Attachment 1 Waste Analysis Plan

FORM EQP 5111 ATTACHMENT TEMPLATE A3 WASTE ANALYSIS PLAN (WAP)

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), being R 299.9504, R 299.9508, and R 299.9605, and Title 40 of the Code of Federal Regulations (CFR) §§270.14(b)(3) and 264.13(b) and (c), establish requirements for WAPs for hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license application template addresses requirements for a WAP for the hazardous waste management units and the hazardous waste management facility for the Petro-Chem Processing Group of Nortru, LLC, 'Petro-Chem' facility. All activities associated with the WAP will be conducted at the Petro-Chem, 421 Lycaste Street, Detroit Michigan facility. The pre-acceptance procedure may be initiated at the Nortru, LLC 550 Lycaste Street Transfer Facility.

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A3.A COMMERCIAL FACILITY

Petro-Chem is a commercial facility that receives wastes generated off site. Petro-Chem has developed a WAP to ensure the Facility accepts only authorized wastes. Wastes will be properly characterized prior to acceptance. All generators will be required to provide a complete waste characterization, including supporting documentation where necessary. Waste screening will be conducted on every shipment of waste to ensure that the waste conforms to the waste characterization report for that generator and to ensure that the waste is properly managed within the facility.

All analysis performed pursuant to this application will be consistent with the QNQC Plan included in Template A2 All samples for the purpose of waste characterization will be collected, transported, stored, and disposed by trained and qualified individuals in accordance with the QNQC Plan.

In accordance with R 299.9609 and 40 CFR §264.73 and Part 264, Appendix I, Petro-Chem will retain all records and results of waste determinations performed as specified in 40 CFR §§264.13, 264.17, 264.314, 264.1034, 24.1063, 264.1083, 268.4(a), and 268.7 in the facility operating record until closure of the facility.

A3.A.1 Initial Waste Characterization Requirements for Generators [R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(b)(5)]

Petro-Chem requires each generator to submit waste stream specific, waste characterization information for review and approval prior to initial waste shipments. This information is documented on the Waste Characterization Report, 'WCR', Figure A3.A.1. The information on the WCR will be entered into the Preview software, which will print out the relevant information for the generator to sign. The WCR information supplied by the generator should be as specific as possible and not allow for uncertainty.

In addition to the waste profile information submitted by the generator, Petro-Chem may:

1) Require submittal of a representative waste sample

- 2) Review industry literature to identify typical waste streams
- 3) Request current material safety data sheets, 'MSDS' for discarded products and product constituents in the waste
- 4) Request past characterization reports, lab test results

These characterization requirements for the storage and transshipment of hazardous wastes are identical

A3.A.I(a) Generator Waste Characterization Discrepancies

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(a)(3) and (4), 264.13(b)(c), and 264.72]

During the initial review process of the waste characterization report, if it is determined that the documents submitted are incomplete or contain information that is otherwise inconsistent with the supporting documentation or lab test results (as may be performed on a pre-shipment sample), the generator will be notified of the discrepancy and the requirement for clarification. Clarification may include:

- 1. re-submittal of an updated WCR
- 2. submittal or re-submittal of a pre-shipment sample
- 3. submittal of further supporting documents

The WCR will not be approved for subsequent shipment until the generator has clarified all discrepancies identified and recertified all changes made to the WCR.

A3.A.1(b) Subsequent Waste Shipment Procedures

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(a)(3) and 264.13(b)(4)]

In the event Petro-Chem is notified, or has reason to believe, that the process or operation generating the waste stream has changed, the generator must either provide an amended WCR or submit a new WCR to obtain approval. When the results of the inspection indicates that the waste delivered does not match the waste designated on the manifest or the WCR on file a discrepancy report will be completed and the generated will be contacted to resolve the discrepancy. The resolution will be based on Petro-Chem's ability to legally and safely manage the waste.

Discrepancy Resolution:

For waste materials that Petro-Chem can legally & safely manage:

- 1. The generator will be informed of the discrepancy and a new WCR will be submitted for repeated discrepancies of the same nature
- 2. All accompanied shipping documents will be updated to reflect the discrepant waste material
- 3. The material may be repackaged if necessary to ensure the contents are compatible and appropriate with the package to effect safe and compliant storage or transshipment of the material
- 4. The markings and/or labels of the package may be updated based on the characterization results of the material
- 5. The generator always has the option to have the material returned or shipped to an alternate facility for management
- If the discrepancy cannot be resolved within 15 days or for waste materials that Petro-Chem cannot legally or safely manage, Petro-Chem will initiate the load rejection procedure as per R299.9608

7. If Petro-Chem accepts permitted hazardous wastes without the appropriate shipping document(s), an 'Unmanifested Waste Report' will be filed with MDEQ within 15 days of acceptance according to R299.9610

As a minimum requirement, on an annual basis the generator is requested to certify that their waste stream has not changed since the previous submittal or provide a new WCR and supporting documentation. If neither of these activities is completed, the waste stream approval is cancelled and will not be reapproved for receipt until the generator re-signs the WCR verifying any changes.

Upon receipt of the generator certification of no change to the waste generating process, the existing documentation is reviewed for consistency and accuracy, then re-approved for future receipt. Any new documentation received will be evaluated and the waste stream will be re-approved and updated in the database or a request will be made for a new WCR for evaluation and approval if the new documentation is inconsistent with the original approval.

A3.A.I (c) Additional Waste Analysis Requirements

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(b)(6) and 264.13(c(3)]

Petro-Chem will review the waste profile information to ensure that the facility is authorized to receive the waste, and can manage the waste in compliance with the following:

⊠ R 299.	.9605 and 40 CFR §264.1	incompatibl		
R 299.	9605 and 40 CFR §264.3	14 Special req	eC1, Section B1,C1] equirements for bulk and containerized liquids eC1, Template C2]	
R 299.	9630 and 40 CFR \$264.1	034(d) Test method	ods and procedures (Subpart AA) A3, Section A3.A.2(c)]	
R 299.	9631 and 40 CFR §264.1	063(d) Test method	ods and procedures (Subpart BB) A3, Section A3.A.2(c)]	
(XI 40 CF	R §264.1083	Waste dete	termination procedures (Subpart CC)	
☑ R 299.9627 and 40 CFR \$268.7		Waste analy	[Template A3, Section A3.A.2(c)] Waste analysis and record keeping LDR requirements [Template A3, Sections A3.A.3, A3.B.3 and A3.C]	
(XI R 299.	9228	Universal w	waste requirements A2, Section A2]	
A3.A.2	Waste Acceptance Proc [R 299.9605(1) and R 29 264.73(b)]		40 CFR §§264.13(c), 264.72(a) and (b), and	
Waste shi	oments arrive at the facilit	y in the following cor	ontainers:	
XI Drums			[XI Tanker trucks	
XI Carboy	/S	[XI Wrangler box	(XI Filter bags	
XI Roll-of	fboxes	[XI Vacuum trucks	s	

[XI Other: pails, boxes, lugger boxes, super sacks,

Upon receipt of wastes from an off-site generator, Petro-Chem will perform all of the following tasks:

- Review paperwork
- Visually inspect the waste
- Perform waste screening/fingerprint analysis of waste

The waste acceptance procedures for the storage and transshipment of hazardous wastes are identical. These tasks are discussed below.

A3.A.2(a) Review Paperwork

[R 299.9605(1) and R 299.9504(1)(c), and 40 CFR §§264.13(c), 264.72(a) and (b), and 264.73(b)]

Petro-Chem will review all paperwork, including manifests and LDR notifications, before any wastes are accepted by the facility. Petro-Chem will review all paperwork for completeness. In addition, the manifest and LDR notification will be compared for consistency. The manifest will also be compared to the waste profile and analytical information provided by the generator and to the waste shipment to ensure the accuracy of information provided on shipment paperwork. The manifest will also be compared to the number of containers, the volume, and/or the weight of the waste in the shipment. All discrepancies will be resolved before processing the waste.

3.A.2(b) Visual Inspection of Waste

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(c)]

Petro-Chem will visually inspect the contents of a minimum of one container and up to a maximum of 100 percent of the containers from each nonreactive waste stream from each generator. The contents of the container will be visually inspected for the following:

[XI Color	[XI Consistency
[XI Physical state	Other: Notable odors
XI pH – for aqueous streams	

Visual observations will be recorded and compared to the waste profile information. All discrepancies will be resolved before processing the waste. The applicant should describe how the information gathered would help identify each movement of hazardous waste managed at the facility.

If a significant manifest discrepancy is discovered (such as variation in piece count or misrepresentation of the type of waste or corrosive rather than flammable), the generator will be contacted to resolve the discrepancy. Any changes to the shipping documents and/or process and/or designated facility will be documented. Any discrepancies that cannot be resolved with the generator or transporter within 15 days of load will initiate the load rejection procedures as per R299.9608.

Each outer package of waste will be visually inspected for damage or leaks to ensure the container is suitable for further handling.

A3.A.2(c) Waste Screening/Fingerprinting

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(b)(14) and 264.13(c)(2)]

Table A3.A.1 lists the waste analysis procedures, including screening parameters for each hazardous waste, the rationale for the selection of these parameters, test methods that will be used to test for these parameters, the appropriate reference, whether the waste is specified in R 299.9216, the frequency of waste screening, and the rationale for the frequency. The sampling methods that will be used to obtain a representative sample of the waste to be analyzed and the sampling equipment and rationale are summarized in Table A3.A.2. The results of the waste screening/fingerprint analysis will be compared to the waste profile information and analytical results provided by the generator during the initial waste characterization process. The outside container of inner laboratory pack containers will be 100 percent visually inspected. Containers of personal protective equipment (PPE) or debris will undergo visual inspection. All discrepancies will be resolved before processing the waste.

Discrepancies Arising from Fingerprinting Results:

For permitted waste materials that Petro-Chem can safely manage:

- 1. The generator will be informed of the discrepancy and a new WCR will be submitted for repeated discrepancies of the same nature
- 2. All accompanied shipping documents will be updated to reflect the discrepant waste material where necessary
- 3. The material may be repackaged if necessary to ensure the contents are compatible and appropriate with the package to effect safe and compliant storage or transshipment of the material
- 4. The markings and/or labels of the package may be updated based on the characterization results of the material
- 5. The generator always has the option to have the material returned or shipped to an alternate facility for management
- 6. If the discrepancy cannot be resolved within 15 days or for waste materials that Petro-Chem cannot legally or safely manage, Petro-Chem will initiate the load rejection procedure as per R299.9608

A3.A.2(d) Waste Screening/Fingerprinting

Wastes that are unacceptable for receipt, will be rejected in accordance with R299.9608

Unacceptable wastes include:

- 1. Explosives, as defined by the US Department of Transportation (USDOT)
- 2. Polychlorinated Biphenyls, as regulated under the Toxic Substance Control Act (TSCA)
- 3. Dioxin Wastes, as defined by the Resource Conservation and Recovery Act (RCRA)
- **4.** Radioactive, as defined by the Nuclear Regulatory Commission
- 5. Biohazards, as regulated by OSHA or EPA

Table A3.A.1 Waste Analysis Procedures

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Oxidizing Potential	Determine reactivity of material; strongly reactive materials	Test Strip	Petro-Chem Lab SOP;	N	Each bulk inorganic container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Ensure reactive materials are managed to meet the requirement of R299.9614 & R299.9615 for containers and tank systems respectively
lgnitability	Identify flammable materials for safe handling and storage	Penskv-Martens Closed Cup Tester	Petro-Chem Lab SOP; SW- 846 Method 1010, ASTM D93-90, E502- 84	Y	Each bulk tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Ensure ignitable materials are managed to meet the requirement of R299.9614 & R299.9615 for containers and tank systems respectively

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Isocyanate Screen	Identify incompatible fuel type waste streams	Visual Observation	Petro-Chem Lab SOP	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Prevent commingling of incompatible fuel type wastes in tank systems
Compatibility/Reactivity	Identify safe handling methods for materials	Visual Observation	Nortru Lab SOP; ASTM D5058; ASTM D5232	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Ensure incompatible materials are not commingled; ensure proper storage of incompatible materials
Moisture Content	Determine anueous content of liquid organic waste streams	Karl Fischer Titration	Petro-Chem Lab SOP; ASTM D4377, ASTM D5530	N	Each bulk container, tanker truck or trailer; composite up to 10 samples of each non-bulk container of lia. waste of each manifest line item	Identify organic wastes subject to Benzene NESHAP standards; determine blending ratios for fuel type wastes

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Specific Gravity/Density	Determine weight of material for safe handling	Gravimetric Determination	Petro-Chem Lab SOP;ASTM D287	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	weight of material is acceptable for placement in tanks or storage in appropriately DOT rated container
рН	Identify wastes that may compromise structural integrity of containers, tanks; identify appropriate PPE for handling material	pH/ISE Electrode	Nortru Lab SOP, SW-846 Methods 9045C, 9040B	Y	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Prevent improper placement of materials in tank systems; ensure safe handling of materials; ensure suitability of containers for storage
PCB's	Identify PCB containing wastes	Gas Chromatography1 ECD	Nortru Lab SOP; SW-846 8081A, 3620B	N	Each bulk container, tanker truck or trailer; composite up to 10 samples of each non- bulk container of org waste of each manifest line item	Prevent acceptance of wastes contain PCB's greater than 50 ppm

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Heat of Combustion	Determine heat value of materials destined for fuel program	Bomb Calorimetry	Nortru Lab SOP; ASTM D240, E144, D5468	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of liquid organic waste of each manifest line item	Confirm criteria for acceptance into fuel program (> 5,000 BTU/lb) (<5,000 BTU/lb will be evaluate for beneficial use at specific BIFs)
Halogen Content	Determine % halogen for materials destined for fuels program; used oil presumption	Combustate Titration	Petro-Chem Lab SOP; SW- 846 Method 9253	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of liquid organic waste of each manifest line item	Verify blending ratios to meet fuel specification for cement kilns;

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Metals	Verify waste code information; verify hazard characteristic for LDR	Inductively Coupled Plasma	Petro-Chem Lab SOP: SW- 846 Method	Y	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of waste of each manifest line item	Ensure LDR are met; verify characteristics for offsite transportation

Table A3.A.2 Sampling Procedures

Container Type or Material	Sampling Method'	Sampling Equipment	Rationale
Non-bulk container of liquid	Drum thief or equivalent	Drum thief or equivalent	Representative core sample
Bulk portable container of liquid	ASTM D 6063	Coliwasa or equivalent	Representative core sample
Non-bulk container of solids	ASTM D 6063	Trier/Scoop	Commingling of various Grab samples at different depths
Bulk portable container of solids	ASTM D 6063	Trier/Scoop	Commingling of various Grab samples at different depths

¹The sampling method should demonstrate equivalence with the sampling methods described in 40 CFR, Part 261, Appendix I.

A3.A.3 Procedures to Ensure Compliance with Land Disposal Restrictions (LDR) Requirements [R 299.9627 and 40 CFR, Part 268]

All shipments of wastes subject to LDR received at the facility will be accompanied by appropriate generator notification and LDR notification in accordance with R 299.9627 and 40 CFR §268.7. The LDR notification accompanying generator wastes will be reviewed, and any discrepancies in the LDR notification and the associated manifest, analytical records, or Waste Profile Form will require shipment rejection unless additional, satisfactory, clarifying information is provided by the generator. All information obtained to document LDR compliance will be maintained in the facility operating record until closure of the facility.

If the facility receives a shipment of waste without LDR notification, or a notification with incorrect or incomplete information, the following actions will be conducted:

- The generator will be informed of the discrepancy and a new LDR notification will be submitted
- 2. All accompanied shipping documents will be updated to reflect any updates to the LDR notification where necessary.
- 3. The material may be repackaged if necessary to ensure the contents are compatible and appropriate with the package to effect safe and compliant storage or transshipment of the material
- 4. The markings and/or labels of the package may be updated based on the updated LDR notification
- 5. The generator always has the option to have the material returned or shipped to an alternate facility for management
- If the discrepancy cannot be resolved within 15 days or for waste materials that Petro-Chem cannot legally or safely manage, Petro-Chem will initiate the load rejection procedure as per R299.9608

In accordance with the LDR regulations, all wastes shipped off site will be analyzed, or generator knowledge will be used when appropriate, to determine whether the waste meets the applicable LDR treatment standards specified in R 299.9627 and 40 CFR §§268.41-43. All analytical results will be maintained in the facility operating record until closure of the facility. Wastes that are determined through analysis to meet treatment standards as specified in R 299.9627 and 40 CFR §268.41-43 will be disposed accordingly.

Petro-Chem will supply LDR notifications and certification, including appropriate analytical records supporting the certification, to the receiving facility with each shipment of waste as required. The notifications and certifications will contain the information required under R 299.9627 and 40 CFR §268.7. Any additional data obtained from the generators (e.g., Waste Profile Forms, original LDR notifications, analysis provided by generators) will be provided to the receiving facility where required.

A3.A.3(a) Spent Solvent and Dioxin Wastes

[R 299.9627 and 40 CFR §§264.13(a)(1), 268.7, 268.30, 268.31, 268.40, 268.41, 268.42, and 268.43]

Spent solvent wastes (F001-F005) are accepted at the facility. Generator process knowledge will be used to determine the presence of spent solvent wastes (F001-F005). Generator process knowledge will be documented on the waste material profile report and LDR notification. The LDR notification will provide additional information regarding the appropriate

treatment standards for the waste and whether it has already been treated to the appropriate standards. PCPG does not accept dioxin wastes.

A3.A.3(b) Listed Wastes

[R 299.9627, R 299.9213, and R 299.9214 and 40 CFR §§264.13(a)(1), 268.7, 268.33, 268.34, 268.35, 268.36, 268.39, 268.40, 268.41, 268.42, and 268.43]

Generator process knowledge will be used to determine whether listed waste meets the applicable treatment standards or to demonstrate that the waste has been treated by the appropriate specified treatment technology. In accordance with R 299.9627 and 40 CFR 5268.41, where treatment standards are based on concentrations in the waste extract, the facility will use toxicity characteristic leaching procedures (TCLP) to determine if wastes meet treatment standards. Generator process knowledge will be documented on the WCR and LDR notification.

A3.A.3(c) Characteristic Wastes

[R 299.9627, R 299.9208, and R 299.9212 and 40 CFR §§261.3(d)(1), 264.13(a)(1), 268.7, 268.9, 268.37, 268.40, 268.41, 268.42, 268.43 and Part 268, Appendix I and Appendix IX]

Generator process knowledge will be used to determine whether characteristic waste meets the applicable treatment standards or to demonstrate that the waste has been treated by the appropriate specified treatment technology. In accordance with R 299.9627 and 40 CFR §268.41, where treatment standards are based on concentrations in the waste extract, generators shipping waste to the facility will determine if their wastes meet treatment standards.

The Generator process knowledge will be used to identify the underlying hazardous constituents that are expected to be present in the waste. Generator process knowledge will be documented on the WCR and LDR notification.

A3.A.3(d) Radioactive Mixed Waste

[R 299.9627 and 40 CFR §§268.7, 268.35(c), 268.35(d), 268.36, and 268.42(d)]

Petro-Chem does not accept radioactive mixed waste.

A3.A.3(e) Leachates

[R 299.9627 and 40 CFR §260.10 and 40 CFR §§268.35(a) and 268.40]

Petro-Chem accepts F039 leachates for storage then transport offsite to an approved facility for further management.

A3.A.3(f) Laboratory Packs

[R 299.9627 and 40 CFR §§268.7and 268.42(c) and Part 268, Appendix IV and Appendix V]

The laboratory packs accepted at Petro-Chem are not land disposed. Lab packs may be repackaged, consolidated or transshipped for further management off-site. The LDR notification information that was provided by the generator is forwarded to the off-site facility.

If a laboratory pack hazardous waste is combined with non-laboratory pack hazardous waste prior to or during treatment, the entire mixture will be treated to meet the most stringent treatment standards for each waste constituent before being land disposed.

A3.A.3(g) Contaminated Debris

[R 299.9627 and 40 CFR §§268.2(g), 268.7, 268.9, 268.36, 268.45, and 270.13(n)]

The hazardous debris categories and the contaminant categories associated with the types of hazardous debris accepted at the facility are presented in Table A3.A.3.

Hazardous debris accepted at the facility that exhibits the characteristics of ignitability, corrosivity, or reactivity will be shipped off-site to an approved facility treated using one of the extraction, destruction, or immobilization technologies identified in Table 1 of 40 CFR §268.45

A3.A.3(h) Waste Mixtures and Wastes with Overlapping Requirements

[R 299.9627 and 40 CFR §§264.13(a), 268.7, 268.41(b), 268.43(b), and 268.45(a)]

Generator process information and analytical data will be used to demonstrate that those waste mixtures and wastes with multiple codes are properly characterized. Each waste that has more than one characteristic or a listed Reactivity Group Number (RGN) will be identified with a number for each characteristic. Waste identified as meeting a listing and exhibiting a characteristic will be primarily identified with the listed waste code for the purpose of manifesting, etc.

A3.A.3(i) Dilution and Aggregation of Wastes

[R 299.9627 and 40 CFR §268.3]

Listed wastes, if destined for land disposal, may not be diluted from the point of generation to the point of land disposal. Characteristic wastes may only be diluted if, (1) the waste is managed in a Clean Water Act (CWA)/CWA-equivalent surface unit or a Class I Safe Drinking Water Act injection well, (2) the waste has a concentration-based treatment standard or is treated using the DEACT technology-based treatment standard, and (3) the waste is not a D003 reactive waste.

The facility may not dilute or partially treat a listed waste to change its treatability category (i.e., from nonwastewater to wastewater), in order to comply with different treatment standards. If the wastes are all legitimately amenable to the same type of treatment to be performed, the facility may aggregate wastes for further management off-site.

Table A3.A.3 Contaminated Debris Categories

	Hazardous Debris Category	Contaminant Category
Glass:	Yes	Characteristic or listed waste
Metal:	Yes	Characteristic or listed waste
Plastic:	Yes	Characteristic or listed waste
Rubber:	Yes	Characteristic or listed waste
Brick:	Yes	Characteristic or listed waste
Cloth:	Yes	Characteristic or listed waste
Concrete	e: Yes	Characteristic or listed waste
Paper:	Yes	Characteristic or listed waste
Asphalt:	Yes	Characteristic or listed waste
Rock:	Yes	Characteristic or listed waste
Wood:	Yes	Characteristic or listed waste

A3.B CAPTIVE FACILITY

Petro-Chem generates waste on site. Petro-Chem also receives waste generated off site. Waste screening procedures for receiving wastes from off-site generators is discussed in Section A3.A.

The hazardous waste treated will be properly characterized using generator knowledge or chemical analysis to ensure that it is properly managed within the facility.

All analysis performed pursuant to this application will be consistent with the QA/QC Plan included in Template A2. All samples for the purpose of waste characterization will be collected, transported, stored, and disposed by trained and qualified individuals in accordance with the QA/QC Plan.

In accordance with R 299.9609 and 40 CFR §264.73 and Part 264, Appendix I, Petro-Chem will retain all records and results of waste determinations performed as specified in 40 CFR §§264.13, 264.17, 264.314, 264.1034, 24.1063, 264.1083, 268.4(a), and 268.7 in the facility operating record until closure of the facility.

A3.B.1 Selection of Waste Analysis Parameters

[R 299.9605(1) and 40 CFR §264.13(B)(1)]

Petro-Chem will select waste analysis parameters to confirm the identity of waste streams generated at the facility. The selection of waste analysis parameters will be based on knowledge of the raw material, analytical results, and physical and chemical processes that produce the waste stream. Knowledge of the process and analytical testing will be used to determine if the hazardous wastes exhibit one or more characteristics to: (1) ensure compliance with LDR regulations and (2) provide waste compatibility information to determine appropriate waste storage.

Table A3.B.1 lists the waste analysis procedures, including the waste analysis parameters, rationale for the selection of these parameters, test methods that will be used to test for these parameters, the appropriate reference, the frequency of waste characterization, and the rationale for frequency. The sampling method that will be used to obtain a representative sample of the wastes to be analyzed, the sampling equipment to use, and rationale to use are presented in Table A3.B.2.

A3.B.2 Additional Waste Analysis Requirements

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(b)(6) and (c)(3)]

<u>Petro-Chem</u> will review the waste characterization information to ensure that the facility is authorized to manage the waste in compliance with the following: (Check as appropriate)

(XI	R 299.9605 and 40 CFR §264.17	General requirements for ignitable, reactive, or incompatible wastes [Template A2, Section B1, C1]
(XI	R 299.9605 and 40 CFR §264.314	Special requirements for bulk and containerized liquids [Template A2, Section C1]

	R 299.9630 and 40 CFR §264.1034(d)	Test methods and procedures (Subpart AA)
D.//	D 000 0004 I 40 0FD 0004 4000(-I)	[Template A3, Section A3.B(2)]
[XI	R 299.9631 and 40 CFR §264.1063(d)	Test methods and procedures (Subpart BB) [Template A3, Section A3.B(2)]
[XI	40 CFR \$264.1083	Waste determination procedures (Subpart CC)
		[Template A3, Section A3.B(2)]
	R 299.9627 and 40 CFR §268.7	Waste analysis and record keeping LDR requirements
		[Template A3, Sections A3.B(3) and A3.C]
Ш	R 299.9228	Universal waste requirements
		[Template A2, Section A2]

(5/01/09)

Table A3.B.1 Waste Analysis Procedures

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Oxidizing Potential	Determine reactivity of material; strongly reactive materials	Test Strip	Petro-Chem Lab SOP;	N	Each bulk inorganic container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Ensure reactive materials are managed to meet the requirement of R299.9614 & R299.9615 for containers and tank systems respectively
lgnitability	Identify flammable materials for safe handling and storage	Pensky-Martens Closed Cup Tester	Petro-Chem Lab SOP; SW- 846 Method 1010, ASTM D93-90, E502- 84	Y	Each bulk container tanker truck or trailer; composite of up to 10 camples of each non-bulk container of each manifest line item	Ensure ignitable materials are managed to meet the requirement of R299.9614 & R299.9615 for containers and tank systems respectively

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Isocyanate Screen	Identify incompatible fuel type waste streams	Visual Observation	Petro-Chem Lab SOP	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Prevent commingling of incompatible fuel type wastes in tank systems
Compatibility/Reactivity	Identify safe handling methods for materials	Visual Observation	Nortru Lab SOP; ASTM D5058; ASTM D5232	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Ensure incompatible materials are not commingled; ensure proper storage of incompatible materials
Moisture Content	Determine organic content of liquid waste streams	Karl Fischer Titration	Petro-Chem Lab SOP; ASTM D4377, ASTM D5530	N	Each bulk container, tanker truck or trailer; composite up to 10 samples of each nonbulk container of liq. waste of each manifest line item	Identify organic wastes subject to Benzene NESHAP standards; determine blending ratios for fuel type wastes

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Specific Gravity/Density	Determine weight of material for safe handling	Gravimetric Determination	Petro-Chem Lab SOP;ASTM D287	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	weight of material is acceptable for placement in tanks or storage in appropriately DOT rated container
рН	Identify wastes that may compromise structural integrity of containers, tanks; identify appropriate PPE for handling material	pH/ISE Electrode	Nortru Lab SOP; SW-846 9045C, 9640B	Y	Each bulk container tanker truck or trailer; composite of up to 10 samples of each non-bulk container of each manifest line item	Prevent improper placement of materials in tank systems; ensure safe handling of materials; ensure suitability of containers for transshipment program
PCB's	Identify PCB containing wastes	Gas Chromatography1 ECD	Nortru Lab SOP; SW-846 808 A, 3620B	N	Each bulk container, tanker truck or trailer; composite up to 10 samples of each non- bulk container of org waste of each manifest line item	Prevent acceptance of wastes contain PCB's greater than 50 ppm

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Heat of Combustion	Determine heat value of materials destined for fuel program	Bomb Calorimetry	Nortru Lab SOP; ASTM D240, E144, D5468	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of liquid organic waste of each manifest line item	Confirm criteria for acceptance into fuel program (> 5,000 BTU/lb) (<5,000 BTU/lb will be evaluate for beneficial use at specific BIFs)
Halogen Content	Determine % halogen for materials destined for fuels program; used oil presumption	Combustate Titration	Petro-Chem Lab SOP; SW- 846 Method 9253	N	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of liquid organic waste of each manifest line item	Verify blending ratios to meet fuel specification for cement kilns;

Screening Parameter	Rationale for Parameter	Test Method	Reference	Specified in R 299.9216 (Y/N)	Frequency	Rationale for Frequency
Metals	Verify waste code information; verify hazard characteristic for LDR	Inductively Coupled Plasma	Petro-Chem Lab SOP: SW- 846 Method	Y	Each bulk container, tanker truck or trailer; composite of up to 10 samples of each non-bulk container of waste of each manifest line item	Ensure LDR are met; verify characteristics for transshipment program

Table A3.B.2 Sampling Procedures

Cantainer Type or Material	Sampling Method ¹	Sampling Equipment	Rationale
Non-bulk container of liquid	Drum thief or equivalent	Drum thief or equivalent	Representative core sample
Bulk portable container of liquid	ASTM D 6063	Coliwasa or equivalent	Representative core sample
Non-bulk container of solids	ASTM D 6063	Trier/Scoop	Commingling of various Grab samples at different depths
Bulk portable container of solids	ASTM D 6063	Trier/Scoop	Commingling of various Grab samples at different depths

¹ The sampling method should demonstrate equivalence with the sampling methods described in 40 CFR, Part 261, Appendix I.

A3.B.3 Procedures to Ensure Compliance with LDRs Requirements [R 299.9627 and 40 CFR, Part 268]

In accordance with the LDR regulations, all wastes shipped off site will be analyzed to determine whether the waste meets the applicable LDR treatment standards specified in R 299.9627 and 40 CFR §268.41-43. All analytical results will be maintained in the facility operating record until closure of the facility. Wastes that are determined through analysis to meet treatment standards as specified in R 299.9627 and 40 CFR §§268.41-43 will be <u>disposed</u>.

<u>Petro-Chem</u> will supply LDR notifications and certification, including appropriate analytical records or documentation of generator knowledge to support the certification, to the receiving facility with each shipment of waste. The notifications and certifications will contain the information required under R 299.9627 and 40 CFR §268.7.

A3.B.3(a) Spent Solvent and Dioxin Wastes

[R 299.9627 and 40 CFR §§264.13(a)(1), 268.7, 268.30, 268.31, 268.40, 268.41, 268.42, and 268.431

<u>Spenf solvent wastes (F001-F005)</u> are generated at the facility. Generator process knowledge will be used to determine the presence of spent solvent wastes (F001-F005). Generator process knowledge will be documented on the waste material profile report and LDR notification. The LDR notification will provide additional information regarding the appropriate treatment standards for the waste and whether it has already been treated to the appropriate standards.

Dioxin wastes are not generated at the facility,

A3.B.3(b) Listed Wastes

[R 299.9627, R 299.9213, and R 299.9214 and 40 CFR, Sections 264.13(a)(1), 268.7, 268.33, 268.34, 268.35, 268.36, 268.39, 268.40, 268.41, 268.42, and 268.431

<u>Generator process knowledge</u> will be used to determine whether listed waste meets the applicable treatment standards or to demonstrate that the waste has been treated by the appropriate specified treatment technology. In accordance with R 299.9627 and 40 CFR \$268.41, where treatment standards are based on concentrations in the waste extract, the facility will use TCLP to determine if wastes meet treatment standards.

Arsenic containing wastewaters (K031, K084, K101, P010, P011, P012, P036, P038, and/or UB6) will be analyzed using the extraction procedure (EP) toxicity test to determine compliance with treatment standards.

<u>Generator process knowledge</u> will be documented on the waste material profile report and LDR notification.

A3.B.3(c) Characteristic Wastes

[R 299.9627, R 299.9208, and R 299.9212 and 40 CFR §261.3(d)(1), 264.13(a)(1), 268.7, 268.9, 268.37, 268.40, 268.41, 268.42, and 268.43 and Part 268, Appendix I and Appendix IX]

Generator process knowledge will be used to determine whether characteristic wastes meet the applicable treatment standards or to demonstrate that the waste has been treated by the appropriate specified treatment technology. In accordance with R 299.9627 and 40 CFR §268.41, where treatment standards are based on concentrations in the waste extract, the facility will determine if wastes meet treatment standards.

A3.B.3(d) Radioactive Mixed Waste

[R 299.9627 and 40 CFR §§268.7, 268.35(c), 268.35(d), 268.36, and 268.42(d)]

Petro-Chem does not generate radioactive mixed waste.

A3.B.3(e) Leachates

[R 299.9627 and 40 CFR §§260.10, 268.35(a), and 268.40]

Petro-Chem does not generate single-source or multi-source F039 leachates.

A3.B.3(f) Laboratory Packs

[R 299.9627 and 40 CFR §268.7, 268.42(c) and Part 268, Appendix IV and Appendix V]

The laboratory packs generated at the facility are not land disposed. Lab packs may be repackaged, consolidated or transshipped for further management off-site. The LDR notification information that was provided by the generator is forwarded to the off-site facility.

If a laboratory pack hazardous waste is combined with non-laboratory pack hazardous waste prior to, or during, treatment, the entire mixture will be treated to meet the most stringent treatment standards for each waste constituent before being land disposed.

A3.B.3(g) Contaminated Debris

[R 299.9627 and 40 CFR §§268.2(g), 268.7, 268.9, 268.36, 268.45, and 270.13(n)]

The hazardous debris categories and the contaminant categories associated with the type of hazardous debris generated at the facility are presented in Table A3.B.3.

Hazardous debris generated at the facility that exhibits the characteristics of ignitability, corrosivity, or reactivity will be shipped offsite for treatment using one of the extraction, destruction, or immobilization technologies identified in Table 1 of 40 CFR §268.45.

A3.B.3(h) Waste Mixtures and Wastes with Overlapping Requirements [R 299.9627 and 40 CFR §§264.13(a), 268.7, 268.41(b), 268.43(b), and 268.45(a)]

Generator process information and analytical data will be used to demonstrate that waste mixtures and wastes carrying multiple codes are properly characterized. Wastes that carry more than one characteristic or listed RGN will be identified with a number for each characteristic.

A3.B.3(i) Dilution and Aggregation of Wastes [R 299.9627 and 40 CFR §268.3]

Listed wastes, if destined for land disposal, may not be diluted from the point of generation to the point of land disposal. Characteristic wastes may only be diluted if (1) the waste is managed in a CWA/CWA-equivalent surface unit or a Class I Safe Drinking Water Act injection well, (2) the waste has a concentration-based treatment standard or is treated using the DEACT technology-based treatment standard, and (3) the waste is not a D003 reactive waste.

The facility may not dilute or partially treat a listed waste to change its treatability category (i.e., from nonwastewater to wastewater), in order to comply with different treatment standards. If the wastes are all legitimately amenable to the same type of treatment to be performed, the facility may aggregate wastes for treatment.

Table A3.B.3 Contaminated Debris Categories

	Hazardous Debris Category	Contaminant Category
Glass:	Yes	Characteristic or listed waste
Metal:	Yes	Characteristic or listed waste
Plastic:	Yes	Characteristic or listed waste
Rubber:	Yes	Characteristic or listed waste
Brick:	No	N/A
Cloth:	Yes	Characteristic or listed waste
Concrete:	No	N/A
Paper:	Yes	N Characteristic or listed waste
Asphalt:	No	N/A
Rock:	No	N/A
Wood:	Yes	Characteristic or listed waste

A3.C NOTIFICATION, CERTIFICATION, AND RECORDKEEPING REQUIREMENTS [R 299.9627 and R 299.9609 and 40 CFR §§264.73, 268.7, and 268.9(d)]

Petro-Chem will perform the following procedures for preparing and/or maintaining applicable notifications and certifications to comply with LDRs:

A3.C.1 Retention of Generator Notices and Certifications

[R 299.9627 and 40 CFR §268.7(a)(7)]

Petro-Chem will retain a copy of all notices, certifications, demonstrations, data, and other documentation associated with compliance to LDRs.

The following notices and certifications submitted by the initial generator of the waste will be reviewed and maintained:

- Notices of restricted wastes not meeting treatment standards or exceeding levels specified in RCRA §3004(d), including the information listed in R 299.9627 and 40 CFR §268.7(a)(1).
- Notices of restricted wastes meeting applicable treatment standards and prohibition levels, including the information in R 299.9627 and 40 CFR §268.7(a)(2).

A3.C.2 Notification and Certification Requirements for Treatment Facilities [R 299.9627 and 40 CFR §268.7(b)]

Petro-Chem waste or treatment residues received from off-site sources or generated from processing activities will be further managed at a different treatment or storage facility. The Petro-Chem facility will comply with the notice and certification requirements applicable to generators as specified in R 299.9627 and 40 CFR §268.7(b)(6).

A3.C.3 Waste Shipped to Subtitle C Facilities

[R 299.9627 and 40 CFR §§268.7(a) and 268.7(b)(6)]

For restricted waste or waste treatment residues that will be further managed at a Subtitle C (hazardous waste management) facility, Petro-Chem will submit notifications and certifications in compliance with the notice and certification requirements applicable to generators under R 299.9627 and 40 CFR §268.7(a). Each shipment of waste to be transported off site to a RCRA-authorized Subtitle C TSDF will include a written notification and certification that the waste either meets or does not meet applicable treatment standards of prohibition levels. Biodegradable sorbents will not be added to wastes shipped to Subtitle C landfills.

A3.C.4 Waste Shipped to Subtitle D Facilities

[R 299.9627 and 40 CFR §§268.7(d) and 268.9(d)]

The facility does not treat hazardous wastes; therefore, RCRA wastes generated by Petro-Chem or received from off-site sources are not shipped to Subtitle D facilities.

A3.C.5 Recyclable Materials

[R 299.9627 and 40 CFR §268.7(b)(7)]

Petro-Chem does **not accept** recyclable materials used in a manner constituting disposal.

A3.C.6 Record Keeping

[R 299.9608(4), R 299.9609, R 299.9610(3), and R 299.9627 and 40 CFR \$3264.72, 264.73, 268.7(a)(5), 268.7(a)(6), 268(a)(7), and 268.7(d)]

Petro-Chem maintains a facility operating log in accordance with R 299.9609 and 40 CFR \$264.73. The operating log consists of <u>Tank Farm Volumes & Capacities, Inspection Forms, Inbound & Outbound Summary, Maintenance Request Form, Testing Results, Discrepancy Reports, Shipping Documents</u>

Copies of all necessary notifications and certifications, as well as relevant inspection forms and monitoring data, are also maintained on file at the facility. Files will be maintained for a minimum of three years (for inspection records and LDR notification), or until facility closure (for inventory records).

A3.C.7 Required Notice

[R 299.9605(1) and 40 CFR §264.12(a) and (b))]

The facility will notify the Division Chief in writing at least four weeks before the date the facility expects to receive hazardous waste from a foreign source. Notice of subsequent shipments of the same waste from the same foreign source is not required. When receiving such hazardous waste, the facility will comply with applicable treaties or other agreements entered into between the country in which the foreign source is located and the United States.

When the facility is to receive hazardous waste from an off-site source, the facility will inform the generator in writing that the facility has the appropriate license for and will accept the waste the generator is shipping. The facility will keep a copy of this written notice in the operating record.

APPENDIX I

Waste Characterization Report



WASTE CHARACTERIZATION REPORT

ALL fields must be completed upon submission. Incomplete profiles will NOT be approved.

process Code	
Profile #	

A - Generator Information Name:		S.I.C/NAICS	Code:	EPA ID #: _		
Site Address:	City:			State:	Zip:	
Mailing Address:				_		
Contact:				:1.		
B - Billing/Broker Information Name:						
Address:					Zip:	
Contact:		Fax:	Ema	ıl:		
Salesperson		Customer Service				
C – Waste Information						
State Waste Code(s)	EPA Waste Code(s)					
Waste Common Name	Generating	Process				
Treatment/Disposal Restrictions						
Analysis Attached ☐ Yes ☐ No	MSDS Attached	Yes 🔲 No	Samp	les Enclosed] Yes □ No	
Annual Generation Quantity	Lbs Gals	Drums 🔲	Tons 🗌 Oth	ner		
	y 🔲 Monthly 🔲 Qua	rterly 🔲 Yea			er	
Container Type 🔲 Bulk Liquid 🔲 Bulk S	Solid Container (Size/Ty	/pe)				
D - Physical Characteristics						
sical State @ 70°F ☐ Gas ☐ Liquid	d □Sludge □Solid	☐ Debris		□ Labpack	☐ Loosepac	:k
r(s) ☐ Single Phase ☐ Bi-Layered				Ш тарраон		
	quid Range	' <u>'</u>	1 Range	- %		
Odor None Mild Strong						
Specific Gravity		Actual				
Flash Point				N/A Actual		
	tor Knowledge					
pH ☐ 52.0 ☐ 2.1 = 5.9 ☐ 6.0 = 8	-	-	T Cup	ie		
·					ive	□No
	Shock					
Fuel Characteristics BTU/lb			_ Liee [_ Misciple _	_ neated Material	(2140 F)
E – Miscellaneous Questions Is the waste any	y of the following?					
lgnitable Solid ☐ Yes ☐ No	Reactive Metal Powders	☐ Yes ☐ No	NIOSH Hum	an-Positive Carcir	nogens	□No
Pyrophoric Yes No	Reactive (Other)	☐ Yes ☐ No		astes (Benzene, et		
Water Reactive ☐ Yes ☐ No	Biological	☐ Yes ☐ No	If yes, spe	cify		
Oxidizer Yes No	Activated Carbon	_ ☐ Yes ☐ No	Asbestos		☐ Yes	☐ No
Nitro Cellulose/Lacquer Dust Yes No			If yes, spe	cify		
- Metals						
Metal Code Generator Knowledse	TCLP Total	<u>Metal</u>	Code Gener	ator Knowledse	☐ TCLP ☐	<u>Total</u>
Arsenic D004 □<5ppm	ppm	Lead	D008		ppm	
Barium	ppm	Mercury	D009 □<0.2		ppm	
nium D006 □<1ppm	ppm	Selenium	D010		ppm	
omium D007 □<5ppm	ppm	Silver	D010 □<1p	-	ppm	
	Total Generator Knowl		2011 — 170р	Pill		
Amount in ppm	John Control (1000)	3-				
Print						

G - Toxics										
<u>Toxics</u>	<u>None</u>	<u>Analysis</u>	<u>Toxics</u>		<u>None</u>	<u>Analysis</u>	<u>Toxics</u>	<u>None</u>	<u>Analysi</u> s	
PCBs		ppm	Urea/Th	iourea		ppm	Phosphorous Compo	ounds 🔲 _		
Dioxins		ppm	Phenols			ppm	Cyanides: Reactive	· 🗆 _	ppm	
Herbicides	•	ppm	Phenolic	s		ppm	Cyanides: Amenab	le 🔲 _	ppm	
HOCs		ppm	TOC			ppm	Cyanides: Total	17 _	ppm	
Aromatic Amines		ppm	VOCs			ppm	Sulfides: Reactive		ppm	
Pesticides		ppm	Quinone	s		ppm	Sulfides: Total		ppm	
Fungicides		ppm	Ammoni	а		ppm				
H – Chemical Com	position	100 age 100 age 100 age 100 age								
Chemical Name (B	se Specific	c, No Trade Nam		Ma	<u>IX</u>	Chemical Name (Be	e Specific, No Trade Names	,	<u>Max</u>	
			<u>%</u>		<u></u> %			%_	%	
					<u>%</u>				%_	
			%_		<u>%_</u>			%_	%	
					<u></u> %				%_	
DOT Hazardous DOT Shipping Nan Technical Descript					_	_	」Yes	When Wet L	Yes No	
Hazard Class	()	ERG#	Un/NA#			Packaging Group	Reportable Quantit	ty (RQ) in lbs _		
J – Regulatory Info	rmation	10180 (3010) (1020)								
USEPA regulated I		swaste?	☐ Yes • No			Explosive material?)	● Yes □ No	/	
Subject to categori			☐ Yes ☐ No			•	ntain friable asbestos?	☐ Yes ☐ No	(
TSCA regulated PC		ŭ	• Yes \square No				ntain non-friable asbestos?	☐ Yes ☐ No		
CERCLA cleanup a		ste?	☐ Yes • No			Infectious or medica	al waste?	☐ Yes ☐ No		
Dioxin bearing was			 ☐ Yes ☐ No	— □ Yes □ No			Waste subject to Subpart CC regulations?			
Radioactive waste	?		☐ Yes ☐ No			State regulated was	ste?	☐ Yes ☐ No		
K – Landban Inforn	nation									
Waste Subject to L			LDR)? [∃Yes	□No	Is a Land Disposal	Restriction Notification Requi	ired?	Yes □No	
Does this waste me	-		_	_	☐ No	-	s federal treatment standards		Yes No	
This waste is a	Waste	water	_	_	_	Is an Underlying Ha	azardous Constituent for Req		Yes □ No	
Is a Land Disposal		_		Yes	□No	, 0	·	_		
Based on my inquit accurate, and comp	and warra ry and per plete to the	int that 1 have pe sonal knowledge e best of my knov	of those individuals wledge and belief.	s respo Further	nsible for more, no	supplying or obtaining material fact has bee	ontained and submitted in this g the information, the informa n omitted as to make this info the waste material described	ation contained ho ormation mislead	erein is true,	
Printed:				NIA NAT				547		
				NAME				DAT	Е	
Signature:										
				NAME				DAT	E	

APPENDIX II

System Generated Profile

Status: ACTIVE

Generator's Waste Profile HCCACID-00

Starts : 15 JUN 2009 Expires: 30 JUL 2011

2504 Becky Schaefer Sales Rep

Acct Mnar

2513 Trenessa Mitchell

A: GENERATOR (108149) SITE INFORMATION

ROTODYNE DECORATIVE TECH.

104 WHITING FARM ROAD HOLYOKE, MA 01040

Contact FRANK GERMAIN TSDF Approval List No

B: CUSTOMER (56805) INFORMATION

HERITAGE-CRYSTAL CLEAN, LLC MAR000006528 **NAICS** 9999 Neshap N 3970 WEST 10TH STREET

Analysis No

INDIANAPOLIS, IN 46222

Sample No

Phone (413) 536-5508

MSDS No

EPA

On File >

C: WASTE INFORMATION

Waste Name MIXED ACIDS Process

UNUSED, UNWATNED, OUT-OF-DATE PRODUCT, INDUSTRIAL CLEANING MATERIALS, COLLECTION OF CAUSTICS

MATERIALS AT TSDF

Unused Commercial Product No Spill Residue No

D: PHYSICAL CHARACTERISTICS OF WASTE

L-Liq

Mid Color **Bot Color**

Top Color VARIOUS

% Ash %Water Odor None

Layers

BTU/Lbs

Information Provided By

Sulfides

Single Phased 0.8-1.0

Spec Grav % Halogens Free Liq % Flash Test

PH Range

Flash Rnge >200F Viscosity Nο Pumpable

E: CHEMICAL COMPOSITION OF WASTE

MIXED MINERAL ACIDS HYDROCHLORIC ACID

Phys States

PCB's

100 % Phenolics NS

) SULFURIC ACID) METALS

Dioxins

Generator

Gen Knowledge

ETALS METHOD Gen Knowledge

Arsenic <5 Barium <100

Cyanides

Cadmium <1 Merc TCLP < 0.2

Chromium <5 Selenium <1 <5 Merc Tot

Silver Nickel **Thallium** Zinc Copper Chrome-6

G: OTHER CHARACTERISTICS OF WASTE

Ign. Solid Explosive

Herbicides

Form W103

Oxidizer No

Explosive No Asbestos

Pesticides

Lead

Shock Sensitive No Radioactive No

Ammonia

Cyanide Reactive No Water Reactive No Infectious No

Sulfide Reactive No Reactive (Other) No Medical No

H: EPA / STATE WASTE IDENTIFICATION EPA Waste Yes

Source G07 Origin 1 SubPart CC No

State Waste Yes **NESHAPS** No

TSCA No CERCLA No Waste Water No Debris No

<5

Universal Waste No Reg. Organics No

EPA Codes D002 D004 D007 D008 D009 D011

State Codes 029L

UHC

Categorical Discharge Standards No

I: SHIPPING INFORMATION

Marine Pollutant No

Containers **DOT Descrip**

WASTE VARIOUS - SEE SHIPPING LABEL

Qty to Ship Now

Projected Volume

J: SPECIAL DISPOSAL INSTRUCTIONS

Generator's Waste Profile HCCACID-00

Page

2

Status: ACTIVE

Starts : 15 JUN 2009 Sales Rep 2504 Becky Schaefer Expires : 30 JUL 2011 Acct Mngr 2513 Trenessa Mitchell

GENERATOR CERTIFICATION

I hereby certify, as an authorized representative of the Generator named above, that Petro-Chem Processing Group has been fully informed of all
information known about this waste, including but not limited to, the waste's generation process, composition, and physical characteristics, necessary to
identify proper treatment and disposal of waste and this information is true and accurate. If this is an existing profile which is being renewed, I hereby
certify that there have been no changes in this waste, chemical, physical, or regulatory designation since full characterization by sample testing.

			1/
Signature	Printed Name	Title	Date

Appendix I - US EPA Michigan Waste Codes

D001	F012	K046	K151	P050	P119	U033	U091	U148	U206	001K
D002	F019	K048	K156	P051	P120	U034	U092	U149	U207	002K
D003	F024	K049	K157	P054	P121	U035	U093	U150	U208	
D004	F025	K050	K158	P056	P122	U036	U094	U151	U209	001U
D005	F032	K051	K159	P057	P123	U037	U095	U152	U210	033U
D006	F034	K052	K161	P058	P127	U038	U096	U153	U211	070U
D007	F035	K060	K169	P059	P128	U039	U097	U154	U213	074U
D008	F037	K061	K170	P060	P185	U041	U098	U155	U214	124U
D009	F038	K062	K171	P062	P188	U042	U099	U156	U215	131U
D010	F039	K069	K172	P063	P189	U043	U101	U157	U216	139U
D011		K071	K176	P064	P190	U044	u102	U158	U217	150U
D012	K001	K073	P001	P065	P191	U045	U103	U159	U218	
D013	K002	K083	P002	P066	P192	U046	U105	U160	U219	
D014	K003	K084	P003	P067	P194	U047	U106	U161	U220	
D015	K004	K085	P004	P068	P196	U048	U107	U162	U221	
D016	K005	K086	P005	P069	P197	U049	U108	U163	U222	
D017	K006	K087	P006	P070	P198	U050	U109	U164	U223	
D018	K007	K088	P007	P071	P199	U051	U110	U165	U225	
D019	K008	K093	P008	P072	P201	U052	UIII	U166	U226	
D020	K009	K094	P009	P073	P202	U053	U112	U167	U227	
D021	K010	K095	P010	P074	P203	U055	U113	U168	U228	
D021	K011	K096	P011	P075	P204	U056	U114	U169	U234	
D022	K013	K097	P012	P076	P205	U057	U115	U170	U235	
D024	K014	K098	PO13	P077	1 200	U058	U116	U171	U236	
D025	K015	K099	P014	P078	U001	U059	U117	U172	U237	
D026	K016	K100	P015	P081	U002	U060	U118	U173	U238	
D020 D027	K017	K100	P016	P082	U003	U061	U119	U174	U239	
D027	K018	K101	P017	P084	U004	U062	u120	U176	U240	
D028	K019	K102	P018	P085	U005	U063	U121	U177	U243	
D023	K020	K103	P020	P087	U006	U064	U122	U178	U244	
D031	K021	K105	P021	P088	U007	U066	U123	U179	U246	
D032	K021	K106	P022	P089	U008	U067	U124	U180	U247	
D033	K023	K111	P023	P092	U009	U068	U125	U181	U248	
D034	K024	K112	P024	P093	U010	U069	U126	U182	U249	
D035	K025	K113	P026	P094	U011	U070	U127	U183	U271	
D036	K026	K114	P027	P095	U012	U071	U128	U184	U277	
D037	K027	K115	P028	P097	U014	U072	U129	U185	U278	
D037	K028	K116	P029	P098	U015	U073	U130	U186	U279	
D039	K029	K117	P030	P099	U016	U074	U131	U187	U280	
D040	K030	K118	P033	P101	U017	U075	U132	U188	U328	
D040	K031	K123	P034	P102	U018	U076	U133	U189	U353	
D042	K032	K124	P036	P103	U019	U077	U134	U190	U359	
D043	K033	K125	P037	P104	U020	U078	U135	U191	U364	
5040	K034	K126	P038	P105	U021	U079	U136	U192	U367	
F001	K035	K132	P039	P106	U022	U080	U137	U193	U372	
F002	K036	K136	P040	P108	U023	U081	U138	U194	U373	
F003	K037	K141	P041	P109	U024	U082	U140	U196	U387	
F004	K038	K142	P042	P110	U025	U083	U141	U197	U389	
F005	K039	K143	P043	PIII	U026	U084	U142	U200	U394	
F006	K040	K144	P044	P112	U027	U085	U143	U201	U395	
F007	K040	K145	P045	P113	U028	U086	U144	U202	U404	
F008	K041	K147	P046	P114	U029	U087	U145	U203	U409	
F009	K042	K148	P047	P115	U030	U088	U146	U204	U410	
F010	K044	K149	P048	P116	U031	U089	U147	U205	U411	
F011	K045	K150	P049	P118	U032	U090	5171	2200	J 111	
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EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
Ю1	The following spent halogenated solvents used in degreasing: tetrachloroethylene,trichloroethylene,methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures and blends used in degreasing containing, before use, a total of 10% or more, by volume, of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane and 1,1,2-trichloroethane; all spent solvent mixtures and blends containing, before use, a total of 10% or more, by volume, of one or more of the above halogenated solvents or those solvents listed in FOO1, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures and blends containing, before use, only the above spent nonhalogenated solvents; and all spent solvent mixtures or blends, containing before use, one or more of the above nonhalogenated solvents, and a total of 10% or more, by volume, of one or more of those solvents listed in FOO1, F002, F004, and F005 and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I)
F004	The following spent nonhalogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures and blends containing, before use, a total of 10% or more, by volume, of one or more of the above nonhalogenated solvents or those solvents listed in FOO1, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F005	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures and blends containing, before use, a total of 10% or more, by volume, of one or more of the above nonhalogenated solvents or those solvents listed in FOO1, F002 and F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I,T)

EPA Hazardous	Hazardous Waste From Nonspecific Sources	Hazard Code
Waste Number	mazardous waste from Nonspecific Sources	Trazard Code
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating used on a segregated basis on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning or stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	
F008	Plating sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process	(R,T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process	(R,T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process	
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat-treating operations	(R,T)
F012	Quenching wastewater treatment sludges from metal heat-treating operations where cyanides are used in the process	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process	(T)
F020	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process, of tri- or tetrachlorophenol or of intermediates used to produce their pesticide derivatives. This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
F021	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of pentachlorophenol or of intermediates used to produce its derivatives	(H)
F022	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzenes under alkaline conditions	(H)

EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
F023	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- and tetrachlorophenols. This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol	(H)
F024	Process wastes, including, but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from 1 to 5, with varying amounts and positions of chlorine substitutions. This listing does not include wastewater, wastewater treatment sludges, spent catalysts, and wastes listed in R 299.9213(1)(a) or R 299.9214(1)(a)	(T)
F025	Condensed light ends, spent filters and filter acids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from 1 to 5, with varying amounts and positions of chlorine substitution	(T)
F026	Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzene under alkaline conditions	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulation containing compounds derived from these chlorophenols. This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA hazardous waste numbers F020, F021, F022, F023, F026, and F027	(T)

EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
F032	Wastewaters, except for those that have not come into contact with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations, except potentially crosscontaminated wastes that have had the F032 hazardous waste number deleted pursuant to 40 C.F.R. §261.35 or potentially cross-contaminated wastes that are otherwise currently regulated as F034 or F035, and where the generator does not resume or initiate the use of chlorophenolic formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
F034	Wastewaters, except for those that have not come into contact with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
F035	Wastewaters, except for those that have not come into contact with process contaminants; process residuals; preservative drippage; and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol, or both.	(T)
F037	Petroleum refinery primary oil/water/solids (oil and/or water and/or solids) separation sludge-any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in R 299.9213(4), including sludges generated in 1 or more additional units after wastewaters have been treated in aggressive biological treatment units, and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under R 299.9204(1)(1) if those residuals are being disposed.	(T)

EPA Hazardous Waste Number	Hazardous Waste From Nonspecific Sources	Hazard Code
F038	Petroleum refinery secondary (emulsified) oil/water/solids (oil and/or water and/or solids) separation sludge-any sludge or float generated from the physical or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in induced air flotation (IAF) units and tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow; sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters; sludges and floats generated in aggressive biological treatment units as defined in R 299.9213(4), including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units; and F037, K048, and K051 wastes are not included in this listing.	(T)
F039	Leachate resulting from the treatment, storage, or disposal of wastes classified by more than 1 hazardous waste number pursuant to R 299.9213 and R 299.9214 or from a mixture of wastes classified pursuant to R 299.9213 and R 299.9214. Leachate resulting from the management of 1 or more of the following hazardous wastes, and no other hazardous wastes, retains its original hazardous waste number or numbers: F020, F021, F022, F023, F026, F027, or F028.	

Industry	EPA Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
Wood Preservation	K001	Bottom sediment sludge from the treatment of wastewaters from wood-preserving processes that use creosote or pentachlorophenol, or both of these compounds	(T)
Inorganic Pigments	K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments	(T)
	K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
	K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
	K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
	K006	Wastewater treatment sludge from the production of chrome oxide green pigments, anhydrous and hydrated forms	(T)
	K007	Wastewater treatment sludge from the production of iron blue pigments	(T)

	K008	Oven residue from the production of chrome oxide green pigments	(T)
	K009	Distillation bottoms from the production of chemicals acetaldehyde from ethylene	(T)
	K010	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
	K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	(R,T)
	K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R,T)
	K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
	K015	Still bottoms from the distillation of benzyl chloride	(T)
	K016	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
	K017	Heavy ends or still bottoms from the purification column in the production of epichlorohydrin	(T)
	K018	Heavy ends from the fractionation column in ethyl chloride production	(T)
Organic Chemicals	K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production	(T)
	K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
	K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
	K022	Distillation bottom tars from the production of phenol or acetone from cumene	(T)
	K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
	K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
	K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
	K026	Stripping still tails from the production of methyl ethyl pyridines	(T)
	K027	Centrifuge and distillation residues from toluene diisocyanate production	(R,T)
	K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	(T)
	K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)

K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene	(T)
K083	Distillation bottoms from aniline production	(T)
K085	Distillation of fractionation column bottoms from the production of chlorobenzenes	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
K103	Process residues from aniline extraction from the production of aniline	(T)
K104	Combined wastewater streams generated from nitrobenzene or aniline production	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes	(T)
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)

K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine	(T)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethane	(T)
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene	(T)
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene	(T)
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. This waste does not include still bottoms from the distillation of benzyl chloride.	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
K1.51	Wastewater treatment sludges, excluding *neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
K1.56	Organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)

K157	Wastewaters, including scrubber waters, condenser waters, washwaters, and separation waters, from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyln-butylcarbamate.	(T)
K158	Baghouse dusts and filterlseparation solids from the production of carbamates and carbamoyl oximes. This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.	(T)
K159	Organics from the treatment of thiocarbamate wastes	(T)
K161	Purification solids, including filtration, evaporation, and centrifugation solids, bag house dust, and floor sweepings from the production of dithiocarbamates acids and their salts. This listing does not include K125 or K126.	(R,T)
	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer, including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater, unless the sludges meet the following conditions: (1) they are disposed of in a hazardous waste landfill or a nonhazardous waste landfill licensed or permitted by the state or federal government, (2) they are not otherwise placed on the land before final disposal, and (3) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of RCRA or part 111 of the act must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth herein. In doing so, they must provide appropriate documentation, such as contracts between the generator and the landfill ownerloperator or invoices documenting delivery of the waste to the landfill, that the terms of the exclusion were met.	(T)
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process	(T)

	K181	Nonwastewaters from the production of dyes or pigments, including nonwastewaters commingled at the point of generation with nonwastewaters from other processes, that, at the point of generation, contain mass loadings of any of the K181 listing constituents identified in 40 C.F.R. §261.32(c) that are equal to or greater than the listing levels identified in 40 C.F.R. §261.32(c), as determined on a calendar year basis. These wastes shall not be considered hazardous if the nonwastewaters are managed in compliance with the requirements for this listing as outlined in of 40 C.F.K. §261.32(a). For the purposes of this listing, dyes or pigments production is defined to include manufacture of the following product classes: dyes, pigments, or federal food and drug administration certified colors that are classified as azo, triarylmethane, perylene, or anthraquinone classes. Azo products include azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone products. Triarylmethane products include both triarylmethane and triphenylmethane products. Wastes that are not generated at a dyes or pigments manufacturing site, such as wastes from the offsite use, formulation, and packaging of dyes or pigments, are not included in this listing. The process for demonstrating that a facility's nonwastewaters are not K181 is contained in 40 C.F.R. §261.32(d). This K181 listing does not apply to wastes that are otherwise identified as hazardous waste under R 399.9212, R 399.9217, R 299.9220, R 299.9222, R 299.9224, or R 399.925 at the point of generation. Also, the listing does not apply to the wastes generated before any annual mass loading limit is met.	(T)
	K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used	(T)
	K073	Chlorinated hydrocarbon wastes from the purification step of the diaphragm cell process using graphite anodes in chlorine production	(T)
	K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
	K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates	(E)
Inorganic Chemicals	K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates	(T)
	K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite	(T)

		process	
	K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
	K032	Wastewater treatment sludge from the production of chlordane	(T)
	K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane	(T)
	K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane	
	K035	Wastewater treatment sludges generated in the production of creosote	(T)
	K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
	K037	Wastewater treatment sludges from the production of disulfoton	(T)
	K038	Wastewater from the washing and stripping of phorate production	(T)
	K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate	(T)
	K040	Wastewater treatment sludge from the production of phorate	(T)
Pesticides	K041	Wastewater treatment sludge from the production of toxaphene	(T)
	K042	Heavy ends of distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T	(T)
	K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
	K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane	(T)
	K098	Untreated process wastewater from the production of toxaphene	(T)
	K099	Untreated wastewater from the production of 2,4-D	(T)
	K123	Process wastewater, including supernates, filtrates, and washwaters, from the production of ethylenebisdithiocarbamic acid and its salt	(T)

	K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamicacid and its salt	(T)
	K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamicacid and its salt	(C,T)
	K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts	(T)
	K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide	(T)
	K132	Spent absorbent and wastewater separator solids from the production of methyl bromide	(C,T)
	K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(T)
	K045	Spent carbon from the treatment of wastewater containing explosives	(I)
	K046	Wastewater treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds	(I)
	K047	Pink or red water from TNT operations	(T)
	K048	Dissolved air floatation, DAF, float from the petroleum refining industry	(I)
E1	K049	Slop oil emulsion solids from the petroleum refining industry	(T)
Explosives	K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
	K051	API separator sludge from the petroleum refining industry	(T)
	K052	Tank bottoms, leaded, from the petroleum refining industry	(T)
	K169	Crude oil storage tank sediment from petroleum refining operations	(T)
Petroleum Refining	K170	Clarified slurry oil tank sediment and/or inline filter/separation solids from petroleum refining operations	(T)
	K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors. This listing does not include inert support media.	(T)
	K172	Spent hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors. This listing does not include inert support media.	(I, T)

	K061	Emission control dust or sludge from the primary production of steel in electric furnaces	(I, T)
	K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry	(T)
	1088	Spent potliners from primary aluminum reduction	(C,T)
	K069	Emission control dust or sludge from secondary lead smelting. (This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further action is taken by the EPA and notice published in the Federal Register.)	(T)
Iron and Steel	K100	Waste leaching solution from acid leaching of emission control dust sludge from secondary lead smelting	(T)
Primary Aluminum	K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
	K101	Distillation tar residues from the distillation of aniline- based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
Secondary Lead	K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
	K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead	(T)
	K060	Ammonia still lime sludge from coking operations	(T)
Veterinary	K087	Decanter tank tar sludge from coking operations	(T)
Pharmaceuticals	K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke byproducts produced from coal. This listing does not include K087.	(T)
Ink Formulation	K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal	(T)
Coking	K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-	(T)

		products produced from coal	
	K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal	(T)
	K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal	(T)
	K147	Tar storage tank residues from coal tar refining	(T)
	K148	Residues from coal tar distillation, including, but not limited to, still bottoms	(T)

Michigan Hazardous Waste Number	Hazardous Waste From Specific Sources	Hazard Code
001K	Residues, including emission control sludges, from the production process and packaging of 4,4'-Methylenebis (2-chloroaniline)	(T)
002K	Wash acids generated after the effective date of these rules from the production of 3,3'-Dichlorobenzidine and still bottoms from the recovery of these acids, excluding wash acids that are recycled or any materials that are reclaimed from the wash acids and used beneficially	(T)

Chemical Abstract Services Number	Substance	Hazard Code
107-20-0	Acetaldehyde, chloro-	
591-08-2	Acetamide, N-(aminothioxomethyl)-	
640-19-7	Acetamide, 2-fluoro-	
62-74-8	Acetic acid, fluoro-, sodium salt	
591-08-2	I - Acetyl-2-thiourea	
107-02-8	Acrolein	
	591-08-2 640-19-7 62-74-8 591-08-2	591-08-2 Acetamide, N-(aminothioxomethyl)- 640-19-7 Acetamide, 2-fluoro- 62-74-8 Acetic acid, fluoro-, sodium salt 591-08-2 I - Acetyl-2-thiourea

P070	116-06-3	Aldicarb	
P203	1646-88-4	Aldicarb sulfone	
P004	309-00-2	Aldrin	
P005	107-18-6	Allyl alcohol	
P006	20859-73-8	Aluminum phosphide	(R,T,)
P007	2763-96-4	5 -(Aminomethyl)-3 -i soxazolol	
P008	504-24-5	4-Aminopyridine	
P009	131-74-8	Ammonium picrate	(R)
P119	7803-55-6	Ammonium vanadate	
P099	506-61-6	Argentate (1-), bis(cyano-C)-, potassium	
P010	7778-39-4	Arsenic acid	
P012	1327-53-3	Arsenic (III) oxide	
P011	1303-28-2	Arsenic (V) oxide	
P011	1303-28-2	Arsenic pentoxide	
P012	1327-53-3	Arsenic trioxide	
P038	692-42-2	Arsine, diethyl-	
P036	696-28-6	Arsonous dichloride, phenyl-	
P054	151-56-4	Aziridine	
P067	75-55-8	Aziridine, 2-methyl-	
P013	542-62-1	Barium cyanide	
P024	106-47-8	Benzenamine, 4-chloro-	
P077	100-01-6	Benzenamine, 4-nitro-	

P028	100-44-7	Benzene, (chloromethyl)-	
P042	51-43-4	1,2-Benzenediol, 4-[l-hydroxy-2- (methylamino)ethyl]-	(R)
P046	122-09-2	Benzeneethanamine, alpha, alpha-dimethyl-	
P014	108-98-5	Benzenethiol	
P127	1563-66-2	7-benzofuranol, 2,3-dihydro-2,2-dimethyl-, methoycarbamate	
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis) - 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b] indol-5-yl methylcarbarnate ester (1:1)	
P001	81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-0x0-1-phenylbutyl)-, and salts, when present at concentrations greater than 0.3%	
P028	100-44-7	Benzyl chloride	
P015	7440-41-7	Beryllium powder	
P017	598-31-2	Bromoacetone	
P018	357-57-3	Brucine	
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino) carbonyl] oxime	
P021	592-01-8	Calcium cyanide	
P021	592-01-8	Calcium cyanide Ca(CN)2	
P189	55285-14-8	Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester	

P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H-pyrazol-5-yl ester	
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester	
P127	1563-66-2	Carbofuran	
P022	75-15-0	Carbon disulfide	
P095	75-44-5	Carbonyl chloride	
P189	55285-14-8	Carbosulfan	
P023	107-20-0	Chloroacetaldehyde	
P024	106-47-8	p-Chloroaniline	
P026	5344-82-1	1-(o-Chlorophenyl)thiourea	
P027	542-76-7	3-Chloropropionitrile	
P029	544-92-3	Copper cyanide	
P029	544-92-3	Copper cyanide Cu(CN)	
P202	64-00-6	m-Cumenyl methylcarbamate	
P030		Cyanides (soluble cyanide salts), not elsewhere specified	
P031	460-19-5	Cyanogen	
P033	506-77-4	Cyanogen chloride	
P033	506-77-4	Cyanogen chloride (CN)C1	
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol	
P016	542-88-1	Dichloromethylether	
P036	696-28-6	Dichlorophenylarsine	
P037	60-57-1	Dieldrin	

P038	692-42-2	Diethylarsine	
P041	311-45-5	Diethyl-p-nitrophenyl phosphate	
P040	297-97-2	0,0-Diethyl 0-pyrazinyl phosphorothioate	
P043	55-91-4	Diisopropyl fluorophosphate	
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta, 5alpha,8alpha,8abeta)-	
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta, 5beta,8beta,8abeta)-	
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha, 3beta,6beta,6aalpha,7beta,7aalpha)-	
P051	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha, 2beta,2abeta,3alpha, 6alpha,6abeta,7beta, 7aalpha)-, & metabolites	
P044	60-51-5	Dimethoate	
P046	122-09-8	alpha,alpha-Dimethylphenethylamine	
P191	644-64-4	Dimetilan	
P047	534-52-1	4,6-Dinitro-o-cresol and salts	
P048	51-28-5	2,4-Dinitrophenol	
P020	88-85-7	Dinoseb	
P085	152-18-9	Diphosphoramide, octamethyl-	
P111	107-49-3	Diphosphoric acid, tetraethyl ester	
P039	298-04-4	Disulfoton	
P049	541-53-7	2,4-Dithiobiuret	

P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2-4-dimethyl-, O-[(methylamino)-carbonyl]oxime	
P050	115-29-7	Endosulfan	
PO88	145-73-7	Endothall	
P051	72-20-8	Endrin	
P051	72-20-8	Endrin, and metabolites	
P042	51-43-4	Epinephrine	
P031	460-19-5	Ethanedinitrile	
P194	23135-22-0	Elhanimidothioic acid, 2-(dimethylamino)-N- [[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester	
P066	16752-77-5	Ethanimidothioic acid, N-[[(methylamine)carbonyl] oxyl]-, methyl ester	
P101	107-12-0	Ethyl cyanide	
P054	151-58-4	Ethyleneimine	
P097	52-85-7	Famphur	
P056	7782-41-4	Fluorine	
P057	640-19-7	Fluoroacetamide	
P058	62-74-8	Fluoroacetic acid, sodium salt	
P198	23422-53-9	Formetanate hydrochloride	
P197	17702-57-7	Formparanate	
P065	628-86-4	Fulminic acid, mercury (II) salt	(R,T)
P059	76-44-8	Heptachlor	
P062	757-58-4	Hexaethyl tetraphosphate	

79-19-6	Hydrazinecarbothioamide	
60-34-4	Hydrazine, methyl-	
74-90-8	Hydrocyanic acid	
74-90-8	Hydrogen cyanide	
7803-51-2	Hydrogen phosphide	
465-73-6	Isodrin	
119-38-0	Isolan	
64-00-6	3-Isopropylphenyl N-methylcarbamate	
2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-	
15339-36-3	Manganese, bis(dimethylcarbamodithioato-S,S')-,	
15339-36-3	Manganese, dimethyldithiocarbamate	
62-38-4	Mercury, (acetato-O)phenyl-	
628-86-4	Mercury fulminate	(R,T)
62-75-9	Methanamine, N-methyl-N-nitroso-	
624-83-9	Methane, isocyanato-	
542-88-1	Methane, oxybis(chloro-	
509-14-8	Methane, tetranitro-	(R)
75-70-7	Methanethiol, trichloro-	
23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3- [[(methylamino)carbonyl]oxy]phenyl]-, monohydrochloride	
17702-57-7	Methanimidamide, N, N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-	
	60-34-4 74-90-8 74-90-8 7803-51-2 465-73-6 119-38-0 64-00-6 2763-96-4 15339-36-3 15339-36-3 62-38-4 628-86-4 62-75-9 624-83-9 542-88-1 509-14-8 75-70-7 23422-53-9	174-90-8

P050	115-20-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro- 3a,4,7,7a-tetrahydro-	
P199	2032-65-7	Methiocarb	
P066	16752-77-5	Methomyl	
P068	60-34-4	Methyl hydrazine	
P064	624-83-9	Methyl isocyanate	
P069	75-86-5	2-Methyllactonitrile	
P071	298-00-0	Methyl parathion	
P190	1129-41-5	Metolcarb	
P128	315-18-4	Mexacarbate	
P072	86-88-4	alpha-Naphthylthiourea	
P073	13463-39-3	Nickel carbonyl	
P073	13463-39-3	Nickel carbonyl Ni(CO) ₄ , (T-4)-	
P074	557-19-7	Nickel cyanide	
P074	557-19-7	Nickel (II) cyanide	
P075	54-11-5	Nicotine and salts	
P076	10102-43-9	Nitric oxide	
P077	100-01-6	p-Nitroaniline	
P078	10102-44-0	Nitrogen dioxide	
P076	10102-43-9	Nitrogen (II) oxide	

P078	10102-44-0	Nitrogen (IV) oxide	
PO81	55-63-0	Nitroglycerine	(R)
P082	62-75-9	N-Nitrosodimethylamine	
P084	4549-40-0	N-Nitrosomethylvinylamine	
P085	152-16-9	Octamethylpyrophosphor-amide	
P087	20816-12-0	Osmium oxide	
P087	20816-12-0	Osmium tetroxide	
P088	145-73-3	7-Oxabicyclo [2.2.1] heptane-2,3-dicarboxylic acid	
P194	23135-22-0	Oxamyl	
P089	56-38-2	Parathion	
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-	
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate(ester)	
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	
P048	51-28-5	Phenol, 2,4-dinitro-	
P047	534-52-1	Phenol, 2-methyl-4,6-dinitro-and salts	
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate	
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate	
P020	88-85-7	Phenol, 2,4-dinitro-6-(1-methylpropyl)-	
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt	(R)
P092	62-38-4	Phenylmercuric acetate	

P093	103-85-5	N-Phenylthiourea	
P094	298-02-2	Phorate	
P095	75-44-5	Phosgene	
P096	783-51-2	Phosphine	
P041	311-45-5	Phosphoric acid, diethyl p-nitrophenyl ester	
P039	298-04-4	Phosphorodithioicacid, O,O-diethyl S-[2-(ethylthio)ethyl] ester	
P094	298-02-2	Phosphorodithioicacid, O,O-diethyl S-[(ethylthio) methyl] ester	
P044	60-51-5	Phosphorodithioicacid, O,O-dimethyl S-O[2-(methylamino)-2-oxoethyl] ester	
P043	55-91-4	Phosphorofluoridicacid, bis(1-methylethyl)ester	
P089	56-38-2	Phosphorothioicacid, O,O-diethyl O-(4-nitrophenyl) ester	
P040	297-97-2	Phosphorothioicacid, O,O-diethyl O-pyrazinyl ester	
P097	52-85-7	Phosphorothioicacid, O,O-dimethyl O-[p- ((dimethylamino) sulfonyl)phenyl] ester	
P071	298-00-0	Phosphorothioicacid, O,O-dimethyl O-(4-nitrophenyl) ester	
P204	57-47-6	Physostigmine	
P188	57-64-7	Physostigmine salicylate	
P110	78-00-2	Plumbane, tetraethyl-	
P098	151-50-8	Potassium cyanide	
P098	151-50-8	Potassium cyanide K(CN)	
L			

P099	506-61-6	Potassium silver cyanide	
P201	2631-37-0	Promecarb	
P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfony1)-,0- [(methylamino)carbonyl] oxime	
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O- [(methylamino)carbonyl] oxime	
P101	107-12-0	Propanenitrile	
P027	542-76-7	Propanenitrile,3-chloro-	
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-	
P081	55-63-0	1,2,3-Propanetriol, trinitrate-	(R)
P017	596-31-2	2-Propanone, 1-bromo-	
P102	107-19-7	Propargyl alcohol	
P003	107-02-8	2-Propenal	
P005	107-18-6	2-Propen-1-o1	
P067	75-55-8	1,2-Propylenimine	
P102	107-19-7	2-Propyn-1-o1	
P008	504-24-5	4-Pyridinamine	
P075	54-11-5	Pyridine, (S)-3-(1-methyl-2-pyrrolidiny1)-, and salts	
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate(ester), (3aS-cis)-	
P114	12039-52-0	Selenious acid, dithallium(1+) salt	
P103	630-10-4	Selenourea	
P104	506-64-9	Silver cyanide	

P104	506-64-9	Silver cyanide Ag(CN)	
P105	26628-22-8	Sodium azide	
P106	143-33-9	Sodium cyanide	
P106	143-33-9	Sodium cyanide Na(CN)	
P108	57-24-9	Strychnidin-10-one, and salts	
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-	
P108	57-24-9	Strychnine and salts	
P115	7446-18-6	Sulfuric acid, thallium (I) salt	
P109	3689-24-5	Tetraethyldithiopyrophosphate	
P110	78-00-2	Tetraethyl lead	
P111	107-49-3	Tetraethylpyrophosphate	
P112	509-14-8	Tetranitromethane	(R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester	
P113	1314-32-5	Thallic oxide	
P113	1314-32-5	Thallium (III) oxide	
P114	12039-52-0	Thallium (I) selenide	
P115	7446-18-6	Thallium (I) sulfate	
P109	3689-24-5	Thiodiphosphoricacid, tetraethyl ester	
P045	39196-18-4	Thiofanox	
P049	541-53-7	Thioimidodicarbonicdiamide	
P014	108-98-5	Thiophenol	
P116	79-19-6	Thiosemicarbazide	

P026	5344-82-1	Thiourea, (2-chlorophenyl)-	
P072	86-88-4	Thiourea, 1-naphthalenyl-	
P093	103-85-5	Thiourea, phenyl-	
P185	26419-73-8	Tirpate	
P123	8001-35-2	Toxaphene	
P118	75-70-7	Trichloromethanethiol	
P119	7803-55-6	Vanadic acid, ammonium salt	
P120	1314-62-1	Vanadium (V) oxide	
P120	1314-62-1	Vanadium pentoxide	
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-	
P001	81-81-2	Warfarin, when present at concentrations greater than 0.3%	
P205	137-30-4	Zinc, bis(dismethylcarbamodithioato-S,S')-	
P121	557-21-1	Zinc cyanide	
P121	557-21-1	Zinc cyanide Zn(CN) ₂	
P122	1314-84-7	Zinc phosphide, when present at concentrations greater than 10%	(R,T)
P205	137-30-4	Ziram	

	Chemical Abstract Services Number	Substance	Hazard Code
U394	30558-43-1	A2213	
LCO1	75-07-0	Acetaldehyde	(I)
U034	75-87-6	Acetaldehyde, trichloro-	

U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-	
U005	53-96-3	Acetamide, N-9H-fluoren-2-y1-	
U240	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts and esters	
U112	141-78-6	Acetic acid, ethyl ester	(I)
U144	301-04-2	Acetic acid, lead(2+) salt	
U214	563-68-8	Acetic acid, thallium(1+) salt	
See F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	
U002	67-64-1	Acetone	(I)
U003	75-05-8	Acetonitrile	
U004	98-86-2	Acetophenone	
U005	53-96-3	2-Acetylaminofluorene	
U006	75-36-5	Acetyl chloride	(C,R,T)
U007	79-06-1	Acrylamide	
U008	79-10-7	Acrylic acid	(I)
U009	107-13-1	Acrylonitrile	
U011	61-82-5	Amitrole	
U012	62-53-3	Aniline	(I,T)
U136	75-60-5	Arsinic acid, dimethyl-	
U014	492-80-8	Auramine	
W15	115-02-6	Azaserine	
U010	50-07-7	Azirino(2',3':3,4)pyrrolo (1,2-a)indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy) methyl]-1,1a,2,8,8a,8b hexahydro-8a-methoxy-5-methyl-	

U280	101-27-9	Barban	
U278	22781-23-3	Bendiocarb	
U364	22961-82-6	Bendiocarb phenol	
U271	17804-35-2	Benomyl	
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	
U016	225-51-4	Benz[c]acridine	
U017	98-87-3	Benzal chloride	
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	
U018	56-55-3	Benz[a]anthracene	
U094	57-97-6	1,2-Benzanthracene, 7,12-dimethyl-	
U012	62-53-3	Benzenamine	(I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-	
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-	
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	
U328	95-53-4	Benzenamine, 2-methyl-	
U353	106-49-0	Benzenamine, 4-methyl-	
U158	101-14-4	Benzenamine, 4,4'-methylenebis(2-chloro-	
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride	
U181	99-55-8	Benzenamine, 2-methyl-5-nitro	
U019	71-43-2	Benzene	(I,T)

U038	510-15-8	Benzeneacetic acid, 4-chloro-alpha-(4-chloropheny1)-alpha-hydroxy, ethyl ester	
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-	
U035	305-03-03	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	
U037	106-90-7	Benzene, chloro-	
U221	25376-45-8	Benzenediamine, ar-methyl-	
U028	117-81-7	1,2-Benzenedicarboxylic acid, [bis(2-ethyl-hexyl)] ester	
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	
U107	117-84-0	1,2-Benzenedicarboxylic acid, di-n-octyl ester	
U070	95-50-1	Benzene, 1,2-dichloro-	
U071	541-73-1	Benzene, 1,3-dichloro-	
U072	106-46-7	Benzene, 1,4-dichloro-	
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis=[4-chloro-	
U017	98-87-3	Benzene (dichloromethyl)-	
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl-	(R,T)
U239	1330-20-7	Benzene, dimethyl-	(I,T)
U201	108-46-3	1,3-Benzenediol	
U127	118-74-1	Benzene, hexachloro-	

U056	110-82-7	Benzene, hexahydro-	(I)
U220	108-88-3	Benzene, methyl-	
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-	
U106	606-20-2	Benzene, 1-methyl-2,6-dinitro-	
U055	98-82-8	Benzene, (1-methylethyl)-	(I)
U169	98-95-3	Benzene, nitro-	(I,T)
U183	608-93-5	Benzene, pentachloro-	
U185	82-68-8	Benzene, pentachloronitro-	
U020	98-09-9	Benzenesulfonic acid chloride	(C,R)
U020	98-09-9	Benzenesulfonyl chloride	(C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-	
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)=bis [4-chloro-	
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)=bis [4-methoxy-	
U023	98-07-7	Benzene, (trichloromethyl)-	(C,R,T)
U234	99-35-4	Benzene, 1,3,5-trinitro-	(R,T)
U021	92-87-5	Benzidine	
U202	81-07-2	1,2-Benzisothiazol-3-(2H)-one, 1,1-dioxide and salts	
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbarnate	
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,	
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	

U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	
U090	94-58-6	1,3-Benzodioxole, 5-propyl-	
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	
U064	189-55-9	Benzo[rst]pentaphene	
U248	81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts, when present at concentrations of 0.3% or less	
U022	50-32-8	Benzo[a]pyrene	
U197	106-51-4	p-Benzoquinone	
U023	98-07-7	Benzotrichloride	(C,R,T)
U085	1464-53-5	2,2'-Bioxirane	(I,T)
U021	92-87-5	(1,1'-Biphenyl)-4,4'-diamine	
U073	91-94-1	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-	
U091	119-90-4	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-	
U095	119-93-7	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-	
U225	75-25-2	Bromofom	
U030	101-55-3	4-Bromophenyl phenyl ether	
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	
U172	924-16-3	I-Butanamine, N-butyl-N-nitroso-	
U031	71-36-3	1-Butanol	(I)
U159	78-93-3	2-Butanone	(I,T)
U160	1338-23-4	2-Butanone peroxide	(R,T)
U053	4170-30-3	2-Butenal	

U074	764-41-0	2-Butene, 1,4-dichloro-	(I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxybutoyx]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-y1 ester, [1S-[1alpha(Z),7(2S*,3R*), 7aalpha]]-	
U031	71-36-3	n-Butyl alcohol	(I)
U136	75-60-5	Cacodylic acid	
U032	13765-19-0	Calcium chromate	
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	
U271	17804-35-2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester	
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester	
U238	51-79-6	Carbamic acid, ethyl ester	
U178	815-53-2	Carbamic acid, methylnitroso-, ethyl ester	
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester	
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis(iminocarbonothioyl)]bis-, dimethyl ester	
U097	79-44-7	Carbamic chloride, dimethyl	
U114	111-54-6	Carbamodithioic acid, 1,2-ethanediylbis-, salts and esters	
U062	2303-16-4	Carbamodithioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl)ester	
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl)ester	
U387	52888-80-9	Carbamothioic acid, dipropyl-, S-(phenylmethyl)ester	

U279	63-25-2	Carbaryl	
U372	10605-21-7	Carbendazim	
U367	1563-38-8	Carbofuran phenol	
U215	6533-73-9	Carbonic acid, dithallium(1+) salt	
U156	79-22-1	Carbonochloridic acid, methyl ester	(I,T)
U033	353-50-4	Carbon oxyfluoride	(R,T)
U211	56-23-5	Carbon tetrachloride	
U034	75-87-6	Chloral	
U035	305-03-3	Chlorambucil	
U036	57-74-9	Chlordane, technical	
U026	494-03-1	Chlornaphazine	
U037	108-90-7	Chlorobenzene	
U038	510-15-6	Chlorobenzilate	
U039	59-50-7	4-Chloro-m-cresol	
U042	110-75-8	2-Chloroethyl vinyl ether	
U044	67-66-3	Chloroform	
U046	107-30-2	Chloromethyl methyl ether	
U047	91-58-7	beta-Chloronaphthalene	
U048	95-57-8	o-Chlorophenol	
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride	
U032	13765-19-0	Chromic acid, calcium salt	
U050	218-01-9	Chrysene	

U051	======	Creosote	
U052	1319-77-3	Cresylic acid	
U053	4170-30-3	Crotonaldehyde	
U055	98-82-8	Cumene	(I)
U246	506-68-3	Cyanogen bromide	
U197	106-51-4	1,4-Cyclohexadienedione	
U056	110-82-7	Cyclohexane	(I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (lalpha, 2alpha,3beta,4alpha, 5alpha,6beta)-	
U057	108-94-1	Cyclohexanone	(I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa-chloro-	
U058	50-18-0	Cyclophosphamide	
U240	94-75-7	2,4-D, salts and esters	
U059	20830-81-3	Daunomycin	
U060	72-54-8	DDD	
U061	50-29-3	DDT	
U062	2303-16-4	Diallate	
U063	53-70-3	Dibenz[a,h]anthracene	
U064	189-55-9	Dibenz[a,i]pyrene	
U066	96-12-8	1,2-Dibromo-3-chloropropane	
U069	84-74-2	Dibutyl phthalate	
U070	95-50-1	o-Dichlorobenzene	
U071	541-73-1	m-Dichlorobenzene	

U072	106-46-7	p-Dichlorobenzene	
U073	91-94-1	3,3'-Dichlorobenzidine	
U074	764-41-0	1,4-Dichloro-2-butene	(I,T)
U075	75-71-8	Dichlorodifluoromethane	
U078	75-35-4	1,1-Dichloroethylene	
U079	156-60-5	1,2-Dichloroethylene	
U025	111-44-4	Dichloroethyl ether	
U027	108-60-1	Dichloroisopropylether	
U024	111-91-7	Dichloromethoxyethane	
U081	120-83-2	2,4-Dichlorophenol	
U082	87-65-0	2,6-Dichlorophenol	
U084	542-75-6	1,3-Dichloropropene	
U085	1464-53-5	1,2:3,4-Diepoxybutane	(I,T)
U108	123-91-1	1,4-Diethylene dioxide	
U395	5952-26-1	Diethylene glycol, dicarbamate	
U028	117-81-7	Diethylhexyl phthalate	
U086	1615-80-1	N,N-Diethylhydrazine	
U087	3288-58-2	O,O-Diethyl-S-methyl-dithiophosphate	
U088	84-66-2	Diethyl phthalate	
U089	56-53-1	Diethylstilbestrol	
U090	94-58-6	Dihydrosafkole	
U091	119-90-4	3,3'-dimethoxybenzidine	

U092	124-40-3	Dimethylamine	(I)
U093	60-11-7	Dimethylaminoazobenzene	
U094	57-97-6	7,12-Dimethylbenz[a]anthracene	
U095	119-93-7	3,3'-Dimethylbenzidine	
U096	80-15-9	Alpha,alpha-Dimethyl-benzylhydroperoxide	(R)
U097	79-44-7	Dimethylcarbamoyl chloride	
U098	57-14-7	1,1-Dimethylhydrazine	
U099	540-73-8	1,2-Dimethylhydrazine	
U101	105-67-9	2,4-Dimethylphenol	
U102	131-11-3	Dimethyl phthalate	
U103	77-78-1	Dimethyl sulfate	
U105	121-14-2	2,4-Dinitrotoluene	
U106	606-20-2	2,6-Dinitrotoluene	
U107	117-84-0	Di-n-octyl phthalate	
U108	123-91-1	1,4-Dioxane	
U109	122-66-7	1,2-Diphenylhydrazine	
U110	142-84-7	Dipropylamine	(I)
U111	621-64-7	Di-n-propylnitrosamine	
U041	106-89-8	Epichlorhydrin	
UO01	75-07-0	Ethanal	(I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-	
U404	121-44-8	Ethanamine, N,N-diethyl-	

U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	
U067	106-93-4	Ethane, 1,2-dibromo-	
U076	75-34-3	Ethane, 1,1-dichloro-	
U077	107-06-2	Ethane, 1,2-dichloro-	
U131	67-72-1	Ethane, 1,1,1,2,2,2-hexachloro-	
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-	
U117	60-29-7	Ethane, 1,1'-oxybis-	(I)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-	
U184	76-01-7	Ethane, pentachloro-	
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-	
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-	
U218	62-55-5	Ethanethioamide	
U226	71-55-6	Ethane, 1,1,1-trichloro-	
U227	79-00-5	Ethane, 1,1,2-trichloro-	
U410	59669-26-0	Ethanimidothioic acid, N,N'- [thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester	
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-n-hydroxy-2-oxo- methyl ester	
U359	110-80-5	Ethanol, 2-ethoxy-	
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-	
U395	5952-26-1	Ethanol, 2,2'-oxybis-, dicarbamate	
U004	98-86-2	Ethanone, 1-phenyl	

75-01-4	Ethene, chloro-	
110-75-8	Ethene, 2-chloroethoxy-	
75-35-4	Ethene, 1,1-dichloro-	
156-60-5	Ethene, trans-1,2-dichloro-	
127-18-4	Ethene, 1,1,2,2-tetrachloro-	
79-01-6	Ethene, trichloro-	
141-78-8	Ethyl acetate	(I)
140-88-5	Ethyl acrylate	(1)
51-79-6	Ethyl carbamate (urethan)	
60-29-7	Ethyl ether	(I)
111-54-6	Ethylenebis(dithiocarbamic acid), salts and ester	
106-93-4	Ethylene dibromide	
107-06-2	Ethylene dichloride	
110-80-5	Ethylene glycol monoethyl ether	
75-21-8	Ethylene oxide	(I,T)
96-45-7	Ethylene thiourea	
75-34-3	Ethylidene dichloride	
97-63-2	Ethyl methacrylate	
62-50-0	Ethyl methanesulfonate	
206-44-0	Fluoranthene	
50-00-0	Formaldehyde	
	110-75-8 75-35-4 156-60-5 127-18-4 79-01-6 141-78-8 140-88-5 51-79-6 60-29-7 111-54-6 106-93-4 107-06-2 110-80-5 75-21-8 96-45-7 75-34-3 97-63-2 62-50-0 206-44-0	110-75-8

U123	64-18-6	Formic acid	(C,T)
U124	110-00-9	Furan	(I)
U125	98-01-1	2-Furancarboxaldehyde	(I)
U147	108-31-6	2,5-Furandione	
U213	109-99-9	Furan, tetrahydro-	(I)
U125	98-01-1	Furfural	(I)
U124	110-00-9	Furfuran	(I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-D-	,
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino) carbonyl]amino]-	
U126	765-34-4	Glycidylaldehyde	
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-	
U127	118-74-1	Hexachlorobenzene	
U128	87-68-3	Hexachlorobutadiene	
U130	77-47-4	Hexachlorocyclopentadiene	
U131	67-72-1	Hexachloroethane	
U132	70-30-4	Hexachlorphene	
U243	1888-71-7	Hexachloropropene	
U133	302-01-2	Hydrazine	(R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-	
U098	57-14-7	Hydrazine, 1,1-dimethyl-	
U099	540-73-8	Hydrazine, 1,2-dimethyl-	

U109	122-66-7	Hydrazine, 1,2-diphenyl-	
U134	7664-39-3	Hydrofluoric acid	(C,T)
U134	7664-39-3	Hydrogen fluoride	(C,T)
U135	7783-06-4	Hydrogen sulfide	
U135	7783-06-4	Hydrogen sulfide H2S	
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl-	(R)
U116	96-45-7	2-Imidazolidinethione	
U137	193-39-5	Indeno[1,2,3cd]pyrene	
U190	85-44-9	1,3-Isobenzofurandione	
U140	78-83-1	Isobutyl alcohol	(I,T)
U141	120-58-1	Isosafrole	
U142	143-50-0	Kepone	
U143	303-34-4	Lasiocarpine	
U144	301-04-2	Lead acetate	
U146	1335-32-6	Lead, bis(acetato-O) tetrahydroxytri-	
U145	7446-27-7	Lead phosphate	
U146	1335-32-6	Lead subacetate	
U129	58-89-9	Lindane	
U163	70-25-7	MNNG	
U147	108-31-6	Maleic anhydride	
U148	123-33-1	Maleic hydrazide	
U149	109-77-3	Malononitrile	

U150	148-82-3	Melphalan	
U151	7439-97-6	Mercury	
U152	126-98-7	Methacrylonitrile	(I,T)
U092	124-40-3	Methanamine, N-methyl-	(I)
U029	74-83-9	Methane, bromo-	
U045	7 4 -87-3	Methane, chloro-	(I,T)
U046	107-30-2	Methane, chloromethoxy-	
U068	7 4 -95-3	Methane, dibromo-	
U080	75-09-2	Methane, dichloro-	
U075	75-71-8	Methane, dichlorodifluoro-	
U138	74-88-4	Methane, iodo-	
U119	62-50-0	Methanesulfonic acid, ethyl ester	
U211	56-23-5	Methane, tetrachloro-	
U153	74-93-1	Methanethiol	(I,T)
U225	75-25-2	Methane, tribromo-	
U044	67-66-3	Methane, trichloro-	
U121	75-69-4	Methane, trichlorofluoro-	
U036	57-74-9	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro	
U154	67-56-1	Methanol	(I)
U155	91-80-5	Methapyrilene	

U142	143-50-0	1,3,4-Metheneo-2H-cyclobuta[cd]pentalen-2-one,1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	
U247	72-43-5	Methoxychlor	
U154	67-56-1	Methyl alcohol	(I)
U029	74-83-9	Methyl bromide	
U186	504-60-9	1-Methylbutadiene	(I)
U045	74-87-3	Methyl chloride	(I,T)
U156	79-22-1	Methyl chlorocarbonate	(I,T)
U226	71-55-6	Methylchloroform	
U157	56-49-5	3-Methylcholanthrene	
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)	
U068	74-95-3	Methylene bromide	
U080	75-09-2	Methylene chloride	
U159	78-93-3	Methyl ethyl ketone	(I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide	(R,T)
U138	74-88-4	Methyl iodide	
U161	108-10-1	Methyl isobutyl ketone	(I)
U162	80-62-6	Methyl methacrylate	(I,T)
U161	108-10-1	4-Methyl-2-pentanone	(I)
U164	56-04-2	Methylthiouracil	
U010	50-07-7	Mitomycin	(C)

U059	20830-81-3	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxohexopyranosyl)oxyl]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-	
U167	134-32-7	1-Naphthalenamine	
U168	91-59-8	2-Naphthalenamine	
U026	494-03-1	Naphthalenamine, N,N'-bis(2-chloroethyl)-	
U165	91-20-3	Naphthalene	
U047	91-58-7	Naphthalene, 2-chloro-	
U166	130-15-4	1,4-Naphthalenedione	
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl-(1,1-biphenyl)-4,4'diyl)]-bis(azo)bis (5-amino-4-hydroxy)-, tetrasodium salt	
U279	63-25-2	1-Naphthalenol, methylcarbamate	
U166	130-15-4	1,4-Naphthoquinone	
U167	134-32-7	alpha-Naphthylamine	
U168	91-59-8	beta-Naphthylamine	
U217	10102-45-1	Nitric acid, thallium(1+) salt	
U169	98-95-3	Nitrobenzene	(I,T)
U170	100-02-7	p-Nitrophenol	
U171	79-46-9	2-Nitropropane	(I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine	
U173	1116-54-7	N-Nitrosodiethanolamine	
U174	55-18-5	N-Nitrosodiethylamine	
U176	759-73-9	N-Nitroso-N-ethylurea	

U177	684-93-5	N-Nitroso-N-methylurea	
U178	615-53-2	N-Nitroso-N-methylurethane	
U179	100-75-4	N-Nitrosopiperidine	
U180	930-55-2	N-Nitrosopyrrolidine	
U181	99-55-8	5-Nitro-o-toluidine	
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide	
U058	50-18-0	2H-1,3,2-Oxazaphosphorin, 2-amine, N,N-bis(2-chloroethyl) tetrahydro-, 2-oxide	
U115	75-21-8	Oxirane	(I,T)
U126	765-34-4	Oxiranecarboxyaldehyde	
U041	106-89-8	Oxirane, 2-(chloromethyl)-	
U182	123-63-7	Paraldehyde	
U183	608-93-5	Pentachlorobenzene	
U184	76-01-7	Pentachloroethane	
U185	82-68-8	Pentachloronitrobenzene	
See F027	87-86-5	Pentachlorophenol	
U161	108-10-1	Pentanonl, 4-methyl-	
U186	504-60-9	1,3-Pentadiene	(I)
U187	62-44-2	Phenacetin	
U188	108-95-2	Phenol	
U048	95-57-8	Phenol, 2-chloro-	
U039	59-50-7	Phenol, 4-chloro-3-methyl-	

U081	120-83-2	Phenol, 2,4-dichloro-	
U082	87-65-0	Phenol, 2,6-dichloro-	
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-	
U101	105-67-9	Phenol, 2,4-dimethyl-	
U052	1319-77-3	Phenol, methyl-	
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate	
U170	100-02-7	Phenol, 4-nitro-	
See F027	87-86-5	Phenol, pentachloro-	
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-	
See F027	95-95-4	Phenol, 2,4,5-trichloro-	
See F027	88-06-2	Phenol, 2,4,6-trichloro-	
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-	
U145	7446-27-7	Phosphoric acid, lead salt	
U087	3288-58-2	Phosphorodithioic acid, 0,0-diethyl-S-methyl ester	
U189	1314-80-3	Phosphorus sulfide	(R)
U190	85-44-9	Phthalic anhydride	
U191	109-06-8	2-Picoline	
U179	100-75-4	Piperidine, 1-nitroso-	
U192	23950-58-5	Pronamide	
U194	107-10-8	1-Propanamine	(I,T)
U111	621-64-7	1,Propanamine, N-nitroso-N-propyl-	

U110	142-84-7	1-Propanamine, N-propyl-	(I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-	
U083	78-87-5	Propane, 1,2-dichloro-	
U149	109-77-3	Propanedinitrile	
U171	79-46-9	Propane, 2-nitro-	(I,T)
U027	108-60-1	Propane, 2,2'oxybis[2-chloro-	
U193	1120-71-4	1,3-Propane sultone	
See F027	93-72-1	Propionic acid, 2-(2,4,5-trichlorphenoxy)-	
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)	
U140	78-83-1	1-Propanol, 2-methyl-	(I,T)
U002	67-64-1	2-Propanone	(I)
U007	79-06-1	2-Propenamide	
U084	542-75-6	Propene, 1,3-dichloro-	
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	
U009	107-13-1	2-Propenenitrile	
U152	126-98-7	2-Propenenitrile, 2-methyl-	(I,T)
U008	79-10-7	2-Propenoic acid	(I)
U113	140-88-5	2-Propenoic acid, ethyl ester	(I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	(I,T)
U373	122-42-9	Propham	
U411 s	114-26-1	Propoxur	

U194	107-10-8	n-Propylamine	(I,T)
U083	78-87-5	Propylene dichloride	
U387	52888-80-9	Prosulfocarb	
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-	
U196	110-86-1	Pyridine	
U191	109-06-8	Pyridine, 2-methyl-	
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	
U180	930-55-2	Pyrrole, tetrahydro-N-nitroso-	
U200	50-55-5	Reserpine	
U201	108-46-3	Resorcinol	
U202	81-07-2	Saccharin and salts	
U203	94-59-7	Safrole	
U204	7783-00-8	Selenious acid	
U204	7783-00-8	Selenium dioxide	
U205	7488-56-4	Selenium sulfide	
U205	7488-56-4	Selenium sulfide SeS ₂	(R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)	
See F027	93-72-1	Silvex	
U206	18883-66-4	Streptozotocin	
U103	77-78-1	Sulfuric acid, dimethyl ester	

U189	1314-80-3	Sulfur phosphide	(R)
See F027	93-76-5	2,4,5-T	
U207	95-94-3	1,2,4,5-Tetrachlorobenzene	
U208	630-20-6	1,1,1,2-Terachloroethane	
U209	79-34-5	1,1,2,2-Tetrachloroethane	
U210	127-18-4	Tetrachloroethylene	
See F027	58-90-2	2,3,4,6-Tetrachlorophenol	
U213	109-99-9	Tetrahydrofuran	(I)
U214	563-68-8	Thallium(I) acetate	
U215	6533-73-9	Thallium(I) carbonate	
U216	7791-12-0	Thallium(I) chloride	
U216	7791-12-0	Thallium chloride TlCl	
U217	10102-45-1	Thallium(I) nitrate	
U218	62-55-5	Thioacetamide	
U410	59669-26-0	Thiodicarb	
U153	74-93-1	Thiomethanol	(I,T)
U244	137-26-8	Thioperoxydicarbonicdiamide $[(H_2N)C(S)]_25_2$, tetramethyl-	
U409	23564-05-8	Thiophanate-methyl	
U219	62-56-6	Thiourea	
U244	137-26-8	Thiram	
U220	108-88-3	Toluene	

U221	25376-45-8	Toluenediamine	
U223	26471-62-5	Toluene diisocyanate	(R,T)
U328	95-53-4	o-Toluidine	
U353	106-49-0	p-Toluidine	
U222	636-21-5	o-Toluidine hydrochloride	
U389	2303-17-5	Triallate	
U011	61-82-5	1H-1,2,4-Triazol-3-amine	
U227	79-00-5	1,1,2-Trichloroethane	
U228	79-01-6	Trichloroethylene	
U121	75-69-4	Trichloromonofluoromethane	
See F027	95-95-4	2,4,5-Trichlorophenol	
See F027	88-06-2	2,4,6-Trichlorophenol	
U404	121-44-8	Triethylamine	
U234	99-35-4	1,3,5-Trinitrobenzene	(R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-	
U235	126-72-7	Tris(2,3-Dibromopropyl) phosphate	
U236	72-57-1	Trypan blue	
U237	66-75-1	Uracil mustard	
U176	759-73-9	Urea, N-ethyl-N-nitroso-	
U177	684-93-5	Urea, N-methyl-N-nitroso-	
U043	75-01-4	Vinyl chloride	
U248	81-81-2	Warfagineand salts, when present at a concentration of 0.3%	

U239	1330-20-7	Xylene	(I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester	
U249	1314-84-7	Zinc phosphide, when present at concentration 10% or less	

Michigan Hazardous Waste Number	Chemical Abstract Services Number	Substance	Hazard Code
001U	50-76-0	Actinomycin D	
002U	107-05-1	Allyl chloride	
003U	117-79-3	2-aminoanthraquinone	
004U	60-09-3	Aminoazobenzene	
005U	97-56-3	0-aminoazotoluene	
006U	92-67-1	4-aminobiphenyl	
007U	132-32-1	3-amino-9-ethyl carbazole	
157U	57360-17-5	3-amino-9-ethyl carbazole hydrochloride	
08U	82-28-0	I-amino-2-methyl anthraquinone	
009U	101-05-3	Anilazine	
158U	142-04-1	Aniline hydrochloride	
011U	90-04-0	o-Anisidine	
012U	134-29-2	o-Anisidine hydrochloride	
013U	Class-01-0	Antimony (when in the form of particles 100 microns or less)	
014U	1397-94-0	Antimycin A	
147U	2642-71-9	Azinphos-ethyl	
148U	86-50-0	Azinphos-methyl	
159U	103-33-3	Azobenzene	
015U	101-27-9	Barban	
016U	22781-23-3	Bendiocarb	
017U	17804-35-2	Benomyl	
020U	1689-84-5	Bromoxynil	
160U	106-99-0	1,3-Butadiene	
161U	85-68-7	Butyl benzl phthalate	
022U	2425-06-1	Captafol	
023U	133-06-2	Captan	
024U	63-25-3	Carbaryl	
025U	1563-66-2	Carbofuran	
027U	786-19-6	Carbophenothion	
028U	Class-08-6	Chloramines	
152U	470-90-6	Chlorfenuinphos	

029U	2921-88-2	Chloropyrifos	
030U	Class-05-3	Chlorinated dibenzofurans (other than those listed in Table 202)	
031U	Class-05-4	Chlorinated dioxins (other than those listed in Table 202)	
032U	7782-50-5	Chlorine gas	
033U	107-07-3	2-Chloroethanol	
034U	6959-48-4	3-(Chloromethyl)pyridine hydrochloride	
150U	106-48-9	p-chlorophenol	
162U	7005-72-3	1-chloro-4-phenoxybenzene	
036U	5131-60-2	4-chloro-m-phenylenediamine	
037U	95-83-0	4-chloro-o-phenylenediamine	
038U	126-99-8	Chloroprene	
163U	590-21-6	1-chloropropene	
151U	96-79-4	5-chloro-o-toluidene	
040U	1420-04-8	Clonitralid	
041U	Class-01-6	Cobalt (when in the form of particles 100 microns or less)	
042U	56-72-4	Coumasphos	
043U	120-71-8	p-Cresidine	
044U	7700-17-6	Crotoxyphos	
046U	66-81-9	Cycloheximide	
164U	72-55-9	P,P' DDE	
048U	39156-41-7	2,4-Diaminoanisole sulfate	
049U	101-80-4	4,4'-Diaminodiphenyl ether	
050U	95-80-7	2,4-Diaminotoluene	
051U	333-41-5	Diazinon	
052U	117-80-6	Dichlone	
054U	62-73-7	Dichlorvos	
055U	141-66-2	Dichrotophos	
056U	64-67-5	Diethyl sulfate	
165U	105-55-5	N,N'-Diethylthiourea	
057U	39300-45-3	Dinocap	
058U	78-34-2	Dioxathion	
059U	2104-64-5	EPN	
166U	106-88-7	1,2-Epoxybutane	
061U	563-12-2	Ethion	
063U	115-90-2	Fensulfothion	
064U	55-38-9	Fenthion	
065U	33245-39-5	Fluchloralin	
068U	680-31-9	Hexamethyl phosphoramide	
070U	123-31-9	Hydroquinone	

071U	1072-52-2	N-(2-Hydroxyethyl) ethyleneimine	
072U	14380-61-1	Hypochlorite	
073U	54-85-3	Isonicotinic acid hydrazine	
167U	59299-51-3	Kanechlor C	
074U	463-51-4	Ketene	
075U	78-97-7	Lactonitril	
076U	21609-90-5	Leptophos	
077U	Class-02-0	Lithium and compounds	
078U	569-64-2	Malachite green	
079U	121-75-5	Malathion	
082U	838-88-0	4,4'-Methylenebis(2-methylaniline)	
083U	101-61-1	4,4'-Methylenebis(N,N-dimethylaniline)	
086U	90-12-0	1-Methylnaphthalene	
088U	7786-34-7	Mevinphos	
089U	315-18-4	Mexacarbate	
090U	2385-85-5	Mirex	
092U	6923-22-4	Monocrotophos	
093U	505-60-2	Mustard gas	
094U	300-76-5	Naled	
095U	2243-62-1	1,5-Napthalenediamine	
096U	Class-02-2	Nickel (when in the form of particles 100 microns or less)	
097U	61-57-4	Niridazole	
098U	139-94-6	Nithiazide	
099U	602-87-9	5-Nitroacenaphthene	
100U	99-59-2	Nitro-o-anisidine	
101U	92-93-3	4-Nitrobiphenyl	
102U	1836-75-5	Nitrofen	
103U	531-82-8	N-(4-(5-nitro-2-furanyl)-2-thiazolyl)-acetamide	
104U	51-75-2	Nitrogen mustard	
106U	156-10-5	p-Nitrosodiphenylamine	
168U	4549-40-0	N-Nitrosomethylvinylamine	
108U	135-20-6	N-nitroso-N-phenylhydroxylamine, ammonium salt	
169U	29082-74-4	Octachlorostyrene	
110U	301-12-2	Oxydemeton-methyl	
111U	1910-42-5	Paraquat dichloride	
112U	79-21-0	Peroxyacetic acid	
113U	136-40-3	Phenazopyridine hydrochloride	
115U	50-06-6	Phenobarbitol	
116U	57-41-0	Phenytoin	
11 7 U	630-93-3	Phenytoin sodium	

118U	4104-14-7	Phosazetim	
119U	732-11-6	Phosmet	
120U	13171-21-6	Phosphamidon	
121U	120-62-7	Piperonyl sulfoxide	
122U	Class-07-8	Polybrominated biphenyls (PBB)	
124U	57-57-8	Propiolactone	
127U	51-52-5	Propylthiouracil	
128U	83-749-4	Rotenone	
129U	57-56-7	Semicarbazide	
170U	563-41-7	Semicarbazide hydrochloride	
153U	62-74-8	Sodium fluoroacetate	
131U	100-42-5	Styrene	
132U	95-06-7	Sulfallate	
134U	72-54-8	TDE	
135U	107-49-3	TEPP	
136U	13071-79-9	Terbufos	
137U	961-11-5	Tetrachlorvinphos	
138U	139-65-1	4,4'-Thiodianiline	
139U	95-53-4	o-Toluidine	
140U	Class-08-4	Triaryl phosphate esters	
154U	56-35-9	Bis(tri-n-butyl tin) oxide	
171U	688-73-3	Tributyltin (and other salts and esters)	
172U	87-61-6	1,2,3-Trichlorobenzene	
173U	120-82-1	1,2,4-Trichlorobenzene	
141U	52-68-6	Trichlorfon	
142U	1582-09-8	Trifluralin	
143U	137-17-7	2,4,5-Trimethylaniline	
174U	51-79-6	Urethane	
175U	593-60-2	Vinyl bromide	

Table 201a

EPA Hazardous Waste Number	Chemical Abstract Services Number	Material	Extract Concentration milligrams per liter
D004	7440-38-2	Arsenic	5.0
D005	7440-39-3	Barium	100.0
D018	71-43-2	Benzene	0.5
D006	7440-43-9	Cadmium	1.0
D019	56-23-5	Carbon tetrachloride	0.5
D020	57-74-9	Chlordane	0.03
D021	108-90-7	Chlorobenzene	100.0

D022	67-66-3	Chloroform	6.0
D007	7440-47-3	Chromium	5.0
D023	95-48-7	o-Cresol	200.0**
D024	108-39-4	m-Cresol	200.0**
D025	106-44-5	p-Cresol	200.0**
D026		Cresol	200.0**
D016	94-75-7 2.4	- (2,4-Dichlorophenoxyacetic	10.0
	D 2,1	Acid)	
D027	106-46-7	1,4-Dichlorobenzene	7.5
D028	107-06-2	1,2-Dichloroethane	0.5
D029	75-35-4	1,1-Dichloroethylene	0.7
D030	121-14-2	2,4-Dinitrotoluene	0.13*
D012	72-20-8	Endrin (1,2,3,4,10,10-	0.02
		hexachloro 1,7-Epoxy-	
		1,4,4a,5,6,7,8,8a octahydro-	
		1,4- endo, endo-5,8-	
		dimenthano naphthalene)	
D031	76-44-8	Heptachlor (and its Epoxide)	0.008
D032	118-74-1	Hexachlorobenzene	0.13*
D033	87-68-3	Hexachlorobutadiene	0.5
D034	67-72-1	Hexachloroethane	3.0
D008	7439-92-1	Lead	5.0
D013	58-89-9	Lindane (1,2,3,4,5,6-hexa-	0.4
		chlorocyclo-hexane, gamma	
		isomer)	
D009	7439-97-6	Mercury	0.2
D014	72-43-5	Methoxychlor (1,1,1-	10.0
		trichloro-2,2-bis (p-	
		methoxyphenyl)ethane)	
D035	78-93-3	Methyl ethyl ketone	200.0
D036	98-95-3	Nitrobenzene	2.0
D037	87-86-5	Pentachlorophenol	100.0
D038	110-86-1	Pyridine	5.0*
D010	7782-49-2	Selenium	1.0
D011	7440-22-4	Silver	5.0
D039	127-18-4	Tetrachloroethylene	0.7
D015	8001-35-2	Toxaphene (C10H10C18,	0.5
		Technical chlorinated	
		camphene, 67-69 percent	
		chlorine)	
D040	79-01-6	Trichloroethylene	0.5
D041	95-95-4	2,4,5-Trichlorophenol	400.0
D042	88-06-2	2,4,6-Trichlorophenol	2.0
D017	93-72-1	2,4,5 TP Silvex (2,4,5-Tri-	1.0
		chlorophe-noxypropionic	
		acid)	
D043	75-01-4	Vinyl chloride	0.2