## **SECTION D-10**

## **MANAGEMENT OF AIR EMISSIONS**

Revision No.

5.0

## **SECTION D-10**

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#### **SECTION D-10**

#### MANAGEMENT OF AIR EMISSIONS

#### **D-10-1** Introduction

This section describes the management of air emissions as required by 40 CFR 264.1030 and ADEM Administrative Code Rule 335-14-5-.27 (Subpart AA); 40 CFR 264.1050 and ADEM Administrative Code Rule 335-14-5-.28 (Subpart BB); and 40 CFR 264.1080 and ADEM Administrative Code Rule 335-14-5-.29 (Subpart CC). The facility implemented the emission standards in December of 1990, which included the Standards for Subpart AA and BB, and in December 1996, which included the Standards for Subpart CC. The 40 CFR regulations will be used in this section since the ADEM Administrative Code Rule references the 40 CFR regulations.

#### D-10-1a Subpart AA and BB Affected Units

The facility manages waste from different generators, which vary in chemical composition. Although there are numerous storage, treatment and disposal units at the facility, historically there are only four areas of the facility that are or were impacted by Subparts AA and BB of the regulations. These units and their present status are shown in Table D-10.1.

The facility has determined that other storage and treatment units at the facility are exempt from Subparts AA and BB due to either of the following:

- Waste stored is at an organic concentration below the regulatory limit; or
- The units do not store waste in units regulated by Subpart AA and BB (i.e., Tanks units); or
- The waste stored in the tank unit is not subject to RCRA regulations (i.e., PCB waste which is regulated only by the Toxic Substance Control Act (TSCA)).

The exempt units, as well as their exempt status are shown in Table D-10.2.

These units are shown in the Facility Drawing in Figure B-3 of Appendix B-2 of this Application.

The facility will evaluate any proposed units, prior to managing waste, to determine the status of the unit in relation to the RCRA Subpart AA or BB regulations. If any evaluated unit is determined to be subject to RCRA Subpart AA or BB, the unit will be incorporated in the facility's Subpart AA or BB monitoring program, and any necessary permit modifications will be obtained, prior to managing waste in that unit.

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The facility will also re-evaluate any existing exempt unit if there is a modification to the unit or the unit commences to manage RCRA waste. If any re-evaluated unit is determined to be subject to RCRA Subpart AA or BB, the unit will be incorporated in the facility's Subpart AA or BB monitoring program, and any necessary permit modifications will be obtained, prior to recommencing waste management in that unit.

#### **D-10-1b** Subpart CC Affected Units

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The Subpart CC regulations govern the air emissions from containers, tanks and surface impoundments, as well as any miscellaneous units, which manage hazardous waste with a volatile organic concentration which equals or exceeds 500 parts per million by weight (ppmw). Requirements of Subpart CC do not apply to the following waste management units:

- A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after this date:
- A container that has a design capacity less than or equal to 0.1 m<sup>3</sup>;
- A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
- A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator begun implementing or completed closure pursuant to an approved closure plan.
- A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v) or 3008(h), CERCLA authorities, or similar Federal or State authorities.
- A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.
- A hazardous waste management unit the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR Part 60, Part 61, or Part 63.
- A tank that has a process vent defined in 40 CFR 264.1031.

The facility manages numerous container and tank storage units, a few miscellaneous units, and no surface impoundments. These units and their present status are summarized in Table D-10.5.

### **D-10-2** Subpart AA Standards

The Subpart AA standards are applicable to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air and steam stripping operations that manage hazardous waste with 10 ppmw or greater total organic concentration. Although the facility at one point had units subject to Subpart AA at the time of initial monitoring, (units within Tank Farm 1), the facility has since closed the units. Therefore, there are no existing units subject to Subpart AA standards. A more detailed description of the units which were subjected to Subpart AA, which have been closed and removed are in the facility's operating record located at the facility. These units are not considered a part of this Permit Application.

## **D-10-3** Subpart BB Standards

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Subpart BB standards address organic air emissions for equipment leaks at hazardous waste Treatment, Storage and Disposal Facilities (TSDFs), which contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight (40 CFR 264.1050(b)). These standards apply to pumps, pressure relief devices, sampling connecting systems, open-ended valves or lines, valves, and connectors. In addition, this subpart provides the requirements for identifying, monitoring, and recordkeeping relative to these potential air emission points. The units subjected to this Subpart are:

Unit 520: includes applicable equipment to Tank 520

Unit 700: includes applicable equipment to Drum pumping station

• Unit 604: includes applicable equipment to the drum pumping station

Within the affected units, there are pumps, valves, pressure relief devices, and connectors which are subject to the regulations. Certain components of these items might be in gas or vapor service. Those items not in gas or vapor service are in either light liquid service or in heavy liquid service. The distinction between light and heavy service is as follows:

a. Light Liquid Service: The fluid is a liquid at operating conditions, and the vapor pressure of one or more of the components in the stream is greater than 0.3 kilopascals (kPa) at 20°C. The total concentration of pure components having a vapor pressure greater than 0.3 kPa at 20°C is equal to, or greater than, 20 percent by weight.

- b. Heavy Liquid Service: The fluid is a liquid at operating conditions and not in gas/vapor service or in light liquid service.
- By definition, the components in the existing affected areas at this facility that are subject to Subpart BB are in light liquid service. Gas/Vapor service had been associated with the units in Tank Farm 1, specifically the thin film evaporator units. However, these units have been closed and removed.

The items, which are regulated by Subpart BB, are summarized in Table D-10.3. Table D-10.3 also summarizes the detectable limit (above background) for determining if a component is leaking and the required monitoring frequency.

#### **D-10-3a** Regulated Unit Descriptions

#### **D-10-3a(1)** Unit 520

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Unit 520 is located just south of Unit 603 at the Facility. Unit 520 consists of one (1) tank and one (1) associated bulk container storage and loading/unloading station. The primary function of Unit 520 is to enable the blending, mixing and/or bulking of organic waste liquids for the loading and subsequent transfer off-site for solvent recovery, energy recovery, incineration or other appropriate treatment. Although the tank is exempt from Subpart BB regulations, the valves; pumps, connectors and other ancillary equipment that are in liquid service are regulated by Subpart BB of 40 CFR 264.1050(a) and (b). Additional information on Unit 520 is provided in Section D-2 of this Permit Application.

#### D-10-3a(2) Unit 700

Unit 700 is located at the northern end of the active facility. The northern end of Unit 700 contains processes that are subject to Subpart BB requirements. These include container pumping stations and the organic container and tanker loading stations. Additional information on Unit 700 is provided in Section D-1 of this Permit Application.

#### D-10-3a(3) Unit 604

Unit 604 is located east of Unit 600. Unit 604 primarily is used as a container management unit. However, within the southeast corner of the container processing area, there is a decanting station for processing and decanting of waste stored in Unit 604. Decanted liquid wastes from this area may be directed through pipelines to tanker trucks located in the Loading/Unloading Stations at Unit 520 and Unit 603 or may be directed through pipelines to Tanks T-634, T-635, or T-636. Additional information on Unit 604 is provided in Section D-1 of this Permit Application.

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#### D-10-3b Compliance with Equipment Leak Standards

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40 CFR 264.1064 requires that the facility maintain certain records and documentation that demonstrate that the facility complies with the Subpart BB regulations. Actual documents and methods used to demonstrate compliance are maintained at the facility. In general, the types of recordkeeping requirements are as follows:

- Equipment specific identification information (40 CFR 264.1064(b))
- Marking of leaking equipment (40 CFR 264.1064(c))
- Information on leaking equipment (40 CFR 264.1064(d))
- Closed-vent system and control device information (40 CFR 264.1064(e))
- Information on equipment not subject to monthly LDAR (40 CFR 264.1064(g))
- Barrier fluid system sensor information (40 CFR 264.1064(j))
- Information for determining exemptions (40 CFR 264.1064(k))
- Retain record for three years for (40 CFR 264.1064(I)):
  - Monthly leak monitoring and repair
  - Detectable emission monitoring
  - Closed vent and control device operations
- Other records in the facility operating record must be kept for the life of the facility

#### 20 D-10-3c Physical Leak Detection and Repair (LDAR) Survey

This section addresses the methods and procedures used to locate, identify, mark, and monitor specific equipment that might be regulated by Subpart BB. These methods provide a systematic approach to leak detection and repair (LDAR) and utilize certain unique conventions to identify and mark potential points of emission. As required by 40 CFR 264.1064, each piece of equipment to which Subpart BB applies was identified and marked with a unique identifier which provided the following:

- a. type of equipment;
- b. area location identifier;
- c. type of service (i.e., liquid or gas);
- d. discrete equipment number.

A more detailed explanation of the identification and marking system is maintained at the facility with the LDAR monitoring program files.

### **D-10-4** Existing Equipment

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This section presents the existing equipment at the facility which will be subject to Subpart BB regulations.

Since the inception of the LDAR program at the facility, in December 1990, the facility has undergone major changes through closure of units and modification of other units. Due to the changes, many of the original LDAR equipment have been eliminated from the baseline program. Therefore, the facility has compiled the existing equipment that is currently subject to the Subpart BB regulations. This equipment is summarized in Table D-10.4. The identifying number and general location of each of the affected equipment is listed in Table D-10.4. Specific locations of equipment are indicated by the grid numbers identified on the table, which correspond to detailed drawings available in the Facility's Operating Record. Portable pumps are identified by a unique number, but given their portability, no specific location is provided.

Equipment changes, deletions or additions, (i.e. flanges, valves, pumps, etc.) may be necessary at times to replace damaged or inoperable equipment. The facility will notify the agency of any changes to the equipment listed in Table D-10.4 on a periodic basis.

## 20 D-10-5 Reporting Requirements

The facility will submit a semi-annual report to the agency as required in 40 CFR 264.1065.

If, during the semi-annual reporting period, leaks from valves, pumps, and compressors are repaired as required in 40 CFR 264.1057(d), 264.1052(c) and (d)(6), and 264.1053(g), respectively, and the control device does not exceed or operate outside of the design specifications as defined in 40 CFR 264.1064(e) for more than 24 hours, the above-mentioned report to the agency is not required.

## **D-10-6** Specific Part B Information Requirements

Specific information for equipment applicable to Subpart BB requirements as required by 40 CFR 270.25 and ADEM Administrative Code Rule 335-14-8-.02(16) is as follows:

- a. The following information is provided in Table D-10.4:
  - 1. Equipment Identification number and hazardous waste management unit identification.
  - 2. Approximate locations within the facility;

3. Type of equipment;

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- 4. Percent by weight total organics in the hazardous waste stream at the equipment;
- 5. Hazardous waste state at the equipment (e.g., gas/vapor or liquid); and
- 6. Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").
- b. There are no closed vent systems or control devices associated with the Subpart BB equipment leaks, therefore, there are no implementation schedules.
- c. There are no control devices associated with the Subpart BB equipment leaks, therefore, there are no performance test plans.
- d. Documentation that demonstrates compliance with equipment standards in 40 CFR 264.1052 to 264.1059 is included in Tables D-10.3 and D-10.4 of this section.
- e. There are no closed vent systems or control devices associated with the Subpart BB equipment leaks, therefore, the documentation to demonstrate compliance with 40 CFR 264.160 is not necessary.

## **D-10-7** Subpart CC General Standards

The Subpart CC standards are applicable to containers, tanks and surface impoundments. The permittee shall control air pollutant emissions from each waste management unit in accordance with standards specified in 40 CFR 264.1084 through 40 CFR 264.1087 as applicable to the waste management unit, except that the unit is exempt from the standards provided that the waste management unit is one of the following:

- A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average volatile organic concentration at the point of waste origination of less than 500 ppmw, as determined by the procedures specified in 40 CFR 264.1083(a).
- A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves on the conditions outlined in 40 CFR 264.1082(c)(2).
- A tank used for biological treatment of hazardous waste in accordance with the requirements in 40 CFR 264.1082(c)(2)(iv).
- A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

- meets the numerical concentration limits for organic constituents, applicable to the hazardous waste, as specified in 40 CFR part 268-Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste" in 40 CFR 268.40; or
- ii. has been treated by the treatment technology established by EPA for the waste in 40 CFR 268.42(a), or treated by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).
- A tank used for bulk feed of hazardous waste to a waste incinerator and all of conditions in 40 CFR 264.1082(5) are met.

A summary of the Facility units and their subjectivity to the requirements of Subpart CC are noted in Table D-10.5. Proposed units will be evaluated for Subpart CC control requirements prior to waste management in the unit.

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For each unit that is "EXEMPT" as noted in Table D-10.5, documentation, certifications, analytical data, and/or other calculations which support each exemption is provided in Appendix D-10-1.

For each unit listed in Table D-10.5 for which a control option has been specified, the following applicable information and certifications, required by 40 CFR 270.27, are provided in the noted locations of this Application.

Citing	Description	Application Location
270.27(2)	Identification of each container area subject to the requirements of 40 CFR Part 264, Subpart CC and certification by the owner or operator that the requirements of this subpart are met.	Table D-10.5
270.27(5)	Documentation for each closed-vent system and control device installed in accordance with the requirements of 40 CFR 264.1087 that includes design and performance information as specified in 40 CFR 270.24(c) and (d).	Appendix D-10-1
270.27(6)	An Emission monitoring plan for both Method 21 in 40 CFR Part 60, Appendix A and control device monitoring methods.	Section F

The facility does not currently have:

- tanks designed with floating roofs;
- enclosures used for tank and container volatile organic emission controls;
- surface impoundments; or
- units subject to Subpart CC controls, but cannot comply with the requirements by the permit issuance date.

Therefore, the information required under 40 CFR 270.27 (1), (3), (4) and (7) are not applicable.

The Facility has reviewed the current waste analysis plan and has determined that no modification to the plan is needed to further ensure compliance with 40 CFR, Subpart CC.

#### D-10-7a Tank Standards

The level of air pollutant emission controls from tanks are dependent on the type of tank, the type of hazardous waste managed in the tank, and the type of hazardous waste activity that is conducted in the tank. Controls are defined as Tank Level 1 and Tank Level 2 controls.

#### **D-10-7a(1)** Tank Level 1

#### D-10-7a(1)a Applicability

Tank Level 1 controls can be utilized under the following conditions as defined in 40 CFR 264.1084(b)(1):

1. The hazardous waste in the tank has a maximum organic vapor pressure that is less than the limit for the following tank's design capacity:

Design Capacity (m³)	Max. Organic Vapor Pressure (kPa)
151 or greater	5.2
75 or greater, and less	27.6
than 151	
less than 75	76.6

2. The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined in item 1.

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3. The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process defined in 40 CFR 265.1081.

The facility utilizes Tank Level 1 controls at various units. These units are identified in Table D-10.5.

#### D-10-7a(1)b Controls

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Controls of air pollutant emissions using Tank Level 1 controls will meet the requirements as defined in 40 CFR 264.1084(c). A summary is listed as follows:

- 1. The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures defined in 40 CFR 264.1083(c). Thereafter the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that will equal or exceed the maximum organic vapor pressure for the tank design capacity.
- 2. The tank will be equipped with a fixed roof designed to meet the following:
  - a. The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank.
  - b. The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between the roof section joints or between the interface of the roof edge and the tank wall.
  - c. Each opening in the fixed roof shall be either:
    - Equipped with a closure device designed to operate such that when the closure devise is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or
    - ii. Connected by a closed-vent system that is vented to a control device.
  - d. The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life.

- 3. Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:
  - a. To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations;
  - b. To remove accumulated sludge or other residues from the bottom of the tank:
  - c. Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications;
  - d. Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

#### D-10-7a(1)c Inspections and Repairs

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- The facility will inspect and repair Tank Level 1 controls in accordance with the requirements specified in 40 CFR 264.1084(c)(4) and outlined in the Facility's Inspection Plan in Section F of this Application.
  - 1. The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions.
  - The owner or operator shall perform an initial inspection of the fixed roof and its
    closure devices on or before the date that the tank becomes subject to the
    requirements. Thereafter, the owner or operator shall perform the inspections at
    least once every year except under the special conditions describe in 40 CFR
    264.1084(1).
  - 3. In the event a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of 40 CFR 264.1084(k).
  - 4. The owner or operator shall maintain a record of the inspections in accordance with the requirements specified in 40 CFR 264.1089(b).

#### **D-10-7a(2)** Tank Level 2

#### D-10-7a(2)a Applicability

Tank Level 2 controls must be applied to all tanks subject to 40 CFR, Subpart CC that do not meet the requirements of Tank Level 1. The facility is not currently operating any Level 2 tanks; therefore, this section is not applicable.

#### **D-10-7b** Surface Impoundment Standards

The facility does not utilize any surface impoundments for hazardous waste management; therefore, this section is not applicable.

#### D-10-7c General Container Standards

#### 5 **D-10-7c(1) Applicability**

The facility shall control air pollutant emissions for each container subject to 40 CFR, Subpart CC in accordance with 40 CFR 264.1086(b) and summarized as follows:

Container Design Capacity (m³)	Waste Type / Treatment Method	Container Level Standard
Greater than 0.1, less than 0.46	None	1
Greater than 0.46	Not In Light Material Service	1
Greater than 0.46	In Light Material Service	2
Greater than 0.1	Used For Stabilization	3

<sup>&</sup>quot;Light Material Service" and "Stabilization" are defined in 40 CFR 265.1081.

#### D-10-7c(2) Container Level 1 Standards

The facility shall comply with the Container Level 1 Standards, where appropriate, as defined in 40 CFR 264.1086(c). The following sections summarize the Container Level 1 Standards.

#### 15 **D-10-7c(2)a Controls**

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A container using Container Level 1 controls is defined in 40 CFR 264.1086(c)(1) and summarized as follows:

- A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in 40 CFR 264.1086(f).
- A container equipped with a cover and closure devices that forms a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps or other open spaces into the interior of the container.

 An open top container in which an organic vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere.

#### D-10-7c(2)b Material Compatibility

A container used to meet the requirements of a non-DOT container, shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service.

#### D-10-7c(2)c Operation

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- Whenever hazardous waste is in a container using Container Level 1 controls, the facility shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:
  - 1. Whenever adding hazardous waste or other material;
    - a. During continuous filling operation of the container to its final level, the cover and closure devices shall be secured in place upon conclusion of the filling operation;
    - b. During batch filling operation the cover and closure devices shall be secured in place whenever any of the following occur first:
      - i. The container is filled to its final level;
      - ii. Completion of the batch filling in which no additional material will be added to the container within 15 minutes;
      - iii. The person performing the loading operation leaves the vicinity of the container;
      - iv. The process generating the material being added to the container ceases.
  - 2. Whenever removing hazardous waste from the container;
    - An empty container as defined in 40 CFR 261.7(b) may be opened to the atmosphere at any time;
    - b. When discrete quantities or batches of material are removed from the container and the container is not empty per 40 CFR 261.7(b), the cover and closure devices shall be secured in place whenever the following occur first:
      - upon completion of the batch removal and no additional material will be removed within 15 minutes;

- ii. the person performing the unloading operation leaves the immediate vicinity of the container.
- 3. Whenever access to the inside of the container is needed to perform routine activities other than transfer of hazardous waste;
- 4. Whenever a pressure relief type device, which vents to the atmosphere, is allowed to open during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications.
- 5. Whenever a safety device, as defined in 40 CFR 265.1081, opens to avoid an unsafe condition.

#### 10 **D-10-7c(2)d Inspection and Repair**

The facility will inspect and repair the containers, covers and closure devices in accordance with the requirements specified in 40 CFR 264.1086(c)(4), outlined in the Facility's Inspection Plan in Section F of this Application.

#### D-10-7c(3) Container Level 2 Standards

The facility shall comply with the Container Level 2 Standards, where appropriate, as defined in 40 CFR 264.1086(d). The following sections summarize the Container Level 2 Standards.

#### D-10-7c(3)a Controls

A container using Container Level 2 controls is defined in 40 CFR 264.1086(d)(1) and summarized as follows:

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- A container that meets the applicable U .S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in 40 CFR 264.1086(f).
- A container that operates with no detectable organic emission as defined in 40 CFR 265.1081 and determined in accordance with the procedures specified in 40 CFR 264.1086(g).
- A container that has been demonstrated within the preceding 12 months to be vapor tight by using 40 CFR Part 60, Appendix A, Method 27 in accordance with the procedure specified in 40 CFR 264.1086(h).

#### 30 **D-10-7c(3)b Operations**

The facility will transfer hazardous waste in or out of a container, using Container Level 2 controls, in such a manner as to minimize the exposure of hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices.

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Whenever a hazardous waste is in a container using Container Level 2 controls, the facility shall install, secure and maintain all covers and closure devices for the container in a closed position except as follows:

1. Whenever adding hazardous waste or other material;

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- a. During continuous filling operation of the container to its final level, the cover and closure devices shall be secured in place upon conclusion of the filling operation;
- b. During Batch filling operation the cover and closure devices shall be secured in place whenever any of the following occur first:
  - i. The container is filled to its final level;
  - ii. Completion of the batch filling in which no additional material will be added to the container within 15 minutes;
  - iii. The person performing the loading operation leaves the vicinity of the container;
  - iv. The process generating the material being added to the container is ceases.
- 2. Whenever removing hazardous waste from the container;
  - a. An empty container as defined in 40 CFR 261.7(b) may be opened to the atmosphere at any time;
  - b. When discrete quantities or batches of material are removed from the container and the container is not empty per 40 CFR 261.7 (b), the cover and closure devices shall be secured in place whenever the following occur first:
    - Upon completion of the batch removal and no additional material will be removed within 15 minutes;
    - ii. The person performing the unloading operation leaves the immediate vicinity of the container.
- 3. Whenever access to the inside of the container is needed to perform routine activities other than transfer of hazardous waste;
- 4. Whenever a pressure relief type device, which vents to the atmosphere, is allowed to open during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications.
- 5. Whenever a safety device, as defined in 40 CFR 265.1081, opens to avoid an unsafe condition.

#### D-10-7c(3)c Inspection, Monitoring and Repair

The facility will inspect, monitor and repair containers, covers and closure devices in accordance with the requirements specified in 40 CFR 264.1084(d)(4), outlined in the Facility's Inspection Plan in Section F of this Application.

#### 5 D-10-7c(4) Container Level 3 Standards

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Presently, the facility does not utilize any Container Level 3 controls; therefore, the standards for Container Level 3 controls are not applicable to the facility and are not presented at this time.

#### **D-10-7d Closed-Vent System and Control Devices**

The facility will install and maintain closed-vent systems and control devices, where applicable, according to the standards outlined in 40 CFR 264.1087. Currently, the facility does not utilize any closed-vent system and control devices; therefore, the standards for closed-vent system and control devices are not applicable to the facility and are not presented at this time.

[End of Section D-10 Text]

## SECTION D-10 MANAGEMENT OF AIR EMISSIONS

## **TABLES**

## **RCRA 40 CFR SUBPART BB NON-EXEMPT UNITS**

Unit	Status
Unit 520 (Tank Farm 1)	Closed, except for Tank T-520
Unit 700 (Drum pumping station)	Existing
Unit 604 (Drum pumping station)	Existing

### RCRA 40 CFR SUBPART BB EXEMPT UNITS

Unit	Description	Status
Unit 600	PCB Container and Tank Storage	3
Unit 602	Container Storage	2
Unit 603	Container Storage	2
Unit 700	Container Storage	2
Unit 702	Container Storage	2
Unit 703	Container Management	4
Unit 406	Container Storage	2
Unit 900	Truck Wash	1
Unit 908	Laboratory Tank	1
Unit 1400	Leachate Storage Tanks	1
Unit 1200A	Stabilization and Container Storage	2
Unit 2000	Stabilization and Container Storage	2
Unit 2200	Container Storage	2
Unit 1700B & C	Leachate Storage Tanks	1
Unit 1700A and Pipe Chase	Leachate Storage Tank	1

- 1 Waste has been monitored and has never contained 10% or greater organic concentration.
- 2 Unit does not contain one of the following regulated pieces of equipment: pumps, compressor, pressure relief devices, sampling connection, open-ended valves or lines; or valves.
- 3 Unit only handles non-RCRA waste.
- 4 Regulated equipment has been removed or decommissioned.

## RCRA 40 CFR SUBPART BB MONITORING FREQUENCY AND DETECTION LIMITS

Regulated Items	Detection limit	Monitoring Frequency	Inspection
I. Light Liquid Service			
Pumps	10,000	Monthly	Weekly
Valves	10,000	Monthly*	
Pressure-relief	10,000	(b)	(c)
Flanges/connectors	10,000	(b)	
Sampling systems	500	(a)	
Open-ended lines	500	(a)	
II. Heavy Liquid Service			
Pumps	10,000	(b)	
Valves	10,000	(b)	
Pressure-relief	10,000	(b)	
Flanges/connectors	10,000	(b)	
III. Gas/Vapor Service <sup>(1)</sup>			
Valves	10,000	Monthly*	
Pressure-relief	500	(b)	
Flanges/connectors	500	(b)	
Sampling systems	500	(a)	
Open-ended lines	500	(a)	

#### Notes:

- \* Alternate monitoring frequency is allowed as provided in 40 CFR 264.1057(c) and in 40 CFR 264.1061 and 264.1062.
- (a) Specific requirements are provided in 40 CFR 264.1055 and 264.1057.
- (b) Monitor within 5 days if evidence of a potential leak is found.
- (c) Monitor within 5 days after each pressure release.
- (1) Gas/Vapor Service only pertained to the tanks in Tank Farm 1 (Unit 500). These tanks were decommissioned and the Unit clean closed in April 1995. There are no other tanks in Gas/Vapor service currently in use at the facility.

EQUIPMEN	T IDENTIFIC	ATION NU	MBER <sup>1</sup>	UI	NIT and LOCAT	ION	METHOD of COMPLIANCE		Percent by
Equipment Type <sup>2</sup>	Equipment Number	Service <sup>3</sup>	Monitor Number	Area <sup>4</sup>	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	Weight Total Organics
PH	0520	L	0001	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0002	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0003	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0004	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0005	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0006	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0007	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	8000	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0009	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0010	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0011	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0012	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	ı	0031	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0032	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	i	0033	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	ı	0034	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	ı	0035	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L I	0036	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0030	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0037	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH		L	0039	0500	0500-090-001	H6		·	15-35
	0520	L	0039	0500		H6	See Note 6	10,000	
PH	0520	L			0500-090-001		See Note 6	10,000	15-35
PH	0520	L	0041	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0042	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0043	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0044	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0045	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0046	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0047	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0048	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0049	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0050	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0051	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0052	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0053	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0054	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0055	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0056	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0057	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0058	0500	0500-090-001	H6	See Note 6	10,000	15-35
PH	0520	L	0059	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0001	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0002	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0003	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0004	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0005	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0005	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520		0007	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L L	0007	0500	0500-090-001	H6	See Note 6	10,000	15-35

EQUIPMEN	IT IDENTIFIC	ATION NU	MBER <sup>1</sup>	UI	NIT and LOCAT	ION	METHOD of	Percent by	
Equipment Type <sup>2</sup>	Equipment Number	Service <sup>3</sup>	Monitor Number	Area <sup>4</sup>	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	Weight Total Organics
PU	0520	L	0009	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0010	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0011	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0012	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0013	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0014	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0015	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0016	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0017	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0018	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0019	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0020	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0021	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0022	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0023	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0024	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0025	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0026	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0027	0500	0500-090-001	Н6	See Note 6	10,000	15-35
PU	0520	L	0028	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0029	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0030	0500	0500-090-001	H6	See Note 6	10,000	15-35
PU	0520	L	0031	0500	0500-090-001	H6	See Note 6	10,000	15-35
TK	0520	L	0001	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0002	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0003	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0004	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0005	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0006	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0007	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0008	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0009	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0010	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0010	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0011	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0012	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0013	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0014	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0013	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0010	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0017	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0018	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0019	0500	0500-090-001	G6	See Note 6	10,000	15-35
TK	0520	L	0020	0500	0500-090-001	G6	See Note 6	10,000	15-35
PH	0604	L	0021	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0001	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0002	0604	0600-090-001	F2 F2	See Note 6	10,000	15-35
PH	0604		0003	0604	0600-090-001	F2 F2	See Note 6	10,000	
PH PH	0604	L	0004	0604	0600-090-001	F2 F2	See Note 6	10,000	15-35 15-35

EQUIPMEN	IT IDENTIFIC	ATION NU	MBER <sup>1</sup>	UI	NIT and LOCAT	ION	METHOD of	Percent by	
Equipment Type <sup>2</sup>	Equipment Number	Service <sup>3</sup>	Monitor Number	Area <sup>4</sup>	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	Weight Total Organics
PH	0604	L	0006	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0007	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	8000	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0009	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0010	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0011	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0012	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0013	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0014	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0015	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0016	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0017	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0018	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0019	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0020	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0021	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0022	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0023	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0024	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0025	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0026	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0027	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0028	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0029	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0030	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0031	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0032	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0033	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0034	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0035	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0036	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0037	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0038	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0039	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0039	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0040	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0041	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0042	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0043	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0044	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0045	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0046	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0047	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0048	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0049	0604	0600-090-001	F2 F2	See Note 6	10,000	15-35
PH	0604		0050		0600-090-001	F2 F2		10,000	15-35
PH PH	0604	L	0051	0604		F2 F2	See Note 6	10,000	
PH PH	0604	L	0052	0604 0604	0600-090-001 0600-090-001	F2 F2	See Note 6	10,000	15-35 15-35
PH PH	0604	L	0053	0604	0600-090-001	F2 F2	See Note 6 See Note 6	10,000	15-35 15-35

EQUIPMENT IDENTIFICATION NUMBER <sup>1</sup>			UI	NIT and LOCAT	ION	METHOD of COMPLIANCE		Percent by	
Equipment Type <sup>2</sup>	Equipment Number	Service <sup>3</sup>	Monitor Number	Area <sup>4</sup>	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	Weight Total Organics
PH	0604	L	0055	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0056	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0057	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0058	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0059	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0060	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0061	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0062	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0063	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0064	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0604	L	0065	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0001	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0002	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0003	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0004	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0005	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0006	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0007	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0008	0604	0600-090-001	F2	See Note 6	10,000	15-35
PU	0604	L	0009	0604	0600-090-001	F2	See Note 6	10,000	15-35
PH	0700	L	0001	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0002	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0003	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0004	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0005	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0006	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0007	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0008	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0009	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0010	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0011	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0012	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0013	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0014	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0015	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0016	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0017	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0018	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0019	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0020	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0021	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0022	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0023	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0024	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0025	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0026	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0027	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0028	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0029	0700	0700-090-001	C4	See Note 6	10,000	15-35

EQUIPMENT IDENTIFICATION NUMBER <sup>1</sup>			UNIT and LOCATION			METHOD of COMPLIANCE		Percent by	
Equipment Type <sup>2</sup>	Equipment Number	Service <sup>3</sup>	Monitor Number	Area <sup>4</sup>	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	Weight Total Organics
PH	0700	L	0030	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0031	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0032	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0033	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0034	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0035	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0036	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0037	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0038	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0039	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0040	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0041	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0042	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0043	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0044	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0045	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0046	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0047	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0048	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0049	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0050	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0051	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0052	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0053	0700	0700-090-001	C4	See Note 6	10,000	15-35
PH	0700	L	0054	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0001	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0002	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0003	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0004	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0005	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0005	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0007	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700		0007	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0008	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0009	0700	0700-090-001	C4	See Note 6	10,000	15-35
	0700	L						10,000	
PU		L	0011	0700	0700-090-001	C4	See Note 6	·	15-35
PU	0700	L	0012	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0013	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0014	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0015	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0016	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0017	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0018	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0019	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0020	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0021	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0022	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0023	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0024	0700	0700-090-001	C4	See Note 6	10,000	15-35

#### RCRA Subpart BB - Equipment Leak Information Chemical Waste Management, Inc. Emelle, Alabama Facility

EQUIPMENT IDENTIFICATION NUMBER <sup>1</sup>				UNIT and LOCATION			METHOD of COMPLIANCE		Percent by
Equipment Type <sup>2</sup>	Equipment Number	Service <sup>3</sup>	Monitor Number	Area <sup>4</sup>	Drawing Number	Grid	Monitoring Frequency	Leak Detection Limit (ppm)	Weight Total Organics
PU	0700	L	0025	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0026	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0027	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0028	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0029	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0030	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0031	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0032	0700	0700-090-001	C4	See Note 6	10,000	15-35
PU	0700	L	0033	0700	0700-090-001	C4	See Note 6	10,000	15-35

#### Notes:

- 1. Equipment Identification Number is designated as follows: Equipment Type-Equipment Number-Service-Monitor Number (e.g., TK-722-L-001).
- 2. All Equipment Types other than pumps (PU) are valves, flanges, unions or other such assemblies in pipelines, or on tanks or equipment. Equipment Types are designated as follows: LD Loading/Unloading Station; PH Piping/Pipe Header; PU Pump; TK Tank or other Vessel.
- 3. Service indicates the state of the hazardous waste at the equipment as follows: L Light or Heavy Liquid; and V Vapor or Gas, as defined in ADEM Administrative Code Rule 335-14-5-.28(2) and 40 CFR 264.1051.
- 4. Area 0500 is designated as Unit 520, Loading/Unloading Station No. 1, and Loading/Unloading Station No. 3. Area 0600 is designated as Unit 600, and Unit 604 Decanting Station. Area 0700 is designated as Unit 700 (Decanting and Crusher Dispersion System), and Unit 703 including the Loading/Unloading Station. The lack of a UNIT and LOCATION (Area, Drwg. No., and Grid) indicates equipment (primarily pumps) that are frequently relocated.
- 5. All equipment is assumed to contain or contact hazardous waste which meets the minimum standards of ADEM Administrative Code Rule 335-14-5-.28(1) and 40 CFR 265.1050(b).
- Monitoring Frequencies are in accordance with the requirements of ADEM Administrative Code Rules 335-14-5-.28(8) and (13), and 40 CFR 254.1057 and 264.1062.

## Table D-10.5 RCRA Subpart CC - Status and Control Summary Chemical Waste Managment, Inc. Emelle, Alabama Facility

Unit Name	Unit Type	40 CFR 264 Subpart CC Status	40 CFR 264 Subpart CC Control Option	Operational Status
T-520	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)] <sup>1</sup>	[40 CFR 264.1084(c)]	Active
T-634	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active (TSCA waste only)
T-635	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active (TSCA waste only)
T-636	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active (Non-hazardous product only)
T-725	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active
T-901	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-902	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-903	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-904	Tank	Exempt [40 CFR 264.1080(a)]	NA	Active (Non-hazardous waste)
T-1201A	Tank	Exempt [40 CFR 264.1082(c)(4)]	NA	Active
T-1202A	Tank	Exempt [40 CFR 264.1082(c)(4)]	NA	Active
T-1405	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1406	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1407	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1408	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1409	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1410	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1411	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1412	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1413	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1414	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1415	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1416	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1417	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1418	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-1419	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active

## Table D-10.5 RCRA Subpart CC - Status and Control Summary Chemical Waste Managment, Inc. Emelle, Alabama Facility

Unit Name	Unit Type	40 CFR 264 Subpart CC Status	40 CFR 264 Subpart CC Control Option	Operational Status
T-1420	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(A)]	[40 CFR 264.1084(c)]	Active
T-A	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(C)]	[40 CFR 264.1084(c)]	Active
T-1701	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
T-1702	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
T-1703	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
T-1704	Tank	Tank Level 1 [40 CFR 264.1084(b)(1)(i)(B)]	[40 CFR 264.1084(c)]	Active
Unit 406	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 520	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 600	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 602	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 603	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 604	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active

## Table D-10.5 RCRA Subpart CC - Status and Control Summary Chemical Waste Managment, Inc. Emelle, Alabama Facility

Unit Name	Unit Type	40 CFR 264 Subpart CC Status	40 CFR 264 Subpart CC Control Option	Operational Status
Unit 700	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 700	Miscellaneous Unit(s) <sup>2</sup>	NA	NA	Tipper hopper not managing Subpart CC waste; CDU not active
Unit 702	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 703A	Container Unit <sup>2</sup>	NA	NA	Active
Unit 1200A	Container Unit <sup>2</sup> (Stabilization Unit)	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 1200A	Miscellaneous Unit(s) <sup>2</sup>	Exempt [40 CFR 264.1082(c)(4)]	NA	Active
Unit 2000	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active
Unit 2001	Leachate Treatment Plant	NA	NA	Active
Unit 2200	Container Unit <sup>2</sup>	Exempt [40 CFR 264.1080(a)] Container Level 1 [40 CFR 264.1086(b)(1)(i)] Container Level 2 [40 CFR 264.1086(b)(1)(iii)]	NA 40 CFR 264.1086(c) 40 CFR 264.1086(d)	Active

#### Notes:

<sup>&</sup>lt;sup>1</sup> Tank T-520 meets the requirements as defined in 40 CFR 264.1084(c); however, Tank T-520 has voluntary Level 2 controls.

<sup>&</sup>lt;sup>2</sup> Waste identified by generator knowledge as non-subpart CC waste may be handled in any container or miscellaneous unit, without subpart CC controls.

## APPENDIX D-10-1 SECTION D-10

# RCRA 40 CFR SUBPART CC DOCUMENTATION, CERTIFICATION, ANALYTICAL DATA, AND CALCULATIONS

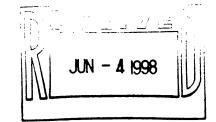
Revision No. 5.0



### Waste Management<sup>™</sup>

Highway 17, Milemarker 163 PO Box 55 Emelle, Alabama 35459

Phone 800.652.5755 Fax 205.652 8289



May 27, 1998

Terra First, Inc. P. O. Box 1259 Vernon, AL 35592

Dear Sir/Madam:

Pursuant to 40 CFR 265.1087(c)(5), Waste Management at Emelle (WM-Emelle) is required to maintain a copy of a procedure to ensure that "Light Material Service" hazardous waste, subject to Subpart CC of the RCRA regulations which is transported into and from the WM-Emelle Facility in containers greater than 0.46m3 (119 gallons), meets the Container Level 2 controls defined in 40CFR 265.1087(d)(1). As part of this procedure, WM-Emelle is requiring a certification from you stating that all your company containers greater than 0.46m<sup>3</sup> (119 gallons), that are used for transporting "Light Material Service" hazardous waste for WM-Emelle, meet the requirements of 40 CFR 265.1087 (d)(1).

Please sign below to acknowledge your compliance with this regulation and return a copy to WM-Emelle for our files.

I understand the requirements for shipping "Light Material Service" hazardous waste subject to Subpart CC regulations. I certify that all Terra First, Inc. containers greater than 0.46m<sup>3</sup> (119 gallons), transporting such waste into and from the WM-Emelle, are in compliance with controls specified in 40CFR 265.1087(d)(1).

Diane M. Cordar
Printed Name and Title Safety Manager

White Mills Condar

6-4-98

05/27/98

er med on recircled base



### Waste Management<sup>™</sup>

Highway 17, Milemarker 163 P.O. Box 55 Emelle, Alabama 35459 Phone 800 652.5755 Fax 205.652.8289

May 27, 1998

**CEI**P. O. Box 69
Walker, LA 70785

Dear Sir/Madam:

Pursuant to 40 CFR 265.1087(c)(5), Waste Management at Emelle (WM-Emelle) is required to maintain a copy of a procedure to ensure that "Light Material Service" hazardous waste, subject to Subpart CC of the RCRA regulations which is transported into and from the WM-Emelle Facility in containers greater than 0.46m³ (119 gallons), meets the Container Level 2 controls defined in 40CFR 265.1087(d)(1). As part of this procedure, WM-Emelle is requiring a certification from you stating that all your company containers greater than 0.46m³ (119 gallons), that are used for transporting "Light Material Service" hazardous waste for WM-Emelle, meet the requirements of 40 CFR 265.1087 (d)(1).

to WM-Emelle for our files.

Please sign below to acknowledge your compliance with this regulation and return a copy

I understand the requirements for shipping "Light Material Service" hazardous waste subject to Subpart CC regulations. I certify that all **CEI** containers greater than 0.46m<sup>3</sup> (119 gallons), transporting such waste into and from the WM-Emelle, are in compliance with controls specified in 40CFR 265.1087(d)(1).

J.J. Barnes Compliance Cordinator

Signature

Date

Signature

c:\msoffice\winword\rodger\transreg.doc

05/27/98

Printed on redycled paper

#### **CERTIFICATION**

### RCRA 40 CFR Subpart CC Exempt Status Pursuant To 40 CFR 264.1082(c)(4)

The following units only receive hazardous waste material for treatment that meets the requirements stated in 40 CFR 264.1082(c)(4). These units may manage Subpart CC waste for transfer only, without the specified Subpart CC controls.

- Tank T-1201A
- Tank T-1200B

All Containers and Miscellaneous Units may receive hazardous waste material for treatment or storage that meets the requirements stated in 40 CFR 264.1082(c)(4). Documentation of the exemption from Subpart CC controls will be based on the Waste Profile records, manifests and LDR records.

Rodger Henson, Division President

Date

## CERTIFICATION of Compliance With CAA Rules

The following units are exempt for 40 CFR Subpart CC regulations pursuant to 40 CFR 264.1080(b)(7), in which the owner or operator certifies that they are equipped with and operating air emission controls with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, of part 63.

<u>Unit</u>

**Documentation** 

Tank T-520

See attached certification

# Certification of Compliance With CAA Rules Chemical Waste Management, Inc. Emelle, Alabama Facility EPA ID No. ALD 000 622 464

I certify that the Tank Unit T-520 is equipped with and operating air emission controls in accordance with the requirements of 40 CFR Part 60, Subpart Kb.

Len Necaise, General Manager

December 6, 1996

Date

ccKbcmpl.doc

## **DOCUMENTATION**

## Units Managing Non-Hazardous Waste

The following units manage non-hazardous waste. Documentation is provided in the form of Waste Profile Summary sheets or MSDS sheets for products materials.

<u>Unit</u>	<u>Documentation</u>
T-634	Waste Profile Sheet PTA-AI8533
T-635	Waste Profile Sheet PTA-AI8533
T-636	MSDS Sheet G-525
T-725	Waste Profile Sheet EME-000227
T-901	Waste Profile Sheet EME-000252
T-902	Waste Profile Sheet EME-000252
T-903	Waste Profile Sheet EME-000252
T-904	Waste Profile Sheet EME-000252

Report: R7008 CHEMICAL WASTE MANAGEMENT, INC.
DATE: 11/21/97 WASTE PROFILE SUMMARY

Version 06.02 PTA-418533

SELLING REGION LAB - MRL

BUSINESS: CHEMICAL WASTE MGMT INC NUMBER.....: 105-6-754

PHONE.....: 205/652-8089

ADDRESS 1: HWY 17 N MI MARKER 163

ADDRESS 2: PO BOX 55

CITY/ST..: EMELLE AL 35459-0055

CONTACT..: SARA GOULD NUMBER.....: 105-6-754

PHONE.....: 205/652-8089

EXPIRES.....: 03/17/98

STATUS......: APPR FOR SERV

FEDERAL EPA ID. ALD000622464

STATE EPA ID.: 99901

EPA STATUS....: UNDETERMINABL

WASTE NAME: PCB OIL/FLUSH > 500 PPM

PROCESS GENERATING WASTE: DRAINING AND FLUSHING OF ELECTRICAL EQUIPMENT

SHIP. NAME: RQ, POLYCHLORINATED BIPHENYLS MIXTURE

ADDL. DESC:

TANKS T-634 T-635

SALES OFFICE..: HOU

- MAX UNIT DESCRIPTION MIN CHEMICAL COMPOSITION 50 % 15 TRANSFORMER OIL 50 % 15 DIESEL FUEL, OILS 0 30 % PCB 0 68 % WATER 1,2,4-TRICHLOROBENZENE

PHYSICAL CHARACTERISTICS TCA OR TOTAL METALS Physical State ...: Liquid Arsenic as As < 50 ppmFlash Point....: 140 - 200 < 100 Barium as Ba ppm pH..... 05.0 - 09.0 Cadmium as Cd < 100 ppm Color..... BROWN / VARIES Chromium tot Cr < 100 ppm Odor..... NONE ppm < 100 Lead as Pb Layers..... Both < 0.2 ppmMercury as Hg Specific Gravity.: 0.850 - 1.400 ppm< 100 Antimony Free Liquids....: 95 - 100 Cyanides.....: None Beryllium < 50 ppm mg/l < 500 Chromium Hex Sulfides..... None Nickel as Ni < 100 ppm ppm, Regulated by 40 CFR 761: Y PCB's..... > 500 p**pm** Potassium < 1000 Phenolics.....: None ppm< 1050 Sodium DOT UN/NA NBR: UN2315 % Taxable....: Thallium as Tl < 100 ppm Treatment Codes..: T07 < 100 ppm Vanadium Material Class: P CRQ RPT QTY..... 1 mg/l Selenium as Se < 100 EXP: / / EPA Permit....: mqq Silver as Ag < 100 Hazard Class....: 9 State Codes....: NESHAP: Not Benezene NESHAP Benzene ....: Packing Group....: III Process Codes....: 10 BF Cert of Dstrct Rq:

Federal Codes: NH00

HANDLING

LEVEL C W/NITRILE GLOVES ACID/ORGANIC POLY TYVEK
Contains PCB AVOID SKIN CONTACT BULK LIQUID

ASH: 5%

WASTE SHIPPED TO PORT ARTHUR UNDER THIS PROFILE MUST HAVE A FLAHPOINT ABOVE 140 DEGREES FAHRENHEIT

DOT PROPERTIES

Inhalation: 3 Dermal: 2 Oral: 3 Flammable: 3 Health: 3

SUMMARY

COMMENTS

INCINERATE AFTERBURNER LIQUID(ES)/DRUMMED
LIQUIDS. (GEN) APPROVED FOR PTA
(TRANS) MS-OK, 316-OK COMP. GP. # 7 (GREEN).
(ACP) MSW cc controls not required

CHEMICAL WASTE MANAGEMENT, INC. Report: R7008 WASTE PROFILE SUMMARY DATE: 11/21/97

Version 06.02 PTA-A19534

SELLING REGION LAB - ARL

NUMBER..... 105-6-754 PHONE..... 205/652-8089 EXPIRES.....: 05/01/98

STATUS.....: PROFILE NOT SIGNED

FEDERAL EPA ID: ALD000622464 STATE EPA ID..: 99901 EPA STATUS....: UNDETERMINABL

SALES OFFICE ..: PTA

TANZS T-634 T-635

WASTE NAME: PCB OIL/FLUSHATE (<500 PPM)

BUSINESS: CHEMICAL WASTE MGMT INC

ADDRESS 1: HWY 17 N MI MARKER 163

PROCESS GENERATING WASTE: TRANSFORMER DRAINING AND FLUSHING OPERATION

AL 35459-0055

SHIP. NAME: RQ, POLYCHLORINATED BIPHENYLS

ADDL. DESC:

DEPT.....

ADDRESS 2: PO BOX 55

CONTACT..: SARA GOULD

CITY/ST..: EMELLE

- MAX UNIT DESCRIPTION MIN CHEMICAL COMPOSITION 50 % 30 TRANSFORMER OIL 50 % 30 DIESEL FUEL, OIL 500 PPM 0 PCB 10 % WATER

METALS TCA OR TOTAL PHYSICAL CHARACTERISTICS Arsenic as As < 50
Barium as Ba < 100
Cadmium as Cd < 100 Physical State ...: Liquid ppm Flash Point....: 140 - 200 ppm ppm pH..... 05.0 - 10.0 Color..... brown Chromium tot Cr < 100  $pp\mathfrak{m}$ Lead as Pb < 100 ppm Odor..... NONE Mercury as Hg < 0.2 ppm Layers..... Single Layer Antimony < 100 Beryllium < 50 Specific Gravity.: 0.800 - 1.300 ppm Free Liquids....: 99 - 100 ppm Cyanides....: None Sulfides....: None Nickel as Ni < 100 ppmPotassium < 1000 Sodium < 1000 ppmppm, Regulated by 40 CFR 761: Y
0 To 99 PPM  $\mathtt{ppm}$ PCB's..... < 500 Phenolics....: ppm Thallium as Tl < 100 DOT UN/NA NBR: UN2315 % Taxable....: Vanadium < 100 ppm Selenium as Se < 100 Treatment Codes..: T07 ppm Material Class: P CRQ RPT QTY.....: 1 Silver as Ag < 100 ppmEXP: / / EPA Permit....: Hazard Class....: 9 State Codes....: NESHAP: Not Benezene NESHAP Benzene ....: Packing Group....: III Process Codes....: 10 BF Cert of Datrot Rq:

Federal Codes: NH00

HANDLING

POLY TYVEK ACID/ORG/DUST PRE FILTER LEVEL C w/NITRILE GLOVES BULK LIQUID Contains PCB AVOID SKIN CONTACT

ASH: 0 TO 2 %. H2O: 0 TO 10 %

CC CONTROLS : NOT REQUIRED.

DOT PROPERTIES

Flammable: 3 Health: 3 Inhalation: 3 Dermal: 3 Oral: 3

SUMMARY

COMMENTS

INCINERATE PCB AFTERBURNER LIQUID. FGPT/PCBS: RUN ON EACH LOAD (GEN) APPROVED FOR PTA (TRANS) MS OK; 316 OK.

Appendix D-10-1

Page 8 of 30

### MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION



MINERAL OIL (Rev. A)

(Kev. A)

MSDS # \_G 525

Issued: December 1983
Revised: November 1985

18

1145 CATALYN ST., SCHENECTADY, NY 12303 USA (518) 377-8854

From Genium's MSDS Collection, to be used as a reference.

#### SECTION 1. MATERIAL IDENTIFICATION

MATERIAL NAME MINERAL OLU

OTHER DESIGNATIONS: White mineral oil; Alboline; paraffin oil; Nujol, Saxol, Lignite oil. CAS #64742 46 7. MANUFACTURER/SUPPLIER: This and other mineral oils are available from many suppliers, including:

Avatar Corp. 7728 W 99 St. Hickory Hills, IL

Hickory Hills, IL 60457

(312) 430-4200

SECTION 2. INGREDIENTS AND HAZARDS	%	HAZARD DATA
Petroleum Distillate ( $C_{14}$ to $C_{10}$ hydrocarbon)*	100	8-Hr. TWA: 5 mg/m <sup>5</sup>
*TYPICAL COMPOSITION: Paraffinic Hydrocarbons Napthenic Hydrocarbons Alkylated Aromatic Hydrocarbons	65 29 6	
* ACGIH (1985-86) recommends a TWA of 5 mg/m <sup>3</sup> for oil mists.  No specific exposure level has been established for mineral oil.		

#### **SECTION 3. PHYSICAL DATA**

	Specific Gravity (H <sub>2</sub> 0=1)	0.8222
Vapor pressure @ 25°C, mmHg Negligible	Volatiles, % by vol	ca. 90%+
Vapor density (Air=1)	Evaporation rate (Ether=1)	Negligible
Solubility in water @ 25 <sup>0</sup> C, wt. % Negligible	Viscosity € 100°F	39.2 SSU*

APPEARANCE & ODOR: Clear, colorless, oily, practically odorless liquid.

SSU = Saybolt Universal Units.

SECTION 4. FIRE AND EXP	LOSION DATA		Lower	Upper
Flash Point and Method	Autoignition Temp.	Flammability Limits in Air		
Combustible*	No data*	N/A*	-	-

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical or foam. Do not use a solid stream of water since the stream will scatter and spread the fire. Use water spray to cool fire-exposed tanks/containers.

Mineral oil is a slight fire hazard when exposed to heat, sparks, or open flame.

Firefighters should wear self-contained breathing apparatus and full protective clothing when fighting fires involving mineral oil. \* Flash point varies with grade. Values ranging from 270°F-444°F have been indicated.

#### SECTION 5. REACTIVITY DATA

This material is stable in closed containers at room temperature under normal handling and storage conditions. It does not undergo hazardous polymerization.

As a combustible hydrocarbon, mineral oil may react violently with strong oxidizing agents.

Thermal decomposition or burning may produce carbon monoxide.

Revised: 11/85

MSDS # G 525, Issued 12/83 MINERAL OIL

### SECTION 6. HEALTH HAZARD INFORMATION

TLV 5.0 mg/m<sup>3</sup>

Fumes or mists of mineral oil are irritating to the eyes, mucous membranes, and upper respiratory tract and an cause headache, dizziness and/or drowsiness if exposure is excessive. Prolonged inhalation of fumes can ult in lipoid pneumonia. If splashed in the eyes, mineral oil may cause irritation. Repeated and/or longed contact with the skin may cause irritation and/or dermatitis. Ingestion of mineral oil may produce a cathartic effect (nausea, vomiting, and diarrhea). Aspiration of mineral oil into the lungs can cause chemical pneumonia. Mineral oils are suspected carcinogens of the skin and scrotum, larynx, lung and alimentary tracts. "Mineral Oil" is a name applied to many materials. CAS #8002-05-9 covers several different FIRST AID: types which are listed as animal carcinogens by IARC. Check with your suppliers.

EYE CONTACT: Promptly flush eyes including under eyelids with running water for at least 15 minutes. Get medical attention if irritation persists.\*

SKIN CONTACT: Wash exposed area with soap and water.

INHALATION: Remove victim to fresh air. Restore and/or support breathing as needed. Get medical help.\* INGESTION: Contact a physician or Poison Control Center. Do not induce vomiting. If vomiting occurs, aspiration of mineral oil may result.

MEDICAL ATTENTION = In plant, Paramedic, Community.

#### SECTION 7. SPILL, LEAK AND DISPOSAL PROCEDURES

Notify safety personnel of large spills or leaks. Remove all sources of heat and ignition. Provide maximum explosion-proof ventilation. Evacuate all nonessential personnel from the area. Those involved in cleanup need protection against inhalation of fumes or mist and contact with the liquid.

Absorb small spills on paper towel or vermiculite and place in a closed container for disposal. Dike large spills and collect for reclamation or disposal. Mop up residue with soap and water. Use caution when picking up spills since floor may be slippery. Do not flush to sewer. Keep out of watersheds and waterways.

DISPOSAL: Place in a suitable container for licensed contractor, burn in an approved incinerator or landfill Follow all Federal, state and local regulations.

#### SECTION 8. SPECIAL PROTECTION INFORMATION

eral ventilation is adequate for this high-boiling material, except when it is heated or misted. When es or mists are present, local exhaust ventilation is needed to meet the ACGIH TLV of 5 mg/m<sup>2</sup>. For emergency or nonroutine exposures where the TLV may be exceeded, use an appropriate NIOSH-approved respirator. All electrical service in use or storage areas should have an explosion-proof design.

To prevent skin contact, wear impervious gloves and, if necessary, oil-impervious clothing. Wear safety gloves with side shield, splash goggles, or face shield to prevent contact with the eyes. Remove contaminated clothing promptly and do not reuse until it has been properly laundered.

Eyewash stations and safety showers should be available in use and handling areas.

Contact lenses pose a special hazard; soft lenses may absorb and all lenses concentrate irritants.

#### SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a cool, dry, well-ventilated area away from strong oxidizing agents. Protect containers from physical damage.

Use only with adequate ventilation. Avoid inhalation of fumes or mists and repeated or prolonged contact with the skin. Do not eat or smoke in use or handling areas.

Follow good housekeeping and personal hygiene practices when handling this material.

DOT CLASSIFICATION: Not regulated.

DATA SOURCE(S) CODE (See Glossary) 1, 6, 34, 59, 79. CR

o the sustability of information herein for purchaser's purposes are necessarily ( herefore, although reasonable care has been taken in the preparation of such is ing Corporation extends no warranties, makes no representations and assumes accuracy or austability of such information for application to purchaser's intende ty as to the a

APPROVALS S.O. Recrosso, 3/86.

INDUST. HYGIENE/SAFETY

7-86

MEDICAL REVIEW:

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JOA 5/851M

GENIUM PUBLISHING

Report: R7008 DATE: 10/21/97

DEPT....: ..

ADDRESS 2: PO BOX 55

CONTACT..: JIMMY STREET

CITY/ST..: EMELLE

CHEMICAL WASTE MANAGEMENT, INC. WASTE PROFILE SUMMARY

Version 06.02 EME-000227

SELLING REGION LAB -

NUMBER...: 105-6-754
PHONE...: 205/652-8135
EXPIRES...: 03/20/98

STATUS..... CONTRACT NOT IN PLACE

FEDERAL EPA ID: ALDOOO622464 STATE EPA ID.::

EPA STATUS...: UNDETERMINABL

SALES OFFICE ..: EME

TANK T-725

WASTE NAME: LAB SUMP WATER-NON-WASTEWATER

BUSINESS: CHEMICAL WASTE MGMT INC

ADDRESS 1: HWY 17 N MI MARKER 163

PROCESS GENERATING WASTE: LAB WASTE WATER DRAINS INTO SUMP

SHIP. NAME: ADDL. DESC:

CHEMICAL COMPOSITION

AL 35459-0055

MIN - MAX UNIT DESCRIPTION
100 %

LABORATORY SUMP WATER
SUMP WATER IS GENERATED THROUGH NORMAL LAB OPERATIONS. WATER IS COLLECTED IN THE LAB SUMP AND
TANK. WHEN IT IS FULL, IT IS EMPTIED AND THE
WATER IS TAKEN TO THE TANK FARM # 4.

METALS E	PT	OX/TCLP		PHYSICAL CHARACTERISTICS_
Arsenic as As	΄ < ΄	·	mg/l	Physical State: Liquid .
Barium as Ba	<	100.0	mg/l	Flash Point: N/A CL
Cadmium as Cd	<	1.0	mg/l	рн 00.0 - 00.0
Chromium tot Cr	<	5.0	mg/l	Color:
Lead as Pb	<	5.0	mg/l	Odor NONE
Mercury as Hg	<	.2	mg/l	Layers:
Selenium as Se	<	1.0	mg/l	Specific Gravity.: 0.000
Silver as Ag	<	5.0	mg∕l	Free Liquids: 99 - 100
_				Cyanides: None
				Sulfides: None
				PCB's ppm, Regulated by 40 CFR 761:
				Phenolics: None
				% Taxable: DOT UN/NA NBR:
				Treatment Codes: S01
				CRQ RPT QTY: Material Class:
				EPA Permit: EXP: / /
				Hazard Class:
				State Codes:
				Benzene NESHAP:
				Packing Group:

Process Codes...: Cert of Dstrct Rq:

Federal Codes: NHOO

**HANDLING** 

DOT PROPERTIES

Inhalation: 0 Dermal: 0

Oral: 0

Flammable: 0

Health: 0

Alabama ADEM Number

SUMMARY 020799-A005

STABILIZATION.REQUIRE ANNUAL ANALYSIS.

COMMENTS

NEW ANALYTICAL 03/26/97. NEW DECISION FOR USE AT LAB WATER TO BE STORED AT STABILIZATION FOR USE DAN EXTENDED UNTIL 02/15/97 (8 MONTHS)

AS PROCESS WATER

TEST ANNUALLY

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CHEMICAL WASTE MANAGEMENT, INC. Report: R7008 WASTE PROFILE SUMMARY DATE: 11/21/97

Version 06.02 EME-000252

STATUS.....: CONTRACT NOT IN PLACE

FEDERAL EPA ID: ALD000622464

SELLING REGION LAB -

NUMBER....: 105-6-754 BUSINESS: CHEMICAL WASTE MGMT INC PHONE..... 205/652-8089 ADDRESS 1: HWY 17 N MI MARKER 163 EXPIRES....: 04/16/98

ADDRESS 2: PO BOX 55

AL 35459-0055 CITY/ST..: EMELLE

STATE EPA ID..: CONTACT..: SARA ADAMS EPA STATUS....: UNDETERMINABL

SALES OFFICE ..: EME WASTE NAME: TRUCK AND EQUIPMENT WASH WATER SLUDGE PROCESS GENERATING WASTE: WASHING UNDERCARRIAGE OF TRANSPORT VEHICLES, PICK TRUCKS, HEAVY EQUIPMENT

SHIP. NAME: ADDL. DESC:

TANKS T-901, T-902, T-903, I

MIN - MAX UNIT DESCRIPTION CHEMICAL COMPOSITION

10 20 🕏 WATER 80 100 % DIRT/SLUDGE ARSENIC (TCLP) 0.013 ppm 0.691 - 1.41 ppm BARIUM (TCLP)

CADMIUM (TCLP) <0.01 - 0.107 ppm <0.03 - 0.9 ppm <0.009 - 0.825 ppm CHROMIUM (TCLP) LEAD (TCLP) <0.005 ppm MERCURY (TCLP) <0.03 ppm SILVER (TCLP) <0.005 - 0.156 ppm SELENIUM (TCLP) ANTHRACENE 0.296 mg/l

PHYSICAL CHARACTERISTICS METALS EP TOX/TCLP Physical State...: Solid/Liquid Arsenic as As 0.013 mg/11.41 mg/1Flash Point....: > = 200 Barium as Ba Cadmium as Cd pH..... 06.0 - 08.0 mg/1 0.107 Color..... BROWN OPAQUE 0.825 Lead as Pb mg/l Mercury as Hg < 0.005 Selenium as Se 0.156 mg/l Odor..... NONE Layers....: mg/1Specific Gravity.: 0.000 Silver as Ag < 0.03 mg/l Free Liquids....: 10 - 90 Chromium Hex Cyanides..... None Copper Sulfides..... None Nickel as Ni 0.157 mg/l ppm, Regulated by 40 CFR 761: PCB's....: Thallium as Tl

Phenolics.....: None Zinc DOT UN/NA NBR:

Chromium tot Cr 0.9 mg/1\* Taxable....: Treatment Codes..: S01

Material Class: I CRQ RPT QTY....: EXP: 04/06/94

EPA Permit....: Hazard Class....: State Codes....:

NESHAP: Benzene ....:

Packing Group...: Process Codes....: Cert of Datrot Rq:

Federal Codes: NHOO

HANDLING

DRUM OR BULK LIQUID

DOT PROPERTIES

Health: 0 Flammable: 0 Inhalation: 0 Dermal: 0 Oral: 0

SUMMARY

100399-C002 Alabama ADEM Number

COMMENTS

STABILIZE/SOLIDIFY AND SECURE LANDFILL RECENT ANALYTICAL IN FILE 11/03/93 FINGERPRINT/MIX RATIO DAN EXTENDED UNTIL 08/25/97 (8 MONTHS)

#### **DOCUMENTATION**

#### **Certification of Control Device Design Analysis**

A design analysis was performed in accordance with 40 CFR 268.1088(c)(5)(iv) for the carbon units managed at the CWM Emelle Facility. A design analysis was performed for all carbon units, however, only the unit for the Decant Storage (Unit X-025) is necessary at this time. This devise controls the emissions from Tanks T-715, T-717 and T-719.

Date: 4/22/97 Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

## 1.0 INTRODUCTION

This report evaluates the design of five carbon adsorbers located at the Chemical Waste Management (CWM) - Emelle, Alabama facility. Each carbon adsorber was evaluated according to a calculated design carbon breakthrough time as well as an actual breakthrough time based upon compliance monitoring data taken at the facility. In order to calculate carbon breakthrough times, the annual amount of emissions from each tank and tanker truck loading station attached to these five adsorbers was estimated using maximized permitted flowrates of waste. Based upon information supplied by Calgon Carbon Corporation, the amount of activated carbon needed to control the maximum emissions was factored. Using the quantity of carbon needed, the design carbon breakthrough time was then calculated with the design criteria of the carbon adsorbers.

The CWM Emelle facility uses activated carbon adsorption systems to control the vent gas emissions from several tank farms and tanker truck loading stations located at the facility in accordance with requirements contained in 40 CFR 264 & 265 Subchapter CC. This report contains a "design analysis" at maximum permitted flow rates, and presentation of actual monitoring data to demonstrate compliance with the removal efficiency requirements presented in Subchapter CC, 40 CFR Parts 264 and 265.

To control emissions from the tanks, each tank is vented to a carbon adsorber. Information about each carbon adsorber evaluated, which contains Calgon Carbon Corporation BPL 4X10 Activated Carbon<sup>(1)</sup>, is included in this report. Whenever the VOC removal efficiency of a carbon adsorber falls below 95%, the spent adsorbent is replaced with fresh activated carbon.

The evaluation of each carbon adsorber is shown in the attached exhibits as follows:

Exhibit 1 - Decant Storage (Tanks T714-T722 and loading stations);

Adsorber permit number X-025

Exhibit 2 - Decant (Tank T724/DCU and loading station);

Adsorber permit number X-019

Exhibit 3 - Flush Tanks (Tanks T634 and T635);

Adsorber permit number Z-014

Exhibit 4 - Tank Farm #1 Loading (RCRA/TSCA loading station);

Adsorber permit number X-026

Exhibit 5 - Solvent Tank (Tank T520 and loading station);

Adsorber permit number X-016

Report.wpd 1 MEE

Date: 4/22/97 Staff Engineer: Michael Ege, EIT

Senior Engineer: Dr. John Pietranski, PE

## 2.0 CERTIFICATIONS

Report.wpd 2 MEE

#### OWNER'S CERTIFICATION

In accordance with the requirements of the "Subchapter CC Standards" of 40 CFR Parts 264 and 265, I hereby certify that this design analysis demonstrates that the control devices in place at the Chemical Waste Management - Emelle facility are designed to operate at an efficiency of 95 percent or greater when operating at capacity or the highest level reasonably expected to occur. The operating parameters used in this design analysis reasonably represent the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. I further certify that the installed control equipment meets the minimum design specifications used in this design analysis.

For Chemical Waste Management, Inc.:

Rodger Henson

Divison President

## **ENGINEER'S CERTIFICATION**

The engineering calculations of the five carbon adsorbers currently in use at the Chemical Waste Management - Emelle facility as contained in this design analysis were prepared in accordance with good engineering practice and the requirements of the "Subchapter CC Standards" contained in 40 CFR Parts 264 and 265. The results of the design analysis indicate that the control devices installed at the Chemical Waste Management - Emelle facility satisfy the removal efficiency requirements of the "Subchapter CC Standards" contained in 40 CFR Parts 264 and 265.

Dr. John F. Pietranski, P.E.

Alabama Registration 17159

Date

Date: 4/22/97 Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

#### 3.0 SUMMARY OF DESIGN ANALYSIS

The calculations shown in each carbon adsorption system exhibit demonstrate that the carbon adsorbers are designed to control the maximum anticipated flow rate of emitted vent gas directed to it. Based upon calculated design breakthrough times and actual measured adsorber inlet and outlet VOC concentrations and actual records of carbon replacement, each of the five carbon adsorbers meets its design objectives.

The design and actual breakthrough times as determined in each exhibit are as follows:

Adsorption System	Design Breakthrough (days) [no safety factor]	Design Breakthrough (days) [safety factor =100%]	Actual Breakthrough (days) <sup>(2)</sup>
Decant Storage Permit No. X-025	36	18	>262
Decant Permit No. X-019	153	77	>323
Flush Tanks Permit No. Z-014	1165	583	>255
Tank Farm #1 Loading Permit No. X-026	572	286	>323
Solvent Tank Permit No. X-016	42	. 21	>262

Carbon adsorption isotherm curves as provided by Calgon Carbon Corporation were used to determine a carbon adsorption capacity factor. The worst-case factor occurs at a high temperature and a low constituent concentration since the capacity of activated carbon decreases as the temperature increases and/or the concentration of a VOC constituent decreases. Thus, a temperature of 91.5°F (the highest monthly average maximum temperature for the facility, taken from meteorological data compiled in AP-42<sup>(3)</sup>, Table 7-2), and a partial pressure of the VOC constituents of 0.0001 psia<sup>(4)</sup> (a partial pressure lower than that of all constituents at all calculated concentrations) were used to factor a design carbon VOC removal capacity of 10 lbs VOC's per 100 lbs activated carbon. According to Calgon Carbon Corporation<sup>(1)</sup>, the carbon

Report.wpd 3 MEE

Date: 4/22/97	Staff Engineer:	Michael Ege, EIT
	Senior Engineer:	Dr. John Pietranski, PE

VOC capacity at a relative humidity of 100% is equal to half the "dry" capacity; this is shown in the adsorption isotherm for water included in Attachment 3. Thus, to account for relative humidity, a 100% safety factor was used in determining design breakthrough times.

Tank vent gas emissions were calculated using the equations given in AP-42<sup>(3)</sup>, Compilation of Air Pollutant Emission Factors, Section 7, Liquid Storage Tanks. Vent gas stream characteristics and tank emission calculations were determined using the annual average maximum and minimum temperatures and pressures given for the closest representative town (Montgomery, Alabama) contained in AP-42<sup>(3)</sup>, Table 7-2. Tank information and representative stream constituents were provided by the CWM Emelle facility. Maximum annual waste flowrates were taken from maximized worst case calculated flows developed by CWM with assistance from WEC by utilizing a spreadsheet program developed by WEC.

The design annual amount of carbon required was calculated for each adsorber. The total VOC emissions routed to an adsorber was determined by summing the emissions from each tank and/or tanker truck loading station in the adsorber system. The resulting total VOC emissions were then divided by a carbon capacity factor based upon the constituents routed to an adsorber. This gave the amount of activated carbon required to control the VOC emissions resulting from a worst-case scenario.

Each of the carbon adsorbers is designed such that the maximum velocity through the carbon bed is less than the recommended<sup>(5)</sup> maximum allowable velocity of 100 ft/min. Based on field observations, each of the carbon adsorbers has a sufficient bed depth<sup>(5)</sup>.

Engineering calculations used in a design analysis of a carbon adsorption system must meet the requirements of 40 CFR 264.1035, which states in part:

(b)(4)(iii)(G) For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

The attached exhibits consider each of the requirements given above and demonstrate compliance with the requirements for the CWM Emelle facility.

Report.wpd 4 MEE

Date: 4/22/97 Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

### 4.0 SUMMARY OF OPERATION & PERFORMANCE DATA

The tank data and maximum annual flowrates for the components in each carbon adsorption system were provided to WEC by the CWM Emelle Facility. The vent gas from Tanks T714-T722 and associated tanker truck loading stations are directed to the Decant Storage adsorber; the vent gas from Tank T724/DCU is directed to the Decant adsorber; the vent gas from Tanks T634-T636 is directed to the Flush Tanks adsorber; the vent gas from the RCRA/TSCA loading station is directed to the Tank Farm #1 Loading adsorber; and the vent gas from Tank T520 is directed to the Solvent Tank adsorber. In addition these calculations assume that emissions from any potential associated tanker truck loading stations are directed to this adsorber.

As required by 40 CFR 264.1033, the volatile organic concentrations (VOC's) are measured by CWM Emelle personnel on a **daily**<sup>(6)</sup> basis at the inlet and outlet points of the activated carbon adsorbers using a BACHARACH TLV Sniffer. As shown in the included product information (Attachment 2), the TLV Sniffer has a detection range of 0-10,000 PPM, and a 2 PPM hexane minimum detectable concentration. Readings are recorded by facility personnel on a Carbon Canister Monitoring Log. An example of the log used at the CWM - Emelle facility is included as Attachment 1.

Actual breakthrough is determined, following the requirements of 40 CFR 264.1087, when the percent VOC's removed by a carbon adsorber falls **below 95%**<sup>(7)</sup>. The removal efficiency is calculated and recorded on the monitoring log.

Upon determination of breakthrough for a carbon adsorption system, the spent adsorbent in the carbon adsorber is removed and replaced with fresh Calgon Carbon Corporation BPL 4X10 Activated Carbon<sup>(1)</sup>. Information about this adsorbent is included as Attachment 3. An inventory of fresh adsorbent is maintained at the facility based upon the expected replacement cycles of each adsorption system.

Data from compliance monitoring records as supplied to WEC by CWM Emelle for the period including January 1, 1996 to November 18, 1996 is summarized in figures titled "CAS Probability Plot", "Removal Efficiency vs. Time", and "Outlet VOC Concentration vs. Time" included in each carbon adsorption system exhibit. Notations have been included to indicate when the spent carbon was replaced.

Carbon replacement occurred following a calculated removal efficiency below 95% for an

Report.wpd 5 MEE

Date: 4/22/97 Staff Engineer: Michael Ege, EIT
Senior Engineer: Dr. John Pietranski, PE

adsorber. Carbon replacement occurred three times during the period reviewed. The carbon in the Flush Tanks Adsorber (permit no. Z-014) was replaced on 9/11/96, the carbon in the Decant Storage Adsorber (permit no. X-025) was replaced on 9/28/96, and the carbon in the Solvent Tank Adsorber (permit no. Z-016) was replaced on 9/28/96.

The following table shows the design breakthrough time as well as the number of times the carbon was changed during the period reviewed:

Adsorption System	Design Breakthrough (days) [Safety Factor = 100%]	Number of Times Carbon Changed
Decant Storage Permit No. X-025	18	1
Decant Permit No. X-019	77	0
Flush Tanks Permit No. Z-014	583	1
Tank Farm #1 Loading Permit No. X-026	286	0
Solvent Tank Permit No. X-016	21	1

#### Notes:

- Activated carbon information and carbon capacity isotherms provided by Calgon Carbon Corporation, and included as Attachment 3.
- Actual breakthrough times based upon CWM records of carbon replacement between 1/1/96 and 11/18/96. Design breakthrough based on maximum flowrates for Tanks T520 and T715-T722. Actual flowrates during the period were lower. Flush Tanks actual breakthrough was less than design due to non-typical flow conditions during late October. These conditions caused the removal efficiency to fall below 95%.

Report.wpd 6 MEE

Date: 4/22/97

Staff Engineer: Michael Ege, EIT

Senior Engineer: Dr. John Pietranski, PE

- Emission calculations and meteorological data based upon information contained in EPA report AP-42, Compilation of Air Pollutant Emission Factors; Volume I: Stationary Point and Area Sources; Fifth Edition, January 1995.
- (4) A VOC partial pressure of 0.0001 psia was used to give a conservative estimate of carbon capacity for all organic compounds found in the vent gas.
- Recommended maximum allowable velocity through the carbon adsorber found on page 5-20 of EPA document 450/2-81-005, **APTI Course 415 Control of Gaseous**Emissions; Student Manual; December 1981. Carbon Bed Depth discussion found on pages 5-20 and 5-21.
- 40 CFR 264.1033 states, in part: "The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of 264.1035(b)(4)(iii)(G), whichever is longer."
- The control device standards given in 40 CFR 264.1087 require that the control device must be "A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight."

Report.wpd

#### **DOCUMENTATION**

## Leachate Vapor Pressure Calculations For Leachate Tanks

The leachate generated at the Emelle Facility was evaluated for vapor pressure using a method defined in 40 CFR 265.1084(c)(3)(ii)(C), methods obtained from standard reference text. The vapor pressure was evaluated for the tanks in Tank Farm 4 (T-1405 through T-1420), Tanks T-1701 through T-1704 and T-A. The results are presented in the following spreadsheets.

#### Chemical Waste Management, Inc. Emelle, Alabama Facility Tank Farm 4 (T-1405 - T-1420) Leachate Vapor Pressure Determination

						abada Ac -40	lamba.		Tamer	reture			Estimated Vapor Pressure	Measured	Measurement			Cono	Mass of Chemical	# of Moles of Chemical	Mole Fraction of Chemical	Vapor Pressure of Chemical	Vapor Pressure of Chem
	CHEMICAL	CAS#	Molecular Formula	A		oine's Coeffic	ente D	E	C		Egn. A	Egn. B	et Temp (mm Hg)	V.P.	Conditions	[Ref.]	Mol. Wt.	(mg/L)	in Mixture (g/L)	in Mitclure (per L)	in Mixture	at T and Total V.P. (mm of Hg)	et T and Total V.P. (kP
LIPHATICS	CHEMICAL	UAST	701114								-												
Liritatios				l	1	1														l			
ACETATES							1.86E-02	9.72E-06		298.16		l x	11.53	15	77 F (25 C)	HSDB	116,160		ا	0.0000E+00	0.000	0.0000E+00	
	n-Butyl Acetate	123-86-4	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4.383 0.8955				1.24E-05		298.16		<del>-</del> x	93.43			HSDB	88.106		o	0.0000E+00	0.000	0.0000E+00	
	Ethyl Acetate	141-78-6	C4H4O2	35.1224				2.67E-06		298.16		X	17.83		55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.000	0.0000E+00	
	Isobutyl Acetate	110-19-0 108-21-4	C <sub>4</sub> H <sub>12</sub> O <sub>2</sub>	22.2064		4.8975	-2.79E-10	8.34E-07		298.16		X	60.37	59.2		HSDB	102.150		0	0.0000E+00	0.000		
	leop ropyl Acetate	79-20-9	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub> C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	33.7235			-9.43E-11	3.31E-06		298.16		X	214.43	216.2	77 F (25 C)	HSDB	74.079		0	0.0000E+00	0.000		
	Methyl Acetate	109-80-4	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	43.0546			2.47E-10	3.75E-06		298.16		X	33.31	33.7	77 F (25 C)	HSDB	102.15		0	0.0000E+00	0.000		
	n-Propyl Acetate Vinyl Acetate	108-05-4	C4H4O2	12.72						298.16		X	114.56	115	77 F (25 C)	HSDB	86.090		0	0.0000E+00	0.000	0.0000E+00	
	Vily Audus																1	ł	1			1	
ALCOHOLS					I	1						i		5.5	68 F (20 C)	HSDB	74.122	1		0.0000E+00	0.000	0.0000E+00	
(n=9)	n-Butyl Alcohol	71-38-3	C <sub>4</sub> H <sub>10</sub> O	7.4766					25		- <del>X</del> -	<del> </del>	6.16 18.24			HSDB	74.122	45,20	0.0452	6.0981E-04	0.000		2.679
	sec-Butyl Alcohol	78-92-2	C <sub>4</sub> H <sub>10</sub> O	7.474		188.51			25 25		<del>^</del>	<b>├</b> ──	42.00		77 F (25 C)	HSDB	74.122		o	0.0000E+00	0.000	0.0000E+00	
	tert-Butyl Alcohol	75-65-0	C <sub>4</sub> H <sub>10</sub> O	7.3196					25		<del>- î -</del>	<del>                                      </del>	59.16	62		Gallant & Yaws, Volume 1	46.069		0	0.0000E+00	0.000	0.0000E+00	
	Ethyl Alcohol	84-17-5	C <sub>2</sub> H <sub>6</sub> O	8.213		3 -3.69E+01	1.45E-02	-3.95E-13		298.16	<u> </u>	X	10.45	10	71.1 F (21.7 C)	HSDB	74.122		0	0.0000E+00	0.000	0.0000E+00	
	isobutyl Alcohol	78-83-1	C <sub>4</sub> H <sub>10</sub> O	109.2803 8.1183		2 219.62	1.436-02	13.83E-13	25	200.10	X	<del> </del>	45.23	44.0	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.000		
	Isopropyl Alcohol	67-63-0 67-56-1	C₃H <sub>8</sub> O CH₄O	8.0724					25		X		126.94	129	77 F (25 C)	Gallant & Yaws, Volume 1	32.042		0	0.0000E+00	0.000		
	Methyl Alcohol	71-23-8	C <sub>3</sub> H <sub>6</sub> O	7.619	2 1375.14	193.01			25		X		20.49	20.8	77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.000		
	n-Propyl Alcohol 2-Butoxyethanol	111-76-2	C <sub>6</sub> H <sub>14</sub> O	39.373	<del></del>			3.27E-05		298.16		X	0.87	0.88	77 F (25 C)	HSDB	118.200		0	0.0000E+00	0.000	0.0000E+00	
	E-CONTACTOR	,,,,,,,,,,		1	1	1		T	l													1	
KETONES			1			I		1	l			_			77 5 05 0	HSDB	58,080		0.097	1.6701E-03	0.000	7.8780E-03	0.0010
	) Acetone	67-64-1	C₃H <sub>€</sub> O	28.5884				2.74E-08		301.16		X	260.99	231 90.6	77 F (25 C)	ATSDR	72.107	44.90		6,2269E-04	0.000		0.000
	Methyl Ethyl Ketone	78-93-3	C4H6O	7.208					28	100112	X	<del>  -</del>	108.66 23.46			HSDB	100.16	44.90		4.6326E-05	0.000		2.619
	Methyl leobutyl Ketone	108-10-1	C <sub>6</sub> H <sub>12</sub> O	84.191	4.36E+03	-1.98E+01	-4.00E-10	7.10E-06	<del> </del>	301.16		X	23.46	14.5	90 F (20 C)	naus	100.10	7.04	0.00404	7.00201-00	<u> </u>	1.0002-03	2.01
			i	1	1	1		Į	1			1	]					1					
SUBSTITUTED			1	1					l	] [		1					1						
METHANES		75-25-2	CHBr <sub>3</sub>	-10.294	3 -2.17E+03	9,1193	-1.6495E-02	7.4917E-06		298.16		x	5.51			MDL, 1996	252.75		0	0.0000E+00	0.000		
	) Bromoform Chloroform	67-66-3	CHO <sub>3</sub>	6.937					25		X	1	194.75	195	77 F (25 C)	Yaws, 1992	119.378		0	0.0000E+00	0.000		
	Carbon Tetrachioride	56-23-5	ca.	6.894					25		X		114.22	108	77 F (25 C)	HSD <b>B</b>	153.823		•	`0.0000E+00	0.000		
	Dichlorodifluoromethane	75-71-8	CCI <sub>2</sub> F <sub>2</sub>	6.68611		2 235.37	1		25		X		4,814.78		70.0 F (21.1 C)	MDL, 1996	120.91			0.0000E+00	0.000		
	Methyl Bromide	74-83-9	CH <sub>3</sub> Br	6.950					25		Х		1,633.46	1,420		HSDB	94.95		0	0.0000E+00	0.000		
	Methyl Chioride	74-87-3	CH <sub>3</sub> CI	6.994		2.4381E+02	2		25		X		4,312.17	3,600		MDL, 1996	50.49		- 0	0.0000E+00	0.000		<b>_</b>
	Methylene Bromide	74-95-3	CH <sub>2</sub> Br <sub>2</sub>	35.352	5 -3.04E+03	3 -9.597	5.83E-10	2.94E-06		298.16		×	45.24		73.9 F (23.3 C)	HSDB	173.83		0 000444	0.0000E+00 5.6986E-06	0.000		6.737
	Methylene Chloride	75-09-2	CH <sub>2</sub> Cl <sub>2</sub>	7.080	3 1138.9	1 231.44			28		<u>X</u>	1	490.64		75.4 F (24.1 C)	HSDB	84.933	0.484	0.000484	0.0000E+00	0.000		6.737
	Trichiorofluoromethane	75-89-4	CCI <sub>3</sub> F	6.884	3 1,043.0	1 236.84	3		25		X	ļ	796.56	690	68 F (20 C)	MDL, 1996	137.38	<del> </del>		0.000000	0.000	0.000240	
							1		1	1 1		I		1									
SUBSTITUTED		1	1	ł	1	1		l	i			1		l									1
ETHANES/ETHENES					1.01276E+01	2.9668E+0	,	1	25		x		1,174.09	1,000	68 F (20 C)	MDL, 1996	64.52	2	0	0.0000E+00	0.000		
(r=16)	) Chloroethane	75-00-3 106-93-4	C <sub>2</sub> H <sub>6</sub> Cl C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub>	8.7214			}	<del>                                     </del>	25		X	1	11.83	8.5	68 F (20 C)	HSDB	187.88		0	0.0000E+00	0.000		
	1,2-Dibromoethane	75-34-3	C <sub>2</sub> H <sub>4</sub> G <sub>2</sub>	33.3				3.7323E-06		298.16		×	227.41	230	77 F (25 C)	ATSDR	98.960		0	0.0000E+00	0.000		
	1,1-Dichloroethane	107-08-2	G <sub>2</sub> H <sub>4</sub> G <sub>2</sub>	48.422				2.6844E-14	<b></b>	298.16		X	79.16	79	77 F (25 C)	EPA, 1992	98.960		0	0.0000E+00	0.000		
	1,2-Dichloroethene 1,1-Dichloroethene	75-35-4	C <sub>2</sub> H <sub>2</sub> G <sub>2</sub>	-16.541						298.16		X	600.39	591	77 F (25C)	ATSDR	96.944		0	0.0000E+00	0.000		
	ds-1,2-Dichloroethene	156-59-2	C <sub>2</sub> H <sub>2</sub> Q <sub>2</sub>	7.022			3		25		X		202.46	215		ATSDR	96.944	ļ	0	0.0000E+00	0.000		
	trans-1,2-Dichloroethene	156-60-5	C <sub>2</sub> H <sub>2</sub> G <sub>2</sub>	48,457		3 -14.69	-2.1282E-09	7.3465E-06		298.16		X	333.33	336		ATSDR	96.944	<u> </u>		0.0000E+00	0.000		
***	Hexachioroethane	67-72-1	C <sub>2</sub> Cl <sub>6</sub>	7.0863	3 1626.945	5 197.04	3		25		X		0.57			HSDB	236.74	ļ	- 0	0.0000E+00	0.000		
	1.1.1.2-Tetrachioroethane	630-20-6	C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	-1.0711	2 -2.51E+0	3 6.153	-1.88E-02	1.05E-05		298.16		X	12.07		77. 1200	HSDB	167.85			0.0000E+00	0.000		
	1,1,2,2-Tetrachioroethane	79-34-5	C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	56.235	6 -4.4615E+0	3 -16.55	-3.5724E-10	4.0425E-06		298.16		X	4.62		68 F (20 C)	MDL, 1996	167.85		ļ <u>°</u>	0.0000E+00	0.000		<del> </del>
	Tetrachloroethene	127-18-4	C <sub>2</sub> CI <sub>4</sub>	7.0	2 1415.40	221.1	7	L	25		X		18.55			HSDB	165.834	<u> </u>	- 0	0.0000E+00 0.0000E+00	0.000		
	1,1,1-Trichioroethane	71-55-8	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	36.546	8 -2.8421E+0			3.7075E-06		298.16		×	123.74		77 F (25 C)	ATSDR	133.405	<b></b>	+	0.0000E+00	0.00		
	1,1,2-Trichloroethane	79-00-5	C <sub>2</sub> H <sub>3</sub> O <sub>3</sub>	6.965					25		X	<del>                                     </del>	24.14		77 F (25 C)	HSDB ATSDR	133.405 131.389	<del> </del>	<del>                                     </del>	0.0000E+00	0.00		
	Trichioroethene	79-01-6	C2HCl3	7.028				<b></b> _	25		X	<del>-</del>	74.31		77 F (25 C) 77 F (25 C)	HSDB	131.389		<del>                                     </del>	0.0000E+00	0.00		
	1,1,2-Trichloro-1,2,2-Trifluorethane	76-13-1	C <sub>2</sub> CI <sub>3</sub> F <sub>3</sub>	33.719				3.94E-06		298.16		×	331.78						1	0.0000E+00	0.00		<del> </del>
	Vinyl Chloride	75-01-4	C₂H₃Cl	6.497	1 7.834E+0:	2 2.3001E+0	2	<b>!</b>	25	<b>├</b> ───	X	+	2,861.11	2,660	77 F (25 C)	ATSDR	62.499	<del> </del>	1	V.0000E400	1		
		l	1	i	1	1	1	1	ļ			1	1	l		1		1	1			1	]
SUBSTITUTED					I	1		1	1			1		1			1	1	1	1	l	1	
PROPANES/PROPENES		107-05-1	C₃H₅CI	8.608	5 -1.75E+0	3 6.08E-0	-7.17E-03	5.22E-06	sl	298.16		x	368.68	368	77 F (25 C)	HSDB	76.53			0.0000E+00			
(n=6)	1,1-Dichloropropane	78-99-9	C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	5.481			-1.1751E-02			298.16		X	52.12				112.99			0.0000E+00	0.00		ļ
	1,2-Dichioropropane	78-87-5	C <sub>3</sub> H <sub>7</sub> Cl <sub>2</sub>	6.965					25		X		49.60			HSDB	112.99		•	0.0000E+00	0.00		ļ
	ds-1,3-Dichioropropene	10061-01-5	C3H4Cl2	3.658				6.49E-06		298.16		X	61.30			HSDB	110.97			0.0000E+00	0.00		<b></b>
	trans-1,3-Dichloropropens	10061-02-6	C3H4Cl2	3.658						298.16		X	61.30		?	HSOB	110.97		<del>                                     </del>	0.0000E+00	0.00		<b> </b>
	1,2,3-Trichloropropane	96-18-4		7.002					25		X	1	3.33	3.69	77 F (25 C)	HSDB	147.43	3		0.0000E+00	0.00	0.0000E+00	
	1	T	1	I	T	T						1	1			}		1	1			ŀ	
MISCELLANEOUS	sļ	l	1	1	1	1	1	1			L L	1	]		75 F (24 C)	HSDB	41.052		١ .	0.0000E+00	0.00	0.0000E+00	l
	i) Acetonitrile	75-05-8		7.073				<b> </b>	25		X	+	86.37 105.83			HSDB	53.06		<del>                                     </del>	0.0000E+00	0.00		T
	Acrylonitrile	107-13-1	C <sub>3</sub> H <sub>3</sub> N	6.916		3 2.2201E+0			25	100010	X	+	105.83 274.35			MDL, 1996	56.06		1	0.0000E+00	0.00		<u> </u>
	Acrolein	107-02-8	C <sub>3</sub> H <sub>4</sub> O	57.981			1.1486E-02	2 -2.3854E-14		298.16	X	X	360.99			HSDB	76.14		1 0	0.0000E+00	0.00		
	Carbon Disulfide	75-15-0	CS,	6.941				1	25	90114	_ <del>x</del>	×	380.99		(20 C)	naue .	106.60		† <u>`</u>	1			
	1-Chloropentane	543-59-9		4.488				1.4884E-05		301.16	X	<del>  ^</del>	534.28		77 F (25 C)	HSOB	74.12	<del></del>	1	0.0000E+00	0.00	0.0000E+00	
	Diethyl Ether	60-29-7		6.9203				1	25	200 10	<del>- ^</del> -	×	38.20			HSOB	88.106		1	0.0000E+00	0.00	7 7	L
	1,4-Dioxane	123-91-1	C4H8O2	20.576					-	298.16 298.16		X	16.50		68 F (20 C)	MDL 1998	92.53		- 0	0.0000E+00	0.00	**	
	Epichlorohydrin	106-89-8	C <sub>3</sub> H <sub>5</sub> ClO	24.76						298.16	<del></del>	+ X	20.59		68 F (20 C)	HSDB	114.14		1 - 3	0.0000E+00	0.00		
	Ethyl Methacrylate	97-63-2	C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	27.957				1.68E-06		∠96.15	×	<del>  ^</del>	1,339.85			HSDB	44.06		1 0	0.0000E+00	0.00	**	
	Ethylene Oxide	75-21-8	C <sub>2</sub> H <sub>4</sub> O	7.270				6 0010E 01	25	298.16	<del>  ^</del> -	×	1,339.85			HSDB	260.76		1 0	0.0000E+00	0.00		
	Hexachlorobutadiene	87-68-3	C <sub>4</sub> Cl <sub>4</sub>	35.59			8 2.9025E-10			298.16		<del>                                     </del>	0.06			MDL, 1996	272.77		- 0	0.0000E+00	0.00		
	Hexachlorocyclopentaclene	77-47-4	CeCle	-9.794						298.16	<b></b>	X	0.0025			MDL, 1998	138.2		- 0	0.0000E+00	0.00		
	leopho rone	78-59-1	C <sub>0</sub> H <sub>14</sub> O	0.503				1.0189E-0		2₩8.10	<u> </u>	<del>  ^</del> -	47.24		72 F (22 C)	HSDB	55.06		1 0	0.0000E+00	0.00		
	Propionitrile	107-12-0	C₃H₅N C₄H <sub>8</sub> O	8.930				3.55E-00	25	298.16	<del></del>	X	162.18			HSDB	72.107		1 0	0.0000E+00			
	Tetrahydrofuran	109-99-9																					

#### Chemical Waste Management, Inc. Emelle, Alabama Facility Tank Farm 4 (T-1405 - T-1420) Leachate Vapor Pressure Determination

	<u> </u>	<u> </u>	Molecular	T	Anto	ine's Coeffic	iente		Temp	erature	Т	T	Estimated Vapor Pressure	Messured	Measurement			Cono	Mass of Chemical	# of Moles of Chemical	Mole Fraction of Chemical	Vapor Pressure of Chemical	Vapor Pressure of Chemi
	CHEMICAL	CAS#	Formula	A	B 1	C	T D	E	c		Ean.A	Egn. B	at Temp (mm Hg)	V.P.	Conditions	[Ref.]	Mol. Wt.	(mg/L)	in Mixture (g/L)	in Mixture (per L)	in Mixture	at T and Total V.P. (mm of Hg)	at T and Total V.P. (kPa
OMATICS	V.I.				† <del></del> †		1			1													
	Benzene	71-43-2	C <sub>e</sub> H <sub>e</sub>	6.90565	1,211.033	220.70	,		25	1	l x	1	95,18	95.2	77 F (25 C)	ATSOR	78.114	l	ا	0.0000E+00	0,000	0.0000E+00	
(10-10)	Benzyl Chloride	100-44-7	C+H+CI	12,1503		-0.3712		2.63E-06		298.16		X	1.31	1	72 F (22 C)	MDL 1998	126.58		0	0.0000E+00	0.000		
	Chlorobenzene	108-90-7	C <sub>e</sub> H <sub>e</sub> Cl	6.9781		217.50		1	28	<b>†</b>	X	1	14.14	11.8	77 F (25 C)	HSDB	112.558	0.417	0.000417	3.7048E-06	0.0000	9.4670E-07	1,26214
	1.2-Dichlorobenzene	95-50-1	C <sub>e</sub> H <sub>4</sub> Cl <sub>2</sub>	7.0703		213.32		†	25	<b>†</b>	X		1.41	1.47	77 F (25 C)	HSDB	147,010		0	0.0000E+00	0.000	0.0000E+00	
	1.3-Dichlorobenzene	541-73-1	C.H.O.	7.3037		230.0	<del></del>	<u> </u>	25	<del>†</del>	X	1	2.06	1.889		MDL 1996	147.010	1	0	0.0000E+00	0.000	0.0000E+00	
	1.4-Dichlorobenzene	108-48-7	C <sub>8</sub> H <sub>4</sub> Cl <sub>2</sub>	6.996		208.5			25	†	X	<del>                                     </del>	1.79	1.78		ATSOR	147.010	<b>†</b>	0	0.0000E+00	0.000	0.0000E+00	
	2.4-Dinitrotoluene	121-14-2	C7H4N2O4	11.5966		-1.6468		-1.8722E-14		298.16	<del>                                     </del>	X	8.1E-03	5.1E-03		ATSDR	182.14	1	0	0.0000E+00	0,000		
	2.6-Dinitrotoluene	606-20-2	C7HaN2O4	-14.5673	4.2746E+03	12.90				298.16	<del>                                     </del>	T X	5.9E-04	1.80E-02		MDL 1998	182.14	t	0	0.0000E+00	0.000	0.0000E+00	
	Ethylbenzene	100-41-4	CaH <sub>10</sub>	6.95719	1424,255	213.200		0.4510E 00	25	1 200.10	X	<del> </del>	9.51	9.53		ATSDR	106.167	t	0	0.0000E+00	0.000	0.0000E+00	
		118-74-1	C <sub>6</sub> Cl <sub>6</sub>	-134.3625		61.74		2.0872E-05		298.16	<del>  ^-</del>	X	4.824E-05	2.350E-05		Schwarzenbach	284.79	<del>                                     </del>	1	0.0000E+00	0.000	0.0000E+00	
	Hexachlorobenzane			-54.4937	-1.33E+03 -2.1123E+03	29.32	4.4839E-02			298.16	<del> </del>	<del>  x</del>	0.25	0.15		ATSDR	123.11	<del>                                     </del>	t	0.0000E+00	0.000		
	Nitrobenzene	96-95-3	CeHeNO2		1344.8	219.48		2.0162E-03	25	200.10	×	<del>  ^</del> -	28,45	28.5		Yaws, 1992	92.141	<del> </del>	t	0.0000E+00	0.000	0.0000E+00	
	Toluene	108-88-3	C <sub>7</sub> H <sub>6</sub>	6.95464				-7.0601E-14	23	301.16	-	x	0.52	20.3	101 F (38.4 C)	MDL 1998	181.46	0.276	0.000276	1.5210E-06	0.000		1.924
	1,2,4-Trichlorobenzene	120-82-1	C <sub>6</sub> H <sub>5</sub> Cl <sub>5</sub>	15.5947	-2.892E+03	-2.5549		-/.U601E-14	-	301.16	<del> </del>	<del>  ^</del>	6.62	1	83 F (28.3 C)	ATSDR	106.167	0.2/6	0.000276	0.0000E+00	0.000	0.0000E+00	1.924
	1,2-Xylene	95-47-6	C <sub>8</sub> H <sub>10</sub>	6.99891	1474.679	213.686	<del></del>	<del> </del>	25	<del> </del>	- X	<del> </del>	8.30		77 F (25 C)	ATSDR	106.167	<del> </del>	<u> </u>	0.0000E+00	0.000	0.0000E+00	
	1,3-Xylene	108-38-3	C <sub>8</sub> H <sub>10</sub>	7.00908	1462.266	215.10		<del> </del>	25	<del> </del>	X	<del> </del>	8.76		77 F (25 C)	ATSDR	106.167	<del> </del>		0.0000E+00	0.000	0.0000E+00	
	1,4-Xylene	106-42-3	C <sub>8</sub> H <sub>10</sub>	6.99052	1453.43	215.30	<b>1</b>	ļ	25	<b></b>	X	<del> </del>	8.76	8.84	77 F (25 C)	AISUR	100.107	<b></b>	<u> </u>	0.00006+00	0.000	0.0000€+00	
AROMATIC ALCOHOLS																							
(n=8)	2-Chiorophenoi	95-57-8	CiHiCIO	18.2631	-2.652E+03	-3.6728		1.8341E-06		298.16		X	2.78	1	53.8 F (12.1 C)	MDL, 1996	128.56		<u> </u>	0.0000E+00	0.000	0.0000E+00	
	2,4-Dichlorophenol	120-83-2	C*H*Q*O	7.497876	1.890E+03	199.30			28	<u> </u>	X	<u> </u>	0.15	1	127 F (53 C)	MDL, 1996		0.431					
	2,4-Dimethylphenol	105-67-9	C <sub>8</sub> H <sub>10</sub> O	53.3886	-5.1516E+03	-15.095	1.3196E-06	2.8455E-06		301.16		X	1.3E-01	10	198 F (92.3 C)	HSDB	122.16	2.2		1.8009E-05	0.000	4.3045E-08	5.738
	2-Methylphenal	95-48-7	C <sub>7</sub> H <sub>6</sub> O	6.9117	1435.5	165.16	3	l	26	<u> </u>	X		0.30	0.299		ATSDR	108.140	1.33	0.00133	1.2299E-05	0.0000	6.7136E-08	8.950
	3-Methylphenol	108-39-4	C <sub>7</sub> H <sub>6</sub> O	7.508	1856.36	199.07	d		25	L	X		0.17	0.138		ATSDR	108.140		0	0.0000E+00	0.000	0.0000E+00	
	4-Methylphenol	106-44-5	C <sub>7</sub> H <sub>6</sub> O	7.0351	1511.08	161.80	3		28	L	X		0.12	0.11		ATSDR	108.140	9.49		8.7757E-05	0.000	1.8902E-07	2.520
	Pentachiorophenol	87-86-5	C.HOISO	7.544423	2286.91	180.3596	3		28		X	<u> </u>	0.000370	0.00017		Crosby, 1981	266.35	1.52					
	Phenol	108-95-2	C <sub>6</sub> H <sub>6</sub> O	7.1345	1516.07	174.57	7		28		X		0.45	0.35	77 F (25 C)	MDL, 1998	94.11	79.5	0.0795	8.4476E-04	0.0000	6.8250E-06	9.09
PAHa.	Acenaphthene	83-32-9	C <sub>12</sub> H <sub>10</sub>	28.6173	4.1623E+03	-8.775	-1.0872E-06	6.3928E-07		298,16		×	1. <b>4E-0</b> 2	4.47E-03	_	ATSDR	154,21			. 0.0000E+00	0.000	0.0000E+00	
(1==9)	Anthracene	120-12-7	C14H10	-120.0992	4.478	52.574				298.16	<del> </del>	Î	1.3E-03		77 F (25 C)	ATSDR	178.23	1	1	0.0000E+00	0.000	0.0000E+00	
	Chloronaphtheiene	25586-43-0	C <sub>10</sub> H <sub>2</sub> Cl	93.776		-30.859				298.16	<del></del>	X	0.0205		11		162.61	<b>†</b>	0	0.0000E+00	0.000	0.0000E+00	
	Chrysene	218-01-9	C18H12	-50.1586	-3.4381E+03	25.178	-2.462E-02	7.0144E-08		298.16	<del> </del>	X	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.28	t	0	0.0000E+00	0.000	0.0000E+00	
	Fluoranthene	208-44-0		70.6802	-6.484E+03	-2.2241E+01		-6.3035E-13		298.16	<del> </del>	x	1.1E-04	5.0E-06		ATSDR	202.26	<u> </u>	0	0.0000E+00	0.000		
	Fluoramene	86-73-7	C18H10	53.9382		-16.059			<del>                                     </del>	298.16	<del>                                     </del>	<del>  x</del>	3.8E-03	7.1E-04		ATSDR	188.21	t	0	0.0000E+00	0.000	0.0000E+00	
· · · · · · · · · · · · · · · · · · ·	Naphthalene	91-20-3	C10Ha	7.01065	1.733.71	201.856	7.50052-00	0.1402-13	25	200.10	×	<del> ^-</del>	0.23	0.05		MDL, 1998	128.16	0.798	0.000798	6.2266E-08	0.000		3.50
		85-01-8		50.2858		-13.935	-8.8520E-10	2.1343E-06	23	298.16	<del>  ^</del>	×	5.49E-04	9.6E-04		ATSDR	178.22		0.000,00	0.0000E+00	0.000		3.50
	Phenanthrene		C14H10	70.7871		-13.93			<del>]</del>	298.16		<del>  x</del>	2.4E-05	2.5E-06		ATSDR	202.26		†	0.0000E+00	0.000	0.0000E+00	
	Pyrene	129-00-0	C <sub>16</sub> H <sub>10</sub>	70.76/1	-6.9413E+03	-21./1	6.0727E-03	1.3/6/E-12		280.10	<b></b>	<del>  ^</del> -	2.46-00	2.3E-00	111 (230)	710011	1 202.20	╁	<u> </u>	0.00002700	0.000	0.0002400	<del></del>
PHTHALATES	Dibutyl Phthalete	84-74-2	C <sub>18</sub> H <sub>22</sub> O <sub>4</sub>	152,675	-1.0754E+04	-51.170	1.6933E-02	2.4948E-14		298.16		x	1.1E-05	7.26E-05	77 F (25 C)	Schwarzenbach	278.34			0.0000E+00	0.000	0.0000E+00	
	Diethyl Phthaiate	84-86-2	G <sub>12</sub> H <sub>14</sub> O <sub>4</sub>	72.1438	-7.0747E+03	-21.029	-3.2404E-10	3.4691E-06		298.16	I	X	4.9E-04	6.32E-03	77 F (25 C)	Schwarzenbach	222.26		0	0.0000E+00	0.000	0.0000E+00	
	Dimethyl Phthelate	131-11-3	C10H10O4	12.6974	-4.1989E+03	-0.3483	-7.6524E-03	3.349E-06		298.16		X	5.9E-05	1.82E-02	77 F (25 C)	Schwarzenbach	194.19		0	0.0000E+00	0.000	0.0000E+00	
	Dioctyl Phtheiste	117-84-0	C24H36O4	27.8473		-2.1134	1.5234E-02		T	298.16		X	7.3E-08				390.56		0	0.0000E+00	0.000	0.0000E+00	
	PCB 1016-1260									301.16			1.0E-04 mex				292	0.0663	0.0000883	2.2705E-07	0.0000	4.1038E-13	5.47
				<b>↓</b> _	<del></del>		<b></b>	L	<b></b>	L	<del> </del>	<del> </del>			77.5 (07.5)	V	<del></del>	1 000 744	200 744-1-				
	Water	7732-18-5	H <sub>f</sub> O	29.8605	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16	<b></b>	X	28.40	23.756	77 F (25 C)	Yaws	18.070	999,711.75	999.7117477	5.5324E+01	0.9996	28.3980	
	If you have any comments or			<u> </u>	<u> </u>			L	L	L	L	1	1		l	I .		Total Mass of Solute 288,25		Total # of Moles in the Chemical Mixture	Check that the Mole Fractions sum to 1.00	Total Vapor Pressure of the Chemical Mixture (mm Hg)	Total Vapor Pressu of the Chemical Mixture

If you have any comments or questions on this program, please contact Dr. David Dolan in Corp. EH&S at (630) 218-1537

Tank Number 1405 - 1420 947.1 (250,195);
Tank Stor - m³ (gale) 1924.28 (608,333)
Vapor Pressure Limit;
kPa (pel) 5.2 (0.75)

## Chemical Waste Management, Inc. Emelle, Alabama Facility Tanks T-1701 and T-1702 Leachate Vapor Pressure Determination

		Т	Molecular	L	Am	toine's Coeffic	lente		Teme	perature		T	Estimated Vapor Pressure	Messured	Measurement			Cone	Mass of Chemical	and Males at the section	Mala Barrier at 2	T V	
	CHEMICAL	CAS	Formula	A	B	С	<b>D</b>	E	C		Egn. A	Egn. B	et Temp (mm Hg)		Conditions	[Ref.]	Mol. Wt.	(mg/L)	in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical in Mixture	Vapor Pressure of Chemical at T and Total V.P. (mm of Hg)	Vapor Pressure of Ci
HATICS																				simutes the ci	FIRELITE	BL 1 BIG 100B V.P. (Him of Hg)	et T and Total V.P.
		1		.1	j	1		1	1		1	1					1						
ACETATES		1		1			1	1	1.			l l							1			1	
(n=/)	n-Butyl Acetate Elfryl Acetate	123-86-4	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4.30						298.16	L	X	11.53		77 F (25 C)	HSDB	116.160		o	0.0000E+00	0.0000	0.0000E+00	
	Isobutyl Acetate	141-78-8	C4H <sub>0</sub> O2	0.695		5.4643				298.16		X	93.43			HSDB	88.106		0	0.0000E+00	0.0000		
	Isopropyl Acetate	110-19-0	C <sub>0</sub> H <sub>12</sub> O <sub>2</sub>	35.122		-9.3893		1 2.67E-0		298.16	<b>├</b>	X	17.83		55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	
	Methyl Acetate	79-20-9	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub> C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	22.200 33.723		-4.8975		8.34E-0		298.16	<del>                                     </del>	X	60.37			HSDB	102.150		0	0.0000E+00	0.0000	0.0000E+00	
	n-Propyl Acetate	109-60-4	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	43.054		-9.1182 -1.22E+01	9.43E-1	1 3.31E-0		298.16	<b></b>	X	214,43			HSDB	74.079			0.0000E+00	0.0000	0.0000E+00	
	Vinyl Acetate	108-05-4	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	12.72		-9.15E-01	4.57E-0	0 3.75E-0 3 2.97E-0		298.16 298.16		X	33.31			HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	
	,	10000	O411602	12.75	2 -2.100+00	-9.13E-01	7.3/E-0	2.012-0	1	298.16		X	114.56	115	77 F (25 C)	HSDB	86.090		0	0.0000E+00	0.0000	0.0000E+00	
ALCOHOLS			ł		1		1	1	1			1	ľ				1 1						
(n=9)		71-36-3	C4H10O	7.476	8 1362.39	178.73	,	1	25		l x	1	6.16		68 F (20 C)	HSDB	74.122		ا ا				
	sec-Butyl Alcohol	78-92-2	C <sub>4</sub> H <sub>10</sub> O	7.474		186.51	1	1	25	<del>                                     </del>	X	<b>†</b>	18.24	18.3		HSDB	74.122		<del>                                     </del>	0.0000E+00 0.0000E+00	0.0000		
	tert-Butyl Alcohol	75-65-0	C <sub>4</sub> H <sub>10</sub> O	7.319	9 1154.48	177.66			25		X	<b>†</b>	42.00			HSDB	74.122		<del>                                     </del>	0.0000E+00	0.0000	0.0000E+00	
	Ethyl Alcohol	64-17-5	C2H4O	8.213	3 1652.05	231.48			25		X	<b>†</b>	59.16	62		Gallant & Yaws, Volume 1	46.069		t	0.0000E+00	0.0000	0.0000E+00	
	isobutyl Alcohol	78-83-1	C <sub>4</sub> H <sub>10</sub> O	109.280	3 -6.31E+03	-3.69E+01	1.45E-02	-3.95E-1	1	298.16		X	10.45	10	71.1 F (21.7 C)	HSDB	74.122		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	Isopropyl Alcohol	67-63-0	C <sub>3</sub> H <sub>8</sub> O	8.118	2 1580.92	219.62			25	1	X	1	45.23	44.0		HSDB	60.096		- 0	0.0000E+00	0.0000	0.0000E+00 0.0000E+00	
	Methyl Alcohol	67-56-1	CH⁴O	8.072	4 1574.99	238.87	1		25		X		126.94	129		Gallant & Yaws, Volume 1	32.042		i i	0.0000E+00	0.0000	0.0000E+00	
	n-Propyl Alcohol	71-23-8	C <sub>2</sub> H <sub>8</sub> O	7.619	2 1375.14	193.01			25		X		20.49	20.8		HSDB	80.096		0	0.0000E+00	0.0000	0.0000E+00	
	2-Butoxyethanol	111-76-2	C <sub>6</sub> H <sub>14</sub> O	-39.373	5 -3.01E+03	2.57E+01	-5.73E-02	3.27E-05		298.16		X	0.87	0.88	77 F (25 C)	HSDB	118.200		0	0.0000E+00	0.0000	0.0000E+00	
VETAU		1		1	1	l		1 .			1	1								3.3332.700	0.000	0.0002=400	
KETONES	Acetone		C 11 C						J		1	l					] ]		1				
(r=3)	Methyl Ethyl Ketone	67-64-1 78-93-3	C3H4O	28.588 7.208		-7.351	2.80E-10	2.74E-06		298.16	<u> </u>	x	229.71	231		HSDB	58.080			0.0000E+00	0.0000	0.0000E+00	
	Methyl Isobutyl Ketone	108-10-1	C <sub>4</sub> H <sub>6</sub> O C <sub>6</sub> H <sub>12</sub> O	7.208 84.191		236.51 -1.98E+01	-4.00E-10	7105.00	25	200.10	X	<del>   </del>	94.78	90.6		ATSDR	72.107		0	0.0000E+00	0.0000	0.0000E+00	
····	more of technique resident	100-10-1	Ogrigo	<del>- 07.191</del>	→.30E+03	- i.⊯5≿+01	4.00€-10	7.10E-06	<del>}</del>	298.16		X	19.86	14.5	68 F (20 C)	HSDB	100.16		0	0.0000E+00	0.0000	0.0000E+00	
SUBSTITUTED		1 1		1	1		i	1	1			l					, !						
METHANES		1		1	1		ł		l			ł	1	[			1 1		[				
	Bromoform	75-25-2	CHBr <sub>3</sub>	-10.294	3 -2.17E+03	9.1193	-1.6495E-02	7.4917E-06	4	298.16		×	5.51	5.6	68 F (20 C)	MDL, 1996	252.75		ا ا	0.0000E+00	0.0000		
	Chloroform	87-86-3	сна	6.937	1 1.1712E+03	2.27E+02			25		X	<del>                                     </del>	194.75		77 F (25 C)	Yaws, 1992	119.378		<del></del>	, 0.0000E+00	0.0000	0.0000E+00	
	Carbon Tetrachioride	56-23-5	CO14	6.894	1 1.21958E+03	2.271 7E+02			25		X		114.22			HSDB	153.823		3	0.0000E+00	0.0000	0.0000E+00	
	Dichlorodifluoromethane	75-71-8	CCI₂F₂	6.6861	782.072	235.377			25		X	<u> </u>	4,814.78		70.0 F (21.1 C)	MDL, 1996	120.91		<del> </del>	0.0000E+00	0.0000	0.0000E+00	
	Methyl Bromide	74-83-9	CH <sub>3</sub> Br	6.959		2.3833E+02			25		X		1,633.46		68 F (20 C)	HSDB	94.95		o d	0.0000E+00	0.0000	0.0000E+00	
	Methyl Chloride	74-87-3	CH <sub>3</sub> CI	6.994		2.4361E+02			25		X		4,312.17	3,600	68 F (20 C)	MDL, 1996	50.49		ò	0.0000E+00	0.0000	0.0000E+00	
	Methylene Bromide	74-95-3	CH <sub>2</sub> Br <sub>2</sub>	35.352	-3.04E+03	-9.5972	5.83E-10	2.94E-06		298.16		X	45.24	40	73.9 F (23.3 C)	HSDB	173.83		o	0.0000E+00	0.0000	0.0000E+00	
	Methylene Chloride	75-09-2	CH <sub>2</sub> Cl <sub>2</sub>	7.080	1138.91	231.46			28		X		490.64	400	75.4 F (24.1 C)	HSDB	84.933	0.918	0.000918	1.0809E-05	0.0000	9.5827E-05	1.
	Trichiorofluoromethane	75-89-4	ca,f	6.884	1,043.01	236.86			25		X		796.56	690	68 F (20 C)	MDL, 1996	137.38		0	0.0000E+00	0.0000	0.0000E+00	·!·
SUBSTITUTED ANES/ETHENES (n=16)	Chloroethane 1,2-Dibromoethane 1,1-Dichloroethane	75-00-3 106-93-4 75-34-3	C <sub>2</sub> H <sub>4</sub> Cl C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub> C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	6.9- 6.72144 33.34	1280.82	2.3668E+02 201.75 -9.1336	-2.8388E-11		25 25		X X		1,174.09 11.83	1,000	68 F (20 C)	MDL, 1996 HSDB	64.52 187.88		0	0.0000E+00 0.0000E+00	0.0000	0.0000E+00 0.0000E+00	
	1,2-Dichloroethane	107-08-2	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	48.4220		-15.37	7.2935E-03	3.7323E-06 2.6844E-14	<b></b>	301.16		X	257.64		77 F (25 C)	ATSDR	98.960	2.16	0.00216	2.1827E-05	0.0000	1.0162E-04	1.3
	1,1-Dichloroethene	75-35-4	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	-16.5416		1.3923E+01	4.0958E-02	2.9995E-05		301.16 301.16		X	91.17		77 F (25 C)	EPA, 1992	98.960	0.254	0.000254	2.5667E-06	0.0000	4.2283E-06	5.
	cis-1,2-Dichloroethens	156-59-2	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	7.022	1205.4	230.6	4.000E-02	2.00052-03	25	301.16	X	-	669.37 202.46	591	77 F (25C) 77 F (25 C)	ATSDR ATSDR	96.944	0.103	0.000103	1.0625E-06	0.0000	1.2851E-05	1.
	trans-1,2-Dichloroethene	156-60-5	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	48.4574		-14.694	-2.1262E-09	7.3465E-06		298.16		X	333.33	336		ATSDR	98.944 98.944		9	0.0000E+00	0.0000	0.0000E+00	
	Hexachioroethane	67-72-1	C <sub>2</sub> CI <sub>4</sub>	7.08633		197.048	22022 40		25		x	<del>                                     </del>	0.57	0.4	<del></del>	HSDB	236.74		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	1,1,1,2-Tetrachioroethane	630-20-6	C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	-1.07112	-2.51E+03	6.1536	-1.88E-02	1.05E-05		298.16		X	12.07	14	77 F (25 C)	HSDB	167.85		4	0.0000E+00	0.0000	0.0000E+00	
	1,1,2,2-Tetrachloroethane	79-34-5	C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	58.2356	4.4615E+03	-16.556	-3.5724E-10	4.0425E-06		298.16		x	4.62		68 F (20 C)	MDL, 1996	167.85		9	0.0000E+00	0.0000	0.0000E+00	
	Tetrachioroethene	127-18-4	C <sub>2</sub> CI <sub>4</sub>	7.02	1415.49	221.10			26		X		21.76	18.47		HSDB	165.834	0.839	0.000839	0.0000E+00 5.0593E-06	0.0000	0.0000E+00	
	1,1,1-Trichloroethane	71-55-8	C2H3CI3	36.5468	-2.8421E+03	-10,205	-2.6369E-09	3.7075E-06		298.16		X	123.74	124		ATSDR	133.405	0.039	0.000639	0.0000E+00	0.0000	1.9890E-06	2
	1,1,2-Trichloroethane	79-00-5	C2H3CI3	6.9653	1,351.0	217.0			25		X		24.14	23		HSDB	133,405			0.0000E+00	0.0000	0.0000E+00	
	Trichloroethene	79-01-6	C₂HOl₃	7.0281	1,315.1	230.01			28		X		85.31	74	77 F (25 C)	ATSDR	131.389	0.684	0.000884	5.2059E-06	0.0000	0.0000E+00	
	1,1,2-Trichloro-1,2,2-Trifluorethane	76-13-1	C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	33.7192	-2.53E+03	-9.3175	1.46E-08	3.94E-08		298.16		X	331.76		77 F (25 C)	HSDB	187.38	0.007	0.00007	0.0000E+00	0.0000	8.0255E-06 0.0000E+00	1
	Vinyl Chloride	75-01-4	C₂H₃G	6.4971	7.834E+02	2.3001E+02			28		X		2,889.24	2,660	77 F (25 C)	ATSDR	62 499	0 31	0.00031	4.9601E-06			
SUBSTITUTED															· · · · · · · · · · · · · · · · · · ·				2.0001	4.80012:00	0.0000	2.5896E-04	3
ES/PROPENES		1 1			]	j								-	}		] [		- 1			1	
(n=6) 3	3-Chiloropropene	107-05-1	C <sub>3</sub> H <sub>5</sub> Cl	8.6085	-1.75E+03	6.08E-01	-7.17E-03	5.22E-06		298.16	l	x	368.68	368	77 F (25 C)	HSD <b>B</b>	76.53	l	ا	0.0000E+00	, , , , ,		
1	1,1-Dichloropropane	78-99-9	C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	5.4819		2.6014				298.16		x	52.12		1250/	1,000	112.99		<u>-</u>	0.0000E+00	0.0000	0.0000E+00	
1	1,2-Dichioropropane	78-87-5	C <sub>3</sub> H <sub>7</sub> Cl <sub>2</sub>	6.9654		221			28	<del></del>	x		57.41	50	77 F (25 C)	HSDB	112.99	0.0217	0.0000217	0.0000E+00 1.9205E-07	0.0000	0.0000E+00	
	cis-1,3-Dichloropropene	10061-01-5	C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub>	3.6589		3.0769	-1.09E-02	6.49E-06		298.16		x	61.30		77 F (25 C)	HSDB	110.97	J.UZ 17	0.0000217	0.0000E+00	0.0000	1.9923E-07	2
	trans-1,3-Dichloropropene	10061-02-6	C3H4Cl2	3.6589		3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	18.5		HSDB	110.97	·	<del>,</del>	0.0000E+00	0.0000	0.0000E+00 0.0000E+00	
1	1,2,3-Trichloropropane	96-18-4	C3H5G3	7.0028	1484.1	204.01			25		X		3.33		77 F (25 C)	HSDB	147.43			0.0000E+00	0.0000	0.0000E+00	
		1 T			I												1 1		<del></del> 1	U.UUUETUU	0.0000	0.0000E+001	
CELLANEOUS	Acetonitrile	Jl	l								ĺ		İ		- 1			I		j		i	
		75-05-8	C <sub>2</sub> H <sub>3</sub> N	7.0735		224.01			25		<u>X</u>		86.37	87	75 F (24 C)	HSDB	41.052	l	0	0.0000E+00	0.0000	0.0000 <del>E+</del> 00	
	Acrylonitrile	107-13-1	C <sub>3</sub> H <sub>3</sub> N	6.9163		2.2201E+02			25		X	I	105.83		73 F (23 C)	HSDB	53.06		0	0.0000E+00	0.0000	0.0000E+00	
	Acrolein Carbon Disulfide	107-02-8	C3H4O	57.9815		-19.6380	1.1486E-02	-2.3854E-14		298.16		X	274.35	210		MDL, 1996	58.08		0	0.0000E+00	0.0000	0.0000E+00	······································
	Jaroon Disumoe I-Chiloropentane	75-15-0 543-59-9	CS <sub>2</sub>	6.9419	1168.62	241.54			25		X	اـــــا	360.99	297	68 F (20 C)	HSDB	78.14		0	0.0000E+00	0.0000	0.0000E+00	
			C <sub>s</sub> H <sub>1</sub> ,a	4.4886		7.8088	-2.3675E-02	1.4884E-05		301.16		X	38.21				106.60	T					
	Diethyl Ether	80-29-7	C <sub>4</sub> H <sub>10</sub> O	6.92032	1064.07	228.8			25		X		534.28		77 F (25 C)	HSDB	74.12			0.0000E+00	0.0000	0.0000E+00	
	,4-Dioxane	123-91-1	C4H6O5	20.5761	-2.47E+03	4.3845	-2.71E-10	8.52E-07		298.16		Х	38.20	37		HSOB	88.106		0	0.0000E+00	0.0000	0.0000E+00	
	pichlorohydrin	106-89-8	C <sub>3</sub> H <sub>5</sub> CIO	24.764			-1.1011E-10	5.3331E-07		298.16	I	Х	16.50	13	68 F (20 C)	MDL, 1996	92.53		0	0.0000E+00	0.0000	0.0000E+00	
	Thyl Methacrylate	97-63-2	C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16	I	X	20.59	14	68 F (20 C)	HSD <b>B</b>	114.14			0.0000E+00	0.0000	0.0000E+00	
	Etrylene Oxide	75-21-8	C+H+O	7.2701	1115.1	244.15			25		X	1	1,339.85		77 F (25 C)	HSDB	44.06		o	0.0000E+00	0.0000	0.0000E+00	
	lexachiorobutadiene	87-68-3	c,a,	35.591	-4.138E+03			5.9012E-07		298.16	I	X	0.22	0.15	68 F (20 C)	HSDB	260.76		ol	0.0000E+00	0.0000	0.0000E+00	
	lexachiorocyclopentacliene	77-47-4	C <sub>1</sub> C <sub>1</sub>	-9.7942	-3.32E+03	10,171	-2.11E-02	9.02E-08		298.16	I	X	0.06	0.08	77 F (25 C)	MDL, 1996	272.77		ol ol	0.0000E+00	0.0000	0.0000E+00	
	sophorone	78-59-1	C <sub>6</sub> H <sub>14</sub> O	0.5931	-4.6647E+03	7.3558	-2.2339E-02	1.0189E-05		298.16		Х	0.0025	0.26	68 F (20 C)	MDL, 1996	138.2		ol	0.0000E+00	0.0000	0.0000E+00	
	ropionitrie	107-12-0	C <sub>3</sub> H <sub>5</sub> N	6.9301	1277.2	218.01	I		25		X	T	47.24	40	72 F (22 C)	HSDB	55.08		ol	0.0000E+00	0.0000	0.0000E+00	
	etrahydrofuran	100-00-0	C1H1O	34.87	-2.75E+03	9.5958	1.99E-10	3.55E-06		298.16		X	162.18	131	68 F (20 C)	HSDB	72.107			0.0000E+00	0.0000	0.0000E+00	·

Appendix D-10-1

## Chemical Waste Management, Inc. Emelie, Alabama Facility Tanks T-1701 and T-1702 · Leachate Vapor Pressure Determination

																	10.070	Total Mass	999.98655/3	5.5340E+01	1.0000	28.4000	
	Water	7732-18-5	H₂O	29.8605	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16		х	28.40	23.756	77 F (25 C)	Yaws	18,070	999,986,56	999.9865573				2.78
	PCB 1016-1280	<del>                                     </del>								301,16			1.0E-04 max				292	0.338	0.000338	1.1575E-06	0.0000		^
		1	- 241 - 54 - 4		1.555.5400	2.107		5.400C-00		200.10	<del> </del>	1	7.3E-08				390.56		0	0.0000E+00	0.0000	0.0000E+00	<del></del>
	Dioctyl Phihalate	117-84-0	C24H36O4	27.8473		-2.1134		6.2365E-06		298.16	<del> </del>	X	5.9E-05 7.3E-08	1.82E-02	77 F (25 C)	Schwarzenbach	194.19	I	0	0.0000E+00	0.0000	0.0000E+00	
·	Dimetry Phihelate	131-11-3	C10H10O4	12.6974	-7.0747E+03	-0.3463	-7.6524E-03	3.4691E-06 3.349E-06		298.16	<del> </del>	X	4.9E-04	6.32E-03		Schwarzenbach	222.28			0.0000E+00	0.0000	0.0000E+00	
727	Diethyl Phthalate	84-66-2	C12H14O4	72,1438	-7.0747E+03	-51.170 -21.029	-3.2404E-10	3.4691E-06		298.16	<del> </del>	X	1.1E-05	7.26E-05		Schwarzenbach	278.34		0	0.0000E+00	0.0000	0.0000E+00	
	Dibutyl Phihelate	84-74-2	C18H22O4	152,675	-1.0754E+04	-51,170	1.6933E-02	2.4948E-14		298,16	l	١.,	,,,,,	7005						l			
PHTHALATES					]					İ							1			V.000E+00	0.0000	0.0000E+00	
	Pyrene	129-00-0	C14H10	70.7671	-6.9413E+03	-21.79	6.0727E-03	1.5767E-12		298.16		X	2.4E-05	2.5E-06	77 F (25 C)	ATSDR	202.26			0.0000E+00	0.0000	0.00002700	
	Phenanthrene	85-01-8	C14H10	50.2858		-13.935		2.1343E-06		298.16		Х	5.5E-04	9.6E-04	77 F (25 C)	ATSDR	178.22			0.0000E+00	0.0000	0.0000E+00	
	Naphthalene	91-20-3	C <sub>10</sub> H <sub>8</sub>	7.01065		201.859			25		X		2.3E-01	0.05	68 F (20 C)	MDL, 1996	128.16			0.0000E+00	0.0000	0.0000E+00	
	Fluorene	86-73-7	C13H10	53.9382		-16.059	4.5693E-03	8.143E-13		298.16		Х	3.8E-03	7.1E-04		ATSDR	166.21			0.0000E+00	0.0000	0.0000E+00	
	Ruoranthene	206-44-0	C <sub>16</sub> H <sub>10</sub>	70.6802		-2.2241E+01		-6.3035E-13		298.16		Х	1.1E-04	5.0E-06	77 F (25 C)	ATSDR	202.26			0.0000E+00	0.0000	0.00002.00	
	Chrysene	218-01-9	C18H12	-50.1566		25.178	-2.462E-02	7.0144E-06		298.16		X	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.28	<del></del>		0.0000E+00	0.0000	0.00002100	
	Chloronaphthalene	25586-43-0	C <sub>10</sub> H <sub>7</sub> G	93.776		-30.859	1.0748E-02	-3.2318E-14		298.16		X	0.0205		. , 3/		162.61			0.0000E+00	0.0000		
	Anthracene	120-12-7	C14H10	-120.0992	4.478	52.574	-4.7696E-02	1.5020E-05		298.16	T	X	1.3E-03	1.7E-05	77 F (25 C)	ATSDR	178.23	<del>  </del>		0.0000E+00	0.0000	1.00002100	
(n=0)	Acenephthene	83-32-9	C12H10	28.8173	4.1623E+03	-8.775	-1.0872E-09	6.3928E-07		298.16	1	x	1.4E-02	4.47E-03		ATSDR	154.21			]		1	•
PAHe	J			1		1				l		l	ı								0.000	U.0000E+00	<del> </del>
	1 101 100	100-93-2	Ceneu	7.1345	1516.07	174.57	<b></b>		25		X	<del> </del>	0.34	0.35	77 F (25 C)	MDL, 1996	94.11		(	0.0000E+00	0.0000	0.0000E+00	<u> </u>
	Phenoi	108-95-2	C <sub>6</sub> HCl <sub>5</sub> O C <sub>6</sub> H <sub>6</sub> O	7.544423 7.1345		180.3596			25	<del> </del>	X	<del> </del>	0.000256	0.00017		Crosby, 1981	266.35			J.5500E10	0.000	0.0000E+00	<b></b>
	4-Methylphenol Pentachlorophenol	106-44-5 87-86-5	C <sub>7</sub> H <sub>8</sub> O	7.0351		161.86			25	<b>↓</b>	X	ļ	0.00	0.11	100	ATSDR	108.140			0.0000E+0	0.000	0.00002700	
	3-Methylphenol	108-39-4	C₁H <sub>8</sub> O	7.508		199.07	1		25	<u> </u>	X	L	0.17	0.138	77 F (25 C)	ATSDR	108.140			0.0000E+0	0.000	0.00002700	
	2-Methylphenol	95-48-7	C <sub>7</sub> H <sub>8</sub> O	6.9117	1435.5	165.16			25	L	X		0.23	0.299	77 F (25 C)	ATSDR	108,140	<del>                                     </del>		0.0000E+0	0.000		1
	2,4-Dimethylphenal	105-87-9	C <sub>8</sub> H <sub>10</sub> O	53.3866		-15.095	-1.3196E-09	2.8455E-06		298.16		х	1.0E-01	10	198 F (92.3 C)	HSDB	122.18	$\vdash$		0.0000E+0	<del> </del>		
	2,4-Dichlorophenol	120-83-2	C4H4Q40	7.497876		199.36			25		X		0.12	1	127 F (53 C)	MDL, 1996	120.50	<del>  </del>		0.0000E+0	0.000	0.0000E+00	<b>1</b>
AROMATIC ALCOHOLS (n=8)	2-Chilorophenol	95-57-8		18,2831			8.3047E-10	1.8341E-06		298.16		_x	2.78	1	53.8 F (12.1 C)	MDL 1996	128.56						
		100 120	O81110	0.0003	1433.43	215.30	<del> </del>			<del>                                     </del>	<del>  ^</del>	<del> </del>	8.70	8.84	77 F (25 C)	ATSDR	106.167			0.0000E+0			<del></del>
	1.4-Xviene	106-42-3		6.99052					25 25	<del> </del>	X	<del> </del>	8.30		77 F (25 C)	ATSDR	108.167			0.0000E+0		0.0000LT00	<del>]</del>
-	1,3-Xviene	108-38-3	C <sub>8</sub> H <sub>10</sub>	7.00908	<del></del>	213.686		<b></b>	25	+	X	+	6.62		83 F (28.3 C)	ATSDR	106.167			0.0000E+0	0.000	0.00002100	<del>}</del>
	1,2-Xylene	95-47-6		6.99891		213.686	2.0384E-04	-7.0001E-14		298.16	+	X	0.43		101 F (38.4 C)	MDL, 1996	181.46			0.0000E+0		0.00002 0.	
	1.2.4-Trichlorobenzene	120-82-1	C <sub>7</sub> H <sub>8</sub> C <sub>8</sub> H <sub>3</sub> G <sub>3</sub>	6.95464 15.5947		219.48		7.00045 **	28		X	<del></del>	33.17	28.5		Yaws, 1992	92.141	5.54	0.0055		5 0.000	0.00002.700	
	Nitrobenzene Toluene	98-95-3	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	-54,4937		29.32		2.0162E-05	<b>!</b>	298.16	<b>I</b>	X	0.25			ATSDR	123.11			0.0000E+0	0.000		
	Hexachiorobenzene	118-74-1	C <sub>e</sub> Cl <sub>e</sub>	-134.3625		<del></del>	-6.5123E-02			298.16	<del> </del>	X	4.824E-0		77 F (25 C)	Schwarzenbach	284.79		0.0000	0.0000E+0	0.000	11.0102.0	
	Ethythenzene	100-41-4	C <sub>8</sub> H <sub>10</sub>	6.95710		213.20		<u> </u>	28		X		11.28	9.53	77 F (25 C)	ATSOR	106.167	0.601	0.00060	0.0000E+0 1 5.6609E-0	0.000		
<del></del>	2,6-Dinitrotoluene	606-20-2	C <sub>7</sub> H <sub>6</sub> N <sub>2</sub> O <sub>4</sub>	-14.5673		12.90-		9.4513E-06		298.16		X	5.9E-04	1.80E-02		MDL 1996	182.14	1		0.0000E+0	0.000		
	2,4-Dinitrotoluene	121-14-2	C7HeN2O4	11.596		-1.6464	1.5949E-03	-1.8722E-14		298.16		X	8.1E-03	5.1E-03	68 F (20 C)	ATSOR	182.14	<del> </del>		0.0000E+0	0.000		o T
	1,4-Dichlorobenzene	108-46-7	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	6.99	8 1575.11	208.5			25		X		1.71			ATSOR	147.010			0.0000E+0	0.000		O .
	1,3-Dichlorobenzene	541-73-1	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	7.303	7 1782.4	230.0			25	T	X	†	2.0			MDL 1996	147.010	<del>}</del>		0.0000E+0	0.000	0.0000ETO	
	1,2-Dichlorobenzene	95-50-1	C <sub>4</sub> H <sub>4</sub> Cl <sub>2</sub>	7.070			2		25	<del>†                                     </del>	X	<del>                                     </del>	1.4	1.47		HSDB HSDB	112.558 147.010	0.184	0.00018	1.007723	0.000		
	Chlorobenzene	108-90-7	C <sub>6</sub> H <sub>6</sub> Cl	6.978		217.5	1		28	200.10	X	<del>† ^</del>	14.14		72 F (22 C) 77 F (25 C)	MDL 1996	126.56			0.0000E+0	0.000		
	Benzyl Chloride	100-44-7	C <sub>6</sub> H <sub>6</sub> C <sub>7</sub> H <sub>7</sub> G	12,150				2.63E-06		298.16	<del>  ^</del> -	X	109.13	95.2	1	ATSDR	78.114		0.0014	9 1.9075E-0	0.000	3.7617E-0	5
	() Benzene	71-43-2		6,9056					28														

contact Dr. David Dolan in Cosp. EH&S at (630) 218-1537

1701 and 1702 94.64 (25,000)

## Chemical Waste Management, Inc. Emelle, Alabama Facility Tanks T-1703 and T-1704 Leachate Vapor Pressure Determination

		1	Molecular	T	An	toine's Coeffk	plente		Tem	perature	1	T	Estimated Vapor Pressure	Marrie *	Manage -								
	CHEMICAL	CAS #	Formula	_	T 8	C	T D	T E	C		Egn. A	Egn. B			Measurement Conditions	<b></b>		Cono	Mass of Chemical	# of Moles of Chemical	Mole Fraction of Chemical	Vapor Pressure of Chemical	V
PHATICS				1	<del>                                     </del>		<del>                                     </del>	1	† <u> </u>	<del>- ``</del>	1		ar renp junit no	V.P.	CONGROVE	[Ref.]	Mol. Wt.	(mg/L)	in Mixture (g/L)	in Mibiture (per L)	in Mixture	at T and Total V.P. (mm of Hg)	Vapor Pressure of Ci at T and Total V.P.
	1		1	l	ı	ļ	1		1		1	1	1	1			1	l				THE COLOR	at 1 and 10th V.P.
ACETATES				1	ŀ	1	1					l .		ł			1			i	1		
(n=7	n-Butyl Acetate	123-86-4	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4.38	-2.71E+03	3.983	-1.66E-0	2 9.72E-06	s	298.16	1	x	11.5	19	5 77 F (25 C)	HSDB	116.160	İ		ĺ	]		
	Ethyl Acetate	141-78-8	C,H,Oz	0.895	2.25E+03	5.484	3 -1.95E-0	2 1.24E-05	5	298.16		X	93.4		0 81 F (27 C)	HSDB	88,108			0.0000E+00	0.0000	0.0000E+00	
	Isobutyl Acetate	110-19-0	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	35.122	-3.24E+03	-9.389	1.79E-1	1 2.67E-06	3	298.16		X	17.8		0 55 F (12.8 C)	HSDB				0.0000E+00	0.0000	0.0000E+00	
	Isop ropyl Acetate	108-21-4	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	22.206	-2.50E+03	-4.897	-2.79E-1	8.34E-07	4	298.16	1	X	60.3			HSDB	116.160			0.0000E+00	0.0000	0.0000E+00	
	Methyl Acetate	79-20-9	C3H4O2	33.723	-2.72E+03	-9.118	2 -9.43E-1	1 3.31E-06	1	298.16	1	X	214.4			HSDB	102.150			0.0000E+00	0.0000	0.0000E+00	
	n-Propyl Acetate	109-60-4	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	43.054	-3.47E+03	-1.22E+0	1 2.47E-10	3.75E-06	1	298.16		X	33.3			HSDB	74.079			0.0000E+00	0.0000	0.0000E+00	
	Vinyl Acetate	108-05-4	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	12.72	-2.18E+03		4.57E-0	<del></del>		298.16	<b>†</b>	X	114.5			HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	
				1	1	<del>                                     </del>	1	1			1	<del>                                     </del>	1	~ <del>                                     </del>	77 F (23 C)	HSUB	86.090		0	0.0000E+00	0.0000	0.0000E+00	
ALCOHOLS	<b>보</b>	1	l	1		1	1	1	i		1			1			1 1					3,000,000	
(n=0)	n-Butyl Alcohol	71-36-3	C <sub>4</sub> H <sub>16</sub> O	7.4768	1362.39	178.7	3		25		X	l	6.1	6 5.5	5 68 F (20 C)	HSDB	74.122				l i		
	sec-Butyl Alcohol	78-92-2	C4H10O	7.474	1314.19	186.5	ı		25		X		18.2			HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	
	tert-Butyl Alcohol	75-65-0	C <sub>4</sub> H <sub>10</sub> O	7.3199	1154.48	177.60	5		25		X		42.0	0 41.7		HSDB	74.122			0.0000E+00	0.0000	0.0000E+00	
	Ethyl Alcohol	64-17-5	C₂H <sub>€</sub> O	8.2133	1652.05	231.44	3	1	25		X		59.1			Gallant & Yaws, Volume 1	46.069		- 0	0.0000E+00	0.0000	0.0000E+00	
	Isobutyl Alcohol	78-83-1	C₄H₁₀O	109.2803	-6.31E+03	-3.69E+0	1.45E-0	-3.95E-13		298.16	1	X	10.4		71.1 F (21.7 C)	HSDB			0	0.0000E+00	0.0000	0.0000E+00	
	isopropyl Alcohol	67-63-0	C <sub>3</sub> H <sub>8</sub> O	8.1182	1580.92	219.62	2		25	1	X		45.2			HSDB	74.122			0.0000E+00	0.0000	0.0000E+00	
	Methyl Alcohol	67-58-1	CH40	8.0724	1574.99	238.87	<del>-</del>		25	1	X		126.9			Gallant & Yaws, Volume 1	60.096		0	0.0000E+00	0.0000	0.0000E+00	<del></del>
	n-Propyl Alcohol	71-23-8	C <sub>3</sub> H <sub>6</sub> O	7.6192	1375.14	193.01		<b>†</b>	25	†	X	<del> </del>	20.4				32.042		0	0.0000E+00	0.0000	0.0000E+00	
	2-Butoxyethanol	111-76-2	C <sub>6</sub> H <sub>14</sub> O	-39.3735		2.57E+0	-5.73E-02	3.27E-05		298.16	<del>                                     </del>	X	0.8	+	77 F (25 C)	HSDB	80.098		0	0.0000E+00	0.0000	0.0000E+00	
		T			1		1	T	1	1	<del>                                     </del>	† ^	1	+	, ,, , (23 C)	HSDB	118.200		0	0.0000E+00	0.0000	0.0000E+00	
KETONES	N .	I		i	1	1	1	1	1		1	1	Ī	1			1 1	- 1				0.00002700	
(n=3)	Acetone	67-64-1	C <sub>3</sub> H <sub>6</sub> O	28.5884	-2.47E+03	-7.351	2.80E-10	2.74E-06		298.16	L	x	229.7	1 231	77 F (25 C)	HSDB		1	ı			1	
	Methyl Ethyl Ketone	78-93-3	C4H <sub>6</sub> O	7.2087	1366.21	236.51			25		X		94.71	<del></del>	77 F (25 C)	ATSDR	58.080		0	0.0000E+00	0.0000	0.0000E+00	
	Methyl Isobutyl Ketone	108-10-1	C <sub>6</sub> H <sub>12</sub> O	64,1919	4.36E+03	-1.96E+01	-4.00E-10	7.10E-06		298.16		X	19.84		68 F (20 C)	HSDB	72.107		0	0.0000E+00	0.0000	0.0000E+00	
	1			I			T	1		T	T	1		† - <del>' ' ' '</del>	(250)	naue	100.16			0.0000E+00	0.0000	0.0000E+00	
SUBSTITUTED		I		l	1	l	1		l		i		1	1			1 1	J	ļ				
METHANES		1		1	1	l		I	Ī	1	1		1	1			1 1	I	i			Į.	
(r=0)	Bromoform	75-25-2	CHBr <sub>3</sub>	-10.2943				7.4917E-06	<del></del>	298.16		X	5.51	1 5.6	68 F (20 C)	MDL, 1996	252.75	ł			]		
	Chloroform	67-66-3	сна,	6.9371	1.1712E+03	2.27E+02			25		X		194.75	5 195	77 F (25 C)	Yaws, 1992	119.378		- 9	0.0000E+00	0.0000	0.0000E+00	
	Carbon Tetrachloride	56-23-5	cal	6.8941	1.21958E+03	2.2717E+02			25		X		114.22	2 108	77 F (25 C)	HSDB	153.823		- 9	0.0000E+00	0.0000	0.0000E+00	
	Dichlorodifluoromethane	75-71-8	CG <sub>2</sub> F <sub>2</sub>	6.68619	782.072	235.377	1		25		X		4,814.78		70.0 F (21.1 C)	MDL, 1996	120.91			0.0000E+00	0.0000	0.0000E+00	
	Methyl Bromide	74-83-9	CH <sub>2</sub> Br	6.9597	9.8659E+02	2.3833E+02			25		X		1,633.46			HSDB	94.95		9	0.0000E+00	0.0000	0.0000E+00	
	Methyl Chloride	74-87-3	CH3CI	6.9944	9.0245E+02	2.4361E+02			25		X		4,312.17			MDL, 1996	50,49			0.0000E+00	0.0000	0.0000E+00	
	Methylene Bromide	74-95-3	CH <sub>2</sub> Br <sub>2</sub>	35.3525	-3.04E+03	-9.5972	5.83E-10	2.94E-06		298.16		Х	45.24		73.9 F (23.3 C)	HSDB	173.83		- 9	0.0000E+00	0.0000	0.0000E+00	
	Methylene Chloride	75-09-2	CH <sub>z</sub> Cl₂	7.0803	1138.91	231.46			28		X		490.64		75.4 F (24.1 C)	HSDB	84.933			0.0000E+00	0.0000	0.0000E+00	
	Trichiorofluoromethane	75-69-4	CO <sub>3</sub> F	6.8843	1,043.01	236.86			25		Х		796.56			MDL 1996	137.38	0.918	0.000918	1.0809E-05	0.0000	9.5827E-05	1.3
					I									1	301 (200)	MUL, 1990	137.38	∤	o	0.0000E+00	0.0000	0.0000E+00	
SUBSTITUTED					l		Ì	1						1 :			1 1	i	l l	i			
HANES/ETHENES		-									1			1	1			1	i		i	1	
(n=16)	Chloroethane	75-00-3	C <sub>2</sub> H <sub>5</sub> Cl	6.94	1.01278E+03			<u> </u>	25	1	X		1,174.09	1,000	68 F (20 C)	MDL, 1996	64.52	- 1			Į.		
	1,2-Dibromoethane	106-93-4	C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub>	6.72148		201.75			25		Х		11.83			HSDB	187.88		0	0.0000E+00	0.0000	0.0000E+00	
	1,1-Dichloroethane	75-34-3	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	33.38		-9.1336	-2.8388E-11	3.7323E-06		301.16		X	257.84	230		ATSDR	98.960	2.16		0.0000E+00	0.0000	0.0000E+00	
	1,2-Dichloroethane	107-06-2	C2H4Cl2	48.4226	-3.1803E+03	-15.37	7.2935E-03	2.6844E-14		301.16		X	91.17			EPA, 1992	98.960	0.254	0.00216	2.1827E-05	0.0000	1.0162E-04	1.3
	1,1-Dichloroethene	75-35-4	CzHzClz	-18.5419	-1.6655E+03	1.3923E+01	-4.0958E-02	2.9995E-05		301.16		X	669.37	591		ATSDR	96.944	0.103	0.000254	2.5867E-06	0.0000	4.2283E-06	5.6
	cis-1,2-Dichloroethene	158-59-2	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	7.0223	1205.4	230.6			25		Х		202.46	215		ATSDR	96.944	0.103	0.000103	1.0625E-06	0.0000	1.2851E-05	1.7
	trane-1,2-Dichloroethene	158-80-5	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	48.4574		-14.694	-2.1262E-09	7.3465E-06		298.16		X	333.33	336	77 F (25 C)	ATSDR	96.944		- 0	0.0000E+00	0.0000	0.0000E+00	
	Hexachloroethane	67-72-1	C <sub>2</sub> Cl <sub>4</sub>	7.08633	1626.945	197.048			25		Х		0.57			HSDB	236.74			0.0000E+00	0.0000	0.0000 <b>E+00</b>	
	1,1,1,2-Tetrachioroethane	630-20-6	C2H2CI4	-1.07112	-2.51E+03	6.1536	-1.88E-02	1.05E-05		298.16		X	12.07	14		HSDB	167.85			0.0000E+00	0.0000	0.0000E+00	
	1,1,2,2-Tetrachloroethane	79-34-5	C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	56.2356	-4.4815E+03	-18.556	-3.5724E-10	4.0425E-06		298.16		X	4.62	8	68 F (20 C)	MDL, 1996	167.85		- 0	0.0000E+00	0.0000	0.0000E+00	
	Tetrachioroethene	127-18-4	C <sub>2</sub> Cl <sub>4</sub>	7.02	1415.49	221.10			28		X		21.76	18.47	77 F (25 C)	HSDB	165.834	0.839	- 0	0.0000E+00	0.0000	0.0000E+00	
	1,1,1-Trichloroethane	71-55-8	C₂H₃Cl₃	36.5468	-2.8421E+03	-10.205	-2.6369E-09	3.7075E-06		298.16		х	123.74			ATSDR	133,405	0.839	0.000839	5.0593E-06	0.0000	1.9890E-06	2.6
	1,1,2-Trichloroethane	79-00-5	C <sub>2</sub> H <sub>3</sub> G <sub>3</sub>	6.9653	1,351.0	217.0			25		X		24.14		77 F (25 C)	HSDB	133,405		0	0.0000E+00	0.0000	0.0000 <b>E+00</b>	
	Trichloroethene	79-01-6	C₂HCl₃	7.0281	1,315.1	230.01			28		Х		85.31		77 F (25 C)	ATSDR		<del>- , , ,  </del>	<u></u>	0.0000E+00	0.0000	0.0000E+00	
	1,1,2-Trichioro-1,2,2-Trifluorethane	76-13-1	C₂Q₃F₃	33.7192	-2.53E+03	-9.3175	1.46E-08	3.94E-06		298.16		х	331.76	363.6		HSDB	131.389	0.684	0.000684	5.2059E-06	0.0000	8.0255E-06	1.0
	Vinyl Chloride	75-01-4		6.4971	7.834E+02	2.3001E+02			28		x		2,889.24		77 F (25 C)		187.38		<u>0</u> _	0.0000E+00	0.0000	0.0000E+00	
													2,000.24		· · · · · · · · · · · · · · · · · · ·	ATSDR	62,499	0.31	0.00031	4.9601E-06	0.0000	2.5896E-04	3.4
SUBSTITUTED			İ					!		I		J			j		i	1	1				
NES/PROPENES		, <u>.</u>							.			i	1		1	ļ	ı	ļ	J			ı	
(n=6)	3-Chioropropene	107-05-1	C <sub>3</sub> H <sub>6</sub> Cl	8.6085	-1.75E+03	6.08E-01	-7.17E-03			298.16		X	368.68	368	77 F (25 C)	HSDB	76.53		ړ	0.00005	ſ	ı	
	1,1-Dichloropropane	78-99-9	C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	5.4819	-2.1918E+03	2.6014	-1.1751E-02	7.3435E-08		298.16	T	X	52.12				112.99	<del></del>		0.0000E+00	0.0000	0.000 <b>0E+00</b>	
	1,2-Dichloropropane	78-87-5	C <sub>3</sub> H <sub>7</sub> Cl <sub>2</sub>	6.9654	1296.4	221		I	28	T	X		57.41	50	77 F (25 C)	HSDB	112.99	0.0217	0.0000217	0.0000E+00	0.0000	0.0000E+00	
	cis-1,3-Dichloropropene	10061-01-5	C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub>	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06	I	298.16	T	X	61.30		77 F (25 C)	HSDB	110.97	0.0217	0.00021/	1.9205E-07	0.0000	1,9923E-07	2.6
	trans-1,3-Dichloropropene	10061-02-6	C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub>	3.6589		3.0769	-1.09E-02	6.49E-06		298.16		X	61.30	18.5		HSDB	110.97		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	1,2,3-Trichloropropane	96-18-4	C₃H₅Cl₃	7.0028	1484.1	204.01			25		Х		3.33		77 F (25 C)	HSDB	147.43		- 0	0.0000E+00	0.0000	0.0000E+00	
		Ι Τ	T		I												17/,43		o	0.0000E+00	0.0000	0.000 <b>0E+00</b>	
CELLANEOUS		! <u></u> !			i				l			ı			1	I	ļ	- 1	1	T			
	Acetonitrile	75-05-8	C <sub>2</sub> H <sub>3</sub> N	7.0735	1279.2	224.01			25		x		86.37	87	75 F (24 C)	HSDB	41.052		J		į	i	
	Acrylonitrile	107-13-1	C <sub>3</sub> H <sub>3</sub> N	6.9163	1.2083E+03	2.2201E+02			25		X	T	105.83	100	73 F (23 C)	HSDB	53.06		<u>-</u>	0.0000E+00	0.0000	0.0000E+00	
	Acrolein	107-02-8	C₃H₄O	57.9815	-3.0933E+03	-19.6380	1.1486E-02	-2.3854E-14		298.16		X	274.35	210	68 F (20 C)	MDL, 1996	56.06		<u></u>	0.0000E+00	0.0000	0.0000E+00	
	Carbon Disulfide	75-15-0	C8 <sub>2</sub>	6.9419	1168.62	241.54			25		X		360.99	297	88 F (20 C)	HSDB			<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	1-Chloropentane	543-59-9	C <sub>5</sub> H <sub>11</sub> Cl	-4.4886	-2.2604E+03	7.8088	-2.3675E-02	1.4884E-05		301.16		×	38.21			11308	76.14		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	Diethyl Ether	60-29-7	C <sub>4</sub> H <sub>10</sub> O	6.92032	1084.07	228.8			25		X		534.28	537	77 F (25 C)	HOOD	106.60						
	1,4-Dioxane	123-91-1	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	20.5761	-2.47E+03	-4.3645	-2.71E-10	8.52E-07		298.16	<del></del>	×	38.20		77 F (25 C)	HSDB	74.12		0	0.0000E+00	0.0000	0.0000E+00	
	Epichlorohydrin	106-89-8	C <sub>3</sub> H <sub>5</sub> CKO	24.764	-2.8846E+03	-5.6252	-1.1011E-10	5.3331E-07	<del></del>	298.16		- <del>x</del>				HSDB	88.106		0	0.0000E+00	0.0000	0.0000E+00	
·····i	Etnyl Methacrylate	97-63-2	C <sub>4</sub> H <sub>10</sub> O <sub>5</sub>	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16	<del></del> +	<del>-</del>	16.50	13	68 F (20 C)	MDL, 1998	92.53		0	0.0000E+00	0.0000	0.000E+00	<del></del>
	Ethylene Oxide	75-21-8	C <sub>2</sub> H <sub>4</sub> O	7.2701	1115.1	244.15	- E.WE-10	1.002-00	- 24	400.10	<del></del>		20.59	14		HSDB	114,14		a	0.0000E+00	0.0000		······································
	Hexachiorobutadiene	67-68-3		35.591	-4.138E+03	-9.0606	2 00255 12	500105 0-	25		X	<del></del> _+	1,339.85		77 F (25 C)	HSDB	44.08		o	0.0000E+00		0.0000E+00	
	Hexachlorocyclopentacliene	77-47-4	C <sub>4</sub> Cl <sub>4</sub>	-9.7942	-3.32E+03	10,171	2.9025E-10			298.16		X	0.22	0.15		HSDB	260.76		a	0.0000E+00	0.0000	0.0000E+00	
	leophorone		C <sub>1</sub> C <sub>1</sub>	-9.7942 0.5931			-2.11E-02	9.02E-08		298.16		X	0.06		77 F (25 C)	MDL, 1996	272.77		ol d	0.0000E+00	0.0000	0.0000E+00	
<u>-</u>		78-59-1	C,H,O		4.6647E+03	7.3558	-2.2339E-02	1.0189E-05		298.18		X	0.0025		68 F (20 C)	MDL, 1996	138.2		<del></del>	0.0000E+00	0.0000	0.0000E+00	
	Propionitrile Tetrahyadantaana	107-12-0	C <sub>3</sub> H <sub>6</sub> N	6.9301	1277.2	218.01			25		X		47.24	40	72 F (22 C)	HSDB	55.08	<del></del>	<del></del>	0.0000E+00	0.0000	0.0000E+00	
j	Tetrahydrofuran	109-99-9	C4H4O	34.87	-2.75E+03	-9.5958	1.99E-10	3.55E-06	I	298.16		X	162.18		68 F (20 C)	HSDB	72.107		<u>`</u>		0.0000	0.0000E+00	
		1		I	1		T	1									12.107		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	I	1													Į.	1		- 1	,			0.00002700	

Appendix D-10-1

## Chemical Waste Management, Inc. Emeile, Alabama Facility Tanks T-1703 and T-1704 Leachate Vapor Pressure Determination

OMATICS	1	1 .	1 100	1	1	1	1	4 20 5 46	1											•	•		
(n=16	8) Benzene	71-43-	CH	6.9058	6 1,211,03	220.7			l	1	l		1	ŀ			ı	1	1				1
	Benzyl Chloride	100-44-		12.150					28	<del> </del>	X	<b></b>	109.13	44.0	77 F (25 C)	ATSDR	78.114	1.40	0.0014	9 1.9075E-	0.000	9.7617E-0	5.01
	Chlorobenzene	108-90-		6,978				2.63E-0		296.16		X	1.31		72 F (22 C)	MDL, 1996	126.5	8		0.0000E+	0.000	0.0000E+00	
	1,2-Dichlorobenzene	96-50-		7.070	.,,,,,,,,	217.5			28	ļ	X		14.14		77 F (25 C)		112.556	0.184	0.00018	4 1.6347E-	0.000	4.1764E-07	5.5
	1,3-Dichlorobenzene	541-73-		7.303		213.3			25	<b></b>	X		1.41	7. 41	77 F (25 C)	HSDB	147.010			0.0000E+	0.000		
	1.4-Dichlorobenzene	108-46-		6.99				<b>↓</b>	25	<u> </u>	X		2.08	1.889	77 F (25 C)	MDL, 1996	147.010		1	0.0000E+0			
	2.4-Dinitrololuene	121-14-2		11,596		208.5		<del> </del>	25		X		1.79	1.76	77 F (25 C)	ATSDR	147.010	0	1	0.0000E+0			
	2,6-Dinitrotoluene	608-20-2		-14.567					4	298.16		X	8.1E-03	5.1E-03	68 F (20 C)	ATSDR	182.1	4		0.0000E+0		3,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1	
	Ethylbenzene	100-41-4						2 9.4513E-0		298.16		X	5.9E-04	1.80E-02	68 F (20 C)	MDL 1996	182.1	4		0.0000E+0			
	Hexachlorobenzene	118-74-1		-134,362				<u> </u>	28		X		11.28	9.53	77 F (25 C)	ATSOR	108.167	0.601	0,00060			0.00002,00	1.5
	Nitrobenzene	98-95-3								298.16		X	4.824E-05	2.350E-05	77 F (25 C)	Schwarzenbach	284.79	1		0.0000E+0			1.3
	Toluene	108-88-3		-54.493				2 2.0162E-0	5	298.16		X	0.25	0.15	68 F (20 C)		123.11		<u> </u>	0.0000E+0			
	1,2,4-Trichiorobenzene		C <sub>7</sub> H <sub>8</sub>	6.9546				1	28		X		33.17	28.5	77 F (25 C)		92.141		0.0055				<del></del>
	1,2-Xviene	120-82-1	C <sub>6</sub> H <sub>9</sub> Cl <sub>3</sub>	15.594				4 -7.0601E-14	4	298.16		X	0.43		101 F (38.4 C		181.4		0.0003	0.0000E+0			4.6
	1,3-Xylene	95-47-6	C <sub>8</sub> H <sub>10</sub>	6.9989		213.68	B		25		X		6.62	10	83 F (28.3 C		106.167		<b></b>	0.0000E+0		0.0000	
	1,3-Aylene 1,4-Xviene	106-38-3	C <sub>8</sub> H <sub>10</sub>	7.00906		215.10	54	<u> </u>	25		X		8.30	8.8	<del></del>		106.167		<del></del>	0.0000E+C			
	I,4-Ayiene	106-42-3	C <sub>8</sub> H <sub>10</sub>	6.99052	1453.43	215.30	1		25		X	1	8.76		77 F (25 C)		106.167			0.0000E+C		0.00002100	<b>}</b>
AROMATIC	.[	-1	ł	1		]						<u> </u>	†	5.04	77. (23 0)	Alson	100.107	+		V.0000E+C	0.0000	0.0000E+00	ļ
ALCOHOLS		ı	l	1	J	ı	i	I				l					ı	1	i	1		1	
(n=8)		95-57-8	CeHeCIO					1				J	1				1	1	l	1		I	Ī
	2,4-Dichlorophenol	120-83-2		18.2031				1.8341E-06	<u> </u>	298.16		X	2.78	1	53.8 F (12.1 C	) MDL, 1996	128.5	e l		0.0000€⊬0	0.0000	0.0000E+00	
	2,4-Dimethylphenol		C4H4Q5O	7.497876	1.890E+03			<u> </u>	25		X		0.12	1	127 F (53 C							0.00002700	<u> </u>
	2-Metrylphenol	105-67-9	C <sub>0</sub> H <sub>10</sub> O	53.3866		-15.095	-1.3196E-09	2.8455E-06		298.16		X	1.0E-01	10	198 F (92.3 C		122.1	8		0.0000E+0	0.0000	0.0000E+00	
	3-Methylphenol	95-48-7	C <sub>7</sub> H <sub>6</sub> O	6.9117	1435.5	165.16		<u> </u>	25		X		0.23		77 F (25 C)		108,140	1		0.0000E+0			
	4-Metrytphenol	108-39-4	C <sub>7</sub> H <sub>8</sub> O	7.508		199.07	1		25		X		0.17				108,140			0.0000E-0			
	Pentachlorophenoi	108-44-5	C <sub>7</sub> H <sub>8</sub> O	7.0351		161.86			25		X		0.09	0.11			108.140	1	·	0.0000E+0			
	Phenol	87-86-5	C <sub>6</sub> HCl <sub>6</sub> O	7.544423		180.3596			25		X		0.000256		1		266.35	<del> </del>		0.0000210	0.000	0.000E+00	
	T MANUE	108-95-2	C <sub>6</sub> H <sub>6</sub> O	7.1345	1516.07	174.57			25		X		0.34				94.1			0.0000E+0	0.0000		
PAHe	4-	1		ı									1		(25 0/	MOL, 1880		<del>' </del>	· · · · · · · · · · · · · · · · · · ·	0.0000240	0.000	0.0000E+00	
	Acenephthene	83-32-0				Ì	1	l		- 1							1	1			ł		
	Anthracene	120-12-7	C12H10	28.8173						298.16		X	1.4E-02	4.47E-03		ATSDR	154.2	ıl i		0,0000€∻0	0,0000	0.0000E+00	
·····	Chloronaphthalene	25586-43-0	C14H10	-120.0992	4.478	52.574			LI	298.16		X	1.3E-03	1.7E-05	77 F (25 C)	ATSOR	178.2			0.0000€∻0			
	Chrysene		C <sub>10</sub> H <sub>7</sub> Cl	93.776		-30.859		-3.2318E-14		298.16		X	0.0205				162.6			0.0000E+0			
	Fluoranthene	218-01-9	C18H12	-50.1586				7.0144E-06		298.16		X	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.2		·····	0.0000E-0			
	Puorene	206-44-0	C <sub>16</sub> H <sub>10</sub>	70.6802				-6.3035E-13		298.16		X	1.1E-04		77 F (25 C)		202.20	3		0.0000E+0			
	Naphthalane	86-73-7	C <sub>19</sub> H <sub>10</sub>	53.9382		-16.059	4.5693E-03	8.143E-13		298.16		X	3.8E-03	7.1E-04		ATSDR	166.2	1	· · · · · · · · · · · · · · · · · · ·	0.0000E+0			
	Phenanthrene	91-20-3	C <sub>10</sub> H <sub>e</sub>	7.01085	1,733.71	201.859			25		X		2.3E-01	0.05		MDL, 1998	128.10	j	· · · · · · · · · · · · · · · · · · ·	0.0000E+0			
	Pyrene	85-01-8	C14H10	50.2858	-5.740 <del>9E</del> +03	-13.935	-8.8520E-10	2.1343E-06		298.16		X	5.5E-04	9.6E-04		ATSDR	178.2	;	<del></del>	0.0000E+0			
	, years	129-00-0	CieHio	70.7671	-6.9413E+03	-21.79	6.0727E-03	1.5767E-12		298.16		X	2.4E-05		77 F (25 C)		202.20	1		0.0000E+0			
PHTHALATES	•	1		1											,250/	ATODIC	202.20	1		7 U.UUUE+U	0.0000	0.0000E+00	
	Dibutyl Phthalate	84-74-2	C H C	1			_ '			- 1	- 1		1				ľ					[	
	Diethyl Phihalate	84-66-2	C16H22O4	152.675		-51.170				298.16		X	1.1E-05	7.26E-06	77 F (25 C)	Schwarzenbach	278.34	,		0.0000E+0	0.0000	0.0000€+00	
	Dimethyl Phihalate	131-11-3	C12H14O4	72.1438		-21.029		3.4691E-06		298.16		X	4.9E-04	6.32E-03		Schwarzenbach	222.20			0.0000E+0		0.000E+00	
	Dioctyl Phthalate		C10H10O4	12.6974	-4.1989E+03	-0.3463	-7.6524E-03	3.349E-06		298.16		X	5.9E-05	1.82E-02		9chwarzenbach	194.19	<del> </del>		0.0000E+0			
		117-84-0	C24H3eO4	27.8473	-7.6834E+03	-2.1134	-1.5234E-02	6.2365E-06		298.16		X	7.3E-08				390.56	1	<del></del>	0.0000E+0		1775	
Ĭ,	PCB 1016-1260	1 1		. !	<b>i</b>											<u> </u>	1	1	·	V.5000E-0	1 0000	0.0000E+00	
		1		<del> </del>						301.16	1		1.0E-04 mex				292	0.338	0.000336	1.1575E-0	0.0000	2.0917E-12	2.7
	Water	7732-18-5	H <sub>2</sub> O	29.8805	0.1500F.55					I							<u> </u>	<del>† ******</del>	2.230000	1.13/32-0	1	2.001/E-12	
		1,000	П	29.0005	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16	I	X	28.40	23.756	77 F (25 C)	Yaws	18.070	999,986.56	999.9885573	5.5340E-0	1 1,0000	28,4000	
								L		1	I						1	1		3.53,02.0	1	25.4000	
	If you have any comments or																	Total Mass		Total # of Moles	Check that the Mole Fractions	Total Vapor Pressure	Total Vapor Press
	questions on this program, please																	of Solute		in the Chemical Mixture	sum to 1.00	of the Chemical Mixture (mm Hg)	of the Chemical Mixtur
	contact Dr. David Dolan in Com.																	13.44		55,3397	1.0000	28,4006	

contact Dr. David Dolan in Cosp. EH&S at (630) 218-1537

Tank Number
Tank Size - m² (gale)
Vapor Pressure Limit
kPa (pel) 1703 and 1704 84.64 (26,000) 27.6 (4.0)

## Chemical Waste Management, Inc. Emeile, Alabama Facility Tank T-A Leachate Vapor Pressure Determination

Et lec	CHEMICAL	CAS	Molecular Formula	A	8	toine's Coeffi	D	E	C	ereture K	Egn. A	Egn. B	Vapor Preseure at Temp (mm Hg	Measured V.P.	Measurement Conditions	[Ref.]	Mol.WL		Mass of Chemical in Mixture (g/L)	# of Moles of Chemical in Mixture (per L)	Mole Fraction of Chemical	Vapor Pressure of Chemical	Vapor Pressure of Ch
ACETATES (n=7) n- Et lise MM			T T	T	T	1				-													
(n=7) n- Et lec lec Mc				1	l l		1										1	31.72	II MICELLY	n mocure (per c)	in Mixture	at T and Total V.P. (mm of Hg)	at T and Total V.P.
(n=7) (n- Et lec lec Mc		1		i		1	1			1	i						1 1	l				[	
Et lec	_		ł	ŀ	ı	1	1		1		1	1	j	1			1 1	- 1	ļ			1	
lec lec Mc	n-Butyl Acetate	123-86-4		4.383						298.16		X	11.5	3 15	77 F (25 C)	HSDB	116.160	i	ا	0.0000E+00	0.0000		
lsc Mc	Ethyl Acetale	141-78-6	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	0.6955		5.464		1.24E-0	5	298.16		Х	93.4	3 100	81 F (27 C)	HSDB	88.106		- 0	0.0000E+00	0.0000	0.0000E+00	
M. n-i	sobutyl Acetate	110-19-0		35.1224		9.369		2.87E-0		298.16	L	X	17.8	3 10	55 F (12.8 C)	HSDB	116.160		0	0.0000E+00	0.0000	0.0000E+00	
n-l	sopropyl Acetate	108-21-4	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	22.2084		4.897		<del></del>		296.16		X	60.3	7 59.2	77 F (25 C)	HSDB	102.150		0	0.0000E+00	0.0000	0.0000E+00 0.0000E+00	
	Methyl Acetate	79-20-9	C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	33.7235		-9.118		3.31E-0		298.16	<u> </u>	X	214.4	3 216.2	77 F (25 C)	HSDB	74.079		0	0.0000E+00	0.0000	0.0000E+00	
IA!	n-Propyl Acetate	109-60-4	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	43.0548		-1.22E+0		3.75E-0		298.16	<u> </u>	X	33.3		77 F (25 C)	HSDB	102.15		0	0.0000E+00	0.0000	0.0000E+00	
	Vinyl Acetate	108-05-4	C4H6O2	12.722	2 -2.18E+03	-9.15E-0	1 -4.57E-03	2.97E-0	<b>-</b>	298.16		X	114.5	8 115	77 F (25 C)	HSDB	86.090		ol	0.0000E+00	0.0000	0.0000E+00	
A1 00101 e		l .	1	ł	1		1			1	1	1					1				0.000	0.000E+00	
ALCOHOLS (n=9) n-i	n-Butyl Alcohol	71-36-3	C,H,O		8 1362.39		_1	ļ		ì	۱	i				ļ	1 1					į	
	Healty Alcohol			7.4768				<del> </del>	25	<del> </del>	X	<b>↓</b>	6.1		68 F (20 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	
	ert-Butyl Alcohol	78-92-2 75-85-0	C <sub>4</sub> H <sub>10</sub> O			188.5		<del> </del>	25	<del> </del>	X	<del> </del>	18.24		77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	
	Ethyl Alcohol	84-17-5	C <sub>4</sub> H <sub>10</sub> O	7.3196 8.2133		177.60		<del> </del>	25	<del> </del>	X	<del> </del>	42.0		77 F (25 C)	HSDB	74.122		0	0.0000E+00	0.0000	0.0000E+00	
	sobutyl Alcohol		C₂H <sub>e</sub> O			231.4		2255.4	25		X	<del> </del>	59.1			Gallant & Yaws, Volume 1	46.069		0	0.0000E+00	0.0000	0.0000E+00	·
	sopropyl Alcohol	78-83-1 67-63-0	C4H10O	109.2803		-3.69E+0		-3.95E-1		298.16	<u> </u>	X	10.45		71.1 F (21.7 C)		74.122		0	0.0000E+00	0.0000	0.0000E+00	
	Wethyl Alcohol		C3H8O	8.1182		219.6		<del> </del>	25	<del>                                     </del>	X	<del> </del>	45.2		77 F (25 C)	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	
	n-Propyl Alcohol	67-56-1	CH40	8.0724		238.87			25		X	<b></b>	126.9			Gallant & Yaws, Volume 1	32.042		0	0.0000E+00	0.0000	0.0000E+00	
		71-23-8	C <sub>2</sub> H <sub>6</sub> O	7.6192		193.01			25	<del> </del>	X	<u> </u>	20.40		<del></del>	HSDB	60.096		0	0.0000E+00	0.0000	0.0000E+00	
	-Butoxyethanol	111-76-2	C <sub>6</sub> H <sub>14</sub> O	-39.3735	-3.01E+03	2.57E+01	1 -5.73E-02	3.27E-0	4	298.16	<b>-</b>	x	0.8	0.88	77 F (25 C)	HSDB	118.200			0.0000E+00	0.0000	0.0000E+00	
KETONES		1 .	l	1	1	l	I	l	l	1	1	1					1			1		0.0002700	
(n=3) Ac	Acetone	67-64-1	C <sub>3</sub> H <sub>6</sub> O	28.5884	-2.47E+03	-7.351	1 2.80E-10	2.74E-00	J	298.16	1	l x	l		77.5 /25 4		1 _ 1	l	I	ŀ		i	
	Nethyl Ethyl Ketone	78-93-3	C <sub>4</sub> H <sub>6</sub> O	7,2087		236.51		2./90-00	25	295.15	<u> </u>	<del>  ^</del>	229.7		77 F (25 C)	HSDB	58.080	L		0.0000E+00	0.0000	0.0000E+00	
	Methyl Isobutyl Ketone	108-10-1		84,1919				7.10E-06	+	200	<del>  ^</del>	+	94.70			ATSDR	72.107		9	0.0000E+00	0.0000	0.0000E+00	
	many revenuely restories	100-10-1	OBUISO	G-1,1919	7.305+03	-1.90=+0	00E-10	7.10E-00	<del>}</del>	298.16	<del>                                     </del>	×	19.86	14.5	88 F (20 C)	HSDB	100.16		9	0.0000E+00	0.0000	0.0000E+00	
SUBSTITUTED				1		1		1	1	1	1	ļ											
METHANES		1		1		1	1	1	1	1	1	1		]			1 1					j	
	Bromoform	75-25-2	CHBr <sub>3</sub>	-10.2943	-2.17E+03	9.1193	-1.6495E-02	7.4917E-06	s <b>l</b>	298.16	1	x	5.51	5.6	68 F (20 C)	MDL, 1996	252.75	]			I		
	hioroform	67-66-3	сна,	6.9371		2.27E+02		1	25	1	X	<del>                                     </del>	194.75			Yaws, 1992	119.378			0.0000E+00	0.0000	0.0000E+00	
Cr	Carbon Tetrachloride	56-23-5	ca,	6.8941	1.21958E+03	2.2717E+02	2	1	25	<b></b>	X	<b>†</b>	114.22	108		HSDB	153.823		- 0	0.0000E+00	0.0000	0.0000E+00	
Di/	Dichlorodifluoromethane	75-71-8	CCI <sub>2</sub> F <sub>2</sub>	6.68619	782,072	235.377	7	<u> </u>	25	†	X	<del>                                     </del>	4,814.78		70.0 F (21.1 C)	MDL, 1998	120.91		9	0.0000E+00	0.0000	0.0000E+00	
M	Aethyl Bromide	74-83-9	CH <sub>3</sub> Br	6.9597		2.3833E+02	2		25	1	X		1,633.46		68 F (20 C)	HSDB				0.0000E+00	0.0000	0.0000E+00	
	fethyl Chioride	74-87-3	CH,CI	6.9944		2.4361E+02		<del> </del>	25	<del>                                     </del>	T X	<del> </del>	4,312.17		88 F (20 C)	MDL, 1996	94.95			0.0000E+00	0.0000	0.0000E+00	
	fethylene Bromide	74-95-3	CH <sub>2</sub> Br <sub>2</sub>	35.3525	<del></del>	9.5972		2.94E-06		298.16	<del>                                     </del>	X	45.24		73.9 F (23.3 C)	HSDB	50.49			0.0000E+00	0.0000	0.0000E+00	
	fethylene Chloride	75-09-2	CH <sub>2</sub> Cl <sub>2</sub>	7.0803	1138.91	231.46			28	200.10	X	<del>                                     </del>	490.64		75.4 F (24.1 C)	HSDB	173.83		9	0.0000E+00	0.0000	0.0000E+00	
	richiorofluoromethane	75-69-4	CG <sub>3</sub> F	6.8843		236.86		<del></del>	25		<del>X</del>	<del> </del>	796.56		68 F (20 C)	MDL, 1996	84.933	2.27	0.00227	2.6727E-05	0.0000	2.3697E-04	3.
		1		0.00.00	1,0.00		1	<del></del>			<del>  ^</del> -	<del>                                     </del>	780.50	- ***	00 F (20 C)	MUL, 1996	137.38		٥_	0.0000E+00	0.0000	0.0000E+00	
SUBSTITUTED		1 1				Į.		l						1 1			1 1	- 1					
THANES/ETHENES		1 1						l			ļ			l i			1 1		1	· · · · · · · · · · · · · · · · · · ·	1	I	
(n=16) Ch	hioroethane	75-00-3	C₂H₅CI	8.94	1.01278E+03	2.3668E+02	2		25		X		1,174.09	1,000	66 F (20 C)	MDL, 1998	84.52	1	ار	0.00005.00		<u>.</u>	
1,2	,2-Dibromoethane	106-93-4	C <sub>2</sub> H <sub>4</sub> Br <sub>2</sub>	6.72148	1280.82	. 201.75			25		Х		11.83		68 F (20 C)	HSDB	187.88		<del></del>	0.0000E+00	0.0000	0.0000E+00	
	,1-Dichloroethane	75-34-3	C₂H₄Cl₂	33.38	-2.6102E+03	-9.1336	-2.8388E-11	3.7323E-06		298.16		X	227.41		77 F (25 C)	ATSDR	98.960		<del></del>		0.0000	0.0000E+00	
1,2	,2-Dichloroethane	107-06-2	C2H4Cl2	48.4226	-3.1803E+03	-15.37	7.2935E-03	2.6844E-14		298.16		X	79.16		77 F (25 C)	EPA, 1992	98.960		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
1,1	1-Dichloroethene	75-35-4	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	-16.5419	-1.6655E+03	1.3923E+01	-4.0958E-02	2.9995E-05		298.16	1	X	600.39			ATSDR	96.944		<del></del>	0.0000E+00	0.0000	0.0000E+00	
de	s-1,2-Dichloroethene	156-59-2	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	7.0223	1205.4	230.6	3		25		X		202.46	215	77 F (25 C)	ATSDR	96,944		<del></del>	0.0000E+00 0.0000E+00	0.0000	0.0000E+00	
trav	ans-1,2-Dichioroethene	156-60-5	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	48.4574	-3.0496E+03	-14.694	-2.1262E-09	7.3465E-06		298.16		Х	333.33		77 F (25 C)	ATSOR	96.944		<del>`</del>	0.0000E+00	0.0000	0.0000E+00	
Her	exachioroethane	67-72-1	C <sub>2</sub> Cl <sub>6</sub>	7.08633	1626.945	197.048	1		25		X		0.57		68 F (20 C)	HSDB	236.74	<del>-</del>	<del></del>		0.0000	0.0000E+00	
1,1	1,1,2-Tetrachioroethane	630-20-6	C5H5Q1	-1.07112	-2.51E+03	6.1536	-1.88E-02	1.05E-05		298.16		Х	12.07		77 F (25 C)	HSDB	187.85	<del></del>	- 3	0.0000E+00	0.0000	0.0000E+00	
1,1	1,2,2-Tetrachloroethane	79-34-5	C2H2CI4	56.2356	-4.4615E+03	-16.556	-3.5724E-10	4.0425E-06		298.16		X	4.62		68 F (20 C)	MDL 1996	187.85			0.0000E+00	0.0000	0.0000E+00	
Tet	etrachloroethene	127-18-4	C2CI4	7.02	1415.49	221.10			25		X		18.55	16.47		HSDB	165.834		<u>-</u>	0.0000E+00	0.0000	0.0000E+00	
1,1	1,1-Trichloroethane	71-55-6	C2H3C3	36.5468	-2.8421E+03	-10.205	-2.6369E-09	3.7075E-06		298.16		X	123.74		77 F (25 C)	ATSDR	133.405			0.0000E+00	0.0000	0.0000E+00	
1,1	1,2-Trichloroethane	79-00-5	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	6.9653	1,351.0	217.0			25		X		24.14		77 F (25 C)	HSDB	133.405			0.0000E+00	0.0000	0.0000E+00	
Tric	richloroethene	79-01-6	C <sub>2</sub> HCl <sub>3</sub>	7.0281	1,315.1	230.01		· · · · · · · · · · · · · · · · · · ·	25		X		74.31		77 F (25 C)	ATSDR		<del></del>		0.0000E+00	0.0000	0.0000E+00	
1.1	1,2-Trichloro-1,2,2-Triffuorethane	76-13-1	C <sub>2</sub> Cl <sub>3</sub> F <sub>3</sub>	33.7192		-9.3175	1.46E-08	3.94E-06	·	298.16		x	331.76	363.6		HSDB	131.389		<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	inyl Chloride	75-01-4	C <sub>2</sub> H <sub>3</sub> Cl	6.4971				2 /2 00	25		X	<u> </u>	2.661.11	2,660	77 F (25 C)	ATSDR	187.38			0.0000E+00	0.0000	0.0000E+00	
1		<del>                                     </del>	- 2 3.				t		<u> </u>				د, <del>00</del> 1.11	2,000	11 1/23 ()	AISUN	62.499		이	0.0000E+00	0.0000	0.0000E+00	
SUBSTITUTED		1 1					j i											ı	į		-		
ANES/PROPENES		i f			l l		; l											ı	l	l	j	İ	
	Chloropropene	107-05-1	C <sub>3</sub> H <sub>5</sub> Cl	8.6085	-1.75E+03	6.08E-01		5.22E-06	i	298.16		X	368.68	368	77 F (25 C)	HSDB	76.53	ı	اہ	0.0000E+00			
	1-Dichloropropane	78-99-9	C₃H₄Q₂	5.4819	-2.1918E+03	2.6014	-1.1751E-02	7.3435E-06		298.16		X	52.12				112.99		<del></del>	0.0000E+00	0.0000	0.0000E+00	
	2-Dichloropropane	78-87-5	C <sub>3</sub> H <sub>7</sub> G <sub>2</sub>	6.9654	1296.4	221			25		X		49.80	50	77 F (25 C)	HSDB	112.99	<del></del>	<del></del>	0.0000E+00	0.0000	0.0000E+00	
	s-1,3-Dichloropropene	10061-01-5	C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub>	3.6589	-2.03E+03	3.0769	-1.09E-02	8.49E-08		298.16		X	61.30			HSDB	110.97	<del></del>			0.0000	0.0000E+00	
	ins-1,3-Dichloropropene	10061-02-6	C <sub>3</sub> H <sub>4</sub> Cl <sub>2</sub>	3.6589	-2.03E+03	3.0769	-1.09E-02	6.49E-06		298.16		X	61.30		?	HSDB	110.97	<del></del>	<del></del>	0.0000E+00	0.0000	0.0000E+00	
1,2	2,3-Trichioropropane	96-16-4	C₃H₅Cl₃	7.0028	1484.1	204.01			25		х		3.33		77 F (25 C)	HSDB	147.43		<del></del>	0.0000E+00	0.0000	0.0000E+00	
																			<del></del>	0.0000E+00	0.0000	0.0000E+00	
MISCELLANEOUS		_ 1					l i								1			ı	1	ļ		ļ	
(n=15) Ace		75-05-8	C <sub>2</sub> H <sub>3</sub> N	7.0735	1279.2	224.01	L		25		X		86.37	87	75 F (24 C)	HSDB	41.052	l	اه	0.0000E+00	0.0000	2 222 E . C.	
	rylonitrie	107-13-1	C <sub>3</sub> H <sub>3</sub> N	6.9163		2.2201E+02	I		25	T	X	T	105.83		73 F (23 C)	HSDB	53.06		d	0.0000E+00		0.0000E+00	
	rolein	107-02-8	C3H4O	57.9815	-3.0933E+03	-19.6380		-2.3854E-14		298.16		Х	274.35	210	68 F (20 C)	MDL, 1996	56.06		<u> </u>	0.0000E+00	0.0000	0.0000E+00	<del></del>
	arbon Disulfide	75-15-0	CS <sub>t</sub>	6.9419	1168.62	241.54			25		X		360.99	297	68 F (20 C)	HSDB	78.14		7	0.0000E+00	0.0000	0.0000E+00	
	Chloropentane	543-59-0	C <sub>5</sub> H <sub>11</sub> Cl	4.4886	-2.2604E+03	7.8088	-2.3675E-02	1.4884E-05		301.16		Х	38.21				106.60		<del></del>	V.VV00E400	0.0000	0.0000E+00	······································
Dief	ethyl Ether	60-29-7	C <sub>4</sub> H <sub>10</sub> O	6.92032	1064.07	228.8			25		X		534.28	537	77 F (25 C)	HSDB	74.12	<del></del>	<del></del>	0.00005.4-			
	f-Dioxane	123-91-1	C4H0O2	20.5761	-2.47E+03	4.3645	-2.71E-10	8.52E-07		298.16		X	38.20			HSDB	88.106	<del></del>	<del></del>	0.0000E+00	0.0000	0.0000E+00	
Epir	pichlorohydrin	106-89-8	C,H,CIO	24.764		-5.6252	-1.1011E-10	5.3331E-07		298.16		x	16.50	13	68 F (20 C)	MDL, 1998	92.53			0.0000E+00	0.0000	0.0000E+00	
	hyl Methacrylate	97-63-2	C <sub>6</sub> H <sub>10</sub> O <sub>2</sub>	27.9574	-2.87E+03	-6.9383	-2.35E-10	1.68E-06		298.16		x	20.59	14	68 F (20 C)	HSDB			<u> </u>	0.0000E+00	0.0000	0.0000E+00	
	hylene Oxide	75-21-8	C <sub>2</sub> H <sub>4</sub> O	7.2701	1115.1	244.15			25	200.10	×	<del></del>	1,339.85	1314			114,14		9	0.0000E+00	0.0000	0.0000E+00	
	oxachiorobutadiene	87-68-3	C <sub>4</sub> C <sub>4</sub>	35.591	-4.138E+03	-9.0808	2.9025E-10	5.9012E-07		298.16		x	0.22			HSDB	44.06		9	0.0000E+00	0.0000	0.0000E+00	
	xachiorocyclopentadiene	77-47-4	C <sub>f</sub> C <sub>f</sub>	9.7942	-3.32E+03	10.171	-2.11E-02	9.02E-06	<del></del>	298.16	<del> </del>	<del>x</del>	0.22		68 F (20 C)	HSDB	260.76			0.0000E+00	0.0000	0.0000E+00	
	phorone	78-59-1	C <sub>2</sub> H <sub>14</sub> O	0.5931	4.6647E+03	7.3556		1.0189E-05		298.16	— <del>-</del>	- <del>x</del>	0.0025		77 F (25 C)	MDL, 1998	272.77			0.0000E+00	0.0000	0.0000E+00	
	opionitrile	107-12-0	C <sub>3</sub> H <sub>6</sub> N	6.9301	1277.2	218.01		7.V10#E-V3	25	200.10	<del>  </del>			0.26	68 F (20 C)	MDL, 1996	138.2		0	0.0000E+00	0.0000	0.0000E+00	
IPm.	trahydrofuran	109-99-9	C <sub>4</sub> H <sub>6</sub> O	34.87		-0.5958	1.99E-10	3.55E-08	23	298.16	<del>X</del>	<del>x</del>	47.24 182.18	40	72 F (22 C) 68 F (20 C)	HSDB	55.08		9	0.0000E+00	0.0000	0.0000E+00	
		104-04-4	20.40	J7.0/	-E. 1 OET-03	-4.3636	1.00E-10	3.335~701	1	400.10			162 181			HSDB	72.107		<b>4</b> F	0.0000E+00	0.0000		

## Chemical Waste Management, Inc. Emelie, Alabama Facility Tank T-A Leachate Vapor Pressure Determination

MATICS				<b>]</b>	1	1 .	1.	1	1 1	1	11.0	1. 1. 4	1 .		l	1	1	1 1	1	1	1	1 1	
(n=18)	Benzene	71-43-2	CaHe	8.90586	1,211.033	220.7	a l	l	25	- 1	¥		95,18	96.2	77 F (25 C)	ATSOR	78.114			0.0000E+0			
	Benzyl Chloride	100-44-7	C <sub>7</sub> H <sub>7</sub> Cl	12.150	-2.91E+03	-0.371	-6.29E-0	2.63E-06		298.16	<u> </u>	X	1.31		72 F (22 C)	MDL 1996	128.58	<del>}</del>		0.0000E+0		0.0000E+00	
	Chiorobenzene	108-90-7	CHA	6.9781		217.5		1	28	200.10	×	<u> </u>	14.14	11.8		HSDB	112,558					0.0000E+00	
	1,2-Dichlorobenzene	95-50-1	C <sub>t</sub> H <sub>4</sub> Cl <sub>2</sub>	7.070		213.3		†	25		x		1.41	1 47		HSDB	147.010	61.3	0.061			1.3914E-04	1.85
	1,3-Dichlorobenzene	541-73-1	C.H.a.	7.3037		230.0		†	25		x		2.06	1.889			147.010			0.0000E+0		0.0000E+00	
	1,4-Dichlorobenzene	106-46-7	CH,CL	8.906	1575.11		<del></del>		25		Ŷ		1.79	1.009		MDL, 1996 ATSDR	147.010			0.0000E+0		0.0000€+00	
	2,4-Dinitrololuene	121-14-2	C7HaNaO4	11,5960				-1.8722E-14		298,16		X	8.1E-03	1./0	77 F (25 C)					0.0000E+0	-1	0.0000€+00	
	2.6-Dinitrotoluene	606-20-2	C7H4N2O4	-14.5673						298.18				5.1E-03	68 F (20 C)	ATSDR	182.14	1		0.0000E+0		0.0000E+00	
	Ethylbenzene	100-41-4	C <sub>e</sub> H <sub>10</sub>	6.95716				9.4013E-00	25	290.15		X	5.9E-04	1.80E-02		MDL, 1996	182.14	<b>!</b>		0.0000E+0		0.0000€+00	
	Hexachiorobenzane	118-74-1	C <sub>t</sub> C <sub>t</sub>	-134.3625			-8.5123E-0	2.0872E-05	-	298.16	X		9.51	9.53	1	ATSDR	106.167	<b>↓</b>		0.0000E+0		0.0000€+00	
	Nitrobenzene	98-95-3	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	-54,4937	2.1123E+03			2.0072E-05				X	4.824E-05		1	Schwarzenbach	284.79	<b></b>		0.0000E+0		0.0000€+00	
	Toluene	108-88-3	C <sub>7</sub> H <sub>6</sub>	8.95464	1344.8	219.48		2.0162E-05		298.16		X	0.25	0.15		ATSDR	123.11	lacksquare		0.0000E+0		0.0000E+00	
	1,2,4-Trichiorobenzene	120-82-1		15.5947	-2.892E+03				25		X		28.45	28.5	77 F (25 C)	Yaws, 1992	92.141	ļl		0.0000E+0		0.0000E+00	
	1,2-XViene	95-47-8	C <sub>t</sub> H <sub>2</sub> Cl <sub>2</sub>	-			2.0384E-04	-7.0801 E-14		298.16		X	0.43	1	101 F (38.4 C)	MDL, 1996	181.48	<u> </u>		0.0000E+0	0.0000	0.0000E+00	
	1,3-Xviene		C <sub>8</sub> H <sub>10</sub>	6.99891	1474.879		3		25		X		6.62		83 F (28.3 C)	ATSDR	106.167	L		0.0000E+0	0.0000	0.0000E+00	
	1,3-Ayrene 1,4-Xviene	108-38-3	C <sub>8</sub> H <sub>10</sub>	7.00908	1462.266		<u></u>		25		X		8.30		77 F (25 C)	ATSDR	106.167			0.0000E+0	0.0000	0.0000E+00	
	1,1-∧унян9	106-42-3	C <sub>8</sub> H <sub>10</sub>	6.99052	1453.43	215.307			25		Х		8.76	8.84	77 F (25 C)	ATSDR	106.167			0.0000E+0	0.0000	0.0000E+00	
AROMATIC						1				İ													
ALCOHOLS				1	1	ł	1	1	ì	- 1						}	1	1 1		1			
(n≔8) 2	2-Chlorophenol	95-57-8	C <sub>6</sub> H <sub>6</sub> CIO	18.2631	-2.652E+03	-3.6728	8.3047E-10	1.8341E-06		298.16		x	2.78		53.8 F (12.1 C)	MDL, 1996	128.56			0.0000E+0			
2	2,4-Dichlorophenol	120-83-2	C.H.O.O	7,497878	1.890E+03			1.35 1.12 1.5	25	200.10	X		0.12	<del></del>	127 F (53 C)	MDL, 1996	120.50	<del>}</del>		0.00006+00	0.0000	0.0000E+00	
2	2,4-Dimethylphenol	105-67-9	C <sub>t</sub> H <sub>10</sub> O	53,3866			-1.3196E-06	2.8455E-08		298.16		_x	1.0E-01		198 F (92.3 C)	HSDB	100.40	<del>                                     </del>					
2	2-Methylphenol	95-48-7	C <sub>7</sub> H <sub>8</sub> O	6.9117	1435.5	165.16	1.01002-00	2.04302-00	25	250.10	x			10			122.16	1		0.0000E+00		0.0000E+00	
3	3-Methylphenol	108-39-4	C <sub>7</sub> H <sub>6</sub> O	7.508		199.07			25		- <del>x</del>		0.23	0.299		ATSDR	108.140	<del> </del>		0.0000E+00		0.0000E+00	
4	l-Methylphenol	108-44-5	C <sub>7</sub> H <sub>8</sub> O	7.0351		161.86			25		<del> </del>		0.17	0.138		ATSDR	108.140	<del>                                     </del>		0.0000E+00		0.0000E+00	
	Pentachiorophenol	87-88-5	C <sub>s</sub> HCl <sub>s</sub> O	7.544423		180 3596			25		- <del>x</del>		0.09	0.11	77 F (25 C)	ATSDR	108.140	<b></b>		0.0000E+00	0.0000	0.0000E+00	
F	henol	108-95-2	CeHeO	7.1345		174.57	<b></b>		25		- X		0.000256	0.00017		Croeby, 1981	266.35	<b></b>		<del>                                     </del>			
				1	1310.07	174.57	<del> </del>						0.34	0.35	77 F (25 C)	MDL, 1996	94.11	<b> </b>		0.0000E+00	0.0000	0.0000E+00	
PAHa				1					1	1	l					İ		l I				1	
(n=9)[A	Acenephthene	83-32-9	C12H10	28.8173	-4.1623E+03	-8.775	-1.0872E-09	6.3928E-07	- 1	298.16		x I	1.4E-02	4.47E-03	_	ATSDR	154.21			0.0000E+00			
, A	Inthracene	120-12-7	C14H10	-120.0992		52,574		1.5020E-05		298.16		- <del>x</del>	1.3E-03		77 F (25 C)	ATSDR	178.23	<del></del>				0.0000E+00	
C	tioronaphthalene	25586-43-0	C <sub>10</sub> H <sub>7</sub> Cl	93,778		-30.859		-3.2318E-14		298.16		- x	0.0205	1.75-05	77 F (25 C)	ATSUR		1		0.0000E+00		0.0000E+00	<del> </del>
C	hrysene	218-01-9	C <sub>18</sub> H <sub>12</sub>	-50,1566		25,178		7.0144E-06		298.16		- <del>î</del>		2 25 22	== 5 (at a)		162.61	<del>  </del>		0.0000E+00	0.0000	0.0000E+00	
F	Ruoranthene	208-44-0	C <sub>10</sub> H <sub>10</sub>	70,6802				-6.3035E-13		298.16		- <del>x</del>	7.89E-07	6.3E-09	77 F (25 C)	ATSDR	228.28	<b>!</b>		0.0000E+00	0.0000	0.0000E+00	
F	Puorene	86-73-7	C13H10	53.9382	-5.3622E+03	-16.059				298.16			1.1E-04	5.0E-06	77 F (25 C)	ATSDR	202.26		<u>c</u>	0.0000E+00	0.0000	0.0000E+00	
N	iaphthalane .	91-20-3	CioHa	7.01065	1,733,71	201.859	4.50832-03	0.143E-13	25	290.10	<del></del> -	X	3.8E-03	7.1E-04		ATSDR	166.21	<b> </b>		0.0000E+00	0.0000	0.0000E+00	
	henenthrene	85-01-8	C16H10	50,2858	-5.7409E+03	-13.935	-8.8520E-10	2.1343E-08		298,16	×	<del></del> -	2.3E-01	0.05	68 F (20 C)	MDL, 1996	128.16	<b>  </b>	0	0.0000E+00	0.0000	0.0000E+00	
P	yrene *	129-00-0	C16H10	70.7671	-6.9413E+03	-13.835		1.5767E-12		298.16		X	5.5E-04	9.6E-04	77 F (25 C)	ATSDR	178.22	ļl	0	0.0000E+00	0.0000	0.0000E+00	
			910.110	70.7371	J.64 (SE403	-21.79	9.01212-03	1.3/0/E-12		296.16		X	2.4E-05	2.5E-08	77 F (25 C)	ATSDR	202.26	<b>├</b> ───┤	0	0.0000E+00	0.0000	0.0000E+00	
PHTHALATES		ļ			l		I			l l	I		1				1					1	
O(+	Obutyli Phihalate	84-74-2	C14H22O4	152.675	-1.0754E+04	-51.170	1.6933E-02	2.4948E-14		298.18	1	x I	أيمين	7.005.00	TI E (05 C)	Ontono monto de	1		_	I			
D	Nethyl Phihalate	84-88-2	C12H14O4	72,1438	-7.0747E+03	-21.029		3.4691E-06		298.16		<del>^</del>	1.1E-05 4.9E-04	7.26E-05	77 F (25 C)	Schwarzenbach	278.34	<b></b>		0.0000E+00		0.0000E+00	
D	Imethyl Phihalate	131-11-3	C10H10O4	12.6974	4.1989E+03	-0.3463		3.349E-08		298.16		- <del>x</del>		6.32E-03	77 F (25 C)	Schwarzenbach	222.26	<del> </del>	0	0.0000E+00	0.0000	0.0000E+00	
D	Noctyl Phthalate	117-84-0	C24H3gO4	27.8473	-7.6834E+03	-2.1134		6.2365E-06		298.16		<del>^</del>	5.9E-05 7.3E-08	1.82E-02	77 F (25 C)	Schwarzenbach	194.19	<b></b>	0	0.0000E+00	0.0000	0.0000E+00	
						2.1134	1.02076-02	0.23030-00	+	250.10			7.3E-08				390.56	<b></b>	0	0.0000E+00	0.0000	0.0000E+00	
P	CB 1016-1260	I			İ				İ	298.16	j	ļ	1.0E-04 max				292	[	_	J			
										200.10	-		1.UE-U4 MAX				292	<del>                                     </del>	0	0.0000E+00	0.0000	0.0000E+00	
. W	rator	7732-18-5	H <sub>2</sub> O	29.8805	-3.1522E+03	-7.3037	2.4247E-09	1.809E-06		301.16		X	28.40	23.758	77 F (25 C)	Yaws	18 070	999,936,43	999,93643	E 500 T. 01	1 2222		<del></del>
					1								20.40	20./30	11 - (25 0)	1 8 1 8	18.070	999,930.43	999.93643	5.5337E+01	1.0000	26.3996	
					.*												4	Total Man-		Tabal M ad Adals :	Charlette Hallton Free Co.	T.4-114	
	you have any comments or uestions on this program, please							•	···									Total Mass of Solute		Total # of Moles in the Chemical Mixture	Check that the Mole Fractions sum to 1.00	Total Vapor Pressure of the Chemical Mixture (mm Ha)	Total Vapor Pres. of the Chemical Mixtu

context Dr. Devid Dolen in Corp. EH&S at (630) 218-1537

Tank Number
Tank Stop - m² (gais)
Vapor Pressure Limit
kPa (pel)