area immediately around a release or release where contamination does or could occur. The innermost of the three zones of a hazardous substance/material incident. Special protection is required for all personnel while in this zone.

**Facility** – The area covered by this Plan which is within an VERTELLUS company process operating area, office, storage area, pipeline right-of-way, or other company property.

**Field Command Post/Incident Command Post** – the field command area designated by Operations Officer. This is the physical location that administers the on-scene operations command.

**FO** – Finance Officer – The FO manages financial responsibilities relating to an emergency event. Part of the ICS structure. A member of the General Staff.
HCA – High Consequence Area as described in 49 CFR Part 195

HAZWOPER – Hazardous Waste Operations and Emergency Response. The OSHA regulation that covers safety and health issues at hazardous waste sites, as well as response to chemical incidents. 29 CFR 1910.120

IC – Incident Command/Commander – The individual within the ICS responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

ICS – Incident Command System, A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. Part of the NIMS system.

LEPC – Local Emergency Planning Committee: A committee appointed by the state emergency response commission, as required by SARA Title III, to formulate a comprehensive emergency plan for its jurisdiction.

LIO – Liaison Officer – The LIO is the point of contact for outside agencies during an emergency incident. Part of the ICS structure. A member of the Command Staff.

LO – Logistics Officer – Provides resources during an emergency incident. Part of the ICS structure. A member of the General Staff.

NIMS – National Incident Management System: Provides a systematic, proactive approach guiding government agencies at all levels, the private sector, and nongovernmental organizations to work seamlessly to prepare for, prevent, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life or property and harm the environment.

OPS – Operations Officer – The OPS provides and enacts tactics in order to achieve operational goals during an emergency incident. Part of the ICS structure. A member of the General Staff.

PIO – Public Information Officer – The PIO is the designated conduit for information flow to the public during an emergency incident. Part of the ICS structure. A member of the Command Staff.

PO – Planning Officer – The PO provides information gathering, evaluation, and dissemination during an emergency incident. Part of the ICS structure. A member of the General Staff.

PPE – Personal Protective Equipment

SO – Safety Officer – The SO is responsible for ensuring personnel safety during an emergency incident. Part of the ICS structure. A member of the Command Staff.

SOP – Standard Operating Procedures

Support Zone (Cold Zone) – The “clean” area outside of the contamination control line. In this area, equipment and personnel are not expected to become contaminated. Special protective clothing is not required. This is the area where resources are assembled to support the hazardous substances/materials release operations.
Technical Officer- during an incident, provides technical expertise and guidance for a particular production unit.

UC – Unified Command: An ICS application used when more than one agency has incident jurisdiction or when incidents cross political jurisdictions.

Upwind – in the direction of where the wind is coming from.

3. Emergency Response Plan

3.1 Document Control
This document is “controlled” with an Effective Date and number in the header. As revisions or updates are received please destroy prior plans.

For additional information contact the Vertellus Indianapolis EHSS Manager.

3.2 Plan Activation
This plan recognizes that the following types of on-site emergencies may occur, and as such, the emergency response plan shall be implemented by the responding Vertellus management in the following situations:

- Significant Potential Release, or Release
  - Liquids or substantial quantity of vapor or particles could cross site boundaries,
  - A flammable environment has developed as indicated by 10% LEL readings,
  - A quantity of material has been released that cannot be controlled or cleaned up with internal resources.
  - Emergency involving hazardous waste
- Medical Emergencies
- Fire and/ or Explosion
- Utility Failure
- Radiation from a nuclear source event in Plant 47
- Security, Threats (Terroristic, Bomb, etc.), Civil Unrest
- Natural Disasters (Flooding, Lightning, Tornadoes, Extreme Winter Weather, Earthquakes)

3.3 Product Hazards, Emergency Recognition, and Prevention
The Vertellus facility contains highly flammable, combustible, corrosive, and toxic chemicals and hazardous wastes; the vapors of which may form explosive or toxic mixtures in the air. Extreme caution should always be used in any emergency response dealing with Vertellus products and materials. Please consult with Vertellus personnel and refer to Safety Data Sheets (SDS), the NIOSH Pocket Guide to Chemical Hazards, the DOT Emergency Response Guide Book, NFPA 704 hazard diamond, container labels and other markings, and other informational material for hazard information regarding specific products or materials. SDS sheets are available upon request from Vertellus personnel.
3.4 Training

The objective of the training is to create awareness and enhance the skills required to develop, implement, maintain, and execute this Emergency Response Plan.

Vertellus management personnel will review this Emergency Response Plan with each employee covered by the Plan at the following times:

- Upon initial employment of the employee,
- Annually,
- When an employee’s responsibilities or designated actions under the plan change, or
- When the plan is revised.

The Trainer shall forward documentation of all training to the Safety Department. This is accomplished through worker orientation training, monthly safety meetings, safety procedures and SOP’s, annual refresher training, computer based training, and participating in emergency response drills which simulate potential facility emergency situations.

3.5 Response Capabilities

Guidance for facility personnel is to respond in accordance with their level of training, physical ability, procedures, and personal protective equipment.

At no time should any employee or contractor/visitor subject themselves or others to unnecessary risk nor act outside of their level of training, ability, procedures or personal protective equipment. In the event of a fire, explosion, product release or potential release, the local emergency responders shall be notified to respond and control the emergency incident.

3.6 Emergency Response Actions

This Vertellus Emergency Response Plan begins with safe and immediate actions in direct response to the onset or discovery of an emergency. These actions in a broad manner of speaking are: Notify, Evacuate, Respond, and Follow-up. Facility coordination with any emergency response agency is in accordance with the National Incident Management System (NIMS) Incident Command System (ICS). The follow-up plan includes the actions to be taken after containment of the emergency, such as restoration of service and post-emergency reviews.
QUICK REFERENCE GUIDE FOR EMERGENCY RESPONSE

**Notify**
- Security
- Supervisor
- Additional Agencies as warranted by incident

**Evacuate**
- Determine Wind Direction -- Stay upwind/crosswind
- Exit via instructions & proceed to the primary Assembly Area. If the primary Assembly Area is unattainable, report to the secondary Assembly Area.
- Assemble at a safe distance
- *Do Not* leave the Assembly Area until directed, or emergency threatens assembly area.
- Report to your supervisor (or Designee)
- Secure the incident site perimeter as directed

**Respond**
- Utilize NIMS to implement ICS
- *Do Not Enter* the area until the atmosphere has been verified to be safe by using monitoring equipment.
- *Do Not* exceed the limits of your training
- Use the proper Level of PPE

**Follow-up**
- Incident Critique
- Initiate Facility Repairs
- Remediation/Site Clean-Up
3.6.1 Notify
Upon discovery or report of an emergency utilize the following means of communication as appropriate:

- Call 311
- Contact to Security via radio-channel 1
- Use the fire pull stations
- Signal from fire alarm or detector

Provide as much information to Security concerning the emergency as time and conditions allow (e.g., product involved, size of release, wind direction, fire, etc.)

During regular hours (8:00 am-5:00 pm) Monday through Friday, Security will send a short message noting the nature of the emergency and the area in which it is occurring to all responders via cell phone. Responders will contact Security to acknowledge the information, determine the nature of the emergency and respond to the emergency as appropriate. Technical Officers will respond if the emergency is in their area of expertise.

After hours, Security will contact responders via cell phones or home phone numbers, until one person from each category of responder has been notified. The Technical Officer responsible for the area in which the emergency is occurring will respond immediately. After notification of an incident, all Vertellus Emergency Personnel are to report to the Communications Officer at the security desk.

Vests which identify the roles of Vertellus emergency personnel will be kept in the Security area. Upon the initial onset of an incident they will be issued to the on-scene Vertellus emergency responders by the senior guard until relieved by the Communications Officer, who will then be in charge of assigning the vests.

Initial Communications and Response to an Emergency

- Security receives emergency information
- Security sounds siren and makes a PA announcement
  
  NOTE: This alert is also transmitted over the facility radios
  
  - A single rise and fall – Initial incident notification
  
  - A continuous siren - Used to indicate an immediate evacuation vs. reporting to your head count location
  
  - Two rises of the siren - Used as an “all clear signal” to be followed by the PA announcement

- Listen and respond per the instructions via the PA system or other means of internal communication.
- When siren sounds all personnel will stop hot work and shut off any running vehicles, report to the nearest control room and perform head count
- Security will secure gate
- Security will follow the siren with PA announcement on the nature of the incident. Will be repeated three times
- After incident is assessed by incident commander, Security will issue additional information or instruction by PA and radio (i.e. which units are not affected and can go back to work or which units need to evacuate)
- Extra Vertellus radio is provided to emergency responders at EOC.
Methods of Internal Communication

- Loud speakers
- Alarm System
- Company Radios
- Verbal notification
- Land-line telephones
- Cellular telephones
- Alarms
- If power outage, may use bullhorns. Also, use of portable generators for radio repeaters and charging company radio batteries may be considered for an extended power outage.

3.6.2 Evacuate

When an “evacuation” message is given, the message will detail where the evacuees should go. The area monitors for the designated plant areas will strive to ensure that the people gather in the Plant Assembly Areas and from there evacuate. Of course, if an immediate need for evacuation exists and time cannot be taken to account for people at the normal designated plant area, then perform the accounting of personnel when in a safe area. Evacuees from the plant areas should stay closely together under the guidance of the area monitors and not stray off. A checklist of departmental employees should be maintained by each monitor.

Accounting of People

In case of an emergency, an accurate accounting of people in the facility must be undertaken. Emergency broadcast messages are delivered by Security. The emergency message provided may be a “Report to Plant Assembly Areas” message then possibly followed by an “Evacuation” message. When an emergency message is broadcast across the PA system (and the radio system), all employees will be responsible for quickly heeding the message to ensure their personal safety, the safety of their coworkers, and others (visitors, contractors). Plant Assembly Areas, Evacuation Areas, and Evacuation Routes are detailed in Appendices A and B.

Report to Plant Assembly Areas: When a “Report to Plant Assembly Areas” message is given, persons are to report to their designated areas so an accounting of personnel (or “headcount”) can be performed. This will include contractors, visitors, and vendors working in the areas.

The Plant Lab personnel will secure their labs and associated equipment before leaving to report to their Plant Assembly Area. All hood sashes must be remain in the appropriately marked position to ensure adequate air flow. Close office doors.

Each department and operating unit will have designated persons (Monitors) and backups to perform the accounting of personnel task at the designated Plant Assembly Areas. A checklist of departmental employees should be maintained by each monitor.
The monitors will report to the Human Resources (HR) “Headcount Hotline” ext. 6292 or (317) 247-8141, ext. 6292 their headcount status. Monitors will report only the exceptions to their accounting or personnel—for example the message might be “Everyone is present except Operator John Doe”.

If after hours, the monitors will report to the Security Desk their headcount status via ext. 6690, radio Channel 1, or ext. 311. Monitors will report only the exceptions to their accounting or personnel—for example the message might be “Everyone is present except Operator John Doe”.

HR will compare the missing employees from the electronic headcount from the area monitors against people attendance rosters obtained from the Security desk.

HR will report the headcount status to the incident Communications Officer, who will in turn report this status to the Incident Commander and Operations Officer. Any persons not accounted for must be considered missing and will be addressed by the IC with the assistance of responding agencies.

Everyone will stay in the Plant Assembly areas until told to either evacuate or return to duty. Plant Assembly Areas are detailed in Appendix A.

Evacuation Routes—Primary and Alternative Routes

In the event of an evacuation, the first marshaling/gathering/rally point will be the Large Evergreen Pine Tree in front of (east of) the Lab Building Flag Pole. An alternate location will be determined by the IC/OPS as necessary depending on the incident, wind direction, obstacles, etc. (SPST Parking Lot is an example that may be chosen).

If possible, Plant, Lab, and Engineering based personnel will evacuate by the closest available plant exit way and road to the Large Evergreen Pine Tree in front of (east of) the Lab Building Flag Pole or exit as directed. Personnel will use alternate evacuation routes communicated by Security via the Communications Officer in the event that the use of the primary evacuation route is unsafe or not possible.

Once the evacuation has occurred, it is the responsibility of the Plant Assembly Areas Monitors to perform a second headcount and ensure everyone is accounted for. The monitor then contacts the Human Resources (HR) “Headcount Hotline” ext. 6292 or (317) 247-8141, ext. 6292 their headcount status.

HR will report the evacuation headcount status to the incident Communications Officer, who will in turn report this status to the Incident Commander. Any persons not accounted for must be considered missing and will be addressed by the IC/OPS with the assistance of responding agencies.

Once an alarm has been sounded or notice of an emergency is given, all personnel should:
• Determine the wind direction
• Proceed to a predetermined “Plant Assembly Area” according to the evacuation route map in Appendices A and B of this Emergency Response Plan.
• Personnel should use the safest evacuation route and “Plant Assembly Area” that is upwind or crosswind and uphill from the emergency.
• Never use a route that will pass through a gas or vapor cloud or other emergency area.

Shelter-In-Place

If evacuation from the main lab and office building is not possible due to a toxic chemical release that is affecting the safe exit of employees from this building, an emergency broadcast message will be delivered to those employees who work in the Main Lab and office buildings informing them to Shelter-in-Place (SIP). When instructed to Shelter-in-Place, employees should take the following actions:

• Close all office windows and immediately move to the designated SIP area. Plant Lab personnel shall close office doors behind them when checking their assigned areas.
• Move to the second floor of the West wing (Gray building) of the Main Lab building
• Do not go to the basement

Once the area monitors have completed their accounting of personnel, have ensured that all employees are out of their areas and have themselves moved into the SIP area, the doors on the east and west end should be closed.

The area monitors should begin taking a head count of those present in the SIP area. To avoid confusion, each person should report to their respective monitor and assemble together until head counts are complete and accounting has been communicated- see 3.6.2 “Accounting of People”.

If the phone system is not working, the red power failure phone in the Site Conference room can be used by calling 247-8141 (no “9” necessary), OR by using the two-way radio located in the Traffic Technician’s cubicle.

A kit containing Shelter-In-Place materials has been placed in the Site Conference Room. The area monitors for this area, with assistance from others as needed, shall obtain the kit and begin to seal the cracks surrounding the doors with duct tape. Towels will be wetted and placed under the doors as well.

The HVAC system to the building shall be turned off. Building Maintenance personnel or SIP area monitors are responsible for this action. Emergency shut offs to the HVAC are located on the south end of the basement floor and immediately inside the east entrance to the Shelter-in-Place area in the circuit panel. The breaker is clearly marked and painted orange.
Please wait patiently and listen for further instructions to be broadcast over the PA system.

When the all clear is given, remove the tape and towels from the doors, open the doors and windows (where possible) to air out the building and go outdoors.

Contractors, Third Party Personnel, and Visitors

Contractors, Third Party Personnel, and Visitors will receive site safety orientation prior to being allowed in a process area. During this training the Contractors, Third Party Personnel, and Visitors will be informed of Evacuation Routes and Assembly Areas.

Contractors, Third Party Personnel, and Visitors shall comply with all notices of evacuation and follow the procedures described in Section 3.6.2 of this Emergency Response Plan.

Essential Operating Personnel

Some Essential Operating Personnel may delay evacuation until critical functions have been performed. These functions DO NOT take precedence over the safety of an employee. If an employee feels they are in danger, they should evacuate immediately.

Essential Operating Personnel are identified as:

- Vertellus employees
- Designated as such by their Supervisor
- Assigned to such duties as on-shift operator or technician.

The Essential Operating Personnel may perform such tasks based on their level of training:

- Valve closures
- Shutdown of equipment
- Depressurize equipment
- Activation of fixed fire protection equipment

In order to perform these tasks, the Essential Operating Personnel must:

- Never enter a gas or vapor cloud or any other immediately dangerous area.
- Be trained in the operation of and assigned to the area (unit) involved in the emergency.
- Have the appropriate level of training for the type of work to be performed.
- Use the appropriate level of Personal Protective Equipment (PPE).
- Evacuate the area if directed to do so by their Supervisor or Emergency Personnel.

Essential Operating Personnel must:

- Be acting under direction of their supervisor.
- Follow the appropriate Operating Procedures for the task to be performed.
- Maintain communications with their supervisor or control room
3.6.3 Respond

Incident Command System

The ICS shall be used to manage an emergency incident. It can be used equally well for both small and large situations. The system has considerable internal flexibility and can grow or retract to meet differing needs.

The Incident Commander (IC) is the person in charge of the incident. Initially the first person on site is considered the IC until relieved by a more qualified individual. This person is responsible for all incident activities and has overall, broad-based authority. This person is normally located at the EOC during the incident, interacting with the responding agencies chief officers and representatives.

The Operations Officer (OPS) is the person at the actual scene of the event, developing and coordinating activities and tactics to address the incident within the operational goals. This person is normally interacting with response personnel who are actually performing duties to mitigate the incident.

Emergency Responders shall operate within their Standard Operating Procedures (SOP’s). Vertellus personnel may have to assume different Incident Command roles (depending on their levels of training and experience) until more qualified officials arrive on the scene to assume these roles and responsibilities.

Employees will immediately implement the ICS for all emergencies (see 3.2 Plan Activation).

As public response agencies arrive on the scene, a multi-agency coordination system or Unified Command (UC) may be established.

Employees may provide security to the emergency location, assist with the evacuation of civilian personnel, and establish emergency site internal road-blocks (not public roadways) or other safety measures until local authorities arrive to assume these responsibilities.

Incident Command Organization

In the event of an emergency, the Facility Incident Command Organization will assume control of the incident. The Facility Incident Command Organization will be comprised of Vertellus personnel from the Facility. The team includes the Vertellus personnel listed in Section 1.1 of this plan and other knowledgeable facility staff as appropriate. The structure of the Facility Incident Command Organization can be established and expanded depending upon the changing conditions of the emergency incident.
Figure 1 presents a chart showing the basic Incident Command Structure.

**Figure 1 – Incident Command System Structure**
Emergency Incident Operating Guidelines
Vertellus has adopted sixteen (16) standard Emergency Incident Operating Guidelines for response to emergency incidents.

1. Notification. Security is notified, who will then notify site management and, if situation warrants, local emergency response agencies.
2. Safely evacuate or Respond – upwind, uphill and upgrade of the incident.
3. Identification of Hazards – Identify the hazards involved in the emergency.
5. Protective Actions – evacuation/shelter-in-place options establish and maintain adequate safety zones for the duration of the incident.
6. Isolate and Deny Access/Entry – do not allow anyone to enter or access the hazard area by using banner tape, vehicles, or emergency response personnel unless directed to do so by the IC/OPS.
7. Command – Initiate ICS and appoint a SO; verify zone control.
9. Assessment/Action Plan – a written Emergency Response Site Safety and Action Plan utilizing the form in Appendix D is developed and communicated to the entire response team through a field briefing. Communicate the SDS to responding agencies
10. Outside or Contracted Skilled support personnel shall be given an initial briefing at the site prior to their participation in any emergency response. The initial briefing shall include instruction in the wearing of appropriate PPE, chemical hazards involved (communicate the SDS to responding agencies), and what duties are to be performed.
11. Decontamination – establish and provide an adequate level of decontamination.
12. Medical – document exposures to personnel; give field medical evaluations to exposed personnel and recommendations for further medical attention.
13. Termination – emergency phase closure, equipment status evaluation, personnel debriefing and assignments for post incident analysis.
14. Disposal – ensure appropriate disposal of all recovered product(s) and contaminated soils.
15. Evaluation – if possible, complete a post-incident analysis within 48 hours after the end of the event with all personnel involved.
16. Documentation – all necessary emergency phase documentation is gathered and secured.

ICS Command Positions
Incident Commander (IC) – This position is normally held by the Plant Manager and is a role which operates as the primary liaison with the highest command of the on-site emergency responders. More simply put, it is the IC responsibility to be at the main Emergency Operations Center with the highest ranking officer(s) of the emergency responders. This person will have received HAZWOPER IC training. It is the responsibility of the IC to work with the Operations Officer to assess the character, source, amount, and extent of the emergency, as well as the possible hazards to human
health and the environment that may result from any emergency situation. Via the different operations and emergency roles primarily the SO, the IC shall ensure that adequate safety measures are in place.

The Incident Commander will have the authority to commit all resources of the company and to request evacuation during any major emergency. The Incident Commander will take whatever steps necessary to preserve life and property. The IC shall ensure emergency notifications are made to the appropriate local emergency response authorities, regulatory authorities, and Vertellus personnel. The IC is responsible for ensuring the situation is assessed, determining an appropriate course of action for controlling the incident, monitoring the Plan's effectiveness, and modifying the plan to meet the objectives of the emergency response. The IC is responsible for establishing the command structure, objectives, priorities, and developing strategies. The IC will approve and authorize the implementation of the Emergency Response Site Safety and Action Plan. Once the incident is controlled, the IC will ensure the area is safe before termination of the incident.

The Incident Commander will assume complete responsibility and authority for the control of personnel at the site. This includes authority over emergency situations occurring in the hazardous waste container storage area, and the hazardous waste storage and treatment areas.

The Incident Commander will be responsible for coordinating all on-site activities with local State, and Federal emergency personnel and will direct the implementation and use of the in-plant equipment and personnel. He will keep upper management informed at all times of the situation within the plants.

**Operations Officer** – The OPS is responsible for the management of all tactical operations directly applicable to the Emergency Response Site Safety and Action Plan. The OPS will have received HAZWOPER IC training. The OPS shall ensure that adequate safety measures are in place. The OPS evaluates and requests sufficient resources to accomplish operational objectives. The OPS evaluates on-scene operations and makes adjustments to organization, tactics, and resources as situations warrant and become necessary. The OPS is responsible for keeping the IC informed on any changes as well as current conditions of the operation. The OPS will function as the RCRA Emergency Coordinator.

Whenever there is an imminent or actual emergency situation, the OPS must immediately:

- Respond to the location of the emergency and identify the area affected, number and type of injuries, type of material released (chemicals involved), amount released, and possible wind direction. Do not put yourself in danger.
- If not already done, notify Security to activate the proper alarm and to announce the incident using the plant’s PA systems.
• Use radio communication, where applicable, to notify all facility personnel (each guard shack has two spare multi-channel radios). The Incident Commander must have a multi-channel radio for communication purposes. Channel 7 is always used during emergency incidents.
• Assess possible hazards to human health or environment. If this assessment indicates that a release will have an off-site impact OPS will contact the IC and advise that outside assistance will be required.
• Inform security to notify the other Vertellus emergency responders.
• Establish the Field Command Post--the Field Command Post is an on-site location where the Operations Officer will establish communications. It is a gathering point.
• Initiate emergency medical and rescue activities.
• Assist and provide information to outside emergency units.
**CAUTION:** Information to the media is to be provided only by the designated Public Information Officer.
• Direct plant personnel working on controlling the emergency. This will include all activities involved at the affected area such as isolation of specific equipment, containment of releases, shutdown of critical operations, etc.
• Ensure plant security (including gate control).
• Initiate the “all clear” notification and coordinate, with the Environmental Officer, on re-entry procedures, if necessary. The Incident Commander will instruct security when to notify the community of the “all clear” message.
• Upon termination of the emergency, initiate damage assessment and coordinate restoration of operations.
• Supervise the appropriate control and clean up.
**NOTE:** The OPS officer will consult with the Environmental Officer and decide the method of containment, clean up, manpower, and resources required accomplishing the required response.
• Ensure that all post-emergency equipment is clean and ready for its intended use before operations are resumed.

**Safety Officer (SO)** – The SO function is to develop and recommend measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations. The SO has authority to stop and prevent unsafe acts. The SO will establish Control Zones and will develop the Site Safety Plan portion of the Emergency Response Site Safety and Action Plan. The SO determines the level of PPE to be used in each of the Control Zones. The SO is responsible for supervising the preparation of the Health and Safety Plan for the approval by the IC/OPS.

Whenever there is an imminent or actual emergency situation, the Safety Officer must have a multi-channel radio for communication purposes and must immediately:

• Ensure the Field Command Post is established in a clean area not requiring specific protective clothing that can accommodate both Vertellus support personnel and any outside emergency responders (cold zone). The Field Command Post must be accessible by vehicle and in an area that can be secured if at all possible.
• Have the area is sectioned off with caution tape if appropriate or otherwise restrict the area if not already completed.
• Collect Air samples including LEL, O2, and organics.
• If an air monitor detects LEL reading within the explosive range, immediately inform the OPS Officer.
• Use “Danger Do Not Enter” tape to section off the “hot zone” area. Only emergency response personnel, with proper PPE, are permitted inside this taped off area. The Site Command Post is located outside of this area. The Safety Officer will identify the hot zone area or the entrance to the hot zone area, using an air monitoring device or instrument, and then barricade this hot zone area with RED “Do Not Enter” tape.
• Ensure the emergency response duffel bag kept at the main security desk is delivered to the Field Command Post.
• Ensure (M)SDS sheets are obtained from Security at the main desk for known chemicals involved in the incident.
• Ensure that Vertellus personnel not involved in handling the incident are kept clear of the incident scene.
• Inform all emergency responders (including Vertellus personnel) as to the types and locations of any emergency equipment at the Vertellus facility. (See Appendix C)
• Ensure personnel safety by locating available water sources that can be used for decontamination purposes.
• Set up decontamination.
• Work with the Radiation Safety Officer to communicate with the outside emergency responders if the emergency is in the area or could impact the nuclear gauges in Plant 47.

Communications Officer—Whenever there is an imminent or actual emergency situation, the control of radio communications will be maintained by the Senior Guard until relieved by the Communications Officer or their alternates (found in the emergency call list).

The senior security guard on duty will assume the role of the Communications Officer until the designated Communications Officer arrives. The Communications Officer will share the desk, located at the west end of Security Control, with the Senior Guard. At this location there is a regular phone, a phone with a private line for receiving calls from Vertellus Emergency Personnel and Vertellus senior management, and a red emergency phone, which is equipped with a battery backup in the event of a power failure or an interruption to the normal phone service.

Other Communication Officer Responsibilities include:
• Keeping the external communication lines open.
• Record all information provided by the Field Command Post.
• Record all information provided from employees who have relevant knowledge of the incident.
• Keep an account of all evacuated personnel from the incident area. During normal work hours, obtain this information from the HR Dept. During after hours, employees without an
immediate supervisor who evacuate their assigned work area are to report to the Communications Officer or Assistant at the Security desk for a head count and to ensure that evacuation has occurred.

- Notify both the EOC and the Field Command Post upon the arrival of each of the emergency responders. This includes outside emergency responders such as WTFD and Vertellus Emergency Response personnel (from the emergency call list) who are to report to the Communications Officer upon arrival.

**Technical Officer** – The Technical Officer is usually the Process Team Leader or the Process Engineer if the incident can be isolated to a specific unit. Upon notification that there is an imminent or actual emergency situation, the Technical Officer must immediately report to the Communications Officer at the main security desk. Their primary duties are to assist the OPS Officer in strategic and tactical decision-making. Also assists the OPS officer as a liaison with the responding emergency units.

**Environmental Officer** – The Environmental Officer will:

- Contact appropriate regulatory agencies and authorities of Incidents requiring notification.
- Assist the OPS and SO with strategic and tactical decision-making.
- Assist the OPS Officer as a liaison with the responding emergency units.
- After an incident, all emergency equipment will be cleaned to remove any hazardous material.
- Place any material collected in proper disposal container. Secure and label the container with appropriate waste label with all proper information.
- The Environmental Officer will confirm that all emergency equipment is clean and ready for its intended use before operations are resumed.
- Collect appropriate samples for analysis.

If material entered the sewers system, take appropriate action to minimize impact on wastewater treatment system by:

- Ensure sumps are off.
- With the SO, take LEL readings in the basins. Notify the OPS Officer if the LEL reading is within the explosive range.
- Starting with the first basin that material entered and working back to the main sump, draw material out as quickly as possible to help reduce the impact on the wastewater treatment system.
- Collect samples to verify that sufficient material has been removed from the sewer system.

Whenever there is a fire, explosion, release of extremely hazardous substances, or release of CERCLA hazardous substances that could threaten human health or the environment, the Environmental Officer must notify IDEM, the NRC, and the appropriate local authorities and note in the operating record, the time, date, and details of any incident that requires implementing the emergency response plan.
Within 10 days after the incident, one must submit a written report of the incident to IDEM and the appropriate local authorities. The report must include the following items:

1. Name, address and telephone number of the owner;
2. Name, address and telephone number of the facility;
3. Date, time and type of incident;
4. Name and quantity of material (s) involved;
5. Extent of injuries, if any;
6. Assessment of actual or potential hazards to human health or the environment, where applicable and
7. Estimated quantity and disposition of recovered material that resulted from the incident.

Whenever there is a fire, explosions, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment, the Environmental Officer must notify the Commissioner (IDEM) and the appropriate local authorities and note in the operating record, the time, date, and details of any incident that requires implementing the emergency (contingency) plan. A follow-up report must be submitted within 15 days of notification.

Any release from a hazardous waste tank system to the environment will be reported to the Commissioner of IDEM within 24 hours of detection, unless it is less than or equal to one pound and is immediately contained and cleaned up. Also, a report containing the following information on such a release will be submitted to the Commissioner of IDEM within 30 days of detection:

1. Likely route of migration of the release.
2. Characteristics of the surrounding soil (geology, hydrology, etc.);
3. Results of any monitoring or sampling conducted in connection with the release;
4. Proximity of the release to down gradient drinking water, surface water and populated areas; and
5. Description of response actions taken or planned.

Public Information Officer (PIO)—The PIO is responsible for developing and releasing information about the incident to the news media, to incident personnel, and to other appropriate agencies and organizations. Only one primary PIO will be assigned for each incident. The PIO may have assistants as necessary. The PIO must coordinate with the IC before any media releases. The PIO will obtain media information that may be useful to incident planning and advise command on issues and concerns.
Additional NIMS Roles: Additional NIMS roles such as Liaison Officer, Planning Officer, Logistics Officer, and Finance Officer can be provided to emergency responders as required due to magnitude of emergency incident.

ICS Command Locations and Organizations

Unified Command (UC) – UC is an expansion of the ICS organization. To be a member of the UC you must have authority and jurisdiction. The need for UC is brought about when an incident impacts the jurisdictional or functional responsibility of more than one agency or company. The UC links the responding organizations to the incident and provides a forum for these agencies to make consensus decisions. Under UC, the various jurisdictions and/or agencies and non-government responders may blend together throughout the organization to create an integrated response team. UC members may also include differing agencies, organizations or private industries, bringing large amounts tactical and support resources to the table.

Emergency Operations Center (EOC) – The EOC is established at the request of the IC to aid in administration of the incident and is normally located in the SPST Building. The FOC is the location and organization in which Site Management provides support for IC needs. The EOC must keep abreast of IC operational status and requests. The EOC must communicate the status of resources and the ability to fulfill operational requests to the IC.

Field Command Post (FCP) – The FCP is the location at which the primary tactical-level, on-scene incident command functions are performed. The FCP is located near the scene of the emergency where the incident is being managed. It is not necessary for the FCP to be within view of the actual incident site. It must always be in a safe area and well outside of the Control Zones.

Safe Work Practices

The OPS Officer and SO will be responsible for ensuring that safety measures are taken in all work practices.

Response and Mitigation Technologies— Life safety and the protection of personnel and the public are the first priority. The IC will make the final determination of which type of mitigating technology will be used in the emergency, along with consultation from Vertellus Operations and Safety personnel.

Personal Protective Equipment (PPE) – Proper PPE for response activities will be determined by the SO and OPS Officer on a case-by-case basis. Only employees properly trained in the use of a piece of equipment will be permitted to use it during an emergency response.

The minimum level of PPE within a process operating area shall be as described in the Vertellus Safety SOP’s and will include:

- Fire Resistant Clothing
EMERGENCY RESPONSE PLAN

- Safety Toe Shoes
- Hard Hat
- Safety Glasses and Chemical Goggles

Monitoring Devices – The Safety Officer will ensure that proper monitoring devices for such gases as Oxygen, Combustible Gases, and Toxic Gases are used during the emergency response and remediation to evaluate atmospheric conditions.

Medical/ First Aid – (M)SDS should be used to understand treatment of the patient. Vertellus employees who respond to an emergency as part of this Emergency Response Plan may be trained in basic first aid and CPR. Employees may provide first aid for injured personnel until public emergency medical services arrive. In case of a medical emergency:

- Immediately call 311 or 317-247-8141 so the guards can contact public emergency medical services.
- Immediately notify the EHSS Manager.
- Provide first aid until medical assistance arrives. MEDICAL ASSISTANCE IS STRICTLY VOLUNTARY BY VERTELLUS EMPLOYEES. Only provide the level of aid to which you are trained and qualified.
- Use “Universal Precautions” for blood borne pathogens and infectious materials.
- Do not move the patient unless the current location is threatened with imminent danger
- Render aid only if you are not placed in a situation of unacceptable risk.
- Ask a conscious victim for permission before giving care.

First Aid Kits are located in:

- Guard house behind the desk.
- Company First Aid room

Emergency Equipment and Supplies – Employees have access to various safety and emergency equipment provided by the company. Only employees trained in the proper use of these items will be permitted to use them. Emergency supplies can be found in:

- The Safety Room
- The Environmental Unit Blue Storage Shed (absorbent, overpacks)
- Control rooms
- Stores

Emergency Supplies may include fire protection equipment, PPE (hearing protection, chemical goggles, rubber gloves, respirators), absorbent materials (oil dry, pigs) portable eye wash, hazardous & toxic gas monitors, ropes, safety harness, ladder, first aid kit, portable lights, wind socks, and air movers.
Emergency Equipment Inspection, Testing and Maintenance

The inspection, testing, and maintenance for the fire protection equipment is detailed in the Fire Protection procedure (HS2MR0018). PPE and respiratory protection are also covered in site specific policy/procedure (HS2MR0036, HS2MR0042).

Limits of Action – Personnel may take action as long as it does not exceed their level of HAZWOPER training, as required by 29 CFR 1910.120.

- First Responder Awareness Level
  - Individuals who are likely to witness or discover a release
  - Trained to NOTIFY the proper authorities of the release
  - TAKE NO ACTION BEYOND NOTIFICATION
  - Shall have received initial training equal to the first responders awareness level and have the competencies outlined in 29 CFR 1910.120(q)(6)(ii)(A-F)
  - Shall receive annual refresher training as outlined in 29 CFR 1910.120(q)(8)

- First Responder Operations Level
  - Individuals who respond to releases or potential releases as part of the initial response for the purpose of protecting nearby persons, property, or the environment from the effects of the release.
  - Are trained to respond in a DEFENSIVE fashion WITHOUT ACTUALLY TRYING TO STOP THE RELEASE
  - Function to contain the release from a safe distance, keep it from spreading and prevent exposures
  - Shall have received 8 hours of initial training equal to the first responders operations level and have the competencies outlined in 29 CFR 1910.120(q)(6)(ii)(A-F) in addition to those competencies listed for the awareness level.
  - Shall receive annual refresher training as outlined in 29 CFR 1910.120(q)(8)

- First Responder Technician Level
  - Individuals who respond to releases or potential releases for the purpose of STOPPING THE RELEASE
  - May approach the point of release, in order to plug, patch or otherwise stop the release
  - Shall have received 24 hours of initial training equal to the first responders operations level and have the competencies outlined in 29 CFR 1910.120(q)(6)(iii)(A-I)
  - Shall receive annual refresher training as outlined in 29 CFR 1910.120(q)(8)

NOTE: Vertellus does not have an employee Hazmat Team.
Control Zones — The control zones will be set by the Safety Officer (SO) in coordination with outside responders. In determination of control zones, the SO shall ensure a buddy system is used and maintained at all times, with appropriate back-up. Personnel evaluating the site must don appropriate PPE until concentrations of contaminants and hazards have been fully evaluated.

- Exclusion Zone (Hot Zone) — The area immediately around a release or release where contamination does or could occur. The innermost of the three zones of a hazardous substance/material incident. Special protection is required for all personnel while in this zone.
- Contamination Reduction Zone (Warm Zone) — The area between the Exclusion Zone and the Support Zone. This zone contains the personnel decontamination station. This zone may require a lesser degree of personnel protection than the Exclusion Zone. This separates the contaminated area from the clean area and acts as a buffer to reduce contamination of the “clean” area.
- Support Zone (Cold Zone) — The “clean” area outside of the contamination control line. In this area, equipment and personnel are not expected to become contaminated. Special protective clothing is not required. This is the area where resources are assembled to support the hazardous substances/materials release operations.

Every effort should be made with the resources available to restrict entry of anyone into the Controlled Zones other than emergency responders authorized by the IC. Entry into and from the Contamination Reduction Zone or Exclusion Zone shall be documented and shall occur by designated routes.

Decontamination
Decontamination is the process of removing or neutralizing contaminants that have accumulated on personnel or equipment. While involved in a small release clean-up, personnel will follow sound decontamination procedures utilizing decontamination equipment staged in designated areas.

- Decontamination procedures shall be established prior to entering the Exclusion Zone.
- The ability to decontaminate shall be in place prior to entering the Exclusion Zone.
- The method of decontamination shall be determined by the SO according to the nature of the contaminant.
- The Environmental Officer shall determine the method of disposal used for contaminants.

Personal contact with chemicals:

- Emergency Decontamination is used to remove harmful amounts of the contaminant as quickly as possible without setting up decontamination corridors. The usual method is to rinse with copious amounts of water.
- Full Decontamination is the thorough washing of the contaminant from the whole body from head to toe and includes removing all of the person’s outer clothing, jewelry, and other items that may trap the chemical. Decontamination corridors should be established. This is performed in a manner that is protective of emergency responders and the environment.
- Partial Body Decontamination is the thorough washing of the contaminant from a small area of the person’s body in a manner that is protective of the emergency responders and the
environment. For instance, if the chemical was splashed on the feet only, a partial decontamination of the lower leg and foot is all that is necessary to remove the contaminant from the area, not a full decontamination. In this case, the person’s pants, shoes, and socks should be removed for decontamination.

Other Considerations:

- Each person should be provided clothing after decontamination for transfer to the hospital
- Their personal belongings (wallet, keys, jewelry) should be placed in a separate, smaller bag from their clothing and labeled. Their personal effects can go with the person to the hospital, while their clothes are left at the scene. The Security Department will contact the Environmental Dept. for handling of contaminated clothing.
- An (M)SDS should accompany any person taken to the hospital.

3.6.4 Follow-up (Post Emergency Response Operations)

Post emergency repairs/cleanup begins when the IC of the initial emergency response declares the site to be safe to perform such activities. Vertellus personnel and/or contractors will assist or perform repairs as safely and promptly as possible.

Immediately after an emergency, the Environmental Officer will provide for treatment, storage, or disposal of recovered products, contaminated soil, or surface water, or any other material that results from a release, fire, or explosion at the facility. The Environmental Officer must ensure that, in the affected area(s) of either facility the following measures are taken:

- No waste that may be incompatible with the released material is treated, stored, or disposed of until clean up procedures are completed; and
- All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

After repairs have been made, Vertellus personnel will coordinate with the Safety and Environmental departments to conduct or assist in the proper remediation and cleanup activities.

Post-Incident Investigation

An incident investigation will be conducted according to the investigation guidelines. In addition, to the extent possible, Vertellus will meet with involved agencies to conduct a post incident critique.
## Appendix A - Plant Assembly Areas and Evacuation Areas

*If you do not know where to go, or immediate need is warranted, or your particular building isn’t listed, go to the closest shelter.*

<table>
<thead>
<tr>
<th><strong>Plant Assembly Areas</strong></th>
<th><strong>Evacuation Area</strong></th>
<th><strong>Severe Weather Emergencies</strong></th>
<th><strong>Shelter In Place Areas</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INSTRUCTIONS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department monitors will account for all employees at assembly area.</td>
<td>Departments and Units are to remain together at the evacuation area. Monitors will account for all employees at assembly area</td>
<td>During tornados, severe thunderstorms or earthquakes, employees will seek shelter in the areas listed below.</td>
<td>For chemical/vapor releases that could potentially pose a hazard for employees, seek shelter in the areas listed below. Follow instructions located in area.</td>
</tr>
<tr>
<td><strong>OAK PARK Department</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Office and Lab Buildings</td>
<td>Designated by departments in Office or Lab Areas.</td>
<td>Large Evergreen Pine Tree in front of (east of) the Lab Building Flag Pole, or North parking lot (dependent on type of emergency and wind direction)</td>
<td>1st Floor (basement) hallway&lt;br&gt;<em>Alternate: Locker room or exercise area</em></td>
</tr>
<tr>
<td>SPST Building</td>
<td>Office Area</td>
<td>Same as above</td>
<td>Locker room or exercise area</td>
</tr>
<tr>
<td>Plant 27</td>
<td>Blue room</td>
<td>Same as above</td>
<td>Blue room computer room, Control rooms under desks</td>
</tr>
<tr>
<td>Plant 40</td>
<td>Control Room</td>
<td>Same as above</td>
<td>Plant 40 Kitchen Area</td>
</tr>
<tr>
<td>Plant 48</td>
<td>Control Room</td>
<td>Same as above</td>
<td>Control Room</td>
</tr>
<tr>
<td>Engineering Lab</td>
<td>Office Area</td>
<td>Same as above</td>
<td>Hallway – internal office area</td>
</tr>
<tr>
<td>Environmental Office Area</td>
<td>Office Area</td>
<td>Same as above</td>
<td>North Bay – Shop or nearest safe location</td>
</tr>
<tr>
<td>Instrument Shop</td>
<td>Office Area</td>
<td>Same as above</td>
<td>Hallway – internal office area</td>
</tr>
<tr>
<td>Instrument Technicians</td>
<td>Office Area</td>
<td>Same as above</td>
<td>Hallway – internal office area</td>
</tr>
<tr>
<td>Maintenance Shop</td>
<td>North Bay – Maintenance Dept.</td>
<td>Same as above</td>
<td>North Bay – Shop or nearest safe location</td>
</tr>
<tr>
<td>Packaging</td>
<td>Main Warehouse</td>
<td>Same as above</td>
<td>Main Warehouse</td>
</tr>
<tr>
<td>Stores/Receiving</td>
<td>North Bay - Maintenance Dept.</td>
<td>Same as above</td>
<td>North Bay – Shop or nearest safe location</td>
</tr>
<tr>
<td>Transport Operators</td>
<td>Office Area</td>
<td>Same as above</td>
<td>Nearest safe area</td>
</tr>
<tr>
<td>Utilities - Oak Park</td>
<td>Office Area</td>
<td>Same as above</td>
<td>Control room</td>
</tr>
</tbody>
</table>
## Emergency Response Plan

<table>
<thead>
<tr>
<th>Security – 1500</th>
<th>SPST Building</th>
<th>Large Evergreen Pine Tree in front of (east of) the Lab Building Flag Pole</th>
<th>Locker room or exercise area</th>
<th>Locker room or exercise area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractors</td>
<td>SPST Building</td>
<td>Large Evergreen Pine Tree in front of (east of) the Lab Building Flag Pole or North parking lot (dependent on type of emergency and wind direction)</td>
<td>Nearest safe area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAYWOOD Department</th>
<th>General Assembly Areas</th>
<th>Plant Evacuation Area</th>
<th>Severe Weather Emergencies Shelter Areas</th>
<th>Shelter in Place Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security – 1800</td>
<td>Gate 7 Guardhouse</td>
<td>Gate 7 Guardhouse</td>
<td>WWTP control room</td>
<td></td>
</tr>
<tr>
<td>Utilities- WWTP</td>
<td>Control Room</td>
<td>Gate 7 Parking Lot</td>
<td>Control room</td>
<td></td>
</tr>
<tr>
<td>Tar Pet</td>
<td>Control Room</td>
<td>Gate 7 Parking Lot</td>
<td>WWTP Restrooms</td>
<td></td>
</tr>
<tr>
<td>Plant 47</td>
<td>Control Room</td>
<td>Gate 7 Parking Lot</td>
<td>Restrooms</td>
<td></td>
</tr>
<tr>
<td>Maintenance Shop</td>
<td>Plant 47 Control Room</td>
<td>Gate 7 Parking Lot</td>
<td>Plant 47 restrooms</td>
<td></td>
</tr>
<tr>
<td>Contractors</td>
<td>Contractor Maintenance Shop and WWTP</td>
<td>Gate 7 Parking Lot</td>
<td>Nearest safe area as listed above</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B- Evacuation Routes

Evacuation routes for the facility are situational and is decided upon by the IC/OPS.

High level, overall evacuation routes for the facility can be found can be found in the Drafting Department.

Drawing numbers:

- Maywood: DWG PLMP01-004
- Oak Park: DWG 29PLMP01-004
Appendix C- Fire Extinguisher and Safety Shower Locations
PLANT 27 BOX
LEVELS 1–7

LEVEL 1

LEVEL 2

LEVEL 3

LEVEL 4

LEVEL 5

LEVEL 6

LEVEL 7

S.C.B.A./ESCAPE PACK
FIRE EXT.
EYE WASH
SAFETY SHOWER

SHOWER-EYE COMBO
HYDRANT MONITOR
MONITOR
FIRE PULL STATION
Diesel Fire Pump
Oak Park/Gate 6

- S.C.B.A./Escape Pack
- Fire Ext.
- Eye Wash
- Safety Shower
- Shower-Eye
- Hydrant Monitor
- Monitor
- Fire Pull Station
PLANT 47
ROTOFORMER BUILDING
LEVEL 1 & 2

ROTOFORMER BLDG- LEVEL 1

ROTOFORMER BLDG- LEVEL 2

SCBA/ESCAPE PACK
FIRE EXT.
EYE WASH
SAFETY SHOWER

SHOWER-EYE COMBO
HYDRANT MONITOR
MONITOR
FIRE PULL STATION
PLANT 66 PROCESS EQUIPMENT STRUCTURE
LEVELS 3 & 4

S.C.B.A./ESCAPE PACK
FIRE EXT.
EYE WASH
SAFETY SHOWER

SHOWER-EYE
HYDRANT MONITOR
MONITOR
FIRE PULL STATION
PLANT 66 PROCESS EQUIPMENT STRUCTURE
LEVELS 5 & 6

S.C.B.A./ESCAPE PACK
FIRE EXT.
EYE WASH
SAFETY SHOWER

SHOWER-EYE
HYDRANT MONITOR
MONITOR
FIRE PULL STATION
**Appendix D - Emergency Response Site Safety Action Plan**

### Emergency Response Site Safety and Action Plan

<table>
<thead>
<tr>
<th>Description Section</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong></td>
</tr>
<tr>
<td><strong>Date:</strong></td>
</tr>
<tr>
<td><strong>Type of Incident</strong></td>
</tr>
<tr>
<td>☐ Medical</td>
</tr>
<tr>
<td>☐ Rescue</td>
</tr>
<tr>
<td>☐ Fire</td>
</tr>
<tr>
<td>☐ Weather</td>
</tr>
</tbody>
</table>

#### Hazardous Materials Involved

---

### Accountability Section

| Accountability Established for Responders? | YES ☐ | NO ☐ |
| Area Evacuated?                           | YES ☐ | NO ☐ |
| Are All Evacuees Accounted For?           | YES ☐ | NO ☐ |

If no, describe:

---

### Command Section

| Location of Command Post: |
| Incident Commander:       |
| Safety Officer:           |
| EOC Activated:            | YES ☐ | NO ☐ |

If yes, location:

---

### Agencies Section

| Agencies Involved (Include name of representative) |

---

### Communications Section

| Methods used: | Radio Channel: | Phone Number: | Other: |

---

### Access Zones Section

| Is Site Secure? | YES ☐ | NO ☐ |
| Exclusion Zone Description: |
| Exclusion Zone PPE: | Level 1 ☐ | Level 2 ☐ | Level 3 ☐ |

Contamination Reduction Zone Description:

Contamination Reduction Zone PPE: | Level 1 ☐ | Level 2 ☐ | Level 3 ☐ |

Method of Decontamination Used:
**Support Zone Description:**

<table>
<thead>
<tr>
<th>Support Zone PPE:</th>
<th>Level 1 □</th>
<th>Other:</th>
</tr>
</thead>
</table>

| Area Monitoring Provided: | YES □ | NO □ | Area Monitoring Described: |

**7. Emergency Procedures Section**

- Review of Alarm and Emergency Evacuation by Responders: YES □ NO □ Method of Recall Used:
- Nearest Hospital/Clinic: Phone:
- Nearest Fire Department: Phone:
- Police Department: Phone:

**8. Actions Section**

- Offensive Actions Taken:

**9. Objectives Section**

<table>
<thead>
<tr>
<th>Objectives Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>List Potential Exposures:</td>
</tr>
</tbody>
</table>

**10. Assets Section**

<table>
<thead>
<tr>
<th>Is Mutual Aid Involved?</th>
<th>YES □ NO □</th>
</tr>
</thead>
<tbody>
<tr>
<td>List Fixed Equipment:</td>
<td></td>
</tr>
<tr>
<td>List Mobile Equipment:</td>
<td></td>
</tr>
</tbody>
</table>

**11. Rehab Section**

<table>
<thead>
<tr>
<th>Location of Rehab:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of Rehab:</td>
</tr>
</tbody>
</table>

**12. Safety Message for Specified Operational Period:**

---

Incident Commander/Preparer (Name/Signature):

Safety Officer (Name/Signature):
## Evacuation Assembly Area Accountability

<table>
<thead>
<tr>
<th>Incident Date:</th>
<th>Incident Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Name:</td>
<td></td>
</tr>
<tr>
<td>Assembly Location:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Contact Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Preparer (Name):

NOTE: Upon Completion – Attach to "Emergency Response Critique Form"
## Appendix E- Reportable Quantity (RQ) List

Onsite Hazardous Substances

<table>
<thead>
<tr>
<th>Hazardous Substance</th>
<th>RQ lbs</th>
<th>Hazardous Substance</th>
<th>RQ lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha picoline</td>
<td>5000</td>
<td>Piperidine (EHS)</td>
<td>1000</td>
</tr>
<tr>
<td>Acetaldehyde</td>
<td>1000</td>
<td>Propionaldehyde</td>
<td>1000</td>
</tr>
<tr>
<td>acetic acid</td>
<td>5000</td>
<td>Pyridine</td>
<td>1000</td>
</tr>
<tr>
<td>Acetic anhydride</td>
<td>5000</td>
<td>Sodium</td>
<td>10</td>
</tr>
<tr>
<td>Acetone</td>
<td>5000</td>
<td>Sodium hydroxide</td>
<td>1000</td>
</tr>
<tr>
<td>Acrylic acid</td>
<td>5000</td>
<td>Sodium hypochlorite</td>
<td>100</td>
</tr>
<tr>
<td>Ammonia (EHS)</td>
<td>100</td>
<td>Styrene</td>
<td>1000</td>
</tr>
<tr>
<td>Aniline (EHS)</td>
<td>5000</td>
<td>Sulfuric acid (H2SO4) (EHS)</td>
<td>1000</td>
</tr>
<tr>
<td>Benzene</td>
<td>10</td>
<td>Toluene</td>
<td>1000</td>
</tr>
<tr>
<td>Carbon disulfide</td>
<td>100</td>
<td>Vanadium pentoxide (EHS)</td>
<td>1000</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
<td>10</td>
<td>Xylene</td>
<td>100</td>
</tr>
<tr>
<td>Chlorine (EHS)</td>
<td>10</td>
<td>m-Xylene</td>
<td>1000</td>
</tr>
<tr>
<td>Chromic acid</td>
<td>10</td>
<td>o-Xylene</td>
<td>1000</td>
</tr>
<tr>
<td>Cyanide compounds</td>
<td>10</td>
<td>D001 ignitable*</td>
<td>100</td>
</tr>
<tr>
<td>Dimethyamine (DMA)</td>
<td>1000</td>
<td>D002 corrosive*</td>
<td>100</td>
</tr>
<tr>
<td>Ferric chloride</td>
<td>1000</td>
<td>D003 reactive*</td>
<td>100</td>
</tr>
<tr>
<td>Formaldehyde (EHS)</td>
<td>100</td>
<td>D018 benzene*</td>
<td>10</td>
</tr>
<tr>
<td>Hydrochloric acid (HCl)</td>
<td>5000</td>
<td>D038 pyridine*</td>
<td>1000</td>
</tr>
<tr>
<td>Hydrogen cyanide (HCN) (EHS)</td>
<td>10</td>
<td>F003*</td>
<td>100</td>
</tr>
<tr>
<td>Hydroquinone (EHS)</td>
<td>100</td>
<td>F005*</td>
<td>100</td>
</tr>
<tr>
<td>Mercury</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>5000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mono ethylamine (MEA)</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*If more than 1 pound is released into the environment from a tank system, the State must be notified.

A complete list of known hazardous substance and their Reportable Quantities can be found in 40 CFR 302.4.
Appendix F- Radiation Safety

Plant 47 Radiation Safety Emergency Procedures

The Radiation Safety Management Program establishes procedures for responding to emergencies at Plant 47. This comprehensive response plan can be accessed via the Radiation Safety Officer, and a hard copy of the plan is kept in the Plant 47 Process Team Leader’s office.

Currently, the site Radiation Safety Officers are:

1. Larry Ballard
2. Kevin Bray

If there is a fire, explosion, or a natural disaster involving Plant 47, **immediately evacuate and barrier off area completely around Plant 47 a minimum of 150 feet.** The Radiation Safety Officer will be notified by the Security Department. Responsibilities for emergency response activities will be the same as indicated in the emergency response plan for the plant. The Radiation Safety Officer is responsible for the safety of personnel working in the area and the public. He is responsible for ensuring that the Radiation Safety Management Program procedures are followed and proper authorities are notified when appropriate and as follows:

- The IC/Operations Officer will notify the outside responding emergency commander of the potential radiation hazard in Plant 47
- The Radiation Safety Officer will notify the manufacturer Vega Americas, the Nuclear Radiation Commission, and the Indiana State Board of Health of incident.
  - Vega Americas 24 hour emergency phone number 1-800-367-5383, follow prompts. The prompts will lead directly to a cell phone for the Vega Americas Radiation Safety Officer.
- The Radiation Safety Officer or designee will identify all personnel potential exposed to the radiation
- Reports will be filed in accordance to regulations and the Radiation Safety Management Program.
- Reporting to IDHS- see page 8

The instructions of the outside emergency responders will be followed as well as instructions from the NRC, IDHS, and Vega Americas.
## Emergency Response Incident/Exercise/Drill Critique Form

### Incident Location:
### Incident Date:
### Incident Start Time:  
### Incident Finish Time:  
### Critique Date:
### Critique Time:

#### 1. Type of Event (If an incident, skip #2, and #3)

- [ ] Exercise/Drill or [ ] Incident

#### 2. Type of Exercise or Drill

- [ ] Notification  
- [ ] Unannounced
- [ ] Announced  
- [ ] Full Scale
- [ ] Tabletop  
- [ ] Deployment
- [ ] Function  
- [ ] Other:

#### 3. Frequency of Drill

- [ ] Quarter  
- [ ] 1st  
- [ ] 2nd
- [ ] 3rd  
- [ ] 4th
- [ ] Annual Exercise/Drill  
- [ ] Semi-Annual Exercise/Drill

#### 4. Type of Incident

- [ ] Medical  
- [ ] Hazmat Liquid Spill  
- [ ] Fire  
- [ ] Weather
- [ ] Rescue  
- [ ] Hazmat Gas Release  
- [ ] Security  
- [ ] Other:

#### 5. Explanation of Incident:

#### 6. Explanation of Actions Taken:

#### 7. Positive Points
8. Points to Improve on

9. Attachments to this Report

- Emergency Response Site Safety and Action Plan
- Incident Command Organization Chart – NIMS 207
- Emergency Response Incident Log
- Evacuation Assembly Area Accountability
- Emergency Response Personnel Roster
- Emergency Response Staging Form
- Other:

10. Critique of Standard Operating Guidelines:

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Notification – Were notification procedures followed and adequate?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Safely Respond – Was the scene approached properly?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Accountability – Where all personnel accounted for?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>d)</td>
<td>Isolate and Deny Entry – Were zones, corridors, and evacuation routes used properly?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>e)</td>
<td>Command – Was incident command established and used properly?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Response Technique Utilized and Corrective Actions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f)</td>
<td>Identification of Material (Hazard Assessment) – Was material identified in an appropriate time and manner?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>g)</td>
<td>Assessment/Action Plan – Was written action plan developed and followed?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
### EMERGENCY RESPONSE PLAN

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>h)</td>
<td>Protective Equipment – Was PPE identified and used properly?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>i)</td>
<td>Control – Were control techniques applied appropriately?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j)</td>
<td>Protective Actions – Were protective actions applied appropriately?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>k)</td>
<td>Decontamination – Was decontamination conducted appropriately?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>l)</td>
<td>Disposal – Waste material(s) disposed of properly?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>m)</td>
<td>Termination – Was the incident terminated at the appropriate time, and all de-briefed?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>n)</td>
<td>Medical – Was medical and/or first aid available and used properly?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
<tr>
<td>o)</td>
<td>Documentation – Was all documentation gathered?</td>
<td>☐ Yes</td>
<td>☐ No</td>
</tr>
</tbody>
</table>

### 11. Participants:

<table>
<thead>
<tr>
<th>Name</th>
<th>Company / Agency</th>
<th>Duty</th>
<th>Phone Number</th>
<th>Contact Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Incident Commander (signature):</td>
<td>Date:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed by (signature):</td>
<td>Date:</td>
<td></td>
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</tr>
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</table>
Appendix H- OSHA Severe Injury Reporting Requirements
(29 CFR 1904.39) NEW as of 1 January 2015 (US sites only)

<table>
<thead>
<tr>
<th>Incident Type</th>
<th>Occurring within...</th>
<th>Reporting Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatality</td>
<td>30 days of the incident</td>
<td>Within 8 hours</td>
</tr>
<tr>
<td>In-patient hospitalization</td>
<td>24 hours of the incident</td>
<td>Within 24 hours</td>
</tr>
<tr>
<td>Amputation (either during incident or as medically necessary afterwards)</td>
<td>24 hours of the incident</td>
<td>Within 24 hours</td>
</tr>
<tr>
<td>Loss of an eye</td>
<td>24 hours of the incident</td>
<td>Within 24 hours</td>
</tr>
</tbody>
</table>

- **Timing**: Reporting clock starts when the event is reported to Vertellus.
- **Contractor Injuries**: If an injury occurs to a contractor while working on a Vertellus site, it may be the contractor employer’s obligation to report, not Vertellus’ – this depends on level of direct supervision. (Examples: lab temporary employee (likely yes) vs. contract tank installer (likely no))
- **Key Definitions/Clarifications:**
  - “In-patient hospitalization” – Means formal “in-patient” admission for medical care or treatment; DO NOT include admissions only for observation and/or testing. (Includes admission due to heart attack – OSHA presumes those occurring at work may be work-related and requires reporting.)
  - “Amputation” – Means the traumatic loss of a limb or other external body part.
    - **Include**: a part, such as a limb or appendage, that has been severed, cut off, amputated (either completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; amputations of body parts that have since been reattached.
    - **DO NOT include**: avulsions (“torn off”), degloving, scalpings, severed ears, or broken or chipped teeth.
- **How to report (choose ONE of these methods):**
  1. Call or report in-person to nearest OSHA Area Office (CANNOT leave a message, fax, text or email – must speak to a person):

<table>
<thead>
<tr>
<th><em>Indiana (Region 5)</em></th>
<th><em>Michigan (Region 5)</em></th>
<th>New Jersey (Region 2)</th>
<th><em>North Carolina (Region 4)</em></th>
<th>Pennsylvania (Region 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana Department of Labor (OSHA)</td>
<td>Michigan Occupational Safety &amp; Health Administration (MIOSHA)</td>
<td>OSHA Region II</td>
<td>North Carolina Department of Labor Occupational Safety &amp; Health Div.</td>
<td>OSHA Region III</td>
</tr>
<tr>
<td>402 West Washington Street</td>
<td>7150 Harris Drive</td>
<td>01 Varick Street, Room 670</td>
<td>111 Hillsborough Street</td>
<td>The Curtis Center-Suite, 740 West</td>
</tr>
<tr>
<td>Indianapolis, Indiana 46204-2751</td>
<td>P.O. Box 30643</td>
<td>New York, New York 10014</td>
<td>Raleigh, NC 27601-1092</td>
<td>170 S. Independence Mall West</td>
</tr>
<tr>
<td></td>
<td>Lansing, Michigan 48909-8143</td>
<td></td>
<td></td>
<td>Philadelphia, PA 19106</td>
</tr>
</tbody>
</table>
2. Call OSHA toll-free central telephone number - **1-800-321-OSHA (6742)** - **CANNOT** leave a message, fax, text or email – must speak to a person

**Incident Investigation:** Follow corporate policies on incident investigation and reporting, including prompt VLT/Legal notification. A Level 2 investigation must be started immediately upon learning of the incident. Site should expect to have OSHA inspectors calling or visiting the site within 24 hours of notification.

**Seek advice immediately for help with interpretations of reporting obligations:**

- **Misty Bogle**
  - Office: 317-248-6548
  - Cell: 317-452-5350

- **Tom Mesevage**
  - Office: 973-515-8611
  - Cell: 973-945-7069
Appendix I Emergency Response Actions

Large Uncontrolled Chemical Release

It is generally considered that a Large Release is defined as a release or release of more than 5 drums of a “Highly Volatile Liquid;” or any product or chemical with characteristics that create immediate safety/health hazards or will migrate off-site. This can be dependent upon the type of material and should be confirmed through the Environmental Department as to the characteristics of the material as well as the “Reportable Quantity” for the specific released material. If you discover a release:

- Immediately Notify Security by dialing 311, the Supervisor, and Safety
- If needed, activate the appropriate facility alarm system to initiate evacuation

If a possible emergency situation exists, Security will activate the Incident Command System. All employees will follow directions of the Incident Commander.

- The IC will determine if Security need to call for outside assistance.
- Security and Vertellus personnel obtain care for any injured personnel
- Departments ensure that all personnel are accounted for and identify if any personnel are missing
- Departments shut down any equipment that is safe to de-energize and also any vehicles, welding machines, generators, etc.
- Departments attempt to identify source of release or release and material type from a safe distance
- IC/OPS determine the wind direction
- IC/OPS completes Emergency Response Site Safety and Action Plan and communicate to personnel prior to any action, update as information or conditions change
- SO establishes Control Zones using monitoring devices
- OPS/Security restrict access according to established Control Zones
- Vertellus employees shall not perform any task in response to an emergency that exceeds their current level of training per 29 CFR 1910.120 and Section 3.5.3.2 of this Emergency Response Plan
- Responders comply with PPE requirements established by the Safety Officer
- Responders utilize the “Buddy System” along with proper back-up
- Responders never enter a gas or vapor cloud or any other immediately dangerous area without proper awareness of situation and PPE
- The trained Emergency Responders will attempt to contain the release
- The trained Emergency Responders will attempt to stop the release
- The IC terminates the incident
- Security sounds the all-clear as directed to do so by the Incident Commander
The IC facilitates a Post Incident Critique
The Environmental Officer facilitates the remediation of the release area and the disposal of any hazardous material
The IC facilitates an Incident Investigation

Boiler System Releases and Leakage (those burning hazardous waste)

The procedures below will be used to respond to releases and leakage of hazardous waste from the BIF boilers and its storage system.

Wearing protective equipment as necessary, qualified personnel shall take any actions needed to stop the release at its source, including:

- Activate emergency pump shut-off switch located in: a) boiler control room; b) boiler area; or c) pump stations
- Shut off valves and/or pumps as needed to stop the flow of waste out the tank system
- Remove the remaining material from the leaking equipment, as necessary to prevent further release and allow repairs
- Put a clean empty container (bucket, drum, etc. depending on the size of the leak) under the leak to prevent material from getting on the ground and to collect the substance for recycle
- Construct temporary containment dike (sandbags, soil, commercial containment "pillows", etc.) to prevent further migration of the release to soils or surface water

Fire

- Immediately Notify Security (311) Supervisor or Safety
- Call for outside assistance and notify public agencies as needed
- Activate the appropriate facility alarm system to initiate evacuation
- If determined necessary by onsite supervision, activate the Incident Command System -- Follow directions of Incident Commander
- Activate fixed firewater systems if applicable (e.g., deluge systems, fire monitors)
- Follow 3.6.1 Notify instructions
- Determine the wind direction
- Obtain care for any injured personnel
- Ensure that all personnel are accounted for and identify if any personnel are missing
- Shut Down any equipment that is safe to de-energize
- Attempt to identify source of fuel and material type from a safe distance
- Establish Control Zones

Restrict access according to established Control Zones
- VERTELLUS employees shall not perform any task in response to an emergency that exceeds their current level of training per 29 CFR 1910.120 and Section 3.5.3.2 of this Emergency Response Plan
- Comply with PPE requirements established by the Safety Officer
- Use the “Buddy System” along with proper back-up.
- Never enter an immediately dangerous area
- The trained Emergency Responders will attempt to:
  - Contain the fire
  - Protect the exposures
  - Stop the fuel source
  - Extinguish the incipient level fire
- The IC terminates the incident
- Security sounds the all-clear as directed to do so by the Incident Commander.
- The IC facilitates a Post Incident Critique
- The Environmental Officer facilitates the remediation of the release area and the disposal of any hazardous material.
- The IC facilitates an Incident Investigation

Fire Prevention Systems and Locations — The following locations are equipped with water sprinkler systems:

- The north sections of the Main Lab building
- The west wing (or gray) Administrative building
- AP Plant (Plant 48)
- Wheeler Plant (Plant 47, MRM office building and MRM warehouse, Rotoformer building)
- SPST building
- Packaging warehouse (needs water supply hose hook up)

The following locations are equipped with halon fire prevention systems:

- Main computer room in the Main Lab building
- Blue Room (located in the Box Plant)
- Wheeler Plant control room

1500 South Tibbs Avenue -- Fire Suppression Equipment

- Gate 6 Electric Fire Pump 750 G.P.M.
- Gate 6 Diesel Fire Pump 1,000 G.P.M.
- Gate 2 Diesel Fire Pump 1,500 G.P.M.

8 Inch piping water supply off of Minnesota St. and 10 inch water piping supply off of Tibbs Ave.

Fire Hydrants, with monitor attachments and fog nozzles for fire extinguishment and exposure protection.

3501 W. MINNESOTA STREET — Fire Suppression Equipment

- Maywood Electric Fire Pump 1500 G.P.M.
- Maywood Diesel Fire Pump 1500 G.P.M.
- 10 inch piping water supply off of Minnesota St.

Utility Failure

In the event of a utility failure, plant personnel should contact security (311) to report the utility failure. If the utility failure may cause an emergency incident (i.e. fire or explosion, release of a material) follow the emergency procedures for fire or release of a material.

In the event of a power failure or, the telephone system is down, the telephones listed in Section 1 will automatically switch to outside lines. The Power Failure numbers can be used to place and receive calls during an emergency. When the telephone system comes up, these phones will switch back to their normal operations.

NOTE: These phones are RED in color for easy identification. Red phones will not be moved from their current locations for any reason without prior approval from the Safety Department. When the Power Failure Mode is in use, the full power failure number (listed above) must be dialed to reach the listed extension. To dial an outside number there is no need to dial “9” as these are direct outside lines, however long distance numbers cannot be dialed from these phones.

Under emergency conditions, Personnel and Safety/Security can be restricted to incoming calls leaving the remainder of the lines for interplant and outgoing calls.

Security Intrusion or Terroristic Threat

1. Immediately Security (311)
2. Follow 3.6.1 Notify instructions
3. Security to call for outside assistance and as needed

4. IC will activate the appropriate facility alarm system to initiate evacuation if appropriate
5. Departments ensure that all personnel are accounted for and identify if any personnel are missing.
6. SO establish Control Zones as appropriate
7. Security restrict access according to established Control Zones
8. Contact Site Security Officer or Alternate Security Officer

The National Terrorism Advisory System (NTAS) (http://www.dhs.gov/national-terrorism-advisory-system) system communicates information about terrorist threats by providing timely, detailed information to the public, government agencies, first responders, airports and other transportation hubs, and the private sector. Each alert provides information to the public about the threat, including, if available, the geographic region, mode of transportation, or critical infrastructure potentially affected by the threat; protective actions being taken by authorities, and steps that individuals and communities can take to protect themselves and their families, and help prevent, mitigate or respond to the threat.

If a NTAS “Threat Alert” below affects the facility, the Safety and Security Manager or designee will contact the appropriate agencies listed in 1.4 and request further guidance.

- **Imminent Threat Alert**
  - Warns of a credible, specific, and impending terrorist threat against the United States.
- **Elevated Threat Alert**
  - Warns of a credible terrorist threat against the United States.

The facility should consider actions to increase its security posture during periods of elevated threat alerts received from the NTAS. This might include implementing the following measures as appropriate when a threat alert is received:

- Coordinating necessary security efforts with Federal, state, and local law enforcement agencies or any National Guard or other appropriate armed forces organizations;
- Taking additional precautions at public events held on-site and possibly considering alternative venues or even cancellation;
- Assigning emergency response personnel and pre-positioning and mobilizing specially trained teams or resources;
- Adding additional barriers at vehicle access points and around critical assets and restricted areas to control traffic and increase standoff distances;
- Adding additional illumination for remote areas;
- Decreasing the number of personnel authorized to be on-site;
- Extending physical protection of vulnerable points;
- Increasing frequency of perimeter patrols;
- Increasing security force allocations;

• Increasing vehicle screenings and tanker truck and rail car inspections;
• Increasing personnel and vehicle screening inspections;
• Requiring mandatory visitor escorts;
• Minimizing the number of gates in use;
• Instituting off-site mail handling;
• Instituting parking restrictions;
• Postponing projects and activities where critical assets are more exposed or vulnerable;
• Reinforcing barriers at remote or unused gates.

If a significant security incident occurs, it should be reported to the Department of Homeland Security once the incident has concluded. Within DHS, incidents should be reported to the National Infrastructure Coordinating Center (NICC) at nicc@dhs.gov or 202-282-9201. The incident may also be reported to the local FBI Field Office- Indianapolis at 317-595-4000.

**Aviation Restriction**

If an emergency incident at the Indianapolis Vertellus Facility presents a dangerous situation for aircraft, the FAA Operation Center shall be notified by calling the applicable FAA number listed in Section 1.2 of this plan. Provide the FAA with the following information:

- Location of area involved
- Reason for request

After the emergency is cleared, call the FAA office and tell them that the temporary flight restriction can be lifted.

**Natural Disasters**

For any of the Natural Disasters listed below, if the Incident Command System is needed:

1. Follow directions of Incident Commander
2. Follow 3.6.1 Notify instructions
3. Complete Emergency Response Site Safety and Action Plan and communicate to personnel prior to any action, update as information or conditions change
4. Establish Control Zones as appropriate
5. Restrict access according to established Control Zones
6. IC terminate the incident
7. IC sounds the all-clear.
8. IC perform a Post Incident Critique

Flooding

1. Continuously monitor local news reports
2. Take preliminary actions to secure the facility prior to flooding and evacuation
3. Consider having sandbags brought to sites
4. Consider obtaining portable pumps and hoses
5. Additional precautions should be taken for underground storage facilities
6. Close all valves on products and additive storage tanks
7. Remove assets such as files from low lying areas
8. Consider shutting off high voltage power and natural gas lines
9. Follow 3.6.1 Notify instructions
10. Activate the appropriate facility alarm system to initiate evacuation if appropriate
11. Perform "Accounting of People"- see page 18.
12. Shut down any equipment that is safe to de-energize
13. Establish Control Zones as appropriate or as needed
14. Restrict access per established zones

Tornadoes

NOTE: Marion County warning sirens will sound during a tornado watch or warning. This may not mean that an immediate danger exists, so listen to the weather radio for further information.

1. Security will make a notification to the plant facility for Tornado Warnings or Tornado Watches
2. Follow 3.6.1 Notify instructions
3. Continuously monitor local news reports and weather radio systems
4. Activate the appropriate facility alarm system to initiate evacuation if appropriate
5. Take shelter. Have location personnel report to the designated area. Inner Hallways-- away from all windows. Restrooms-- away from all windows
6. Perform "Accounting of People"- see page 18.
7. Establish Control Zones as appropriate
8. Restrict access according to established Control Zones

Extreme winter (Ice/Snow)

1. Prepare the facility prior to onset of winter with an adequate supply of fresh water, snow removal equipment, generators, and other items considered necessary
2. Monitor local news reports
3. If there is a blizzard or ice storm imminent, communicate this information to all personnel
4. Immediately Notify Supervisor, Safety or Control Room

5. Follow 3.6.1 Notify instructions
6. Take preliminary actions to secure the facility prior to inclement weather and possible evacuation
7. Perform “Accounting of People”- see page 18.

Earthquake

1. Know the gathering locations and contact persons for each of the buildings
2. Immediately Notify Supervisor, Safety or Control Room of the occurrence
3. Continuously monitor local news reports
4. Call for outside assistance and notify public agencies as needed
5. Activate the appropriate facility alarm system to initiate evacuation if appropriate
6. Take shelter. Have location personnel report to the designated area
7. Perform “Accounting of People”- see page 18.
8. Use the stairs, if applicable, to evacuate to a place of safety outdoors
9. Move away from buildings, utility poles, and other structures that could fall
10. Always avoid power or utility lines
11. If you must remain indoors, seek refuge in a doorway or under a desk or table
12. Stay away from glass windows, shelves, and heavy equipment
13. If in an automobile, stop in the safest place available, preferably away from power lines and trees. Stay in the vehicle, as it offers shelter.
Appendix J- Acknowledgment of Receipt

<table>
<thead>
<tr>
<th>VERTELLUS</th>
<th>ACKNOWLEDGEMENT OF RECEIPT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EMERGENCY RESPONSE PLAN</td>
</tr>
</tbody>
</table>

Please Read:
By signing below I am acknowledging that I have received the Vertellus Integrated Pyridines LLC Emergency Response Plan.

Date: 

Print Name: 

Print Title: 

Organization: 

Contact Person: 

Mailing Address: 

City: 

County: 

State: 

Zip: 

Emergency Phone Number (10 digit):  

Phone Number: 

Fax Number: 

E-Mail: 

Signature: 

### Appendix K - Emergency Response Check Sheets

**Communications Officer Guidelines and Checklist**

**Date:**

Communication Officer Responsibilities include:

- Keeping the external communication lines open.
- Record all information provided by the Field Command Post.
- Record all information provided from employees who have relevant knowledge of the incident.
- Keep an account of all evacuated personnel from the incident area. During normal work hours, obtain this information from the HR Dept. During after hours, employees without an immediate supervisor who evacuate their assigned work area are to report to the Communications Officer or Assistant at the Security desk for a head count and to ensure that evacuation has occurred.
- Notify both the EOC and the Field Command Post upon the arrival of each of the emergency responders. This includes outside emergency responders such as WTFD and Vertellus Emergency Response personnel (from the emergency call list) who are to report to the Communications Officer upon arrival.

<table>
<thead>
<tr>
<th>Obtain vest, clipboard and radio (set to emergency channel 7) from the Emergency Operations Center.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain other emergency response roles vests and clipboards from Emergency Operators Center and issue to other Vertellus responders as they report to Security:</td>
</tr>
<tr>
<td>Review actions taken by Senior Guard (Senior Guard is Communication Officer Until Relieved)</td>
</tr>
<tr>
<td>- Review Security Emergency Checklist to determine what has been done and still needs to be done.</td>
</tr>
<tr>
<td>- Confirm call list of Security, especially outside emergency responders.</td>
</tr>
<tr>
<td>Ensure spare portable radio set to channel 7 is given to responding FD upon their arrival.</td>
</tr>
</tbody>
</table>

Ensure Field Command Post is notified upon arrival of each responder (this includes outside responders as well as internal emergency response personnel).

- Ensure that outside responders identify themselves.
- Review plant maps with FD as needed.

During normal hours or after hours ensure Process Team Leader or Team Coordinator for the affected unit has been notified of the incident. Upon arrival, the unit PTL or Coordinator will take the role of Technical Officer.

Man the base station at the Security desk and serve as the liaison between responding the Site Command Post (Incident Commander) and the Site Manager.

Remove non-essential personnel from base station.

Ensure notes are taken of communications from site command post and activities at the Security desk. This task can be assigned to someone if necessary; recruit help/assistance if needed from the hourly ranks or Human Resources department if necessary.

With the assistance of HR during business hours, maintain a record of all evacuated personnel. Provide a notepad for floor monitors from the main lab building or employees from the plant to sign who report to the security desk. Personnel should sign their name and last work location or their area of responsibility.

Outside calls from corporate Vertellus management should be directed to the Site Manager.

At shift change, evaluate need to hold people in locker area, or block access to locker and shower area. (May have to redirect egress from locker area to accommodate safe exchange of personnel in non-affected units).
# Environmental Officer Guidelines and Checklist

**Date:**

- Check in with the Communications Officer at the Security desk. Identify yourself as an emergency responder and determine if you are the first Environmental Officer on the scene.

- Receive guidance from the Communications Officer on the incident, incident location and the location of the Field Command Post.

- Obtain vest, clipboard and radio (set to emergency channel 7) from the Emergency Operations Center.

- With permission of the Operations Officer, proceed to the Field Command Post and establish contact.

- Receive briefing from the Operations Officer on the nature of the incident and the immediate technical assistance he/she requires. Identify hazard(s) with input from the Operations Officer and Safety Officer. The Safety Officer will likely have obtained MSDS sheets for the chemicals involved in the incident.

- Note plan implementation details in the operating record. This is the RCRA operating record and only applies to RCRA units.

| May establish Hot, Warm, Cold Zones per directions from Operations and Safety Officer. |

| During the clean-up process, ensure incompatible materials are kept separate from affected media/waste. During response, try to keep incompatible materials separated. |

| Ensure emergency equipment is cleaned, returned and/or replaced before resuming normal operations, especially for the RCRA units. |

Obtain a copy of the incident notes for the operating record.

Once the incident is under control, consult with the Incident Commander for further instructions before leaving the Incident Command area.

Notify appropriate outside agencies as necessary. Be able to provide details prior to calling.

- See Emergency Response Plan for contact numbers.
Incident Commander/Operations Officer Guidelines and Checklist

Date: _________

**Priorities:** Protect Life, Stabilize Incident, Protect Property and the Environment

**Strategic Goals:** Assess, Notify, Mitigate, Terminate

- Obtain radio, clipboard, vest, and Emergency Response Plan from Emergency Operations Center
- Switch to emergency channel 7
- Obtain SDS and NIOSH Chemical Hazards Pocket Guide.

**Assess the situation.**

- Assess the incident and protect people.
  - Identify affected area(s): ________________________________
  - Evacuate or Shelter in Place employees?
  - Type of incident (Fire, Spill, Explosion, Injury)? ________________________________
  - Number of injured ________ Identities: ________________________________
  - Materials/chemicals involved:
    - Amount released: ________________________________
    - MSDS
    - Tanks, building, process equipment involved? ________________________________
    - Wind direction? ________________________________
    - Unit? ________ Surrounding Units?
    - Everyone accounted for?
  - Establish Hot, Warm & Cold Zones. Rule of thumb: 100 feet for 55 gallon loss, 500 feet for greater than 55 gallon loss.
    - Establish zones by air sampling: flammable, organics
    - DENY ENTRY!

**Notify**

- Formally activate Emergency Response? – If YES,
  - Formally announce the IC/Operations Officer identity to Security

○ Confirm Security contact Fire, EMS, Police, MCHD, Utilities as needed
○ Confirm Emergency Responders call list activated by Security
○ Alarms and/or announcements to make to facility.

**Mitigate**
○ Designate field command post – if possible, within site of incident and upwind - Communicate location to Communications Officer

○ Assemble emergency responders at both EOC and Field Command Post– Fire Dept., Safety Officer, Technical Officer, Environmental Officer, MCHD representative.

○ Develop Offensive and Defensive strategies with responders.
  ○ Achieve mitigation in a logical, ordered manner
  ○ Strive to control or achieve “steady state” first
  ○ Ensure the safety of responders in all action steps
  ○ Lead and maintain control of the response team. Rely on their expertise.
  ○ Communicate each key step to Communications Officer
  ○ Account for all task team members at each step.

**Terminate**
○ Declare incident contained and “safe”. Date:_________ Time:_________

○ Declare incident “all clear” once:
  ○ Equipment is in “safe” mode
  ○ Account for all responders
  ○ Verify evacuation lists are correct
  ○ Verify number of injured, deceased.
  ○ Sampling allows re-entry.

○ Environmental Officer:
  ○ Regulatory agencies need alerted?
  ○ Strategies for clean-up?

○ Relieve emergency responders as warranted.

○ Confirm full account of incident as documented by Communications Officer.

○ Scene of incident returned to Unit Mgmt. control at ______hrs. on date__________

○ Ensure post incident analysis (utilize incident critique form):
  ○ Formal investigation. Incident Investigator identified:____________________
  ○ Review of incident with Fire Dept./EMS/Police
  ○ Vertellus Emergency Plan reviewed:
    ▪ How did we do?
    ▪ What can we do better?
    ▪ Was the information in the Emergency Response Plan correct?
Make a copy of this checklist for your records. This checklist should then be included with the notes of the Communications Officer and both should be forwarded to the Incident Investigator.

Notes:
Safely Officer Guidelines and Checklist- 8/15/14

Date: 

Overview: The Safety Officer develops and recommends measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations.

Check in with the Communications Officer at the Security desk. Identify yourself as an emergency responder and determine if you are the first Safety Officer on the scene.

Receive guidance from the Communications Officer on the incident, incident location and the location of the Field Command Post.

Respond with a radio set to emergency channel 7.

Obtain vest, clipboard and radio (set to emergency channel 7) from the Emergency Operations Center.

Verify Site Command Post location is located:

- Upwind
- Not in the Hot Zone
- Safe area within view of incident scene

With permission of the Operations Officer, proceed to the Field Command Post and establish contact.

Receive briefing from the Operations Officer on the nature of the incident and the immediate technical assistance he/she requires. Identify hazard(s) with input from the Operations Officer and any other Safety Officer on scene.

Obtain appropriate SDS sheets for the chemicals involved in the incident.

Oversees response activities, stops, prevents any unsafe actions and procedures during the course of the incident.

Test using appropriate monitoring equipment to establish warning zones (Hot, Warm, Cold) and put up Red "Do Not Enter" Danger Tape to designate boundaries. Rule of thumb: Restrict access to 100 feet for 55 gallon or less release, 500 feet for loss greater than 55 gallons.

Put up Yellow Caution Tape to control immediate area.

Keep checking for missing or injured.

Ensures all personnel not involved in handling the emergency are kept clear of the area.

Informs all emergency responders as to the types and locations of emergency equipment.

Locates nearby water sources that can be used for decontamination.

Selects a location and supervises decontamination.

Performs other duties as directed by the Incident Commander.

Should news media helicopters fly into the Danger Zone or otherwise interfere with response activities, notify IFD to have the air space cleared. Vertellus Plant is:

- Latitude = 30 deg-44 minute-19 seconds
- Longitude = 86 deg-13 minutes-6 seconds
Technical Officer Guidelines and Checklist- 8/15/14

**Date:**

Overview: The Technical Officer is to assist the Operations Officer with strategic and tactical decision-making. The Technical Officer will also assist as a liaison with the responding emergency units.

Check in with the Communications Officer at the Security desk. Identify yourself as an emergency responder and determine if you are the first Technical Officer on the scene.

Receive guidance from the Communications Officer on the incident, incident location and the location of the Field Command Post.

Obtain vest, clipboard and radio (set to emergency channel 7) from the Emergency Operations Center.

With permission of the Operations Officer, proceed to the Field Command Post and establish contact.

Receive briefing from the Operations Officer on the nature of the incident and the immediate technical assistance he/she requires. Identify hazard(s) with input from the Operations Officer and Safety Officer. The Safety Officer will likely have obtained MSDS sheets for the chemicals involved in the incident.

Arrange for a location for the Technical team, preferably at the Field Command Post. Otherwise, locate as close to the Operations Officer as possible. An area for spreading out drawings and writing will likely be needed.

Identify and document helpers. These will usually include the Process Team Leader, Unit Process Engineer, or the Team Coordinator of the affected unit. Helpers may also include operators, mechanics or Technology support. With permission from the Operations Officer, have the helpers either report to the Technical team area or have them on standby to offer assistance as needed.

Send helper(s) to obtain applicable drawings or other process documentation. Normally the P&ID drawings for the affected area will be useful. Underground drawings or equipment layout drawings may also be useful. **The Technical Officer should never leave the Field Command Post unless relieved by someone else acting as Technical Officer and communicating this to the Operations Officer. Send helpers to get needed items or people.**

Once the incident is under control, consult with the Operations Officer for further instructions before leaving the Field Command Post area.

Notes:
Appendix L - Notifications of Emergency and Security Emergency Checklist

Notifications of emergency events (3.2 of the Emergency Response Plan) must be documented on the Security Emergency Checklist. This checklist must be completed and accurate information documented so emergency responders can be best prepared.

When receiving notices of emergency, it is important to:

- Stay calm.
- Write clearly and concisely on the Security Emergency Checklist.
- Ensure you receive and document correct information. Repeat the written information back to the caller to ensure your understanding of the situation.
- Remember that Vertellus has trained EMTs’ for medical emergencies available during business hours. However, if instructed, this does not delay calling 911 for an ambulance.
- Coach the caller to stay calm and remain on the communication link until all of the pertinent information is documented on the Security Emergency Checklist.
- Do Not speculate or offer an opinion.
- Do Not abbreviate when documenting (for example do not write “AC” for “Acetaldehyde”).
- Obtain SDS’s as needed.
- Utilize all Security guards and enlist volunteers as necessary to assist with the situation.
- Do Not allow employees not associated with emergency response activities to loiter in the SPST building. Employees are to remain in their work areas, plant assembly areas, shelter –in-place areas, and/or severe weather locations unless otherwise directed by the IC.

1) When calling for outside emergency responders (calling 911), if the 911 call received requires the fire department and/or emergency medical service then the 911 dispatcher will advise the caller to stay on the telephone line- do not hang up, and then they will transfer to Fire/EMS.

2) Utilizing the Security Emergency Checklist, answer the 911 Dispatcher questions. Give accurate and known information. Do not speculate-give facts that you have documented on the Security Emergency Check sheet.

   ➢ The 911 Dispatcher will say “911, What is Your Emergency?”
   ➢ You will reply with the situation: Medical emergency, fire, chemical release, etc.

   911 Dispatcher will inquire:
   ▪ Verify the location of the caller
   ▪ Where precisely is the location of the emergency
   ▪ Who (who is calling, business information, telephone number, etc.)
   ▪ What is going on (simple explanation of events)
   ▪ When (is this occurring now? In progress, time delayed or has already occurred?)

EMERGENCY RESPONSE PLAN

- Welfare (how many people are injured?, Are people trapped?-where are they trapped? Are people held hostage?)
- Weapons (are there any weapons involved?)

Security Emergency Checklist

<table>
<thead>
<tr>
<th>Incident Date:</th>
<th>Incident Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person(s) involved:</td>
<td></td>
</tr>
<tr>
<td>Security Guard completing checklist:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Location of incident (specific to the area as possible)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Type of incident (fire, medical, chemical release)</td>
<td>911 called? Time:</td>
</tr>
<tr>
<td>3</td>
<td>Name of person(s) reporting the incident</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>How many people injured? Trapped?</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Name of chemical(s) involved</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Weapons involved?</td>
<td></td>
</tr>
</tbody>
</table>
| 7    | Ambulance needed? YES/ NO | -Oak Park: 1500 S. Tibbs Ave.  
-Maywood: 3501 W. Minnesota St.  
Do not move the patient(s) unless necessary. Have someone guide EMS. Always have someone stay with the patient. |
| 8    | Notify Penne Hout, Dave Wilkes and Tyler Nestleroad. If after hours, contact POC. | Hout- (317) 459-5756  
Wilkes- (317) 319-7080  
Nestleroad - (317) 452-3408 |
<p>| 9    | When notified by the Incident Commander to activate the Emergency Response Plan, send an email message to “Indy Emergency Response”. In the email subject line write “Emergency Response”. Write brief description of incident (fire, chemical release, medical) and location. | |</p>
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Sound siren and make PA announcement to Plant and Lab/Office building-Press 0 on PA phone for &quot;All Page&quot;- this will also automatically change hand-held radios to Ch.1 and will broadcast message on radios.</td>
</tr>
<tr>
<td>11</td>
<td>Stop all traffic into and out of the facility. Ask visitors who may be in the SPST building to wait in the small HR Conference room.</td>
</tr>
<tr>
<td>12</td>
<td>Obtain and print copies of SDS of known chemicals involved.</td>
</tr>
<tr>
<td>13</td>
<td>Per IC instructions, assign CH7 as Emergency frequency.</td>
</tr>
<tr>
<td>14</td>
<td>For plant evacuation, open main gate and direct personnel to main parking lot, against east wall of SPST building.</td>
</tr>
<tr>
<td>15</td>
<td>After this checklist completed, give to Security Manager.</td>
</tr>
</tbody>
</table>

Miscellaneous notes:

---

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTION</th>
</tr>
</thead>
</table>
| 1    | Assist Senior Guard in all aspects of their Emergency Checklist.  
      | SENIOR GUARD IS IN CHARGE! |
| 2    | Lay out Vertellus Emergency Responders vests on the Security counter. |
| 3    | Run (5) MSDS sheets:  
      | a. Give one to Fire Department  
      | b. Keep the rest for Vertellus Responders. |
| 4    | Give Fire Department a Plant Map –  
      | Indicate on map:  
      | a. The location of the incident  
      | b. Wind Speed and Direction  
      | c. Location of the Command Post  
      | d. Draw the safest road to the incident |
| 5    | Give Fire Department Hand-Held Radio:  
      | a. Radio should be on Emergency Channel 7  
      | b. Instruct them how to use the radio  
      | c. Inform Fire Department who is the on-site Incident Commander. |
| 6    | Escort Emergency Equipment to the scene of the emergency if needed. |
# EMERGENCY RESPONSE PLAN

## MAYWOOD (Plant 47 / WWTP) EMERGENCIES

### 3501 W. Minnesota Street

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Same duties apply as above.</td>
</tr>
<tr>
<td>2</td>
<td>Maintain order at gate 7 and keep watch of gate 6 for Media and Employees coming across.</td>
</tr>
<tr>
<td>3</td>
<td>Disengage the clutch to the gate 7 inbound and gate 7 outbound. Open both gate 7 inbound and gate 7 outbound and leave open for emergency gear to flow.</td>
</tr>
</tbody>
</table>

- Utilize guards and volunteers as necessary to control traffic, take phone calls, etc. – If you need assistance, ask for it!
- Employees NOT associated with response activities are NOT to loiter in the guardhouse. Please ask them to return to their work areas or designated evacuation locations.
## Appendix M- Document Change Log

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Reason for Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/23/2015</td>
<td>Annual review and change of roles. Inclusion of OSHA Severe Injury Reporting Requirements, ER Check sheets, and Document Change Log</td>
</tr>
<tr>
<td>10/24/2016</td>
<td>Changed name of company in to Vertellus Integrated Pyridines LLC in Executive Summary. Updated contact names and information Updated Appendix A.</td>
</tr>
<tr>
<td>4/3/2017</td>
<td>Updated Officer and other Responder Names</td>
</tr>
<tr>
<td>8/29/2017</td>
<td>Updated Assembly and Rally/Muster Points</td>
</tr>
<tr>
<td>12/1/2017</td>
<td>Updated Positions/Names</td>
</tr>
<tr>
<td>4/2018</td>
<td>Added additional Security Site Control Checklist and clarified verbiage regarding external support personnel briefing</td>
</tr>
<tr>
<td>4-9-2018</td>
<td>Added DHS to federal agency list and updated Security Intrusion or Terroristic Threat section with reporting requirements for DHS.</td>
</tr>
<tr>
<td>4-1-2019</td>
<td>Review with no changes</td>
</tr>
<tr>
<td>9/18/19</td>
<td>Updated emergency responder contact information</td>
</tr>
</tbody>
</table>

Space for Hand Written Notes as Needed
ATTACHMENT H
PERSONNEL TRAINING
ATTACHMENT H
PERSONNEL TRAINING

The information contained herein provides the personnel training program for this facility’s hazardous waste storage and treatment area in accordance with the requirements of 329 IAC 3.1

H-1 Outline of Training Program (40 CFR 264.16(a)(1))

Vertellus’ training program consists of computer and/or classroom instruction and on-the-job training designed to prepare employees for safe operation and maintenance of the facility. The computer/classroom instruction consists of computer-based or videotape viewing of generalized education material, and personal instruction in specific Vertellus operating procedures. The latter training will also be conducted on-the-job as the occasion warrants. Computer/classroom instruction is in some cases followed by testing to verify comprehension and retention of the material. Records of the training completed by each employee are maintained by Vertellus’ Human Resource Department.

H-1a Job Titles and Duties (40 CFR 264.16(d)(1) and (2))

The names, titles, duties, and qualifications of Vertellus employees involved in hazardous waste management operations are maintained on-site by Vertellus. Examples are shown in Figure H-1.

H-1b Training Content, Frequency, and Techniques (40 CFR 264.16(c) and (d)(3))

The content of Vertellus’ hazardous waste training is provided in Figure H-2. This program will be completed by personnel described in H-1a above at least annually. Instruction techniques consist of viewing videotaped or computer-based material and personal instruction in Vertellus Standard Operating Procedures. Most of the lessons are followed by a test that is
required to obtain training credit. These tests are graded on a scale of 0-100, with a minimum passing grade of 85 percent. On-the-job training is conducted in each plant area, as needed, to familiarize their employees with specific procedures or equipment. Practical exercises are conducted in the use of: respirators; methods of air sampling; packaging of hazardous waste; use of portable fire extinguishers; operation of a backhoe; general sampling methods; review of the Environmental Standard Operating Procedure book; and decontamination procedures.

Vertellus provides annual RCRA training to its employees that operate Boilers 28K, 30K, and 70K. This eight hour training course consists of a combination of field, control room, and classroom training. The field and control room training consist of hands-on operating procedures of the boilers, tank systems associated with the boilers, and the boiler control system. This training allows the operators sufficient instruction to limit the exposure of hazardous waste to human health and the environment, and includes the safe shutdown of the boilers during an emergency. The AWFCO system is incorporated into the boiler control system. Training on the AWFCO system is included with the training on the boiler control system.

**H-1c Training Director (40 CFR 264.16(a)(2))**

Vertellus' hazardous waste training program is directed by a person trained in hazardous waste management procedures and coordinated and maintained by the Human Resources department as described in H-1a above.

**H-1d Relevance of Training to Job Position (40 CFR264.16(a)(2))**

Vertellus personnel are instructed in specific procedures relevant to their job position, both in the classroom instruction on SOPs and in on-the-job training. Implementation of the Contingency Plan is discussed annually.
H-1e Training for Emergency Response (40 CFR 264.16(a)(3))

The hazardous wastes training program includes extensive discussions of emergency procedures and equipment in the Contingency Plan. The training includes:

- Using, inspecting, repairing, and replacing emergency and monitoring equipment, where applicable;
- Parameters for automatic waste feed cut-off systems;
- Communications or alarm systems;
- Response to fires or explosions;
- Response to groundwater contamination incidents; and shutdown of operations.

H-2 Implementation of Training Program (40 CFR 264.16(b), (d)(4), and (e))

Within six (6) months of the effective date of hire, new employees receive classroom training. On-the-job training is provided upon assignment to a new unit. No employee assigned to the hazardous waste management area will work supervised until the training program described in H-1 has been completed. The program has been completed when an employee has received all training described in H-2 and has passed any applicable tests. Records documenting that current facility personnel have received required training are kept by the facility until closure, and records of former employees will be kept for three (3) years after leaving employment.
ATTACHMENT H-1

EXAMPLE OF JOB TITLES AND DUTIES
Position Title: Environmental Specialist

Name: James Gross

Position Responsibilities:

Provided technical support for Environmental Services at the plant, including: wastewater management and waste fuel operations. The Environmental Specialist reports to the EHSS Manager.

Skills/Qualifications/Training:

- College diploma or equivalent
- Technical degree or equivalent experience in industrial environmental technologies
- Knowledge of federal and state environmental regulations
- Knowledge of plant waste analytical methods.
Position Title: Environmental Supervisor

Name: Greg Pipher

Position Responsibilities:
  Provides technical and administrative support for Environmental Services at the plant, including: Leak Detection and Repair. The Environmental Supervisor reports to EHSS Manager.

Skills/Qualifications/Training:
  • Associates Degree in technical area or equivalent industrial experience
  • Knowledge of federal and state environmental regulations
  • Knowledge of plant data collection methods.
Position Title: Environmental Operator
Name: Matt GerKing, Charles Naylor

Job Responsibilities:
Duties include: operation of waste handling equipment, inspect tanks, drums and other hazardous waste management equipment as required for proper operation and structural integrity, inspect drum storage area for evidence of leaks and spills and inappropriately placed drums, notifies foremen and other plant authorities as necessary in emergency situations. The Environmental Operator reports to the Environmental Supervisor.

Skills/Qualifications/Training:
- High School Diploma or Equivalent
- Good Knowledge of spill control methods
- Licensed to operate waste handling equipment, as applicable
- Knowledge of waste handling procedures
Position Title: Utilities Operator

Name: Dave Ashburn, Tim Craft, Charles Hull, LarySpray, Doug Winterrowd, John Wood, Robert Breen, Wallace Oglesby, Floyd Phillips, Rex Rainbolt

Job Responsibilities:

Duties include operation of the boilers and waste handling equipment. Operators will notify supervisors and other plant authorities as necessary in emergency situations. The Utilities Operator reports to the Utilities Supervisor.

Skills/Qualifications/Training:

- High School Diploma or Equivalent
- Good Knowledge of spill control methods
- Licensed to operate waste handling equipment, as applicable
- Knowledge of waste handling procedures
ATTACHMENT H-2

HAZARDOUS WASTE TRAINING COURSES
HAZARDOUS WASTE TRAINING COURSES

On-the-job, computer and video-based training will cover a substantial portion of the following subjects:

- RCRA Introduction
- Hazardous Waste Introduction
- Packaging Hazardous Waste
- Container Management Procedures
- Tank Management Procedures
- Hazardous Waste Disposal Facility
- Preparedness and Prevention Reporting
- Chemical Handling
- Used Oil Management
- Universal Waste Management
- LDAR Training
- Waste Combustor MACT Training for Boiler Operator
- Site Specific Emergency Response Plan
ATTACHMENT I
CLOSURE PLAN
ATTACHMENT I

CLOSURE AND POST-CLOSURE REQUIREMENTS

329 IAC 3.1

Attachment I presents closure plans for the hazardous waste tank systems and boilers explained and shown in detail in Attachment D. These plans identify actions necessary to conduct closure of individual tanks and boilers, actions that may constitute partial closure of the facility, as well as any additional work that will be required at final closure of the facility. As equipment becomes worn or outdated or production processes change, it is anticipated that individual tanks will be taken out of service and closed. As such, this plan is written anticipating partial closure of the facility on a tank-by-tank basis. Final Closure of the facility is not expected prior to 2049 A.D.

The tank systems and boilers are not disposal units but serve as storage and treatment units only, and it is anticipated that each can be closed by removal (i.e., clean closed). Therefore, post-closure plans for the facility are neither required nor provided at this time. If, during partial or final closure activities it is determined that a particular unit cannot be clean closed, a modified closure plan and post-closure plan will be prepared and submitted to IDEM for approval no later than 30 days after such determination is made.

The tank systems and boilers are located on a Superfund “Area of Concern”, as identified by the Remedial Investigation (RI) conducted in accordance with the Administrative Order by Consent (V-W-87-C-006) signed in March 1987 and amended in September 1992. The tanks would be removed from service and decontaminated as described in Section I-1e (5), Closure of Tanks. The soils surrounding the units are covered by a concrete cap as per the Consent Decree for the Fourth Operable Unit signed in June 1998. The long-term cap maintenance and groundwater monitoring will be conducted according to the Final Monitoring Plan for the Thermal Desorption Cover Maintenance submitted in July 1996 to U.S. EPA per the Administrative Order by Consent and per the deed restrictions attached to the Administrative Order by Consent. This ongoing remedy of the area surrounding the units precludes the necessity of soil sampling. The
boilers would be removed from service and decontaminated as described in Section I-1e (12), Closure of Boilers and Industrial Furnaces.

Section I also addresses how Vertellus meets the financial responsibility requirements including the financial assurance mechanism for closure costs.

**I-1 Closure Plan (40 CFR 264.112(a)(1) and (2), 270.14(b)(13))**

A copy of the closure plan approved as a condition of the RCRA permit as well as any approved modifications to the plan will be maintained on-site throughout the operating life of the facility until certification of final closure has been made to the Commissioner of IDEM and the Commissioner releases Vertellus from closure financial responsibility requirements. A facility map including the location of the units is provided as Figure I-1, “Site Maps”. A list of hazardous wastes stored in the units is provided as Figure I-2, “Waste Inventory List”.

**I-1a Closure Performance Standard (40 CFR 264.111)**

Vertellus must close the facility in a manner which: minimizes the need for further maintenance; controls, minimizes, or eliminates the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and complies with the closure requirements of 329 IAC 3.1 and unit-specific closure requirements. Vertellus proposes to close each hazardous waste management unit in a manner that minimizes the need for further maintenance and controls the post-closure escape of hazardous waste so as to protect human health and the environment. Each hazardous waste management unit will be closed by either removal of all hazardous wastes to an approved RCRA Subtitle C hazardous waste treatment or disposal facility, burning for energy recovery in the plant boilers or neutralization in the treatment tanks with neutralized water directed to the on-site wastewater treatment plant. Upon removal of all waste contained within the units, each will be decontaminated following the procedure outlined in Section I-1e. Following completion of the sampling activities, review of
data collected and demonstrations that clean closure has been completed; a closure certification demonstrating conformance with the closure performance standard will be forwarded via registered mail to the commissioner of IDEM.

As stated above, the tank systems are located on a Superfund “Area of Concern”, as identified by the Remedial Investigation (RI) conducted in accordance with the Administrative Order by Consent (V-W-87-C-006) signed in March 1987 and amended in September 1992. The tanks would be removed from service and decontaminated as described in Section I-1e (5), Closure of Tanks. The soils surrounding the units are covered by a concrete cap as per the Consent Decree for the Fourth Operable Unit signed in June 1998. The long-term cap maintenance and ground water monitoring will be conducted according to the Final Monitoring Plan for the Thermal Desorption Cover Maintenance submitted in July 1996 to U.S. EPA per the Administrative Order by Consent and per the deed restrictions attached to the Administrative Order by Consent. This ongoing remedy of the area surrounding the units precludes the necessity of soil sampling. The boilers would be removed from service and decontaminated as described in Section I-1e (12), Closure of Boilers and Industrial Furnaces.

I-1b Partial and Final Closure Activities (40 CFR 264.112 (b)(1) through (7))

As explained above, process changes or obsolescence of equipment may require the facility to complete partial closure on a unit-by-unit basis. As shown in Table I-1b, for the purposes of the RCRA permit, individual tank systems or groups of tank systems are considered to be units and each boiler is considered to be an individual unit. During facility final closure activities, it is anticipated that at least one boiler will be the final unit that is closed. This is to allow for the treatment of tank, container storage area, and other BIF unit decontamination materials that are amenable to treatment in the boiler.

Any unit requiring partial closure will be closed in accordance with the closure plan in this permit. Certifications will be made as units are closed. Vertellus will modify the permit if partial closures change the storage capacity or any other permit condition. At the end of the
operating life of the entire facility, all remaining hazardous waste management units not addressed under partial closure will be closed in accordance with the approved closure plan. Certification of final closure will then be made upon completion of all closure activities for the permitted units.

**TABLE I-1b**

**GROUPING OF STRUCTURES BY HAZARDOUS WASTE MANAGEMENT UNIT**

<table>
<thead>
<tr>
<th>Hazardous Waste Management Unit Number</th>
<th>Component Structure(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tank 64</td>
</tr>
<tr>
<td>2</td>
<td>Tank 66</td>
</tr>
<tr>
<td>3</td>
<td>Tank 69</td>
</tr>
<tr>
<td>4</td>
<td>Boiler 28K</td>
</tr>
<tr>
<td>5</td>
<td>Boiler 30K</td>
</tr>
<tr>
<td>6</td>
<td>Boiler 70K</td>
</tr>
</tbody>
</table>

**I-1c Maximum Waste Inventory (40 CFR 264.112(b)(3))**

The maximum inventory of hazardous waste in storage at any point in the operating life of the facility is a function of the volume of the various units and Vertellus operating procedures for both the production and waste management portions of facility. For instance, it may not be possible for all tanks to be at capacity at the same time due to constraints such as situations place on operations and, consequently, waste generation. However, as a conservative approach, maximum potential inventory of hazardous wastes in storage at any given time is estimated not to exceed the following: Storage tanks- 580,860 gallons.

The maximum inventory figures developed for this section were used to calculate the closure cost estimate provided in Section I-4. The list of hazardous wastes managed by Vertellus is located in Permit Condition VII.
I-1d Schedule for Closure (40 CFR 264.112(b)(6))

I-1d(1) Time Allowed for Closure (40 CFR 264.112(b)(2), 264.113 (a) and (b))

Final closure of this facility is not expected prior to the year 2049. However, partial closures involving individual waste management units are likely to occur before the final closure. The following schedule will be followed for these partial closures as well as final closure.

Vertellus will initiate closure of a hazardous waste management unit within 30 days of receipt of the known final volume of waste at that unit. It should be noted that during the facility's active life, an individual unit, such as a tank or group of tanks, may remain inactive for a period of time without going through closure since there is a reasonable likelihood that the unit will receive additional waste. Operation of the unit must begin within one year of receipt of the latest volume of waste should the unit remain inactive for that length of time unless it can be demonstrated that the unit is necessary for future storage given the necessity to clean or repair another unit. Vertellus will notify IDEM at least 45 days prior to the date when it expects to begin partial or final closure of the facility. The expected schedule for tank closure is shown in Table I-2d-1. The expected schedule for boiler closure is shown in Table I-2d-2.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Period (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closure Notification</td>
<td>0</td>
</tr>
<tr>
<td>Burn/Off-site waste disposal</td>
<td>0 to 30</td>
</tr>
<tr>
<td>Decontaminate tanks</td>
<td>30 to 50</td>
</tr>
<tr>
<td>Treat or dispose of rinsate</td>
<td>50 to 60</td>
</tr>
<tr>
<td>Contingency Clean</td>
<td>60 to 70</td>
</tr>
<tr>
<td>Sampling and analysis</td>
<td>70 to 80</td>
</tr>
<tr>
<td>Prepare closure criteria</td>
<td>80 to 115</td>
</tr>
<tr>
<td>Activity</td>
<td>Period (days)</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Decontaminate boiler exterior/burner gun</td>
<td>10</td>
</tr>
<tr>
<td>Refractory removal/offsite disposal</td>
<td>30</td>
</tr>
<tr>
<td>Decontaminate boiler interior</td>
<td>10</td>
</tr>
<tr>
<td>Treat or dispose of residues</td>
<td>10</td>
</tr>
<tr>
<td>Decontaminate boiler area</td>
<td>10</td>
</tr>
<tr>
<td>Treat of dispose of rinsate</td>
<td>10</td>
</tr>
<tr>
<td>Contingency clean</td>
<td>10</td>
</tr>
</tbody>
</table>

**Totals days for boiler closure**

90

All wastes, and other stored materials, will be removed from the unit being closed within 90 days of receipt of the known final volume of waste at that unit. However, if closure is not begun within 30 days of receipt of the last volume of waste due to the likelihood that the unit will be receiving additional waste, then all wastes will be removed within 90 days of the date on which closure begins.

Similarly, closure of a unit will be completed within 180 days after the date of receipts of the known final volume of waste unless initiation of closure is delayed as noted above. In that case, closure activities will be completed 180 days after the start of closure for a particular unit.
Should closure of any unit be delayed for up to one year following the receipt of its last volume of waste, standard operations, inspection and maintenance activities will continue to be conducted on that unit until the date closure is begun.

**I-1d (1) (a) Extension for Closure Time (40 CFR 264.113 (a) and (b))**

The facility is not expected to be closed prior to 2049. Although individual hazardous waste management units may be closed prior to that date, each is expected to be clean closed in accordance with present regulatory requirements; thus, no extensions are anticipated at this time.

If unanticipated conditions are encountered during closure activities and those conditions require additional time to complete closure, Vertellus will comply with all applicable requirements for requesting a modification to the permit and demonstrate that closure activities will, of necessity, take longer than 180 days to complete.

**I-1e Closure Procedures (40 CFR 264.112, 264.114) **

**I-1e(1) Inventory Removal (40 CFR 264.112 (b)(3))**

Vertellus plans to clean close all permitted hazardous waste management units by removing the remaining material and either treating it and discharging the supernatant to the on-site wastewater treatment plant, burning it on-site in the boilers for energy recovery, or shipping it off-site to an approved RCRA Subtitle C treatment or disposal facility. For each unit for which waste must be sent to a treatment or disposal facility the same general procedure will be followed. First, using waste analysis information previously used for disposal of the materials or for Vertellus internal organization purposes, disposal facilities eligible to accept such materials will be contacted and proper authorization, if needed, will be obtained. Materials will then be removed from the waste management unit as described in Sections I-1e(5) and (12), packaged in suitable containers, if necessary, and loaded into lined dump trailers (solids and non-pumpable sludges) or vacuum tank trailers (liquids or pumpable sludges) or van-type trailers (containers) for transportation to the approved treatment or disposal facility. Subsequent to loading but prior
to departing, each transportation vehicle will be appropriately placarded and a manifest form filled out to accompany the material to its ultimate destination.

I-1e (2) Disposal or Decontamination of Equipment, Structures, and Soils (40 CFR 264.112(b)(4), 264.114)

The procedures described in I-1e(1) above will be followed at each unit for its contents. Associated equipment and structures will be decontaminated as described in Sections I-1e(5) and (12). Wash waters resulting from decontamination of the various units containing only characteristic wastes will be directed to the on-site wastewater treatment plant for treatment prior to discharge to the POTW. Wash waters contaminated with any listed wastes will be managed as a hazardous waste and disposed of in an approved treatment or disposal facility.

The soils associated with the units will not be sampled for this Closure Plan. The soils have been addressed with a Superfund Remedy.

I-1e (3) Closure of Disposal Units/Contingent Closures (40 CFR270.14(b)(13))

There are two approaches for closure:

- “Clean” closure with all waste residues and contaminated materials removed or decontaminated (does not require post-closure monitoring); or,
- Closure as a landfill disposal unit with some waste residues or contaminated materials left in place (requires post-closure monitoring).

Vertellus will attempt to clean close all of the units described in this permit, as detailed in Section I-1e.
I-1e (5) Closure Tanks (40 CFR 264.112(b)(3), 264.197, 270.14(b)(13))

At closure, all hazardous waste and waste residue will be removed from the tank systems. The majority of the wastes removed from the tanks will be sludge. Preparation for disposal at an approved RCRA Subtitle C facility may include bulking to assure proper consistency for disposal. The wastes will then be loaded onto appropriate vehicles for transport to the disposal facility, after having been properly placarded and manifested.

Waste removal efforts will be primarily mechanical (e.g., the use of heavy equipment such as backhoes and loaders, pumps to transfer liquids and pressure clean lines, etc.) supplemented by manual efforts (e.g., the use of shovels, scrapers, brushes, etc.) where dictated by the situation such as in small and hard to reach areas. Upon removal of waste contents and residues, each tank and secondary containment vessel will be either high pressure washed or steam cleaned. The tanks may also be initially cleaned by a solvent wash that could be used as a fuel in the facility’s boilers. Any solvent wash would also be followed by steam cleaning to complete decontamination exercises.

The rinsate from steam cleaning or pressure washing will be collected and sampled using EPA Methods 8260 and 8270 for any detectable levels of hazardous constituents found in the listed wastes previously managed in the unit. EPA Methods 6010 and 7470 will be employed for those metals previously identified as being managed in the tanks, as these should be the only metals of concern. If any such constituents are detected in the rinsate, the material will be removed by vacuum truck and managed as hazardous waste, and the unit will be cleaned again and rinsate sample repeated. This iterative process will be repeated until the tank and secondary containment vessel are clean as indicated by a sample of final rinsate containing no detectable levels above Maximum Contaminant Levels (MCLs) of the National Primary Drinking water regulations or the analytical method’s estimated quantitation limits (EQLs) for organic parameters without MCLs of the wastes previously stored in the unit. Detection limits from the July 2013 Heritage Quality Assurance Plan will be applicable. The Heritage Environmental Services Comprehensive Quality Assurance Plan, dated July 2013, is included by reference.
Analytical results will also include documentation identified in “Hazardous Waste Program: Analytical Data Deliverable Requirements for RCRA Closures, Risk Assessments, Site Assessments, and Remediation Projects. The final rinsate from each tank will be resampled to verify decontamination, i.e., two samples (field duplicates) meeting the criteria above will assure decontamination.

Lines used to transfer hazardous waste into and out of the tanks will be pressure flushed or steam cleaned, with a high-pressure air flush to clear them of rinsate. This rinsate will be sampled and handled in the same manner as described above, and the process repeated until the equipment is decontaminated.

Tools used during cleanup (including any contaminated exterior surface of the vacuum truck) will be cleaned, the rinsate sampled, and the process repeated in the same manner as described above until they are decontaminated. Rinsate that is found not contaminated by the above sampling and testing procedures will be pumped by pipeline or transferred by tank truck to the on-site wastewater treatment plant for treatment and discharge to the POTW. Any rinsate contaminated with listed wastes, and tools (e.g., shovels, scrapers, brushes, etc.) for which cleaning is economically infeasible, will be managed as a hazardous waste and disposed of at an approved RCRA Subtitle C treatment or disposal facility.

When necessary for personnel to enter a tank (or any confined areas), the required health and safety procedures are followed and a valid tank entry permit issued each time a tank is entered. Depending upon the condition of the decontaminated tanks and lines and plant needs, they may be placed in service for production purposes. If unsuitable or not needed, they will be cut up and recycled by an off-site scrap metal dealer.
I-1e(12) Closure of Boilers and Industrial Furnaces

Upon initiation of closure, decontamination of the boiler exterior and burner gun will be conducted. The boiler will be fired on natural gas only at a high firing rate for at least 4-hours prior to initiating closure activities. This is to ensure that any residues within the boiler are completely combusted. It is assumed that all piping up to the burner gun is being closed as ancillary equipment of the feed tanks in accordance with the procedures detailed in Section I-1e(5). The burner gun will be removed from the boiler and decontaminated. The exterior of the boiler will be inspected and any areas of contamination will be decontaminated. The methods that may be used to decontaminate the burner gun and boiler exterior include manual methods (i.e., scrapers, brushes, etc.), mechanical methods (i.e., high pressure wash, steam, etc.), and/or chemical (i.e., solvent wash, etc.). All solvent washes will be followed by steam cleaning or high pressure washing.

The rinsate from steam cleaning or pressure washing activities will be collected and sampled. The rinsate samples will be analyzed using SW-846 Methods 8260 and 8270 for any detectable levels of hazardous constituents found in the listed wastes previously treated in the unit. If any such constituents are detected in the rinsate, the materials will be removed by vacuum truck and managed as hazardous waste. The above steps will be repeated until the rinsate sample is determined to be clean. “Clean” will be indicated by a sample of rinsate that contains no detectable levels above MCLs of the National Primary Drinking Water regulations or PQLs for organic parameters without MCLs of the listed wastes previously treated in the unit. Rinsate that is found not to be contaminated by the above sampling and testing procedures will be pumped by pipeline or transferred by tank truck to the on-site wastewater treatment plant for treatment and discharge to the POTW.

The boiler will then be opened and any ash residues removed for off-site disposal. All of the refractory will then be removed from the boiler and sent off-site for disposal. When necessary for personnel to enter a boiler (or any confined areas), the required health and safety procedures are followed and a valid tank entry permit issued each time a boiler is entered. The
heat transfer surfaces of the boiler (i.e., boiler tubes, water walls, etc.) will be visually inspected and any residues (i.e., ash, slag, etc.) will be manually removed, to the extent practical, by scraping, brushing, etc.

Upon removal of the refractory and any other residues, the interior of the boiler will be either high pressure washed or steam cleaned. The rinsate from steam cleaning or pressure washing will be managed in the same manner as previously discussed for the exterior cleaning of the boiler.

Once the exterior and interior of the boiler have been decontaminated, the area around the boiler will be decontaminated. The area around each boiler is defined as those areas that are inside the boiler house structure and generally includes the floor. These areas will be either high pressure washed or steam cleaned. The rinsate from steam cleaning or pressure washing will be managed in the same manner as previously discussed for the exterior cleaning of the boiler.

Tools used during the closure (including any contaminated exterior surface of the vacuum truck) will be cleaned with the rinsate managed in the same manner as previously discussed for the exterior cleaning of the boiler. Any tool (i.e., shovels, scrapers, brushes, etc.) for which cleaning is not economically feasible will be managed as a hazardous waste and disposed of at an approved RCRA Subtitle C treatment or disposal facility.

Depending on the condition of the decontaminated boiler and plant needs, the boiler may be placed into service for production purposes. If unsuitable or not expected to be needed, the boiler may be scrapped to an off-site scrap dealer.

**I-3a Certification of Closure (40 CFR 264.115)**

Within 60 days of completion of closure activities for a unit or the facility, Vertellus will submit to the Commissioner of IDEM the Certification of Closure Statement signed by the owner/operator and an independent registered professional engineer.

In accordance with the detailed closure plan outlined in Section I-1, an estimate of costs for final closure of the facility has been prepared and is presented herein as Table I-4. The estimate assumes closure would be required at a point at which standard operations would make closure the most expensive to undertake and would be completed by an independent third party. The cost estimates do not incorporate any salvage value realized by the sale of hazardous wastes, facility structures or equipment, land or other assets of the facility at the time of partial or final closure.

During the active life of the facility, the closure cost estimate will be adjusted for inflation annually either 60 days prior to the anniversary date of the instrument used for financial insurance or 30 days after the close of the company’s fiscal year for financial test or guarantee. In addition, during the active life of the facility when an approved modification results in higher closure costs, the cost estimate will be revised within 30 days of such approval, and likewise adjusted for inflation.

As partial closures are completed and certified to the satisfaction of the Commissioner IDEM, the Part A will be modified and the closure cost estimate reduced to reflect lower anticipated final closure costs.

Vertellus will maintain on-site the latest approved initial or modified closure cost estimate that has been adjusted for inflation on an annual basis. The summary of the closure costs are below:

- Tank 64 $293,238.55
- Tank 66 $293,238.55
- Tank 69 $135,254.80
- Tank Closure Cost Total $721,731.90
• Boiler 28K  $48,048.34
• Boiler 30K  $48,048.34
• Boiler 70K  $48,048.34
• Boiler Closure Total  $144,145.01
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Vertellus uses State of Indiana-required financial mechanisms to satisfy the requirements of 329 IAC 3.1. Vertellus has established financial assurance for closure of the facility using a letter of credit. The documentation demonstrating financial assurance is provided to the State of Indiana in May of each calendar year. Information to be submitted for the next fiscal year will be provided to IDEM as the required annual financial assurance demonstration. As indicated in the foreword to this permit and on the documents themselves, such information should be considered confidential, and will be submitted in accordance with Confidential Business Information requirements.

**I-8 Liability Requirements (329 IAC 3.1-15-8)**

Vertellus uses State of Indiana-required financial mechanisms to satisfy the requirements of 329 IAC 3.1. A copy of the documentation demonstrating sufficient insurance is provided in May of each calendar year to IDEM.

Information submitted in 2013 for the latest fiscal year is provided as described above. As indicated in the foreword to this permit application and on the documents themselves, such information related to Vertellus’ financial status should be considered confidential, and will be submitted in accordance with Confidential Business Information requirements.

**I-9 Use of State Required Mechanisms**

As explained in Sections I-5 and I-8, Vertellus uses State of Indiana-required financial mechanisms to comply with the requirements of 329 IAC 3.1. Annual submissions of the required information are made in May of each calendar year to IDEM. Vertellus claims
confidentiality on this financial information, and the information will be submitted in accordance with Confidential Business requirements.
FIGURE I-1

Site Maps
FIGURE I-2

Waste Inventory List

See Permit Condition VII.
FIGURE I-3

QAPP

IDEM's Virtual File Cabinet Document # 70117542
ATTACHMENT J
CORRECTIVE ACTION
ATTACHMENT J
CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

**J Corrective Action for Solid Waste Management Units**

**J-1 Solid Waste Management Units (40 CFR 264.101, 270.14(d)(1))**

The facility (formally known as Reilly Industries, Inc. (Reilly) entered into an Administrative Order by Consent (Order VW-87-C-006) with the U. S. EPA in March of 1987 to conduct the Remedial Investigation and Feasibility Study for the site. The U.S. EPA and Reilly agreed to amend the Order to incorporate the Corrective Action requirements that would ordinarily have been imposed by the RCRA permit into the Superfund program. The amended order was signed in September of 1992 and is included in Figure J-1. The amended order contains the list of Solid Waste Management Units (SWMUs).

**J-1a Characterize the Solid Waste Management Unit**

The SWMUs were fully characterized under the Superfund program.

**J-2 Releases**

**J-2a Characterize Releases**

The SWMUs were fully characterized and remedial actions were implemented under the Superfund program. The site continues to be under U.S. EPA review.

For any existing or future SWMUs not addressed under Superfund, Vertellus must demonstrate that the SWMU will be addressed under Superfund or address the SWMU as required by this permit.
FIGURE J-1

Administrative Order by Consent (Order VW-87-C-006)
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

IN THE MATTER OF:
REILLY TAR & CHEMICAL CORPORATION
1500 SOUTH TIBBS AVENUE
INDIANAPOLIS, INDIANA 46241
Respondent

PROCEEDING UNDER SECTION 122(a) and
(d)(3) OF THE COMPREHENSIVE ENVIRON-
MENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT OF 1980, AS AMENDED.

U.S. EPA DOCKET NO.
V-W- '87-C-006

ADMINISTRATIVE ORDER BY CONSENT

I. JURISDICTION

This Consent Order is issued pursuant to the authority
vested in the President of the United States by Section 122(a)
and (d)(3) of the Comprehensive Environmental Response,
et seq., as amended by the Superfund Amendments and Reauthorization
Act of 1986, Pub. L. 99-499 (CERCLA) and delegated to the
Administrator of the United States Environmental Protection
Agency (EPA) on , by Executive Order 12580, 52 Fed. Reg. 2923,
and further delegated to the Assistant Administrator for Solid
Waste and Emergency Response Branch and the Regional Administrators
by EPA Delegation No. 14-14-B.
The Respondent, Reilly Tar & Chemical Corporation (Reilly), agrees to undertake all actions required by the terms and conditions of this Consent Order. Reilly consents to and will not contest EPA jurisdiction regarding this Consent Order.

II. NOTICE OF ACTION

A. U.S. EPA has notified the Federal Natural Resource trustee of this action pursuant to the requirements of Section 122(j) of CERCLA.

B. U.S. EPA has notified the State of Indiana of this action pursuant to the requirements of Section 121(f) of CERCLA.

III. PARTIES BOUND

This Consent Order shall apply to and be binding upon the Reilly and EPA, their agents, successors, and assigns and upon all persons, contractors, and consultants acting under or for either Reilly or EPA or both.

No change in ownership or corporate or partnership status relating to the Facility will in any way alter Reilly's responsibilities for carrying out all activities required of Reilly under this Consent Order.

Reilly shall provide a copy of this Consent Order to all contractors, sub-contractors, laboratories, and consultants
retained to conduct any portion of the work performed pursuant to this Consent Order, and shall ensure that any such contractors, sub-contractors, laboratories and consultants abide by the terms of this Consent Order.

The undersigned representatives of EPA and Reilly certify that they are fully authorized to enter into the terms and conditions of this Consent Order and to execute and legally bind such party to this document.

IV. STATEMENT OF PURPOSE

In entering into this Consent Order, the mutual objectives of EPA and Reilly are for Reilly: (1) to perform a Remedial Investigation to determine fully the nature and extent of the threat to the public health, welfare or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants from the Facility and (2) to conduct a Feasibility Study which will identify and evaluate alternatives for the appropriate extent of remedial action to prevent or mitigate the migration or the release or threatened release of hazardous substances, pollutants, or contaminants from the Facility. The activities conducted pursuant to this Consent Order are subject to approval by EPA and shall be consistent with the National Contingency Plan, 40 CFR Part 300.68 (a)-(j) as amended, and the Superfund Amendments and Reauthorization Act of 1986.
V. FINDINGS OF FACT

A. The Reilly site is located in Section 17, Township 15 North, Range 3 East in Marion County, Indiana. It is bounded on the north by residential and industrial properties, on the west and south by industrial facilities, and on the east by commercial, industrial, and residential properties.

The site consists of two parcels of property divided by Minnesota Street and bounded on the east by Tibbs Avenue. The southern parcel contains about 83 acres and the northern parcel contains about 41 acres. On the southern parcel are an active drum storage area, the API treatment area, inactive landfill areas, treatment tanks, storage tanks, and miscellaneous storage areas. Manufacturing facilities, including specialty chemical manufacturing, are located on the southern parcel. The northern parcel contains most of the active manufacturing facilities, a lime pond, and an API treatment area.

Reilly began operations on the southern parcel in the early 1920's with a coal tar refining and wood treatment (creosote) facility. This operation was closed in 1972. The Reilly manufacturing facility on the northern parcel began in the early 1950's. Since then it has been engaged in the production of numerous synthetic chemical substances. Hazardous substances as defined in Section 101(14) of CERCLA, 42 U.S.C. 9601 (14), have been deposited, stored, disposed of, placed or located
at the site.

The site constitutes a "facility" within the meaning of Section 101(9) of CERCLA, 42 U.S.C. 9601(9) and shall herein be referred to as the "Facility".

B. The Reilly Tar & Chemical Corporation, Indianapolis, Indiana is the owner/operator of the Facility within the meaning of Section 101(20) of CERCLA, 42 U.S.C. 9601(20).

C. The Facility was ranked with a Hazardous Ranking Score (HRS) of 34.03 on the National Priorities List (NPL) within the meaning of Section 105(8)(B) of CERCLA, 42 U.S.C. 9601(8)(B).

D. Hazardous substances associated with the manufacturing area of the facility include: pyridine; alpha picoline; ammonia; acetaldehyde; formaldehyde; and methanol. Hazardous substances reportedly associated with past coal tar refining, wood treatment and landfill areas include: methyl ethyl ketone; trichloroethylene; toluene; m-xylene; o-xylene; p-xylene; cresol and benzene.

E. Three water samples taken in mid-1964 by the Indiana Stream Pollution Control Board (SPCB) from a waste lagoon on the Facility indicated appreciable amounts of pyridine, picolines and ammonia.

Samples of liquid taken in July 1975 from a trench in the southern parcel of the Facility indicated high levels of ammonia (3,100 mg/L).
Soil samples, collected in June 1980 on the Facility's southern parcel were reportedly found to contain methyl ethyl ketone, trichloroethylene, toluene, m-xylene, p-xylene and cresol. A liquid sample, collected on the southern parcel, also reportedly contained benzene, xylene and toluene.

F. Marion County is covered by generally thick deposits of Pleistocene age glacial materials and some recent alluvial sediments. Underlying these unconsolidated deposits are Ordovician and Mississippian age sedimentary rocks consisting of shale and dolomite which form the bedrock surface of Marion County.

Marion County is almost entirely within the drainage basin of the White River, which flows through the county from northeast to southwest. The Facility is less than 1 mile west of Eagle Creek, a White River tributary. There are numerous small lakes and ponds near the site formed by groundwater flow into abandoned sand and gravel quarries.

Marion County is underlain by five discernable aquifers. These include the limestone aquifer, an unconfined glacial outwash aquifer and three confined sand and gravel aquifers. The aquifers may be hydraulically connected in some locations.

The glacial outwash aquifer is the most important potential groundwater source in the area. It underlies about 20 percent of Marion County and, at a minimum, the southeast parcel of the Facility. The depth to groundwater is 25-33 feet.

The three confined sand and gravel aquifers are not present under the Facility but are probably hydraulically connected to the glacial outwash aquifer where there are discontinuities in
the confining shale beds.

The limestone aquifer is partially confined by shale but is also in direct contact with the sand and gravel aquifer glacial outwash aquifer in some areas.

In the summer months, the near surface aquifers discharge into the White River and Eagle Creek. Thus, any contaminated groundwater has the potential for reaching these surface drainage features.

VI. CONCLUSIONS OF LAW

Based upon information available on the effective date of this Consent Order, the Regional Administrator of U.S. EPA, Region V, makes the following conclusions of law:

A. The Reilly site is a facility as defined in Section 101(9) of CERCLA, 42 U.S.C. §9601(9).

B. Reilly is a person as defined in Section 101(21) of CERCLA, 42 U.S.C. §9601(21).

C. Some wastes and constituents thereof disposed at the Facility, are "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. §9610(14).

D. The past, present, or potential migration of hazardous substances from the Facility constitutes an actual and/or threatened "release" as defined in Section 101 (22) of CERCLA, 42 U.S.C. §9601(22).

E. Reilly is a liable person pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a) and a potentially responsible party for the purpose of Section 122 of CERCLA.

VII. DETERMINATIONS

Based on the foregoing Findings of Fact and Conclusions of Law, the Regional Administrator of U.S. EPA, Region V, has
determined that:

A. Reilly will promptly and properly take appropriate response action at the Facility by conducting a Remedial Investigation and Feasibility Study (RI/FS) and is qualified to perform the RI/FS; and

B. The actions required by this Consent Order are in the public interest, consistent with the National Contingency Plan, 40 CFR Part 300, as amended, and are consistent with the Superfund Amendments and Reauthorization Act of 1986.

VIII. WORK TO BE PERFORMED

A. All work performed by Reilly pursuant to this Consent Order shall be under the direction and supervision of a qualified professional engineer or certified geologist with expertise in hazardous waste site cleanup. Prior to the initiation of site work, Reilly shall notify EPA in writing regarding the name, title, and qualifications of such engineer or geologist and of any contractors and/or subcontractors to be used in carrying out the terms of this Consent Order.

B. The following work shall be performed:

Reilly shall implement the tasks detailed in the Remedial Investigation and Feasibility Study Work Plan (RI/FS Work Plan) which has been approved by EPA and is attached to and incorporated in this Consent Order (Attachment 1) and made an enforceable part hereof. This work shall be conducted in accor-
dance with the the standards, specifications, and schedule contained in the RI/FS Work Plan. All plans and reports required to be prepared by Reilly pursuant to the RI/FS Work Plan shall be in accordance with the EPA RI/FS guidance documents. Within ten calendar days of the effective date of this Consent Order, Reilly shall commence performance of the work set forth in the RI/FS Work Plan.

IX. PLANS AND REPORTS

A. Reilly shall provide monthly written progress reports to EPA. At a minimum, these progress reports shall: (1) describe the actions which have been taken toward achieving compliance with this Consent Order, (2) include all results of sampling and tests and all other data received by Reilly during such month, and (3) describe all plans and procedures completed pursuant to the RI/FS Work Plan during the past month as well as actions, data, and plans which are scheduled for the next month. These reports are to be submitted to EPA by the tenth day of each month following the effective date of this Consent Order.

B. Reilly shall submit draft and final plans and reports to EPA according to the schedule contained in the RI/FS Work Plan.

C. EPA shall review all draft plans and reports and, within 30 calendar days of receipt by EPA, shall notify Reilly in
writing of EPA's approval or disapproval of each draft plan or report or any part thereof. In the event of a disapproval, EPA shall specify in writing both the deficiencies and the reasons for such disapproval, and Reilly shall revise the draft plan in response to EPA comments in order to submit the final plan or report according to the schedule contained in the RI/FS Work Plan.

D. In the event that the review of draft and/or final plans and reports requires a longer review period than 30 calendar days, U.S. EPA shall notify Reilly in writing of that fact within thirty (30) calendar days after receipt of the document. Regardless of whether EPA gives notice of such delay to Reilly, delay by Reilly in performance of the work under this Consent Order due to EPA document review beyond thirty (30) calendar days shall not be considered a violation of this Consent Order and the time allowed for performance by Reilly shall be extended by the number of calendar days beyond thirty (30) calendar days that elapse before Reilly receives the written notice from EPA relating to their review of such document.

E. EPA shall review all final plans and reports and, within 30 calendar days of receipt by EPA, shall notify Reilly in writing whether the final plan or report is 1) approved as submitted, 2) approved with modifications, or 3) disapproved. In the event of any approval with modifications, EPA shall specify
in writing the deficiencies requiring modification and either
a) request Reilly to submit a modified final plan or report
within a reasonable time period as specified by the EPA Project
Coordinator or b) provide Reilly with the modifications em-
bodied in the final plan or report as part of the approval. In
the event of any disapproval, EPA shall specify in writing the
deficiencies and retains the right to prepare an amended final
plan or report, to perform additional studies, to conduct a
complete or partial Remedial Investigation and/or Feasibility
Study pursuant to its authority under CERCLA, and/or to enforce
the terms of this Consent Order. In the event of any disapproval
or modification by EPA of final plans or reports, Reilly re-
tains the right to request dispute resolution pursuant to Section
XVII.

X. ADDRESSES FOR ALL CORRESPONDENCE

Documents, including reports, approvals, disapprovals, and
other correspondence, to be submitted pursuant to this Consent
Order, shall be sent by certified mail, return receipt requested
to the following addresses or to such other addresses as Reilly
or EPA hereafter may designate in writing:

Documents to be submitted to EPA shall be sent in
duplicate to:
Mr. Dion Novak  
Remedial Project Manager  
Hazardous Waste Enforcement Branch  
(5HE-12)  
U.S. Environmental Protection Agency  
230 S. Dearborn Street  
Chicago, Illinois  60604  
Attn: Reilly Tar, Indiana Facility

Documents to be submitted to the Respondent shall be sent to:

Dr. Paul Rivers  
Project Coordinator  
Reilly Tar & Chemical Corporation  
1500 South Tibbs Avenue  
Indianapolis, Indiana  46241

XI. ADDITIONAL WORK

EPA may determine that tasks, including remedial investigatory work and/or engineering evaluation, are necessary as part of a Remedial Investigation and Feasibility Study in addition to EPA-approved tasks and deliverables, including reports, which have been completed pursuant to this Consent Order. Subject to the "Dispute Resolution" Section (Section XVII) of this Consent Order, Reilly shall implement any additional tasks which EPA determines are necessary as part of a Remedial Investigation and Feasibility Study and which are in addition to the tasks detailed in the RI/FS Work Plan. The additional work shall be completed in accordance with the standards, specifications, and schedule determined or approved by EPA.
XII. DESIGNATED PROJECT COORDINATORS

The designated project coordinators for EPA and Reilly are Dion Novak and Paul Rivers respectively. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Order. The EPA Project Coordinator will be EPA's designated representative at the Facility. To the maximum extent possible, communications between Reilly and EPA and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators.

EPA and Reilly each have the right to change their respective Project Coordinator. Such a change shall be accomplished by notifying the other party in writing at least five calendar days prior to the change.

The EPA designated "On-Scene-Coordinator", will be the EPA Project Coordinator, and shall have the authority vested in the On-Scene-Coordinator, by the National Contingency Plan; 40 CFR Part 300 et seq., 47 Federal Register 31180 July 16, 1982. This includes the authority to halt, conduct, or direct any tasks required by this Consent Order and/or any response actions or portions thereof when conditions present any immediate risk to public health or welfare or the environment.
The absence of the EPA Project Coordinator from the Facility shall not be cause for the stoppage of work, nor shall his presence be required for work to proceed.

XIII. QUALITY ASSURANCE

Reilly shall use quality assurance, quality control, and chain of custody procedures in accordance with the approved Quality Assurance Project Plan throughout all sample collection and analysis activities. Reilly shall consult with EPA in planning for, and prior to, all sampling and analysis as detailed in the RI/FS Work Plan. In order to provide quality assurance and maintain quality control regarding all samples collected pursuant to this Consent Order, Reilly shall:

A. Ensure that EPA personnel and/or EPA authorized representatives are allowed access to the laboratory and personnel utilized by Reilly for analyses.

B. Ensure that the laboratory utilized by Reilly for analyses performs such analyses according to EPA methods or methods deemed satisfactory to EPA and submits all protocols to be used for analyses to EPA at least 14 calendar days prior to the commencement of analysis.

C. Ensure that the laboratory utilized by Reilly for analyses participates in an EPA quality assurance/quality control program equivalent to that which is followed by EPA and which is consistent with EPA document QAMS-005/80. As part of
such a program, and upon request by EPA, such laboratory shall perform analyses of samples provided by EPA to demonstrate the quality of such laboratory's analytical data. A maximum annual number of three series of samples may be expected to be provided to each laboratory for analysis.

XIV. SAMPLING AND DATA/DOCUMENT AVAILABILITY

A. Reilly shall make available to EPA the results of all sampling and/or tests or other data generated by Reilly, or on Reilly's behalf, with respect to the implementation of this Consent Order, and shall submit such results in progress reports as described in Section IX of this Consent Order. EPA will make available to Reilly the results of sampling and/or tests or other data similarly generated by EPA, or its contractor within a timely manner.

B. At the request of EPA, Reilly shall allow split or duplicate samples to be taken by EPA and/or its authorized representatives, of any samples collected by Reilly pursuant to the implementation of this Consent Order. Reilly and EPA shall notify each other not less than 48 hours in advance of any sample collection activity pursuant to this Consent Order.

C. Reilly may assert a confidentiality claim, if appropriate, covering part or all of the information requested by this Consent Order pursuant to 40 CFR §2.203(b). Such an
assertion shall be adequately substantiated when the assertion is made. Analytical data shall not be claimed as confidential by Reilly. Information determined to be confidential by EPA will be afforded the protection specified in 40 CFR Part 2, Subpart B. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public without further notice to Reilly.

XV. ACCESS

A. At all reasonable times, EPA and/or any EPA authorized representative shall have the authority to enter and freely move about such property at the Facility as is necessary to oversee the implementation of this Consent Order (e.g., inspecting records, operating logs and contracts related to the implementation of the Consent Order; reviewing the progress of Reilly in carrying out the terms of this Consent Order; conducting such tests, inspections and sampling as EPA deems necessary to implement this Consent Order; using a camera, and verifying the data submitted to EPA by Reilly hereunder). Reilly shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, in any way pertaining to work undertaken pursuant to this Consent Order. All parties with access to the Facility pursuant to this paragraph shall comply with all approved health and safety plans and such safety regulations of Reilly at the Facility which are reasonable and not in-
consistent with EPA's oversight duties hereunder. Nothing herein shall be construed as restricting the inspection or access authority of EPA under any law or regulation.

B. With respect to access to property not owned by Reilly, Reilly will use its best efforts to obtain access agreements from the present owners of property on which Reilly is to carry out tasks under the RI/FS Work Plan. Such agreements shall provide access for the U.S. EPA and authorized representatives of the U.S. EPA. In the event that such access agreements cannot be obtained by Reilly thirty (30) calendar days prior to the commencement of the appropriate RI/FS task, Reilly shall so notify the EPA. EPA will, in its sole discretion, (1) use its authority to obtain access to such property and shall either provide for access by Reilly and its contractors or (2) perform such work itself in which case Reilly agrees to reimburse EPA for the costs thereof, or (3) if Reilly is unable to obtain access agreements for a material portion of the RI/FS Work Plan, terminate this Consent Order.

XVI. FORCE MAJEURE

A. Reilly shall cause all work to be performed within the time limits set forth herein, unless performance is delayed by events which constitute a force majeure. For purposes of this Consent Order, a "force majeure" is an event beyond the control of the Respondent which delays performance of any obligations required by this Consent Order. Increases of costs shall not be considered circumstances beyond the control of Reilly.
B. Reilly shall notify the U.S. EPA in writing no later than three (3) business days after discovery of any event which Reilly contends is a force majeure. Such notification shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken and to be taken by Reilly to minimize the delay, and the timetable by which these measures will be implemented. Reilly shall have the burden of demonstrating that the event is a force majeure.

C. If the U.S. EPA agrees that a delay is attributable to a force majeure, the time period of performance under this Consent Order shall be extended for the time period attributable to the event constituting the force majeure. EPA shall use its best efforts to promptly respond to the notice described in Paragraph B, above.

XVII. DISPUTE RESOLUTION

A. The parties shall use their best efforts, in good faith to resolve all disputes or differences of opinion informally. If, however, disputes arise concerning this Consent Order which the parties are unable to resolve informally, Reilly shall present a written notice of such dispute to the U.S. EPA, which shall set forth specific points of dispute, the position of Reilly and the technical basis therefore, and any actions which Reilly considers necessary.
B. Within ten (10) business days of receipt of such a written notice, EPA shall provide a written response to Reilly setting forth its position and the basis thereof. During the five (5) business days following receipt of the response, the EPA and Reilly shall attempt to negotiate in good faith a resolution of their differences.

C. Following the expiration of the time periods described in paragraph B, above, if the EPA concurs with the position of Reilly, Reilly shall be so notified in writing and this Consent Order shall be modified to include any necessary extensions of time or variances of work. If the EPA does not concur with the position of Reilly, the EPA shall resolve the dispute, based upon and consistent with the terms of this Consent Order, and shall provide written notification of such resolution to Reilly.

D. The pendency of dispute resolution set forth in this Section shall not affect the time period for completion of work and/or obligations to be performed under this Consent Order, except that upon mutual agreement of the EPA and Reilly, any time period shall be extended not to exceed the actual time taken to resolve the dispute. Elements of work and/or obligations not affected by the dispute shall be completed in accordance with the schedule contained in the RI/FS Work Plan.
E. Upon resolution of any dispute, whether informally or using the procedures in this Section, any actions or modifications required as a result of such dispute resolution shall immediately be incorporated, if necessary, into the appropriate plan or procedure and into this Consent Order. Reilly shall proceed with all remaining work according to the modified plan or procedure.

XVIII. RECORD PRESERVATION

Reilly agrees that it shall preserve, during the pendency of this Consent Order and for a minimum of six (6) years after its termination, all records and documents in its possession or in the possession of its employees, agents, accountants, contractors, or attorneys which relate in any way to the implementation of the Consent Order, despite any document retention policy to the contrary. After this six year period, Reilly shall notify EPA within 30 calendar days prior to destruction of any such documents. Upon request by EPA, Reilly shall make available to EPA such record or copies of any such records.

XIX. STIPULATED PENALTIES

A. For each week or part thereof that Reilly fails to submit a report or document or otherwise fails to comply with a schedule in accordance with the requirements of this Consent Order, Reilly, shall, subject to Section XVII above, pay into the United
States Treasury the sums set forth below as stipulated penalties. Checks should be made payable to the Hazardous Substances Response Trust Fund and sent to the address set forth in paragraph XXII below.

B. Stipulated penalties shall accrue in the amount of $1,000.00 for the first full week or part thereof and $2,000.00 for each full week or part thereof thereafter for failure to submit a deliverable or comply with a schedule as required by this Consent Order. Such sums, subject to the provisions set forth in Section XVII, shall be due and payable within fifteen (15) calendar days of receipt of notification by EPA.

C. The stipulated penalties set forth in this Section do not preclude EPA from electing to pursue any other remedies or sanctions which may be available to EPA by reason of Reilly's failure to comply with any of the requirements of this Consent Order. Such remedies and sanctions include a suit to enforce the terms of this Consent Order, a suit for statutory penalties as authorized by law, a federally-funded response action, and a suit for reimbursement of costs incurred by the United States.

XX. RESERVATION OF RIGHTS

A. The parties herein reserve all rights and defenses that they may have pursuant to any available legal authority.
B. Nothing herein shall waive the right of the EPA to enforce this Consent Order, or to take action pursuant to Section 104, 106(a) and 107 of CERCLA. EPA reserves the right to take any enforcement action pursuant to CERCLA and/or any available legal authority including the right to seek injunctive relief, monetary penalties, and punitive damages. In addition, if Reilly fails to comply with the Consent Order, EPA reserves the right to undertake any remedial investigation/feasibility study work. EPA reserves the right to undertake any removal, remedial and/or response actions not within the scope of this Consent Order relating to the Facility, and to seek recovery from Reilly for any costs incurred in undertaking such actions.

C. Nothing herein is intended to release, discharge, or in any way affect any claim, causes of action or demands in law or equity which the parties have against any person, firm, partnership or corporation not a party to this Consent Order for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release or disposal of any materials, hazardous substances, hazardous wastes, contaminants, or pollutants at, to, or from the Facility. The parties to this Consent Order expressly reserve all rights, claims, demands, and causes of action they have against any and all other persons and entities who are not parties to this Consent Order, and as to each other for matters not covered hereby.
D. The EPA recognizes that Reilly may have the right to seek contribution, indemnity and/or any other available remedy against any person found to be responsible or liable for contribution, indemnity or otherwise for any amounts which have been or will be expended by Reilly in connection with the Facility.

E. Nothing herein shall be construed to release Reilly from any liability for failure of Reilly to perform the RI/FS in accordance with the RI/FS Work Plan. The parties further expressly recognize that this Consent Order and the successful completion and approval of the RI/FS do not represent satisfaction, waiver, release, or covenant not to sue, of any claim of the United States against Reilly relating to the Facility, (including claims to require Reilly to undertake further response actions and claims to seek reimbursement of response costs pursuant to Section 107 of CERCLA) except that, upon receipt of written notice of satisfaction as provided in Article XXVII of the Consent Order, Reilly shall have no further obligations under this Consent Order.

F. Nothing herein in intended to be a release or settlement of any claim for personal injury or property damage by any person not a party to this Consent Order.

G. Nothing in this Consent Order is intended by the parties to be an admission of law or fact by Reilly. Any payment made by Reilly pursuant to this Consent Order is made only for the purpose of compromise and avoidance of litigation.
XXI. CERCLA FUNDING

A. Reilly waives any claims or demands for compensation or payment under Section 111 and 112 of CERCLA against the United States or the Hazardous Substances Response Trust Fund established by Section 221 of CERCLA for or arising out of any activity performed or expenses incurred pursuant to this Consent Order.

XXII. REIMBURSEMENT OF COSTS

A. Reilly agrees to reimburse U.S. EPA for all response costs incurred prior to the effective date of this Consent Order. Reilly shall pay this amount within thirty calendar days of receipt of an accounting, which shall include copies of the actual documentation adequately supporting such accounting. Payment shall be made in the manner specified in paragraph C hereof.

B. Within ninety days of the end of each year following the effective date of this Consent Order, EPA shall submit to Reilly an accounting of all response and oversight costs incurred by the U.S. Government for such year with respect to this Consent Order including but not limited to the costs incurred by the U.S. EPA in having a qualified person oversee the conduct of this RI/FS pursuant to Section 104(a) of CERCLA. Reilly shall, within 30 calendar days of receipt of that accounting, remit a check for the amount of those costs made payable to the Hazardous Substance Response Trust Fund. The accounting referred to herein shall include copies of the actual documentation which adequately supports such accounting.
C. Checks payable pursuant to this Paragraph should specifically reference the identity of the site and be addressed to:

U.S. Environmental Protection Agency
Superfund Accounting
P.O. Box 371003M
Pittsburgh, PA 15251

A copy of the transmittal letter shall be sent to the Project Coordinator and to U.S. EPA, SWERB Branch, attention Ms. Isalee Coleman, Office of Regional Counsel, ECS-16, 230 S. Dearborn, Chicago, Illinois 60604.

EPA reserves the right to bring an action against Reilly pursuant to Section 107 of CERCLA for recovery of all future costs incurred or to be incurred by the United States in connection with response activities conducted or to be conducted pursuant to CERCLA at this site other than those response activities completed to the satisfaction and approval of the U.S. EPA pursuant to this Consent Order.

XXIII. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. Reilly shall be responsible for obtaining all state or local permits which are necessary for the performance of any work hereunder.
XXIV. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Reilly agrees to indemnify and save and hold the United States Government, its agencies, departments, agents, and employees, harmless from any and all claims or causes of action arising from or on account of acts or omissions of Reilly, its officers, employees, receivers, trustees, agents or assigns, in carrying out the activities pursuant to this Consent Order to the extent of said acts or omissions. EPA is not a party to any contract involving Reilly at the Facility and shall not be held liable under, or as a party to, any contract entered into by Reilly.

XXV. COMMUNITY RELATIONS

Reilly shall cooperate with the U.S. EPA in providing RI/FS information to the public. As requested by the U.S EPA, Reilly shall participate in the preparation of all appropriate information disseminated to the public and in public meetings which may be held or sponsored by the U.S. EPA to explain activities at or concerning the facility, including the findings of the RI/FS.

XXVI. PUBLIC COMMENT AND EFFECTIVE DATE OF ADMINISTRATIVE ORDER

Within fifteen (15) calendar days of the date of the execution of this Consent Order, the EPA shall announce to the public, the availability of this Consent Order for review and comment. The EPA shall accept comments from the public for, at a minimum, a thirty (30) calendar day period after such announcement. At the end of the comment period, the EPA shall review all such comments and shall either:
a) determine that the Consent Order shall be made effective in its present form, in which case the EPA Project Coordinator shall so notify Reilly in writing, and the Consent Order shall become effective on the date Reilly receives such notification, or

b) determine that modification of the Consent Order is necessary, in which case the EPA Project Coordinator will inform Reilly as to the nature of all required changes. If Reilly agrees to the modifications, the Consent Order shall be so modified and shall become effective upon signature of the EPA.

In the event that Reilly does not agree to modifications required by the EPA as a result of public comment, this Consent Order may be withdrawn by the EPA. In such an event, the EPA reserves all rights to take such actions as it deems necessary.

XXVII. MODIFICATION

Any term of this Administrative Order may be modified upon mutual written agreement of the Parties.

XXVIII. TERMINATION AND SATISFACTION

The provisions of this Consent Order shall be deemed satisfied upon Reilly’s receipt of written notice from EPA that Reilly has demonstrated, to the satisfaction of EPA, that all of the terms of this Consent Order including any additional tasks which EPA has determined to be necessary, have
been completed. Upon such demonstration by Reilly, said written notice shall not be unreasonably withheld or delayed.

IT IS SO AGREED AND ORDERED:

REILLY TAR & CHEMICAL CORPORATION

BY: [Signature]

(Reilly Tar & Chemical Corporation)  March 10, 1987

Date

BY: [Signature]

Valdas V. Adamkus, Regional Administrator  March 31, 1987

Date
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

IN THE MATTER OF:
REILLY INDUSTRIES, INC.
1500 SOUTH TIBBS AVENUE
INDIANAPOLIS, INDIANA 46241

Respondent

PROCEEDING UNDER SECTION 122(A) and
(d)(3) OF THE COMPREHENSIVE ENVIRON-
MENTAL RESPONSE, COMPENSATION, AND
LIABILITY ACT OF 1980, AS AMENDED

U.S. EPA DOCKET NO.
V - W - 87 - C - 006

FIRST AMENDMENT TO THE ADMINISTRATIVE ORDER BY CONSENT

The Administrative Order by Consent in the matter of: Reilly Tar & Chemical Corporation (Order VW-87-C-006), hereinafter referred to as this Consent Order, is hereby amended by agreement of both parties to add the following language:

PREAMBLE

Reilly Industries, Inc. (Reilly), owns and operates a facility located in Indianapolis, Indiana. Hazardous substances have been released at this facility to an extent that warranted the site being placed on the National Priority List established by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). A Remedial Investigation/Feasibility Study (RI/FS) is being conducted at the site under the terms of an Administrative Order by Consent. This Consent Order (Order VW-87-C-006) was issued pursuant to Section 122 (a) and (d)(3) of CERCLA, 42 U.S.C. Section 9622.

At the same site, Reilly operates a chemical manufacturing facility engaged in the treatment and storage of hazardous waste. Reilly applied for a Resource Conservation and Recovery Act (RCRA) Permit for this facility. The State portion of this permit has been issued and is effective. The federal portion of this permit (federal permit) has also been issued, in September, 1990; however, the conditions of the federal permit which impose the Corrective Action requirements for the facility have been appealed by Reilly
and have not become effective. Consequently, Reilly is operating under a permit issued by the Indiana Department of Environmental Management; however, the federal permit, which imposed Corrective Action requirements pursuant to the Hazardous and Solid Waste Amendments of 1984 ("HSWA"), has been partially stayed by this appeal.

The HSWA amended the RCRA statute and established requirements for Corrective Action to address releases of hazardous waste or hazardous constituents from Solid Waste Management Units (SWMUs) at RCRA-permitted facilities. The HSWA established a scheme by which such Corrective Actions were to be taken prior to the issuance of the Federal portion of the permit; or, alternatively, Compliance Schedules for the accomplishment of Corrective Action requirements were to be made enforceable conditions of the permit.

The federal permit issued in September, 1990 contained conditions which established Compliance Schedules for Corrective Action requirements at the facility; however, the majority of these conditions were the subject of a petition for appeal filed by Reilly. Subsequently, representatives of Reilly and the United States Environmental Protection Agency (U.S. EPA) met to negotiate a resolution to the issues raised by the permit appeal.

The U.S. EPA and Reilly have agreed to amend this Consent Order (Order VW-87-C-006) in this matter to incorporate the Corrective Action requirements that would ordinarily have been imposed by the federal portion of the Resource Conservation and Recovery Act permit.

When this Amendment to this Consent Order has been executed by both parties, the parties will initiate a major (class III) modification to the federal portion of the RCRA permit, following the procedures set forth for such modifications at 40 CFR 270.42 (c). This modification will replace the Corrective Action conditions which Reilly appealed with a condition stating that the Corrective Action requirements imposed by the HSWA are required to be implemented at the facility pursuant to this Amendment to this Consent Order. This Amendment will be incorporated by reference into that condition of the permit. It is the agreement of both parties that this procedure will resolve the issues of RCRA-CERCLA coordination which prompted Reilly's petition for appeal.

I. JURISDICTION

Section I of this Consent Order, JURISDICTION, is hereby amended to add the following language:

This Consent Order is also issued pursuant to the authority to require corrective actions vested in the Administrator of U.S. EPA by Sections 3004 (u) and (v) and 3005 (c)(3) of the Resource Conservation and Recovery Act of
1976 (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. Sections 6924 (u) and (v) and 6925 (c)(3), and delegated to the Regional Administrators by EPA Delegation Nos 8-31 and 8-32 on April 16, 1985 and May 15, 1986.

IV. STATEMENT OF PURPOSE

Section IV of this Consent Order, STATEMENT OF PURPOSE, is hereby amended to add the following language:

This Amended Administrative Order by Consent has the following additional purposes:

A. The Parties' purpose is to integrate Reilly's CERCLA response obligations and RCRA corrective action obligations which relate to the release(s) of hazardous substances, hazardous wastes, or constituents, pollutants or contaminants covered by this Consent Order. Therefore the Parties' purpose is that activities successfully completed under this Consent Order will be deemed to achieve compliance with CERCLA, 42 U.S.C. Section 9601 et seq.; to satisfy the corrective action requirements of Sections 3004(u) and (v) of RCRA, 42 U.S.C. Section 6924(u) and (v) for a RCRA permit, and Section 3005(c)(3) of RCRA, 42 U.S.C. Section 6925(c)(3), for a RCRA permit; and to meet or exceed all applicable or relevant and appropriate Federal and State laws and regulations, to the extent required by Section 121 of CERCLA, 42 U.S.C. Section 9621. Furthermore, the parties intend that all RI/FS activities which have already been carried out pursuant to this Consent Order prior to this Amendment and which have already been approved by U.S. EPA, to the extent that such activities comply with the statutory and regulatory requirements imposed by RCRA/HSWA, shall be deemed sufficient to satisfy all requirements that might have been imposed by the RCRA Corrective Action program for those previously accomplished investigatory activities.

B. The Parties' purpose is that with respect to releases of hazardous waste and hazardous waste constituents covered by this Consent Order, RCRA shall be considered an applicable requirement pursuant to Section 121 of CERCLA. The Parties' purpose is that any remedial action selected under this Consent Order shall, if it is implemented and completed, be deemed to be protective of human health and the environment such that remediation of releases covered by this Consent Order shall obviate the need for further corrective action under RCRA.

V. FINDINGS OF FACT
Section V of this Consent Order, FINDINGS OF FACT, is hereby amended to add the following language:

RCRA

G. Reilly is a company doing business in the State of Indiana and is a person as defined in Section 1004(15) of RCRA, 42 U.S.C. Section 6903(15), and 40 CFR 260.10.

H. Reilly is a generator of hazardous wastes and an owner and operator of a hazardous waste management facility located at 1500-1800 South Tibbs Avenue, Indianapolis, Indiana. Reilly engages in treatment and storage of hazardous waste at the facility. Storage in containers amounts to 124,080 gallons; storage in tanks: 1,102,200 gallons; treatment in tanks: 1,102,200 gallons. Reilly was issued a RCRA permit for these activities by IDEM, effective October 16, 1990; however, the federal portion of that permit, which also imposed Corrective Action requirements pursuant to HSWA, has been partially stayed by the appeal petition filed by Reilly.

I. Reilly owned and operated its facility as a hazardous waste management facility on and after November 19, 1980, the applicable date which renders facilities subject to interim status requirements or the requirement to have a permit issued pursuant to Sections 3004 and 3005 of RCRA, 42 U.S.C. Sections 6924 and 6925.


K. In its Part A permit application dated November 17, 1980, and revisions thereafter, Reilly identified itself as handling the following hazardous wastes at the facility:

1) Tank Storage: Total Volume of 1,102,200 gallons

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Waste Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic of Ignitability</td>
<td>D001</td>
</tr>
<tr>
<td>Characteristic of Corrosivity</td>
<td>D002</td>
</tr>
<tr>
<td>Nonhalogenated Solvents</td>
<td>F003</td>
</tr>
<tr>
<td>Acetone</td>
<td>U002</td>
</tr>
<tr>
<td>Methanol</td>
<td>U154</td>
</tr>
<tr>
<td>Methyl Isobutyl Ketone</td>
<td>U161</td>
</tr>
<tr>
<td>Xylene (Dimethyl Benzene)</td>
<td>U239</td>
</tr>
<tr>
<td>Nonhalogenated Solvents</td>
<td>F005</td>
</tr>
</tbody>
</table>
Toluene (Methyl Benzene)  U220
Benzene U019
Methyl Ethyl Ketone U159
2-Picoline U191
Pyridine U196
Acetaldehyde U001
Acetonitrile U003
Formaldehyde U122
Creosote U051
Cyclohexane U056

2) Container Storage: Total Volume of 124,080 gallons

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Waste Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic of Ignitability</td>
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<td>U051</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>U056</td>
</tr>
</tbody>
</table>

3. The Reilly has manufactured the following products:

Creosote Oils
Bituva
Pitches
Pipe Enamel and Protective Coatings
Coke
Carburizing Carbons
Tar Acids
Naphthalene
Phenol

Xylenols
Components of Tar Bases
134 Pyridine and Piperidine Derivatives
2-Picoline
3-Picoline  
4-Picoline  
Acenaphthene  
Anthracene  
Carbazole  
Chrysene  
O-, m-, and p-Cresols  
Dimethylnaphthalene  
Flouranthenone  
Flourene  
Methyl Naphthalenes  

Phenantherene  
Pyrene  
Quinoline  
Creosoted Railroad Ties  
Creosoted Wood Blocks  
Creosoted Timbers  
Creosoted Poles and Posts  
2- and 4-Vinylpyridine  
Synthetic 2-Picoline  
3-Pyridinecarbonitrile  
Pyridine from Alkylpyridines  
Niacinamide  
Aminopyridine Derivatives  

4. **Hazardous Substances**

Hazardous substances associated with the manufacturing areas include:

Ammonia  
Acetaldehyde  
Formaldehyde  
Methanol  
Methyl Ethyl Ketone  
Trichloroethylene  
Toluene  
m-Xylene  
o-Xylene  
p-Xylene  
Cresol  
Benzene  

5. **Solid Waste Management Units**

Forty six Solid Waste Management Units (SWMUs) have been identified at the facility. These SWMUs include:

Former Location of the Cyano Process Carbon Units  
Smokatrol
Lime Pond
Tank 548
Tank 541
Tank 540
Sewer Lines Throughout the Process Area
North API Separator
Tank K3
Tank 0
Tank 1
Tank 2
North Boilers (4 Boiler Systems)
Tank 64
Tank 65
Tank 66
Waste Gas Flare System C
Solvent Adsorption System A (2 Units)
Solvent Adsorption System B
Former Railway Trench
Tank 781
Tank 753
Tank 772
South Landfill
Former Drainage Ditch
South API Separator
Sludge Pans
Former Sludge Pit
South Boilers (2 Boiler Systems)
Tank 38
Tank 39
Tank 15
Tank 16
Tank 40
Tank 41
Drum Steam-out Area
Crystallizer 13
Drum Storage Areas
Tank 17
Tank 18
Decontamination Pads Used in RI/FS
Loading and Unloading Areas
Dug Well
Kickback Areas
Facility SWMU

The Facility may contain other SWMUs that have been removed over time, or others which have not yet been identified.

L. Reilly has appealed portions of its RCRA permit which impose the Corrective Action requirements mandated by HSWA.

VI. CONCLUSIONS OF LAW
Section VI of this Consent Order, CONCLUSIONS OF LAW, is hereby amended to add the following language:

F. Reilly is a "person" within the meaning of Section 1004(15) of RCRA, 42 U.S.C. Section 6903(15).

G. Reilly is the owner and operator of a facility that has operated subject to Section 3005(e) of RCRA, 42 U.S.C. Section 6925(e).

H. The facility owned and operated by Reilly Industries at 1500-1800 South Tibbs Avenue in Indianapolis, Indiana includes a "hazardous waste management facility" as defined under 40 CFR 260.10 which operates as authorized under Sections 3004 and 3005 of RCRA, 42 U.S.C. Sections 6924 and 6925.

I. Certain wastes and waste constituents found at the facility are hazardous wastes or hazardous constituents as defined by Section 1004(5) of RCRA, 42 U.S.C. Section 6903(5), Section 3001 of RCRA, 42 U.S.C. Section 6921, and 40 CFR Part 261.

J. There is or has been a release of hazardous wastes or hazardous constituents from Solid Waste Management Units at the facility to the environment at the facility and to the environment outside the facility boundaries.

K. To comply with the HSWA, Reilly must undertake to satisfy the requirements of that statute regarding Corrective Action set forth at Sections 3004 and 3005 of RCRA, 42 U.S.C. Sections 6924 and 6925.

L. The actions required by this Consent Order are necessary to protect human health and the environment.

VIII. WORK TO BE PERFORMED

Section VIII. of this Consent Order, WORK TO BE PERFORMED, is hereby amended to add the following language:

C. Reilly shall implement the tasks required by the Statement of Work for Remedial Investigation/Feasibility Study (SOW) (as amended, 1992), including implementation of all activities required by the SOW to conduct a RCRA Facility Investigation for those SWMUs where a release or threat of release has been identified. Where necessary as determined by U.S. EPA on the basis of results provided in the RFI reports, Reilly shall conduct Corrective Measures Studies. The amended SOW is attached to and incorporated in this Consent Order (Attachment II) and made an enforceable part hereof.
D. All work undertaken pursuant to this Amendment to this Consent Order shall be performed, at a minimum, in a manner consistent with the attached Scopes of Work and all Work Plans and in a manner not inconsistent with RCRA, its implementing regulations, and all relevant U.S. EPA guidance, as provided to Reilly by U.S. EPA. The Parties further agree that all RI/FS activities which have already been carried out pursuant to this Consent Order prior to this Amendment and which have already been approved by U.S. EPA, to the extent that such activities comply with the statutory and regulatory requirements imposed by RCRA/HRSA, shall be deemed sufficient to satisfy all requirements that might have been imposed by the RCRA Corrective Action program for those previously accomplished investigatory activities.

E. All work performed on CERCLA operable units which are also determined by U.S. EPA to be SWMUs as defined by RCRA shall be performed in a manner not inconsistent with the RCRA statute, 42 U.S.C. 6901 et seq., as amended, its implementing regulations, and all appropriate guidance which has been provided by U.S. EPA. All such work shall be performed in a manner and to an extent that shall satisfy the requirements of the RCRA statute and its implementing regulations.

F. The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Consent Order shall be as provided for in CERCLA and the NCP. The Parties further recognize that ongoing hazardous waste management activities at the facility may require the issuance of permits (e.g. RCRA Facility Operating Permits) under Federal and State laws. This Consent Order does not affect the requirements, if any, to obtain such permits.

XIII. QUALITY ASSURANCE

Section XIII of this Consent Order, QUALITY ASSURANCE, is hereby amended to add the following language:

D. All quality assurance, quality control and chain of custody procedures for RCRA Facility Investigations or Corrective Measures Studies conducted to address the release of hazardous waste or hazardous constituents from Solid Waste Management Units at the facility must meet the statutory requirements of RCRA, the regulations promulgated thereunder and be consistent with all relevant RCRA guidance for implementation of corrective action. All actions undertaken pursuant to this Amendment to this Consent Order shall be subject to a single Quality Assurance/Quality Control ("QA/QC") program that is consistent with both RCRA and CERCLA requirements. Quality assurance, quality control and chain of custody procedures employed in connection with actions taken previously, pursuant to this Consent Order, prior to this
Amendment, shall be deemed sufficient to satisfy RCRA QA/QC requirements to the extent that such procedures have been approved by U.S. EPA.

IT IS SO AGREED AND ORDERED:

REILLY INDUSTRIES, INC.

BY:  

Robert D. McNeely  
President

3 Sept 1992  
Date

BY:  

William E. Munoz  
Acting Director
Waste Management Division

9/10/92  
Date