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R-020-204.25

REMOVAL ACTION NO. 9, WORK PLAN FOR FERNALD ENVIRONMENTAL MANAGEMENT PROJECT LIQUID MIXED WASTES, WASTE WATER TREATMENT TECHNICAL SPECIFIC WORK PLAN

12/07/1995

DOE-0274-96
DOE-FN EPAS
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WORK PLAN

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Department of Energy
Fernald Environmental Management Project
P. O. Box 538705
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DEC 0 7 1995

DOE-0274-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V-5HRE-8J
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Thomas J. Schneider, Project Manager
Ohio Environmental Protection Agency
401 East Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

REMOVAL ACTION NO. 9, "WORK PLAN FOR FERNALD ENVIRONMENTAL MANAGEMENT PROJECT LIQUID MIXED WASTES," WASTE WATER TREATMENT TECHNICAL SPECIFIC WORK PLAN

The purpose of this letter is to transmit for approval the Department of Energy (DOE), Fernald Environmental Management Project (FEMP) addendum to the "Work Plan for FEMP Liquid Mixed Wastes". The purpose of this addendum is to add the Waste Water Treatment Technical Specific Work Plan to the existing Work Plan for FEMP Liquid Mixed Wastes. The project will be implemented under the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Removal Action No. 9, removal of waste inventories, and the Director's Final Findings and Orders (DF&O), dated October 4, 1995. The DF&O approved the FEMP Site Treatment Plan (STP) as developed to comply with the Federal Facilities Compliance Act (FFCA). Under the approved STP, the DOE committed to submit a work plan to the U.S. Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) for Waste Water Treatment. The Waste Water Technical Specific Work Plan was prepared to encompass treatment for currently stored and future generated waste streams.

The entire "Work Plan for FEMP Liquid Mixed Wastes" including the Waste Water Treatment Technical Specific Work Plan is enclosed. Minor language adjustments were made to the purpose and scope of the previously approved Work Plan for FEMP Liquid Mixed Wastes. The changes were made to include Waste Water Treatment as a technology specific element of the "Work Plan for FEMP Liquid Mixed Wastes". No changes were made to the work plan activities of the previously approved work plan. A summary of the changes is enclosed in each binder.

Recycled and Recyclable

The DF&O did not specify a date for the submittal of the Technical Specific Work Plan. However, in the DF&O the FEMP must initiate treatment by February 29, 1996. Further, the FEMP is planning to meet an internal commitment to begin treatment by January 15, 1996.

FEMP personnel would like to meet with the OEPA as early as December 11, 1995, to present and discuss the revisions in this Technical Specific Work Plan.

Please contact Ed Skintik at (513) 648-3151 to schedule a meeting to present and discuss the enclosed Technical Specific Work Plan for Waste Water Treatment.

Sincerely,

Glenn Griffiths

for Jack R. Craig
Director

FN:Skintik

cc w/enc:

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WORK PLAN FOR FEMP LIQUID MIXED WASTES

SAMPLING, TRANSFERRING, AND SHIPPING

Document # HMWM-001-95
Rev. 1

Prepared by:

Hazardous and Mixed Waste Management

Fernald Environmental Restoration Management Corporation

Cincinnati, Ohio

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SAMPLING, TRANSFERRING, AND SHIPPING

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WORK PLAN FOR FEMP LIQUID MIXED WASTES

REVISION PAGES AND NEW ADDITIONS
Revised From Rev.0 to Rev.1

The list of revision pages and new additions added to include the Waste Water Treatment Technical Specific Work Plan as an addendum to the Work Plan for FEMP Liquid Mixed Wastes are listed below.

REVISION PAGES - Text changes are marked with redline and strike-out.

SECTION 1.0 SCOPE . . . . . Page 1

SECTION 3.0 WASTE DESCRIPTION . . . . . Page 3

SECTION 5.1 WASTE TREATMENT PROCESS . . . . . Page 4

NEW ADDITIONS

ATTACHMENT R

The Approved Decontamination Plan was added in Attachment R.

ATTACHMENT S (NEW SECTION)

Waste Water Treatment Technical Specific Work Plan

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1.0 SCOPE

The purpose of the Liquid Mixed Waste Project is to consolidate and transport ignitable and combustible liquid waste mixtures presently stored at the Fernald Environmental Management Project (FEMP) to the Department of Energy's (DOE) K-25 Toxic Substances Control Act (TSCA) Incinerator located in Oak Ridge, Tennessee. The work plan further identifies a subproject of the liquid mixed waste project--treatment of mixed aqueous liquids that are contaminated with low concentrations of hazardous constituents using the FEMP Waste Waster Treatment System (WWTS). This work plan was prepared to meet the requirements of Removal Action No. 9 as identified in the Amended Consent Agreement between the DOE and United States Environmental Protection Agency (USEPA).

A Removal Action Memorandum Addendum was prepared and signed (March 22, 1995) by the DOE clarifying the scope of wastes included in Removal Action No. 9. Specifically, "...that low level radioactive wastes that are also regulated under other USEPA environmental regulations and their State of Ohio counterparts, such as those that contain polychlorinated biphenyls (PCBs) or RCRA hazardous constituents (e.g. low level "mixed wastes"), are subsets of the LLRW category which are covered under the scope of response already established for this removal action..." (page 1, section I(1)). Additionally, treatment, as needed to meet land disposal restrictions and waste acceptance criteria at the receiving facility is defined in section V.A.1, Proposed Action Description, of the Removal Action Memorandum Addendum, Rev. 1.

To achieve the project goals, liquid mixed wastes will be identified which meet the waste acceptance criteria (WAC) for the K-25 TSCA Incinerator and mixed aqueous liquids that are contaminated with low concentrations of hazardous constituents which can be treated in the FEMP WWTS. The wastes destined for the K-25 TSCA Incinerator will then be tested for chemical compatibility. Wastes identified as being compatible will be bulked in liquid storage tanks and verification sampling performed per the K-25 WAC. After verification sampling is completed, the waste will be transported to the incinerator for treatment. Waste streams destined for the FEMP WWTS will be evaluated to determine: if the hazardous constituent can be treated by the FEMP WWTS; if treatment of the waste will not interfere with the normal operation of the WWTS and not impact NPDES discharge criteria; the rate at which the waste will be added to the WWTS, and if aggregation is appropriate or if the waste can be added to the WWTS from its storage container. Individual work elements will be conducted as specified in this work plan in accordance with all federal, state and local rules and regulations.

2.0 DEFINITIONS

2.1 ***Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*** - The Congressional act which governs the cleanup of abandoned waste sites, or potential waste sites, and specifies the response process to releases to the environment of hazardous substances.

2.2 ***Resource Conservation and Recovery Act (RCRA)*** - The Congressional act which establishes safe and environmentally acceptable management practices for specific waste including hazardous waste. RCRA requires the strict "cradle to grave" control and management of hazardous waste.

2.3 ***Atomic Energy Act (AEA)*** - The legislative act passed in 1954 which defines the different types of nuclear materials.

2.4 ***Superfund Amendments and Re-Authorization Act (SARA)*** - Revision of CERCLA.

2.5 ***RCRA Hazardous Waste*** - A material which satisfies the United States Environmental Protection Agency's definition of a RCRA hazardous waste as stated in Part 261 Code of Federal Regulations, Title 40 (40 CFR § 261) also stated in the Ohio EPA Administrative Code (section 3745-51). A waste can be one that is listed by waste stream or chemical substance, or one that exhibits any of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity by exceeding Toxic Characteristic Leaching Protocol (TCLP) concentration limits which have been set for specific chemicals. These are termed RCRA Listed wastes and RCRA Characteristic wastes respectively.

2.6 ***Low-Level Radioactive Waste*** - Radioactive waste material that is not high-level radioactive waste, spent nuclear fuel, transuranic waste or byproduct material as defined in Section IIe(2) of the Atomic Energy Act (10 CFR § 62).

2.7 ***Mixed Waste*** - Waste containing both radioactive and hazardous components regulated by the AEA and RCRA, respectively (DOE Order 5400.3: Hazardous and Radioactive Mixed Program).

2.8 ***Contact Waste*** - Any waste material generated or disposed during the decontamination process or material contaminated by spillage or leakage during handling of the waste material.

2.9 ***Exclusion Zone*** - An area established around the work area perimeter that controls access of personnel. The exclusion zone shall be established by erecting a barrier.

2.10 ***Assistant Emergency Duty Officer (AEDO)*** - The on-site management authority for all shifts and for all abnormal events.

2.11 ***Event*** - Any significant deviation from planned or expected behavior or course of events that could endanger or adversely affect people, property, or the environment.

3.0 WASTE DESCRIPTION

The Department of Energy (DOE) Facility near Fernald, Ohio was established in the early 1950s as part of the United States Defense Program. The Feed Materials Production Center (FMPC), as the facility was originally known, produced metallic uranium fuel elements, target cores and other uranium products for use in weapons production reactors and other programs operated for the DOE. These production operations ceased in July 1989. Shortly thereafter, the site was added to the National Priorities List (NPL) under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In August 1991, the Fernald Facility formally acknowledged the change in focus from production to cleanup by renaming itself the Fernald Environmental Management Project (FEMP). With this transition to environmental restoration, safe disposal of hazardous and mixed waste inventories is a prime concern.

Three ~~Two~~categories of waste streams currently stored at the FEMP are ignitible liquid hazardous waste, ~~and~~combustible liquid waste and mixed aqueous liquids that are contaminated with low concentrations of hazardous constituents which can be treated in the FEMP WWTS. ~~These two~~The ignitable and combustible waste streams contain listed RCRA (Resource Conservation and Recovery Act) hazardous wastes. The project specific drum inventory is located in Attachment A. The steps to implement treatment of waste utilizing the FEMP WWTS are detailed in Attachment S.

Ignitible liquid hazardous waste, per 40 CFR 261.21, has a flash point below 140°F., carry EPA I.D. number D001, and are assigned the reactivity group code (RGC) "K". These mixtures include chlorinated and halogenated spent solvents and hydrocarbon derivatives containing low concentrations of radionuclides. Ignitible liquid hazardous waste is stored in a RCRA storage unit, the KC-2 Warehouse.

Wastes include methanol/cyclohexane, degreasing solvents, acetone, xylene, paint thinner, paint, agitene, 1,1,1 trichlor, nitric acid/cyclohexane, gasoline, and discard process residue.

Combustible (per NFPA Code 30) liquid wastes have flash points of 140°F. and greater. This category does not carry the D001 EPA waste code and are assigned the RGC "B". These mixtures are made up primarily of waste oils and spent solvents. Combustible liquid waste is stored in various RCRA warehouses on site.

Combustible wastes include contaminated trichlorhexane and perchlorhexane, oily sludge, contaminated oil, dry cleaning sludge/cake, used oil, solvent contaminated oil, hydraulic oil, and quench oil.

4.0 COMPATIBILITY STUDY

Characterization of this project's waste streams indicates these liquid wastes to be as either ignitable or combustible. Due to the consistent characteristic of these wastes, a treatability study was not required. Recommended treatment for these waste streams is incineration.

Batch groups of waste were identified based upon material and characterization. Prior to identifying final batches to be consolidated, the waste was sampled and consolidated in bench scale quantities. These compatibility tests were conducted according to ASTM Method 5058, Standard Test Method A. Batches that successfully exhibited no averse reaction, such as evolving heat or volatilizing when mixed, were considered compatible for field scale operations. Test results are in Attachment F.

5.0 WASTE TREATMENT PROCESS

A five phase work effort is the most effective method to manage disposition of these wastes. Phases I, II, and III are discussed in this section. Phases IV and V are discussed in Section 5. The phases are as follows:

I Testing to verify compatibility of wastes before commingling.

II Transferring ignitible and combustible liquid wastes currently stored in drums to bulk liquid storage tanks.

III Sampling storage tank contents for analysis according to the Sampling Plan supporting the K-25 TSCA Incinerator Waste Acceptance Criteria.

IV Transfer of liquid wastes from storage tanks to tank trailers.

V Shipment of the liquid wastes from the FEMP to the K-25 TSCA Incinerator located in Oak Ridge, Tennessee.

5.1 Phase I involved identifying waste streams for which incineration is the appropriate treatment and testing compatibility of wastes to mixing within that stream. Bench scale commingling tests of individual streams were performed to assure potentially dangerous chemical reactions would not occur from mixing. Each stream exhibiting no reaction when commingled may be managed as a homogeneous unit or batch. The WWTS subproject is not planning to commingle potentially incompatible waste. Bench scale testing for incompatibility will be completed for the WWTS subproject if waste specified in OAC 3745-55-99 are to be commingled.

Inventory of each batch is contained in the Project Specific Sampling and Analysis Plan. Samples of each batch were commingled in a laboratory setting under conditions simulating field mixing. Commingled wastes were

then monitored for temperature change and chemical reaction. A copy of the plan, developed by Site Media Sampling, is included as Attachment E of the Project Work Plan and results of the compatibility tests are located in Attachment F.

5.2 During Phase II, approximately 2500 drums of liquid ignitable and combustible wastes, identified in the project work plan, will be transferred to storage tanks. The project uses six 18,000 to 21,000 gallon, mobile, steel tanks. The tanks are approved to contain flammable liquid and have been hydrostatically leak tested. A single secondary containment is being utilized for the entire temporary tank farm. The secondary containment and all tank seals are resistant to strong solvents. Attachment K contains detailed tank and secondary containment requirements including secondary containment volume calculations.

Waste will be bulked into batches for sampling and analysis to verify waste acceptability at the TSCA Incinerator. Each batch will carry all waste codes appearing in the inventory for that batch. Upon completion of analysis and waste acceptance by TSCA Operations, the waste will be transferred to tank trailers and prepared for shipment to the TSCA Incinerator for thermal destruction. Approximately 21 shipments will be required to remove the identified project wastes from the FEMP. Current plans indicate from 120 days to 250 days of waste storage in the mobile tanks varying according to batch shipment schedule.

All movement and handling of wastes during this project will be performed using appropriate sections of 20-C-017, "Movement of Hazardous Wastes". Any spill will be managed according to appropriate sections of 20-C-606, "Hazardous Waste Spill Cleanup". Wastes will be consolidated by being pumped into bulk storage tanks then sampled prior to shipping. Six mobile storage tanks are located south of the 4A Warehouse. Atop each storage tank, approximately 11 feet above grade, is a sampling portal. Access to the top of the tank is via stairway and walkway, both equipped with handrails. These tanks meet or exceed 40 CFR 265 container standards.

Pumping will be accomplished by using an Air-Operated Diaphragm Pump with Stainless Steel wetted areas and Teflon diaphragms. This type of pump will be used for both Ignitable and Combustible Liquid wastes. Consolidated wastes in this project will be managed according to appropriate sections of 20-C-630, "Storage of Hazardous Waste".

Forty containers is the maximum number of drums allowed in the work area. Waste containers stored in the work area will be managed according to 20-C-017 which details requirements for secondary containment. Daily inspections of the work area are required by the project work plan.

Liquid accumulation in the secondary containment will be sampled to establish presence of hazardous material. If hazardous material is present, the liquid will be drummed and included in future disposition projects. Non-hazardous liquid will be vacuumed by the Supersucker in accordance with procedures 43-C-413 and 43-C-414, processed through the site Waste Water Treatment Plant.

5.3 Phase III is sampling waste bulked in the liquid storage tanks for Waste Acceptance Criteria (WAC). Martin-Marietta will furnish a Project Manager, with the required certificates (or copies) associated with 40 CFR 1910.120 Hazardous Waste Operation Emergency Response standard, for hazardous waste sampling workers. The sampling crew will report to the orientation meeting which will include the 40 CFR 1910.120 site specific element.

Samples are taken by the sampling crew according to Martin-Marietta protocols contained in the Project Work Plan Appendices. A minimum of 2 samples will be collected from each storage tank.

A sample preparation exclusion zone, consisting of heavy duty plastic sheets, such as Herculite, to collect any spills or leaks, will be constructed by the Sampling Crew. This step is similar to the practice currently being used on-site. Empty 55 gallon drums with lids and lock rings will be available for decontaminating the sampling equipment and collecting any contact waste generated during the sampling effort.

After the batch is sampled, FERMCO Operations personnel will seal and lock the tank per MMES Waste Acceptance Criteria Specification. QA personnel will verify the sample has been collected by MMES personnel, security seals placed on the tanks, and identification numbers recorded to prevent alteration prior to shipment.

All personnel will monitor themselves for radioactive contamination upon exiting the work area. All disposable anti-c garments shall be managed as contact wastes unless they are re-useable after decontamination and laundering. If high levels of radiological contamination are present, or a spill occurred, the disposable PPE outer garments will be placed in drums as contact wastes.

6.0 WASTE DISPOSITION

Incineration destroys many hazards inherent in liquid waste streams. Liquid incineration leaves minimal ash that may still be hazardous but offers the advantage of volume reduction. The ash may be land disposed or stabilized prior to land disposal as indicated by sampling and characterization.

DOE's TSCA Incinerator, located in Oak Ridge TN, was designed and constructed to receive Fernald and other DOE facility wastes. The Oak Ridge Facility, in addition to being designed and permitted for this waste, has obtained USEPA permission to treat CERCLA wastes and is in need of waste material to operate the facility. FEMP waste is scheduled in the FY '95 burn plan and is also listed in the FY '96 schedule forecast. The TSCA Incinerator FY '95 Burn Plan is in Attachment N.

Bulk liquid waste will be transported to the incinerator in Oak Ridge TN via tank truck. Radiological Control personnel will survey the incoming tank trailer for contamination in accordance with approved procedures. Maintenance Garage personnel will inspect the tank trailer for acceptability and complete a Preliminary Visual Trailer Inspection (form #FS-F-3344). Quality Assurance Certification personnel visually inspect the tanker for foreign material or compromised structural integrity. Heavy Equipment personnel will weigh empty tanker trucks upon arrival and record the tare weight (form #FMPC-PRO-238).

Transport company personnel shall position the tanker at the loading area. Operations personnel shall connect the transfer hoses between the storage tanks and the tanker and operate the transfer pumps. Filling of the tanker shall be visually monitored to prevent overflowing during the liquid transfer procedure. The filled tanker will be weighed and surveyed for radiological contamination. DOT and EPA required documentation will be provided to the driver of the transport vehicle.

Workers and supervisors, intimately involved in the project, will have sufficient knowledge/training of severity of contamination to make informed decisions about special management or segregation of contact waste. Contact wastes that have been subject to minimal exposure will go directly to the baler and subsequent burial. Spill materials and heavily contaminated waste will be evaluated on a case-by-case basis. Materials managed per this plan are characterized sufficiently to allow proper decision making with respect to contact waste. Little to no sampling of contact waste should be required. Contact wastes will be managed according to the applicable site provisions (SSOP-0003). Containers with solids remaining after removal of liquid constituents will be closed and returned to storage and will be included in a future project.

7.0 HEALTH and SAFETY

Personnel involved in the project have received, according to their responsibilities, appropriate level training in the following site documents. This training includes general employee training, on the job training, and radiological worker training in addition to training for specific tasks. The Project Specific Health and Safety Plans is located in Attachment D and the FEMP Emergency Response Team Fire/Spill Preplan is located in Attachment H.

7.1 Site Plans & Manuals

7.1.1	"FMPC Emergency Plan", (PL-3020)
7.1.2	"Flammable and Combustible Liquids Code", (NFPA-30)
7.1.3	"Flammable and Combustible Liquids", (OSHA 29 CFR 1910.106)
7.1.4	"Comprehensive Environmental Occupational Safety and Heath Program"; Volumes I, II, and Radiological Control Manual (ESH-1-1000)
7.1.5	"FMPC Spill Prevention Control & Countermeasure Plan", (PL-2194)
7.1.6	"FMPC Respiratory Protection Program", (RM-0007)
7.1.7	"FERMCO Quality Assurance Program Plan", (RM-0012)
7.1.8	"Control of Permits for Accomplishing Hazardous Work", (FMPC-0516)
7.1.9	"The On-site Transportation of Radioactive and Non-Radioactive Hazardous Materials", (SSOP-0003)
7.1.10	"FEMP Lot Marking and Color Coding System", (RM-0005)
7.1.11	"Personnel Accountability", (SSOP-0089)

7.2 Site Standard Operating Procedures and Standard Operating Procedures

7.2.1	"Spill Incident Reporting and Cleanup", (SSOP-0067)
7.2.2	"Emptying Liquid Hazardous Waste Storage Containers", (SOP 20-C-613)
7.2.3	"Processing the Site Wide Analysis Request/Custody Record for Sample Control", (SSOP-0018)
7.2.5	"Hazardous Waste Spill Cleanup", (SOP 20-C-606)
7.2.6	"Certification of Hazardous Waste Loading, Examination of Transport Vehicle/Trailer for Off-Site Shipment", (EQP-12.06)
7.2.7	"Movement of Hazardous Waste", (SOP 20-C-017)
7.2.8	"Storage of Hazardous Waste", (SOP 20-C-630)
7.2.9	"Completing the Material Evaluation Form", (SSOP-0002, revised)
7.2.10	"Environmental On-Site Media Sampling", (EM-2-013)
7.2.11	"Environmental Media Sampling Extraction Methodology for Obtaining Samples of Liquid Materials Using a Disposable Glass Coliwasa", (EM-EXM-90-007 Rev. 03/06/1991)

7.2.12	"Inspection and Performance Testing of Portable Radiation Survey Instruments", (SP-P-35-028)
7.2.13	"Packaging, On-Site Movement and Off-Site Shipment of Material", (PP-0314)
7.2.14	FEMP RCRA Contingency Plan
7.2.15	Handling Waste Materials with the Industrial Vacuum Loader Truck (Supersucker), (43-C-413)
7.2.16	Industrial Vacuum Loader Truck (Supersucker) Operation, (43-C-414)

8.0 PROJECT MANAGEMENT and REPORTING

8.1 Responsibilities

PHASE I: COMPATIBILITY TESTING PRIOR TO COMMINGLING

8.1.1 Waste Programs Management (WPM) - Waste Operations:

- Attend the specified activity training with Environmental Safety and Health (ES&H) Compliance Training Coordinator.
- Participate in the Orientation Meeting which will cover the task activities and safety issues.

8.1.2 Environmental Safety and Health (ES&H) - Industrial Hygiene:

- Perform any air monitoring deemed necessary at the testing locations.
- Issue the necessary Work Permits in accordance with the requirements specified in the approved Project Specific Health and Safety Plan (Attachment D).

8.1.3 ES&H - Radiological Control:

- Perform radiological monitoring at the sampling locations as required.
- Issue and renew as necessary a radiation work permit (RWP) during the performance of this project phase. See Project Specific Health and Safety Plan (Attachment D).

8.1.4 ES&H - Fire Protection Engineering and Fire & Safety Services.

- Verify proper grounding is utilized and required safety equipment is in place for all sampling and transfer operations.

8.1.5 Administration - Training:

- Conduct training as required.

8.1.6 WPM - Waste Sampling and Analysis:

- Obtain the necessary Work Permits per FERMCO Site Policy and Procedure number FMPC-0516, entitled "Control of Permits for Accomplishing Hazardous Work".

- Provide a sampling plan and technicians to collect samples from the drums per the approved sampling plan. Upon completion of sampling activities deliver the samples to the analytical laboratory.
- Perform analysis on each sample collected by Site Media Sampling in accordance with the approved sample plan.
- Provide a report of all analysis.

8.1.7 WPM - Hazardous and Mixed Waste Management:

- Review and certify ASTM commingling compatibility test data.

8.1.8 A&F - Materials Control & Accountability (MC&A):

- Designate lot numbers to be assigned to drums containing contact waste (as required).

8.1.9 WPM - Waste Operations:

- Stencil the lot numbers determined by MC&A on drums used to collect and store contact waste.

8.1.10 Quality Assurance

- QA will perform inspections on sampling activities to verifying sampling was performed in accordance to the Sampling Plan.

PHASE II: TRANSFERRING LIQUID WASTE FROM DRUMS TO BULK STORAGE TANKS FOR SAMPLING AND ANALYSIS.

8.1.11 WPM - Waste Operations:

- Attend specified activity training with ES&H-Compliance Training Coordinator. Train to Project Work Plan.
- Participate in Orientation Meetings which will cover task activities and safety issues.
- Provide Operators, MVOs, equipment, and materials for movement of hazardous waste drums from RCRA storage to the bulk storage tank loading areas.
- Provide labor to transfer liquid contents of hazardous waste drums into bulk storage tanks.
- Provide supervision to direct drum transfers from RCRA storage to the bulk storage tank loading area, to transfer hazardous waste from drums to storage tanks, to record inventory numbers transferred into each tank, and forward this information to MC&A.
- Obtain required work permits.
- Erect barricades and signs to cordon off the Exclusion Zone.
- Prepare a temporary dike around the storage tank loading area where drums are to be stored. Ensure drums are stored in compliance with applicable RCRA hazardous waste storage regulations and site procedures.
- Participate in development and conduct of On the Job Training (OJT) and maintain a worker qualification program for activities and equipment utilized in the project.
- Conduct daily inspection of mobile tanks containing hazardous waste, complete inspection form in Attachment M, and provide a completed copy to the RCRA Operating Record.
- Request the vacuum truck (Supersucker) and crew remove accumulated rainwater from the secondary containment.
- Review the following Single Valve Failure Analysis and be aware of ramifications of various valve positions. Normal valve position is the position of the valve (opened or closed) for the desired transfer operation to occur.

Single Valve Failure Analysis
Transfer Drums to Mobile Storage Tanks

Normal position is the position for transfer to occur.

Valve:	Normal Position:	If:	Then:
A1	Open	Closed	Transfer stops
H1	Open	Closed	Transfer stops
H2	Open	Closed	Transfer stops
H3	Open	Closed	Transfer stops
H4	Open	Closed	Transfer stops
T1-6	Open	Closed	Transfer stops

Single Valve Failure Analysis
Transfer Storage Tanks to Tanker

Normal position is the position for transfer to occur.

Valve:	Normal Position:	If:	Then:
A1	Open	Closed	Transfer stops
H1	Open	Closed	Transfer stops
H2	Open	Closed	Transfer stops
H3	Open	Closed	Transfer stops
H4	Open	Closed	Transfer stops
T1-6	Open	Closed	Transfer stops
V1	Open	Closed	Transfer stops

Note: See Figures 1 and 2 for valve locations.

- Stencil "Hazardous Waste, Accumulation Start Date _____" and place adhesive Hazardous Waste labels on commingled storage tanks.
- Blend drummed liquid waste materials into storage tanks as specified in the project drum inventory log.
- Provide notification to AEDO should an event occur.
- Provide notification to the AEDO in the event of a spill of hazardous waste or personnel contamination. Generate all required documentation should a release of hazardous material occur. If required, generate an Occurrence Report (OR) in the event of personnel contamination.
- Generate Material Evaluation Forms (MEF) for contact wastes generated during the performance of this project and submit to Waste Characterization.
- Stencil the lot numbers determined by MC&A on the drums containing contact waste, then contact a MVO to have the drums moved to an appropriate storage area.
- Generate W-65 card, "Item Production/ Certification/Identification," FMPC-CONT-1945XX, dated 11-20-92.

8.1.12 A&F - Materials Control and Accountability:

- Assist Operations in generating "Material Evaluation Forms" for any contact wastes generated as required.
- Assist in assigning lot numbers to contact waste.
- Generate the 68/69 Transfer Records to transfer hazardous waste drums to bulk loading area.
- Enter data from 65 card into inventory.
- Record drum consumption into each storage tank.

8.1.13 WPM - Waste Characterization:

- Provide Waste Operations with RCRA determinations on the waste streams being prepared for shipment to the K-25 TSCA Incinerator Facility.
- Provide Waste Operations with RCRA determinations for the contact waste generated.

8.1.14 ES&H - Industrial Hygiene:

- Determine the Personnel Protective Equipment (PPE) requirements during the performance of this project phase. Determinations will be made in accordance with the requirements in the approved Project Specific Health and Safety Plan (Attachment D).
- Conduct air monitoring for hazardous conditions during the performance of this project phase.
- Issue and renew Hazardous Work Permits (HWP) as necessary during the performance of this project phase per FMPC-0516 Control of Permits for Accomplishing Hazardous Work.

8.1.15 ES&H - Radiological Control:

- Issue and renew Radiation Work Permits (RWP) during the performance of this project phase. See Project Specific Health and Safety Plan (Attachment D).
- Provide radiological monitoring of the work area as required during the performance of this project phase.

8.1.16 ES&H - Fire Protection Engineering and Fire & Safety Services.

- Verify proper grounding is utilized and required safety equipment is in place for all sampling and transfer operations.

8.1.17 WPM - Hazardous and Mixed Waste:

- Develop a detailed schedule identifying important milestones to be reached during the completion of this project phase.
- Provide technical support as needed during the performance of this project phase.
- Assist in the development of training materials for operating pumping systems at the bulk storage tank loading area. Participate in training sessions as subject matter area expert.
- Conduct a visual inspection to ensure waste drums meet the definition of "Empty" as described in 40 CFR § 261.7. Complete "Empty Drum and Disposal Evaluation", Form FMPC REST-3192. Submit form to RCRA Operating Record, MS-30.
- Secure completed MEF for contact waste prior to project starting.
- Provide MC&A information required to assign lot marking.
- Provide detailed list of drums to be included in this project to waste storage in advance of project start date.
- Assure drums are available for project.
- Verify commingled wastes have been tested for compatibility.

8.1.18 ES&H - Hazardous Waste Compliance

- Perform independent assessment/surveillance to ensure hazardous waste is being managed in accordance with applicable RCRA regulations.
- Maintain records associated with the condition of the mixed wastes in the RCRA Operating Record including the location of newly generated contact wastes.
- Coordinate the set-up of Satellite Accumulation Areas / 90 Day Storage Areas as required.

8.1.19 WPM - Hazardous and Mixed Waste:

- Obtain documentation from Martin-Marietta showing that their sampling crew members have completed the required 40 hour hazardous waste worker training as specified in 29 CFR 1910.120, are enrolled in a medical monitoring program, and have been fit-tested for a full-face respirator.
- Arrange the necessary site training with the training coordinator for the Martin-Marietta sampling crew.
- Participate in the Orientation Meeting which will cover the task activities and safety issues.
- Obtain the necessary work permit per FERMCO Site Policy and Procedure number FMPC-0516, entitled "Control of Permits for Accomplishing Hazardous Work."

8.1.20 ES&H - Industrial Hygiene:

- Perform any air monitoring deemed necessary at the sampling locations.
- Issue the necessary Work Permit in accordance with the requirements specified in the approved Project Specific Health and Safety Plan (Attachment D).

8.1.21 ES&H - Radiological Control:

- Perform radiological monitoring at the sampling locations, as required.
- Issue and renew as necessary a radiation work permit (RWP) during the performance of this project phase. See Project Specific Health and Safety Plan (Attachment D).

8.1.22 ES&H - Fire Protection Engineering and Fire & Safety Services.

- Verify the proper grounding is utilized and required safety equipment is in place for all sampling and transfer operations.

8.1.23 Martin-Marietta Energy System (MMES) Sampling Crew

- Complete the required 40 hour hazardous waste training as specified in 29 CFR 1910.120.
- Provide documentation that personnel assigned to this project have completed Radiation Worker II Training.
- Supply the necessary sampling instruments, collection jars, storage containers, such as ice chests, and shipping containers plus any packing material such as dry or blue ice and seals.

- Supply full-face respirators with HEPA and Organic Vapor/Acid Gas cartridges.
- Provide documentation that personnel assigned to this project are enrolled in a medical monitoring program, have been fit-tested for their respirators, and have all the PPE as defined in the Project Specific Health and Safety Plan.
- Provide a directive from the Martin-Marietta Waste Acceptance Manager stating which parameters or analytes are to be analyzed for, and the following information: type of collection jar required, the volume of sample needed, any preservative required, and hold times (the latter information can be in a table).
- Provide MMES sample collection form and chain-of-custody form.
- Collect and handle all samples according to MMES protocols.
- Package all samples per MMES protocols and applicable DOT regulations for shipment.
- Attend site specific training (G.E.T.) prior to performing any work on-site and attend yearly refresher training as needed.

8.1.24 A&F - Materials Control and Accountability:

- Assign lot numbers to containers of contact waste and contaminated waste material as required.

8.1.25 WPM - Waste Operations:

- Stencil the lot numbers determined by MC&A on containers used to collect contact waste and contaminated waste materials as required.
- Conduct daily inspection of mobile tanks containing hazardous waste, complete inspection form in Attachment M, and provide a completed copy to the RCRA Operating Record.

8.1.26 Quality Assurance

- QA will perform inspections to verify sampling to be in accordance with the Sampling Plan.

PHASE IV & V: TRANSFER OF WASTE FROM STORAGE TANKS TO DOT CERTIFIED TANK TRAILERS AND SHIPMENT OF WASTE TO THE TSCA INCINERATOR.

8.1.27 RSO - Facility Engineering and Maintenance, Garage Personnel:

- Conduct a road worthiness inspection of the incoming vehicle. Inspect the tank trailer per FMPC Preliminary Visual Trailer Inspection (form #FS-F-9344).

8.1.28 A&F - Materials Control & Accountability:

- Assist WPM-Waste Operations in generating "Material Evaluation Forms" for all wastes generated during transfer operations. These wastes include contact wastes.
- Assign lot numbers to contact waste generated during the project. This will involve both RCRA and non-RCRA materials.
- Prepare and approve shipping orders for each shipment before tanker leaves the FEMP.
- Assign inventory numbers and lot numbers for each tanker of material that leaves the FEMP.

8.1.29 WPM - Waste Characterization:

- Provide Facilities and Warehousing with any necessary RCRA determinations for wastes to be shipped to the TSCA Incinerator Facility.
- Provide Facilities and Warehousing with RCRA determinations for contact wastes.
- Review completed Hazardous Waste Manifest and sign Generator's Certification block on the date of shipment.
- Complete required LDR Notifications/Certifications for each shipment.

8.1.30 WPM - Waste Operations:

- Provide the labor and materials for conducting the project. The supervisor in charge shall direct the actual transfers from the storage tanks to the tanker.
- Obtain work permits, as needed.
- Erect barricades and signs, as needed, to cordon off the exclusion zone.
- Prepare a temporary dike area around the tanker if there is any danger of spilling from the tanker during transfer.
- Generate 65 card, "Item Production/ Certification/Identification," FS-F-1945-1, dated 11-20-92.

- Provide notification to the AEDO and generate all required documentation should an event occur.
- Generate an Occurrence Report (OR) in the event of personnel contamination of the skin.
- Generate material evaluation forms (MEF) for contact wastes generated during the performance of this project and submit to Waste Characterization.
- Stencil lot numbers provided by MC&A on the drums containing contact waste or contaminated waste material.
- Perform a daily leak inspection of the tanker if the tanker will sit over night with RCRA materials.
- Conduct daily inspection of mobile tanks containing hazardous waste, complete inspection form in Attachment M, and provide a completed copy to the RCRA Operating Record.

8.1.31 Quality Assurance:

- Verify that a Radiological Control Technician has made a radiological survey of the trailer prior to loading and has recorded results on Form ES&H-1596-1 to ensure compliance with DOT, DOE, and disposal site requirements.
- Receive a copy of the completed Vehicle Monitoring Report Form ES&H-1596-1 on each tanker.
- Prior to loading, visually inspect the vehicles exterior per site procedure and verify:
  a. protective covers of all loading and unloading valves are in proper condition;
  b. no apparent defects that would induce leakage during transit;
  c. the tank has been properly tested and marked by the transporter; and
  d. a verification will be done on all fasteners to determine whether suspect or counterfeit fasteners exist. This will be done on the tanker trailer.
- Prior to loading, visually inspect the interior of the tanker for the presence of the following:
  a. significant amounts of liquid or oily substances on interior surfaces; and
  b. structural damage that would allow leakage.
- Perform a final vehicle examination on the outgoing tanker by completing a "Waste Certification Final Trailer/Vehicle Checklist."
- Conduct the surveillance required to verify that all steps in this plan are properly completed.
- Verify shipment paperwork package contains all documents required by this work plan. Guidance in inspection paperwork can be found in EQP 12.06, entitled, "Certification of Hazardous Waste Loading, Examination of Transport Vehicle/Trailer for Off-Site Shipment." Required shipment

paperwork for acceptance at the TSCA Incinerator is as follows:

a. Uniform Hazardous Waste Manifest;
b. LDR Notification form *;
c. request for Disposal/Storage of Waste Material and Equipment form *;
d. Waste Analysis Forms **;
e. Nuclear Materials Transportation Request form DOE/NRC-741;
f. Nuclear Materials Shipping Order form T-558;
g. Vehicle Radiation Survey Report; and
h. Tanker Trailer DOT Certification *

* Provided by MMES
** Provided by FERMCO Analytical Facility

- Check that a tamper-proof seal has been securely fastened to the filled tanker.

8.1.32 ES&H - Industrial Safety:

- Determine any changes to the Personnel Protective Equipment (PPE) requirements during the performance of this project phase. Determination will be in accordance with the requirements specified in the approved Project Specific Health and Safety Plan (Attachment D).
- Conduct air monitoring for hazardous conditions during the performance of this project phase.
- Issue and renew, as necessary, the Hazardous Work Permit (HWP) during the performance of this project phase, per FMPC-0516.

8.1.33 ES&H - Radiological Control:

- Issue and renew a Radiation Work Permits (RWP) for performance of this project phase. See Project Specific Health and Safety Plan (Attachment D).
- Provide Radiological Control coverage of the work area during the performance of this project phase as required.
- Survey incoming and outgoing transport vehicles in compliance with applicable DOT regulations and site procedures.

8.1.34 ES&H - Fire Protection Engineering and Fire & Safety Services.

- Verify proper grounding is utilized and required safety equipment is in place for all sampling and transfer operations.
- Verify storage tank placement, venting, and secondary containment meet NFPA 30 code requirements.

8.1.35 WPM - Hazardous and Mixed Waste:

- Develop a detailed schedule identifying important milestones to be reached during the completion of this project phase.
- Provide technical support, as needed, during the performance of this project phase.
- Provide Waste Characterization with the laboratory data generated by The FERMCO Analytical Laboratory on the waste materials which were sampled during the sampling and characterization phase.
- Develop the training materials for operating the pumping systems at each storage tank area and conducting the subsequent training sessions.
- Prepare the Hazardous Waste Manifest for each shipment.
- Track the Hazardous Waste Manifest from tanker departure to TSCA Incinerator to ensure the Manifest is signed and returned to the FEMP within 30-45 days.
- Submit a copy of the entire shipment package to the operating record including the signed Hazardous Waste Manifest acknowledging receipt by the TSD Facility.

8.1.36 Martin-Marietta Energy Systems, Inc. (K-25 TSCA Operations):

- Provide evidence showing that the TSCA Facility is permitted to accept wastes generated at the FEMP.
- Provide DOT certification documentation on tank trailers transporting the liquid waste mixtures from the FEMP to the K-25 TSCA Facility.
- Have the FERMCO Analytical Facility data reviewed and evaluated by MMES for TSCA acceptance.
- Provide RCRA Waste Reduction (RWR) with laboratory data generated for RCRA characterization purposes.

8.1.37 WPM - Transportation:

- Perform a preliminary carrier evaluation per DOE standards.
- Contract with a licensed, insured, DOT certified transporter. The transporter shall possess current credentials of OSHA training for transporting the MMES tank trailer to the K-25 TSCA Facility.
- Affix the specified placards to the front of the trailer, each side, and the rear of the tank body in such a manner that at least one will be visible when viewing the vehicle from any direction. Trailer placards shall correspond with sampling analysis and comply with DOT regulations.
- Review the Hazardous Waste Manifest after Traffic Control has completed the document.
- Prepare a bill of lading for shipment, if required.

- Attach security seals to the tank trailer per applicable requirements.

8.1.38 WPM - Waste Operations:

- Weigh empty tanker before loading and record tare weight, then re-weigh tanker trailer after loading to document NET shipment weight.

8.2 Waste Management - Contact Waste

Workers and supervisors, intimately involved in the project, will have sufficient knowledge of severity of contamination to make informed decisions about special management or segregation of contact waste. Wastes that have been subject to minimal contact will go directly to the baler and subsequent burial. Spill materials and heavily contaminated waste will be evaluated on a case-by-case basis. Materials managed per this plan are characterized sufficiently to allow proper decision making with respect to contact waste. Little to no sampling of contact waste should be required. Contact wastes will be managed according to the applicable site provisions (SSOP-0003).

8.3 Work Sequence

NOTE: Deviation from the steps contained in this work plan shall be approved by the Hazardous & Mixed Waste Project Coordinator and documented in the Work Plan.

NOTE: There are five general tasks that are involved in completing this project. These tasks will require appropriate FERMCO Work Permits and are identified as follows:

I. Identification of drums expected to **exceed 0.01 percent of uranium** (Attachment J).

II. Pumping of liquids from all drums which are **0.01 percent (or less) uranium** to the storage tanks.

III. Pumping of liquids from all drums which are **greater than 0.01 percent uranium** to the storage tanks.

IV. Sampling of the composite waste materials within the storage tanks for the K-25 TSCA Incinerator acceptance criteria and DOT shipping requirements.

V. Pumping of the characterized liquids to a DOT approved tanker. The tanker will be used to transport the liquid mixed waste to the K-25 Incinerator.

General - For the purposes of radiological control, below are steps for completing Tasks I through V.

1. Identify all drums with the potential to exceed 0.01 percent uranium. Refer to the Attachment J and available analytical data for guidance.

2. Screen and segregate those drums from those determined to be 0.01 percent or less.

Note: At concentrations greater than 0.01 percent, the expected amount of radioactivity (per gram of material) is likely to exceed 100 pCi. At 100 pCi/gm, removable contamination on surfaces is likely to exceed 1,000 dpm/100 cm^2, if this material is spilled in sufficient quantity. This will result in an increase in radiological controls beyond what is desired for the project area.

3. As the drums suspected of exceeding 0.01% uranium are being segregated, Radiological Control Technicians (RCTs) may screen these drums by direct scan with an appropriate survey instrument.

4. Pending the results of the direct scan, the drum shall be handled appropriately as either "greater than 0.01" or "less than 0.01" uranium.

5. After the affected drum has been pumped of all liquids, it shall be sealed and fully contained with no openings and moved to an appropriate storage area.

8.3.1 Transferring Liquid Waste from Drums to Bulk Storage Tanks for Sampling & Analysis

NOTE: Approximately 2500 drums of liquid Ignitable and Combustible wastes, identified in this plan, will be transferred to storage tanks. Waste will be prepared in batches for sampling and analysis to verify waste acceptability at the TSCA Incinerator. Upon completion of analysis and waste acceptance by TSCA Operations, the waste will be transferred to tank trailers and prepared for shipment to the TSCA Incinerator for T&D. Approximately 21 shipments will be required to remove the identified project wastes from the FEMP.

8.3.1.1 Prepare the work area where the drums will be emptied.

a. Construct a berm, for a containment area of adequate size, using PVC piping.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

b. Place Herculite sheets or equivalent material over the piping.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

c. Place exclusion zone barrier a minimum of 5 feet from the drum pumping area.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

d. Place 2 empty drums for collecting contact waste materials.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

e. Establish the step-off pad.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

f. Place spill clean-up equipment and safety equipment at the loading location.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

g. Verify safety showers and fire extinguisher are operable.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

h. Verify the pump and storage tanks are grounded. (Fire Protection Engineering can offer guidance as needed with grounding.)

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

i. Verify the pump is equipped with a check valve to prevent backflow through pump.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

8.3.1.2 Transfer contents from drums to storage tanks.

NOTE: **If work in progress must be suspended, the Project Coordinator will ensure liquid transfer equipment is placed in a safe and secure configuration.**

NOTE: **If operation lasts more than 1 day, each day requires a loading/unloading leak inspection of the area. Send the inspection report to MS-30 c/o operating record.**

NOTE: **Batches #2 and #4 carry EPA designation of Ignitable. For this reason, the storage tank atmosphere must be made inert prior to pumping liquids into the tank. Attachment G contains sequential steps for inerting storage tanks.**

a. Verify all valve tags are in place for valves in transfer system: (Valves A1, H1, H2, H3, H4, T1 through T6)

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

b. Attach the transfer hose from the storage tank valve (T1 - T6) to the discharge side of the transfer pump. Secure cam lock fittings with a tie-wrap.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

c. Attach the transfer hose from the suction side of the transfer pump to the drum suction tube. Secure cam lock fittings with tie wraps.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

d. Attach the air hose from the air supply to the transfer pump. Secure fitting with safety wire.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

e. Verify drum inventory number is listed on the commingling inventory list for the batch being commingled. Stage a maximum of 40 drums in the work zone.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

f. Connect a ground strap from the drum being pumped to an adequate ground. (Fire Protection Engineering can offer guidance on adequate grounding.)

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

g. Begin opening drums and verifying the presence of **liquid** waste to be pumped.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

h. Open valve (T1 - T6) on storage tank being filled.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

i. Place drum suction tube inside the drum to be transferred.

Caution: Hold the suction tube securely during transfer.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

***NOTE:** If drum contains only solids that cannot be pumped, move that drum aside and proceed to next drum.

j. Open valves (H1 - H4) on transfer hoses to allow transfer of liquid waste from drum to the storage tank.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

k. Start the pump by opening air supply valve (A-1). Maximum air inlet pressure 120 psi, normal range 40 to 100 psi.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

l. When the liquid contents have been removed from the drum, move drum suction tube and the ground strap to the next drum and continue transfer. Repeat this procedure until liquids from all drums in the staging area have been pumped into the bulk storage tank.

m. Verify 6-12 inch head space remaining in storage tank from level indicator scale before starting next series of transfers. The air horn overflow alarm will sound when head space falls below 6".

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

n. When the drum pumping is complete, stop the pump by closing air supply valve (A-1).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

o. Repeat steps (e) through (n) until the consolidation tank is filled.

***Note:** **If the work shift ends prior to the tank being filled, proceed to step (p).**

p. When the consolidation tank is filled, close valve (T1 - T6) on the container being filled.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

q. Close valves H1, H2, H3, & H4 on transfer hoses.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

r. Disconnect the transfer hoses and drain the remaining liquid into a bucket. Pour the contents of the bucket into a container to be pumped when operations resume.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

s. Repeat steps (a) through (r) until all bulk storage tanks have been filled or inventory of liquid waste drums has been consumed.

***Note:** **RCRA empty drums will be sent to the on-site drum crushing facility. Drums containing solid residues after removal of liquids will be returned to an appropriate warehouse.**

8.3.2 Sample bulk liquid storage tanks for Waste Acceptance Criteria (WAC).

Martin-Marietta:

a. Martin-Marietta will furnish a Project Manager, with the required certificates (or copies) associated with 29 CFR 1910.120 Hazardous Waste Operation Emergency Response Standard, for Supervising Hazardous Waste Sampling Workers.

b. Sampling crew reports for orientation meeting which includes the 29 CFR 1910.120 site specific element.

c. Sampling crew members will provide initial, bi-weekly, and termination urine samples. Sampling crew members will also have an initial and final in-vivo (whole body counting) exam.

d. Sampling crew will don PPE at the work area control point and assemble at the sampling location.

e. A sample preparation exclusion zone, consisting of heavy duty plastic sheets, such as herculite, to collect any spills or leaks, will be constructed by the Sampling Crew. This step is similar to the practice currently being used on-site.

f. Empty 55-gallon drums with lids and lock rings will be available for decontaminating the sampling equipment and collecting any contact waste generated during the sampling effort.

g. Samples are taken by the sampling crew according to Martin-Marietta protocols contained in Attachment B. A minimum of 2 samples will be collected from each storage tank.

WPM - Waste Operations:

h. After the batch is sampled, Operations personnel will seal and lock the tank.

Seal identification number,_____
Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

Quality Assurance (QA):

i. QA personnel will verify the sample has been collected by MMES personnel, security seals placed on the tanks, and identification numbers recorded to preventing alteration prior to shipment.

ES&H - Radiological Control:

j. All personnel will monitor themselves for radioactive contamination upon exiting the work area. All disposable anti-c garments shall be managed as contact wastes unless they are re-useable after decontamination and laundering. If high levels of radiological contamination are present, or a spill occurred, the disposable PPE outer garments will be placed in drums as contact wastes.

WPM - Waste Operations:

k. Upon completion of liquid waste transfer and sampling, Operations personnel will collect all contact wastes in accordance with SSOP-0003 and label the drums for storage in the Controlled Holding Area.

8.3.3 Transfer of Waste from Storage Tanks to DOT Certified Tank Trailers and Shipment to the TSCA Incinerator.

8.3.3.1 ES&H - Radiological Control:
Radiological Controls personnel will survey the incoming tank trailer for contamination in accordance with approved procedures.

8.3.3.2 RSO - Facility Engineering and Maintenance, Garage Personnel:
Maintenance Garage personnel will inspect the tank trailer for acceptability and complete a Preliminary Visual Trailer Inspection (form # FS-F-3344).

8.3.3.3. Quality Assurance:
QA Certification personnel visually inspect the tanker for signs of contamination or compromised structural integrity.

8.3.3.4 WPM - Waste Operations:
Heavy Equipment personnel will weigh empty tanker truck upon arrival and record the tare weight (form #FMPC-PRO-238).

8.3.3.5 ES&H - Industrial Hygiene:
Industrial Safety personnel will place the necessary hazardous work permit at the entrance to the work area in accordance with the Project Specific Health and Safety Plan (Attachment D).

8.3.3.6 WPM - Waste Operations:
Operations personnel shall attach electrical bonding cables to the tanker, as required by Fire and Safety.

8.3.3.7 ES&H - Radiological Control:
Radiological Controls personnel will perform any required monitoring during loading activities.
Radiological Control Technician will issue a Radiation Work Permit (RWP) if required.

8.3.3.8 WPM - Waste Operations:
Operations personnel shall connect the transfer hoses between the storage tanks and the tanker and operate the transfer pumps. Filling of the tanker shall be visually monitored to prevent overflowing during the liquid transfer procedure.

NOTE: WPM - Waste Operations is required to complete daily leak inspections of the storage tanks & tanker prior to starting loading/unloading operations and complete the inspection form. (A copy of this form must be sent to the RCRA Operating Record MS-30.)

Date:_____ Shipment Number:_____ 7376

PROCEDURE FOR TRANSFERRING WASTE TO TANKERS FOR BATCH 1.

8.3.3.9 Prepare the work area where the tanker will be filled.

a. Construct a berm using PVC piping.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

b. Place Herculite sheets or equivalent material over the piping.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

c. Place exclusion zone barrier a minimum of 5 feet from the tanker.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

d. Place 2 empty drums for collecting contact waste materials.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

e. Establish the step-off pad.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

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f. Place spill clean-up equipment and safety equipment at the loading location.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

g. Verify safety showers and fire extinguisher are operable.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

h. Verify the pump and storage tanks are grounded. (Fire Protection Engineering can offer guidance as needed with grounding.)

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

8.3.4 Transfer contents to the tanker.

Note: If work in progress must be suspended, the Project Coordinator will ensure liquid transfer equipment is placed in a safe and secure configuration.

a. Verify all valve tags are in place in transfer system (Valves T1, T2, T3, T4, T5, T6, H1, H2, HR, H4, A1, & V1).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

b. Attach the transfer hose from the discharge side of the transfer pump to the tanker. Secure cam lock fittings with a tie wrap.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

c. Attach a ground strap from the tanker to an adequate ground. Fire Protection Engineering can offer guidance on adequate grounding.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

d. Attach the transfer hose from the storage tank to the suction side of the transfer pump. Secure cam lock fittings with a tie wrap.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

e. Attach the air hose from the air supply to the transfer pump at valve (A1). Secure fitting with safety wire or other suitable means.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

f. Open storage tank valve (T1 - T6).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

g. Open valve on the tanker (V1).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

h. Open hose valves H1, H2, H3, and H4.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

i. Operate the pump according to the specific work instructions for that pump. Start the pump by opening air supply valve (A1). Maximum air inlet pressure: 120 psi. Normal pressure range: 40 to 100 psi.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

j. Verify that someone is constantly monitoring tanker to monitor available storage space.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

k. Monitor tank float gauge to verify presence of liquid waste.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

l. When the storage tank is empty or the transport tankers is full, close valve (T1 - T6).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

m. When the tanker is full, stop the pump by closing air supply valve (A1).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

n. Close valve on the tanker (V1).

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

o. Close hose valves H1, H2, H3, and H4.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

p. Disconnect transfer hoses and drain the liquid remaining in the hoses into a bucket. Pour the contents the bucket into the top of the tanker.

Project Coordinator,
date & time_____
Quality Assurance,
date & time_____

8.3.5 ES&H - Radiological Control:

Radiological Control personnel will survey and release the tank trailer from the exclusion zone loading area. If the tanker has become contaminated during the transfer procedure, Site Services personnel shall decontaminate the affected areas until Radiological Control approves release of the tanker.

8.3.6 WPM - Waste Operations:

8.3.6.1 Heavy Equipment personnel will weigh the filled tank trailer and document this step on a weight ticket (FMPC-PRO-238).

8.3.6.2 Upon completion of material transfer to the tanker and the movement of the tanker out of the work area, Operations personnel will collect potential contact waste, including PPE, in accordance with SSOP-0003 and label the drums for storage in the RCRA Warehouse per SOP 20-C-630, entitled, "Receipt Inspection, Storage, and Storage Inspection of Hazardous Waste."

8.3.6.3 Operations personnel will properly affix lids to drums when full and at the end of each work session. MC&A shall assign lot markings (per RM-0005) and prepare 65/68 cards. Operations personnel shall stencil lot markings on the drums. Filled containers shall be transported to the RCRA warehouse.

8.3.7 A&F - Materials Control & Accountability:

8.3.7.1 MC&A personnel will prepare the shipping order for the departing tanker.

8.3.7.2 Record shipment, receipt and locations of drums shipped to RCRA Warehouse.

8.3.8 Traffic Control:

Shall prepare the Hazardous Waste Manifest for each shipment.

8.3.9 Quality Assurance:

8.3.9.1 Shall ensure the shipment paperwork package is complete per the following list:

a. Uniform Hazardous Waste Manifest;
b. LDR Notification form *;
c. Request for Disposal/Storage of Waste Material and Equipment form *;
d. Waste Analysis Forms **;
e. Nuclear Materials Transportation Request form DOE/NRC-741;
f. Nuclear Materials Shipping Order form T-558; and
g. Vehicle Radiation Survey Report

* Provided by MMES
** Analytical Facility

8.3.9.2 Guidance in inspection paperwork can be found in EQP 12.06, entitled, "Certification of Hazardous Waste Loading, Examination of Transport Vehicle/Trailer for Off-Site Shipment."

8.3.9.3 QA personnel shall perform a final trailer and vehicle examination on the outgoing tanker by completing a "Waste Certification Final Trailer/Vehicle Checklist" (ECQ-880801.1, Rev. 0). These requirements shall be met before releasing the tanker for transport to Oak Ridge.

9.0 SUPPORTING DATA

9.1 Figures

9.1.1	Diagram 1:	Project Organization Chart
9.1.2	Diagram 2:	Transfer Operation from drums to storage tanks.
9.1.3	Diagram 3:	Transfer Operations from storage tanks to tanker.
9.1.4	Diagram 4:	FMPC Storage Tank Locations.
9.1.5	Diagram 5:	Tank/Container Inspection Form

9.2 Attachments

9.2.1	Att. A:	Project Specific Drum Inventory
9.2.2	Att. B:	K-25 TSCA Incinerator Waste Acceptance Plan
9.2.3	Att. C:	Loading Bulk Liquid Waste Tanker Procedures
9.2.4	Att. D:	Project Specific Health and Safety Plan; Liquid Mixed Waste Sampling, Transferring, and Shipping.
9.2.5	Att. E:	Project Specific Sampling and Analysis Plan (Waste Compatibility)
9.2.6	Att. F:	Commingled Waste Compatibility Test Results
9.2.7	Att. G:	Storage Tank Atmosphere Inerting Procedure
9.2.8	Att. H:	FEMP Emergency Response Team Fire/Spill Pre-Plan
9.2.9	Att. J:	Drums Identified which Exceed 0.01% Uranium
9.2.10	Att. K:	Tank Specifications and Secondary Containment Calculations
9.2.11	Att. M:	Tank Inspection Form
9.2.12	Att. N:	TSCA Incinerator Burn Plan, FY95
9.2.13	Att. P:	Secondary Containment Chemical Compatibility Analysis
9.2.14	Att. Q:	Hydrostatic Test Certification
9.2.15	Att. R:	TSCA Incinerator CERCLA Approval Documentation
9.2.16	Att. S:	Waste Water Treatment Project

ATTACHMENT K

In order to demonstrate compliance with OAC 3745-55-75 (B) (3) and (4), the following dimensions and calculations of the secondary containment are provided. The calculations demonstrate the containment system has sufficient capacity to contain 10% of the volume of the containers or the volume of the largest container, whichever is greater, plus the precipitation from a twenty-five year, twenty-four hour rainfall event.

All six tanks in the secondary containment are 21,000 gallons. For this reason the volume of any one tank is more than 10% of the capacity of the entire contained tank farm. A non-pressurized vessel of liquid will drain until the level of the contained liquid and the surrounding liquid are equal. For example, if the bottom of a tank is punctured, the tank will leak only until the secondary containment is filled to the level remaining in the tank. The liquid remaining in the tank erases the footprint displaced by the tank. The containment calculations provided are based upon the footprints of five tanks displacing liquid.

The calculation is as follows:

Containment Capacity:

The secondary containment vessel is 90′ x 60′ x 1.5′ in depth.

90′ x 60′ x 1.5′ = 8100 cubic feet (cf)

Capacity of Largest Tank:

21,000 gal ÷ 7.4 gal/cu.ft = 2838 cf

Volume of 25 Year/24 Hour Rain Event:

5.4" = .45′

.45′ x 60′ x 90′ = 2430 cf

Volume Displaced by 5 Non-Leaking Tanks:

Volume occupied by five 40′ x 8′ rectangular tanks in the 1.5′ deep secondary containment vessel:

5 x 8′ x 40′ x 1.5′ = 2400 cf

Containment Summary:

8100 cf - 2838 cf - 2430 cf - 2400 cf = 432 Cubic Feet

The volume of the largest of six tanks plus the volume of a 25 year/ 24 hour rain event is less than the capacity of the secondary containment vessel by 432 cubic feet. Applying this volume over the 90′ x 60′ containment area less the five 8′ x 40′ tanks:

$$432 \text{ cf} \div (90' \times 60' - 5 \times 8' \times 40') = .114' = 1.34''$$

This idealized calculation provides less free board than discussed in the project documentation. The tanks are not planned to contain more than 20,000 gallons, the calculation is based upon the tank capacity of 21,000 gallons. This calculation also assumes the tanks to be flat bottomed rectangles. They are in fact, built on semi-trailer frames approximately 12" in depth. While structural members of frame would be submerged, the frame is not solid and would not displace the entire volume. For these reasons, the free board calculated is extremely conservative.

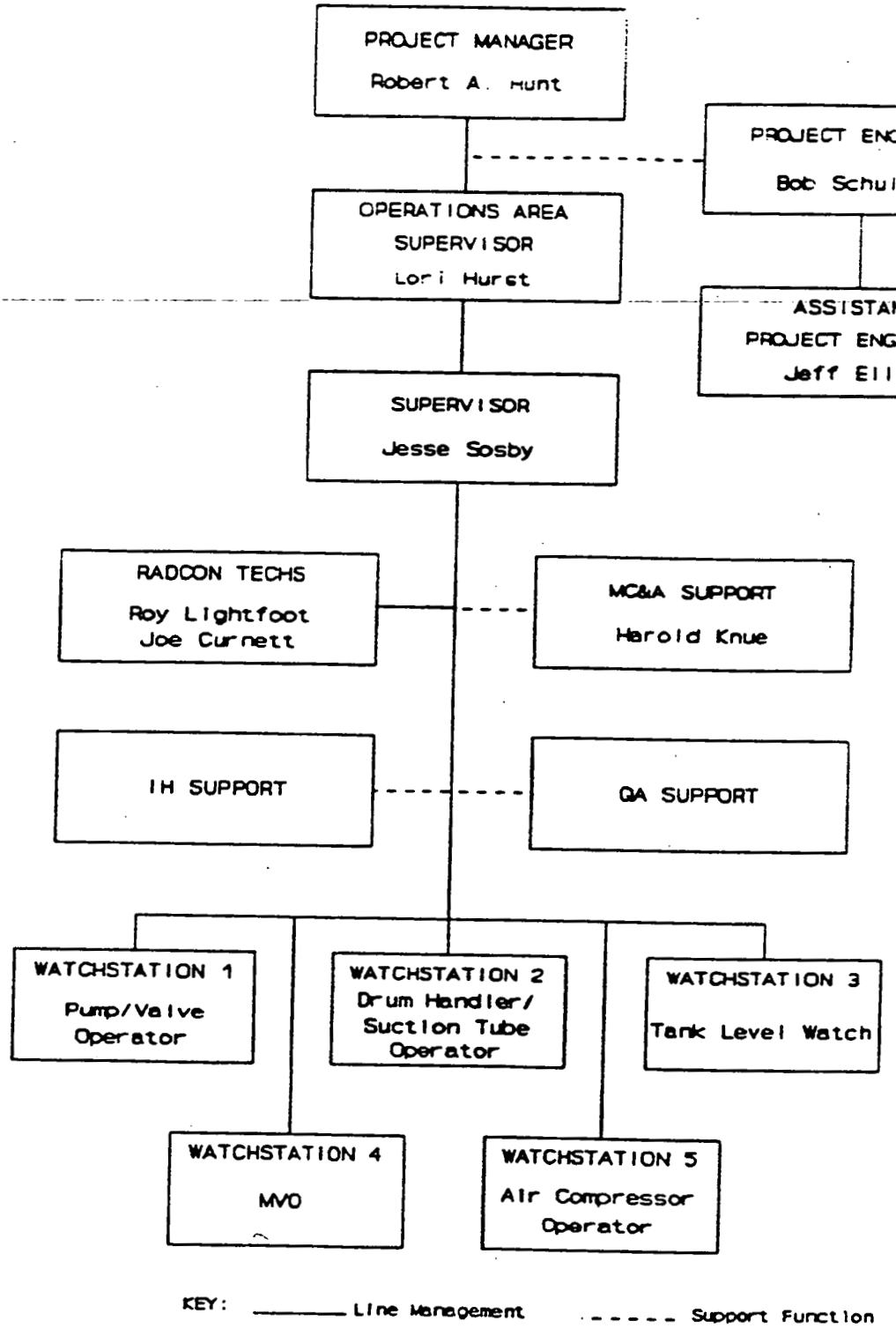
In the event a leak occurs, waste from the leaking tank and waste captured by the secondary containment would be pumped into the sixth tank. The inventory for this project has been grouped into five batches. Six tanks were procured to allow an extra tank for emergency use.

FIGURES

Figures

- Diagram 1: Project Organization Chart
- Diagram 2: Transfer Operation from drums to storage tanks.
- Diagram 3: Transfer Operations from storage tanks to tanker.
- Diagram 4: FMPC Storage Tank Locations.
- Diagram 5: Tank/Container Inspection Form

7376



PROJECT ORGANIZATION

Figure 1

000048

Transfer Operation

From: Storage Drums
To: Storage Tank

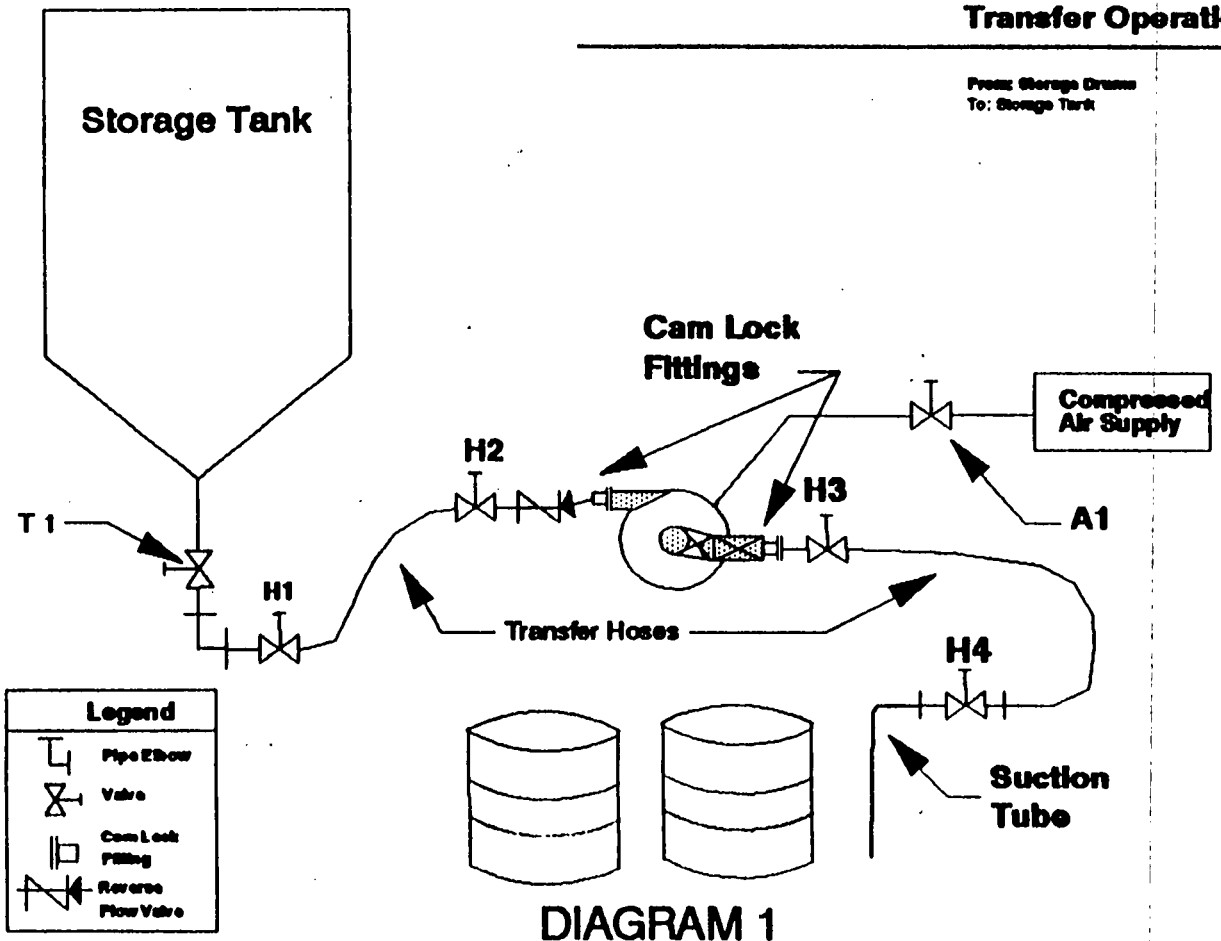


DIAGRAM 1

Transfer Operations

From: Storage Tank
To: Tank Trailer

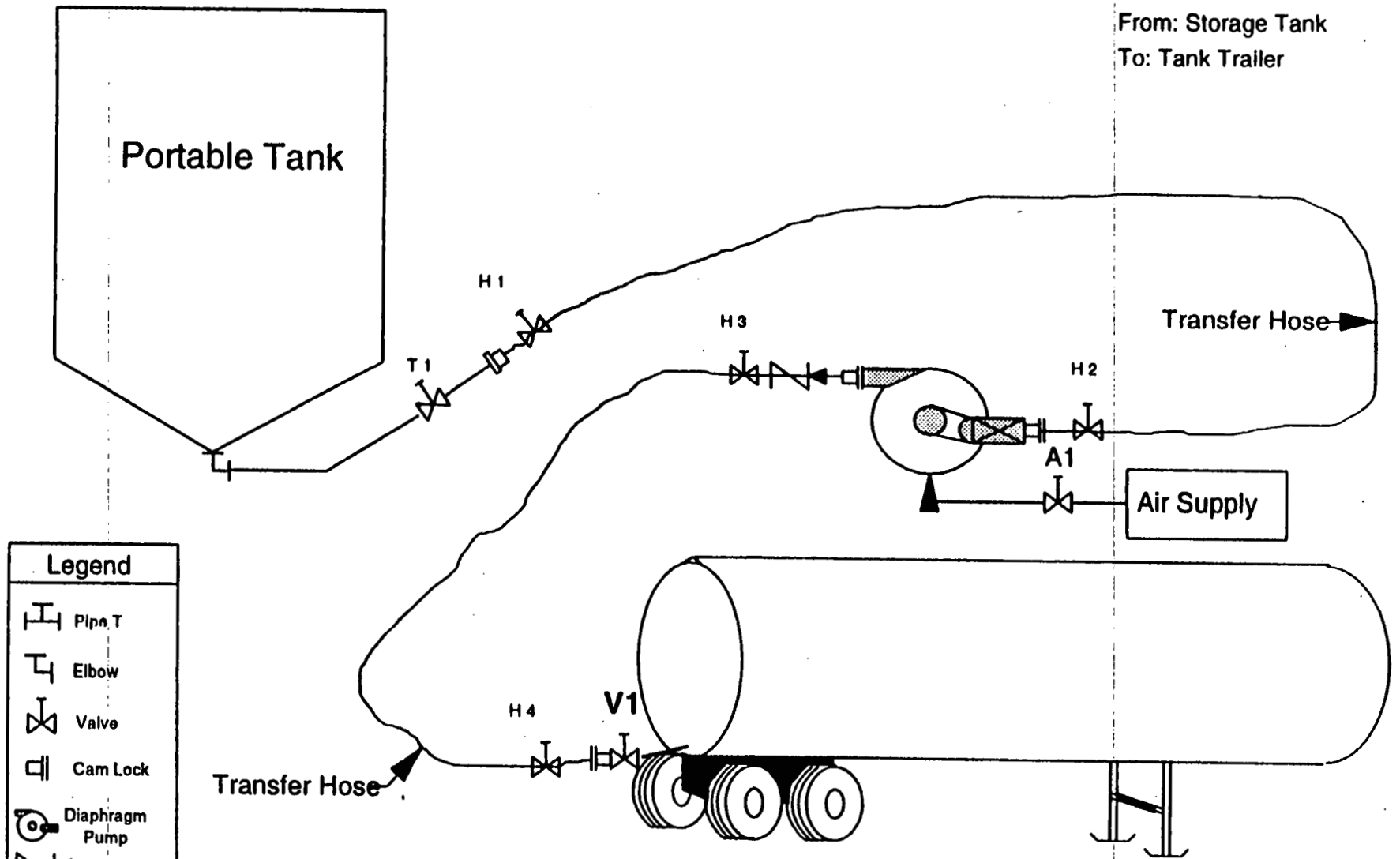
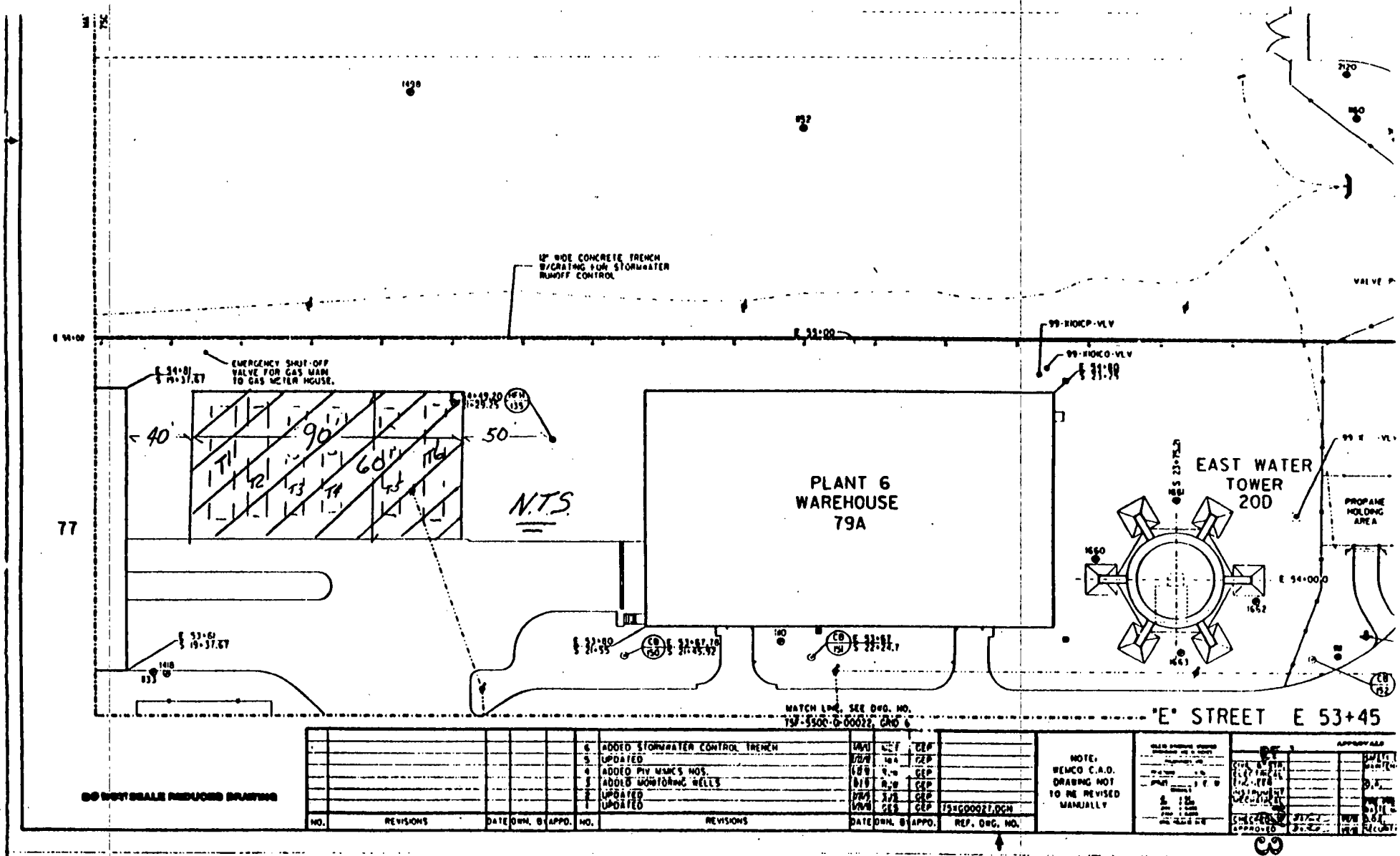


DIAGRAM 2

020000

9232

Fig. 3


12" WIDE CONCRETE TRENCH W/GRATING FOR STORMWATER RUNOFF CONTROL
EMERGENCY SHUT-OFF VALVE FOR GAS MAIN TO GAS METER HOUSE.
40'
90'
50
60'
T1
T2
T3
T4
T5
T6
N.T.S.
77
PLANT 6
WAREHOUSE
79A
EAST WATER
TOWER
200
PROPANE HOLDING AREA
99-HOICP-VLV
99-HOICO-VLV
E 54+00.0
E 53+00
MATCH LINE, SEE DWG. NO. TSF-5500-0-00022, GRID 6
"E" STREET E 53+45
NOTE: WEMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY
REF. DWG. NO.
TSF5000021.DGN
NO. REVISIONS DATE DWN. BY APPD.
6 ADDED STORMWATER CONTROL TRENCH
5 UPDATED
4 ADDED PIV MMCS NOS.
3 ADDED MONITORING WELLS
2 UPDATED
1 UPDATED
DO NOT SCALE REDUCED DRAWING

FEMP
MIXED AND HAZARDOUS WASTE DISPOSAL
MULTIPLE TANK/CONTAINER INSPECTION FORM

7376

PROJECT NAME: _____

PROJECT ENGINEER: _____

Item	Item Description	Acceptable	Unacceptable	N/A	Observations/Corrective Actions To Be Completed	Date Action Completed
TEMPORARY TANK STORAGE: List Tank No.'s and Location(s):						
1	Overfill/Spill control equipment:					
2	Corrosion or release of waste:					
3	Monitoring equipment In place (Content level):					
4	Surrounding area & unit integrity:					
5	Secondary containment condition:					
6	Manway/fillpipe seals unbroken:					
7	Sump pump switch position -should be on "off" setting:					
8	Tank marked with words "Hazardous Waste"					
DRUM STORAGE AREA(S): Attach list of inventory No.'s and staging area location(s):						
1	Drums marked "Hazardous Waste"					
2	Corrosion, holes, dents, bulges, or leaks:					
3	All drums closed except when adding or removing waste:					
4	Spill control equipment:					
5	Secondary containment condition:					

000052

FEMP
MIXED AND HAZARDOUS WASTE DISPOSAL
MULTIPLE TANK/CONTAINER INSPECTION FORM

7376

PROJECT NAME: _____

PROJECT ENGINEER: _____

Item	Item Description	Acceptable	Unacceptable	N/A	Observations/Corrective Actions To Be Completed	Date Action Completed
TEMPORARY TANK STORAGE: List Tank No.'s and Location(s):						
1	Overfill/Spill control equipment:					
2	Corrosion or release of waste:					
3	Monitoring equipment In place (Content level):					
4	Surrounding area & unit integrity:					
5	Secondary containment condition:					
6	Manway/fillpipe seals unbroken:					
7	Sump pump switch position -should be on "off" setting:					
8	Tank marked with words "Hazardous Waste"					
DRUM STORAGE AREA(S): Attach list of inventory No.'s and staging area location(s):						
1	Drums marked "Hazardous Waste"					
2	Corrosion, holes, dents, bulges, or leaks:					
3	All drums closed except when adding or removing waste:					
4	Spill control equipment:					
5	Secondary containment condition:					

000053

Item	Item Description	Acceptable	Unacceptable	N/A	Observations/Corrective Actions To Be Completed	Date Action Completed
TANKER TRUCK AND TRAILER: List location: E 7276						
1	Marked with words "Hazardous Waste"					
2	Corrosion, holes, dents, bulges, or leaks:					
3	Lid/manway closed except when adding or removing waste:					
4	Spill control equipment:					
5	Secondary containment condition:					

NOTE: DRUMS AND STAGING AREAS MUST BE INSPECTED WEEKLY
TEMPORARY STORAGE TANKS MUST BE INSPECTED DAILY
TANKER TRUCK MUST BE INSPECTED DAILY

Comments:

Inspector's Signature:	Date:
Hazardous Waste Compliance Signature:	Date:

53a

ATTACHMENT A

!NCI[illegible] [illegible]N PROJECT – BATCH 1

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10004	W500764	55	193	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500766	85OP	246	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500767	85OP	557	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500776	85OP	275	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500777	55	274	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500805	85OP	575	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500810	85OP	224	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500817	55	374	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500818	55	269	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500819	85OP	325	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500855	85OP	327	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500856	55	383	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500857	85OP	184	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500859	55	387	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500860	85OP	418	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500861	55	371	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500862	55	365	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500893	85OP	529	0.01	0.5	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500894	85OP	391	0.01	0.5	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W500895	85OP	529	0.01	0.5	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10004	W503700	55	428	0.02	0.94	Cont. Solvents – Trichlor, Perchlor	D007	D018	D019	D021	D029	D039	D040	F001
10010	W500131	55 OP	34	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500173	85 OP	481	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500174	55	398	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500175	55	469	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500176	85 OP	454	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500233	55	464	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500234	55	439	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500235	55	516	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500236	55	426	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500288	55	423	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				

92376

INCINERATION PROJECT – BATCH 1

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W500289	55	486	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500290	55	374	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500291	55	485	14.80	0.320	OILY SLUDGES	F001	D039	D029	D040				
10010	W500539	55	383	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500540	55	383	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500541	55	341	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500542	55	378	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500593	55	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500594	55	353	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500595	85 OP	386	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500596	55	365	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500642	55	315	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500643	85 OP	335	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500644	55	101	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500645	55	342	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500677	55	321	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W500678	55	359	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501137	55	284	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501138	55	330	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501139	55	355	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501140	55	294	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501141	55	331	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501142	55	336	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501775	55	282	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501776	85 OP	287	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501777	85 OP	287	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501778	55	236	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501779	85 OP	350	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501780	85 OP	320	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501781	55	266	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501782	55	312	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

9232

PREF	INV #	SIZE	WEIGHT	LOAD	CAT-286	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W501783	85 OP	317	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501784	55	340	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501785	85 OP	332	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501786	55	312	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501787	55	330	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501788	85 OP	338	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501789	55	339	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501790	55	344	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501791	85 OP	180	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501792	55	380	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501793	55	331	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501794	55	343	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501795	55	320	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501797	55	355	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501798	85 OP	372	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501799	55	314	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501800	55	313	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501801	55	295	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501802	55	374	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501803	55	400	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501804	85 OP	410	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501805	55	377	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501806	85 OP	371	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501807	55	379	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501808	55	391	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501809	55	307	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501810	85 OP	363	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501811	55	355	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501812	55	400	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501813	85 OP	390	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501814	55	420	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

950300

INCINER[illegible]ON PROJECT – BATCH 1

MEF	INV #	SIZE	NET LBS	XU	XU-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W501815	85 OP	376	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501816	85 OP	362	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501817	55	303	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501818	85 OP	312	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501856	55	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501857	55	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501858	55	349	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501863	55	372	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501864	85 OP	391	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501865	85 OP	396	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501866	55	363	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501867	55	353	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501868	55	357	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501869	55	311	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501870	85 OP	340	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501871	55	331	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501872	55	281	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501873	55	323	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501874	55	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501875	85 OP	108	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501876	55	392	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501877	55	423	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501878	55	311	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501879	55	362	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501880	55	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501881	55	376	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501882	55	352	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501883	55	342	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501884	85 OP	457	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501885	55	362	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501886	55	359	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

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INCINERATION PROJECT – BATCH 1

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W501887	55	362	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501888	55	334	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501889	55	312	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501890	55	318	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501891	55	353	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501892	55	324	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501893	55	344	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501894	55	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501895	55	408	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501896	55	413	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501897	85 OP	343	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501898	55	93	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501899	55	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501900	55	335	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501901	55	295	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501902	55	350	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501903	55	318	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501904	55	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501905	55	364	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501906	55	306	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501907	55	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501908	55	329	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501909	55	339	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501910	55	321	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501911	55	444	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501912	55	426	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501913	55	396	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501914	55	388	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501915	55	326	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501916	55	329	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501917	55	322	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

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INCINERA N PROJECT – BATCH 1

IMEG	INV	SIZE	NET LBS	KU	KU-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W501918	55	341	1.60	0.200	OILY SLUDGES'	F001	D039	D029	D040				
10010	W501919	55	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501920	55	365	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501921	55	401	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501922	55	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501923	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501924	55	295	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501925	55	311	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501926	55	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501927	55	308	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501928	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501929	55	386	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501930	55	386	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501931	55	369	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501932	85 OP	357	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501933	55	369	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501934	85 OP	369	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501935	85 OP	169	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501936	55	317	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501937	55	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501938	55	356	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501939	85 OP	356	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501940	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501941	55	344	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501942	55	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501943	55	318	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501948	55	295	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501949	55	275	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501950	85 OP	324	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501951	55	239	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501952	55	284	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

INCIN[illegible]ON PROJECT – BATCH 1

[illegible]	INV #	SIZE	NET LBS	GU	X U 235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W501953	85 OP	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501954	55	295	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501955	55	268	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501956	55	274	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501957	55	314	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501958	55	289	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501959	55	267	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501960	55	349	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501961	55	297	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501962	55	345	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501963	55	334	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501964	55	314	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501965	55	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501966	55	273	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501967	55	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501968	85 OP	339	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501969	85 OP	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501970	55	300	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501971	55	320	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501972	85 OP	315	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501973	55	271	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501974	85 OP	352	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501975	55	311	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501976	55	311	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501977	55	308	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501978	55	318	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501979	85 OP	310	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501980	55	300	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501981	55	258	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501982	55	339	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501983	85 OP	207	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

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92362

INCINE. .ION PROJECT – BATCH 1

						DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W501984	55	336	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501985	85 OP	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501986	55	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501987	85 OP	393	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501988	55	358	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501989	85 POLY	335	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501990	85 OP	303	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501991	85 OP	371	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501992	85 OP	331	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501993	55	313	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501994	55	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501995	55	334	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501996	55	368	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501997	55	341	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501998	55	337	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W501999	55	323	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502000	85 OP	384	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502001	85 OP	408	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502002	85 OP	350	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502003	55	359	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502004	55	282	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502005	55	372	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502006	55	322	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502007	55	341	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502008	55	342	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502009	55	313	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502010	55	342	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502011	55	349	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502012	85 OP	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502013	85 OP	374	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502014	55	365	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

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92372

INCINE[illegible]ION PROJECT – BATCH 1

INT	[illegible]	[illegible]	NET LBS	SU	SU	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502015	85 OP	344	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502016	55	309	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502017	55	327	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502018	55	332	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502019	55	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502020	55	335	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502021	85 OP	298	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502022	55	284	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502023	55	392	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502024	85 OP	404	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502025	85 OP	285	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502026	55	353	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502027	85 OP	307	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502028	55	373	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502029	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502030	55	327	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502031	55	349	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502032	55	341	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502033	55	332	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502034	55	354	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502035	55	340	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502036	55	342	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502037	85 OP	327	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502038	55	88	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502042	55	334	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502043	55	315	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502044	85 OP	327	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502045	55	298	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502046	55	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502047	55	301	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502048	55	300	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

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INCINE .TION PROJECT – BATCH 1

10010	W502049	55	306	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502050	55	362	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502051	55	341	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502052	85 OP	291	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502053	55	324	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502054	55	346	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502055	85 OP	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502056	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502057	55	331	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502058	55	312	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502059	55	298	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502060	55	337	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502061	55	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502062	55	320	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502063	55	343	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502064	55	334	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502065	55	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502066	55	293	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502067	85 OP	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502068	55	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502069	55	324	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502070	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502071	55	348	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502072	55	304	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502073	55	311	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502074	55	352	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502075	55	324	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502076	85 OP	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502077	85 OP	359	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502078	55	304	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			
10010	W502079	85 OP	308	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040			

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92376

INCIN[illegible]ATION PROJECT – BATCH 1

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502080	85 OP	310	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502081	55	319	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502109	85 OP	285	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502110	85 OP	288	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502111	85 OP	286	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502112	55	292	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502113	85 OP	318	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502114	85 OP	295	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502115	55	339	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502116	55	340	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502117	85 OP	366	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502118	55	318	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502119	55	354	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502120	55	240	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502121	55	298	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502122	55	347	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502123	55	333	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502124	55	315	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502125	55	343	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502126	55	322	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502127	55	306	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502128	55	311	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502129	55	323	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502130	55	311	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502131	55	306	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502132	55	300	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502133	55	298	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502134	55	287	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502135	55	291	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502136	55	390	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				
10010	W502137	55	343	1.60	0.200 OILY SLUDGES	F001	D039	D029	D040				

[illegible]	INV #	SIZE	NET LBS	XU	XU 235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502138	55	344	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502139	85 OP	327	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502140	85 OP	266	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502141	55	318	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502142	55	298	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502143	55	301	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502144	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502145	85 OP	287	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502146	55	291	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502147	55	327	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502148	85 OP	301	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502149	85 OP	301	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502150	55	304	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502151	55	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502152	55	336	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502153	55	315	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502154	85 OP	282	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502155	55	339	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502156	30 OP	292	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502157	85 OP	365	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502158	55	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502159	55	284	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502160	55	290	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502161	55	283	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502162	55	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502163	85 OP	308	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502164	55	313	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502165	55	340	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502166	55	340	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502167	55	309	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502168	55	320	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

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						DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502169	55	326	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502170	55	348	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502171	55	326	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502172	55	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502173	55	338	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502174	55	279	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502175	55	275	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502176	85 OP	284	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502177	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502178	85 OP	287	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502179	55	260	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502180	55	300	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502181	85 OP	315	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502182	55	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502183	55	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502184	55	343	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502185	55	353	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502186	55	341	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502267	55	279	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502268	55	282	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502269	85 OP	392	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502270	85 OP	385	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502271	55	317	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502272	55	372	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502273	55	306	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502274	55	267	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502275	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502276	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502277	55	290	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502278	55	278	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502279	85 OP	328	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

930000

92376

INCINERATION PROJECT – BATCH 1

MFG	INV #	SIZE	NET LBS	XU	XU-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502280	55	304	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502281	55	268	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502282	55	297	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502283	85 OP	28	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502284	55	290	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502285	85 OP	411	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502286	55	293	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502287	55	369	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502288	55	345	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502289	55	308	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502290	55	282	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502291	55	302	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502292	55	303	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502293	55	287	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502294	55	286	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502295	55	244	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502296	55	278	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502297	55	298	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502298	55	330	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502299	85 OP	151	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502300	55	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502301	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502302	55	295	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502303	55	305	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502304	85 OP	289	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502305	55	322	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502306	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502307	55	347	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502308	55	276	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502309	55	201	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502310	55	343	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

9237

INCINERATION PROJECT – BATCH 1

LINE	INV #	SIZE	NET LBS	SAU	U-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502327	85 OP	307	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502328	85 OP	326	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502329	55	305	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502330	55	301	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502331	55	294	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502332	85 OP	282	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502333	55	376	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502334	85 OP	285	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502335	85 OP	259	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502336	55	261	1.60	1.250	OILY SLUDGES	F001	D039	D029	D040				
10010	W502337	55	320	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502338	55	325	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502339	55	315	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502340	85 OP	331	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502341	55	325	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502342	55	322	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502343	55	329	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502344	55	293	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502345	55	278	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502346	55	315	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502347	55	298	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502348	55	295	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502349	55	299	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502350	85 OP	310	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502351	55	328	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502352	55	325	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502353	55	322	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502354	55	308	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502355	55	316	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502356	55	336	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502357	55	306	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				

850000

73762

INCINE ON PROJECT – BATCH 1

LMEF	INV #	SIZE	NET LBS	XU	XU-238	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502358	55	312	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502359	55	299	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502360	85 OP	299	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502361	55	348	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502362	55	137	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502363	55	327	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502364	55	331	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502365	55	353	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502366	55	334	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502367	55	333	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502368	55	330	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502369	85 OP	340	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502370	55	362	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502371	55	349	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502372	55	325	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502373	55	312	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502374	55	293	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502375	55	375	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502376	55	257	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502377	55	375	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502378	55	354	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502379	55	280	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502380	55	412	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502381	85 OP	305	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502382	55	347	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502383	55	374	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502384	55	304	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502385	85 OP	341	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502386	55	342	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502387	55	331	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502388	55	307	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				

650000

9376

INCINERATION PROJECT – BATCH 1

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502389	55	297	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502390	55	297	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502391	55	304	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502392	55	298	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502393	55	280	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502394	55	305	1.60	0.947	OILY SLUDGES	F001	D039	D029	D040				
10010	W502395	85 OP	206	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502396	85 OP	197	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502397	85 OP	314	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502399	85 OP	296	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502400	55	293	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502401	85 OP	297	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502402	55	307	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502403	55	304	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502404	85 OP	315	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502405	55	332	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502406	55	285	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502407	55	293	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502408	55	303	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502409	55	85	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502493	85 OP	335	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502495	85 OP	259	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502496	85 OP	331	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502497	55	321	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502498	55	323	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502499	55	346	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502500	85 OP	440	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502501	110 OP	266	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502502	85 OP	333	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502503	55	299	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502504	55	340	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				

020030
92372

INCINERATION PROJECT – BATCH 1

[illegible]	[illegible]	SIZE	NET LBS	[illegible]	[illegible]	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10010	W502505	55	330	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502506	55	271	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502507	55	318	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502508	55	348	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502509	55	363	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502510	55	319	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502516	85 OP	462	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502517	55	320	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502518	85 OP	343	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502519	55	335	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502540	85 OP	334	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502541	85 OP	325	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502542	85 OP	437	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502543	85 OP	284	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502544	85 OP	337	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502545	85 OP	325	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502658	55	38	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502689	55	403	1.60	1.100	OILY SLUDGES	F001	D039	D029	D040				
10010	W502690	85 OP	381	1.60	0.711	OILY SLUDGES	F001	D039	D029	D040				
10010	W502696	55	469	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W502791	85 OP	296	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W503514	55	290	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10010	W503775	55	316	1.60	0.200	OILY SLUDGES	F001	D039	D029	D040				
10027	W501031	85 OP	447	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501033	85 OP	400	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501034	55	409	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501035	55	404	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501036	55	395	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501037	85 OP	407	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501041	55	479	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501042	55	466	0.01	0.200	U-CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					

L40000

9237 6

INCIN ION PROJECT – BATCH 1

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10027	W501043	55 OP	242	0.01	0.200	U–CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501044	85 OP	442	0.01	0.200	U–CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501045	55	358	0.01	0.200	U–CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W501046	55	415	0.01	0.200	U–CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W502558	55	296	0.01	0.200	U–CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					
10027	W502559	55	351	0.01	0.200	U–CONTAMINATED OIL, INSOLUBLE IN W/	D040	D039	F001					

TOTAL # OF DRUMS – 564

220000

7376

MEF	INV #	SIZE	NET (LBS)	%U	%U-235	DESCRIPTION	EPA CODES
00426	W503666	5 GAL	35	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503667	5 GAL	31	0.01	0.980	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503668	5 GAL	32	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503712	5 GAL	27	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503713	5 GAL	36	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503780	5 GAL	31	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503781	5 GAL	37	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503818	5 GAL	32	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503819	5 GAL	25	0.01	0.200	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503887	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503888	5 GAL	35	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503905	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503906	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503914	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W503915	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W504297	5 GAL	15	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W504298	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W504299	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W504635	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W504804	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W504806	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506202	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506205	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506206	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506207	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506208	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506269	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506270	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506271	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506310	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506311	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506312	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506313	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506323	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA CODES
00426	W506325	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506400	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506402	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506403	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506404	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506405	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506571	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506572	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506573	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506574	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506575	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506576	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506577	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506642	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506643	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506644	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506645	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506646	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506658	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506659	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506660	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506803	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506804	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506805	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506806	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506827	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506828	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506829	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506849	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506850	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506851	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506852	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506867	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506869	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001

92376

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA CODES
00426	W506870	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506880	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506881	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506882	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506883	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506888	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506889	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506890	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W506891	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507485	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507486	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507487	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507488	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507606	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507607	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507608	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507615	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507616	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507617	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507626	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507627	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507628	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507633	5 GAL	36	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507634	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507635	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507636	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507655	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507656	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507657	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507724	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507725	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507726	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507727	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507744	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001

000075

92376

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA CODES
00426	W507745	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507746	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507783	5 GAL	35	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507784	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507785	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507786	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507787	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507815	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507816	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507817	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507818	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507823	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507825	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W507826	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W508118	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W508119	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W508120	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W509632	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W509633	5 GAL	35	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W509634	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W509635	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510102	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510103	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510104	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510811	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510812	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510813	5 GAL	37	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W510814	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W511793	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W511794	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W511795	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513841	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513842	5 GAL	37	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513843	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001

9400300

4376

MEF	INV #	SIZE	NET LBS	%U	%U-236	DESCRIPTION	EPA CODES
00426	W513844	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513858	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513859	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513860	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513918	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513919	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513921	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513945	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513946	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513951	5 GAL	35	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513958	5 GAL	34	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513959	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513960	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513974	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513975	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W513976	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514056	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514057	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514058	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514059	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514103	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514104	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514105	5 GAL	22	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514198	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514200	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514201	5 GAL	23	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514202	5 GAL	33	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514302	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514303	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514304	5 GAL	23	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514305	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514330	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514331	5 GAL	24	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514332	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001

00009232

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA CODES
00426	W514333	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514336	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514365	5 GAL	22	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514366	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514367	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514368	5 GAL	24	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514369	5 GAL	43	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514370	5 GAL	37	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514543	5 GAL	20	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514544	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514545	5 GAL	21	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514546	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514547	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514549	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514671	5 GAL	21	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514672	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514673	5 GAL	23	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514674	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514675	5 GAL	24	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514676	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514700	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514701	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514702	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514703	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514704	5 GAL	27	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514705	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514794	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514795	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514796	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514797	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514798	5 GAL	30	0.01	0.700	METHANOL CYCLOHEXANE MIXTURE	D001
00426	W514799	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514814	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514815	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001

8200300

2326

TYPE	UNIV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA CODES
00426	W514816	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514817	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514818	5 GAL	24	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514819	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514852	5 GAL	26	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514853	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514854	5 GAL	32	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514855	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514856	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514857	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514908	5 GAL	28	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514909	5 GAL	31	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514910	5 GAL	30	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514911	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514912	5 GAL	29	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W514913	5 GAL	25	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W515044	55 POLY	311	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001
00426	W515102	55 POLY	392	0.01	0.700	METHANOL/CYCLOHEXANE MIXTURE	D001 F003
20003	W500294	55 OP	34	0.01	1.000	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502187	55	456	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502188	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502189	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502190	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502191	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502192	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502193	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502194	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502195	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502196	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502197	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502198	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502199	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502200	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029
20003	W502201	55	450	0.01	0.950	DEGREASING SOLVENT	F001 F003 F005 D001 D019 D022 D028 D029

	INV #	SIZE	NET LBS	% U	% U-235	DESCRIPTION				EPA CODES				
20003	W502202	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502227	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502228	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502229	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502230	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502231	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502232	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502233	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502234	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502235	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502236	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502237	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502238	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502239	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502240	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502241	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502242	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502243	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502244	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502245	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502246	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502247	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502248	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502249	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502250	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502251	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502252	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502253	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502254	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502255	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502256	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502257	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502258	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502259	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

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					DESCRIPTION	EPA CODES							
20003	W502260	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502261	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502262	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502263	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502264	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502265	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502266	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502613	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502614	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502615	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502616	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502617	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502618	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502619	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502620	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502621	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502622	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502623	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502624	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502625	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502626	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502627	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502628	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502629	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502630	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502631	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502661	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502662	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502663	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502664	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502665	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502666	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502667	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502668	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

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20003	W502669	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502670	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502671	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502672	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502673	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502674	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502675	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502676	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502677	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502678	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502679	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502680	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502720	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502721	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502723	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502724	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502725	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502726	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502727	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502728	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502729	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502730	85 OP	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502731	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502732	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502733	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502734	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502735	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502736	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502737	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502738	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502739	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502740	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502783	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		
20003	W502784	55	450	0.01	0.950 DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029		

						DESCRIPTION	EPA CODES							
20003	W502785	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502786	85 OP	451	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502787	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502788	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502789	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502790	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502795	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502796	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502797	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502798	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502799	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502800	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502801	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502802	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502803	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502804	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502805	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502806	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502807	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502808	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502809	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502810	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502811	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502812	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502813	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502814	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502815	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502816	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502817	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502818	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502819	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502820	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502821	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502822	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

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						DESCRIPTION	EPA CODES							
20003	W502839	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502844	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502845	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502846	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502847	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502848	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502849	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502850	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502851	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502852	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502853	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502854	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502855	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502856	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502857	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502858	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502859	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502860	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502861	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502862	85 OP	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502874	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502875	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502876	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502877	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502878	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502879	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502880	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502881	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502882	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502883	55	465	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502884	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502885	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502886	55	458	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502887	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

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						DESCRIPTION	EPA CODES							
20003	W502888	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502889	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502890	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502891	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502892	55	468	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502893	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502894	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502895	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502896	55	464	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502897	55	461	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502898	55	463	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502899	55	458	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502900	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502901	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502902	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502903	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502904	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502905	55	442	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502906	55	446	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502907	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502908	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502909	55	447	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502910	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502911	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502912	55	447	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502913	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502914	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502915	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502916	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502917	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502918	55	459	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502919	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502920	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502921	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

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	INV	SIZE				DESCRIPTION	EPA CODES							
20003	W502922	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502923	55	445	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502924	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502925	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502926	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502927	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502928	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502929	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502930	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502931	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502932	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502933	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502934	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502935	55	453	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502936	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502937	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502938	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502939	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502940	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502941	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502945	55	456	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502946	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502947	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502948	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502949	55	447	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502950	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502951	55	447	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502952	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502953	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502954	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502955	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502956	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502957	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502958	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

MEF	INV #	SIZE	NET LBS	%U	%U-235	DESCRIPTION	EPA CODES							
20003	W502959	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502960	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502961	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502962	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502963	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502964	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502965	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502966	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502967	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502968	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502969	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502970	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502971	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502972	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502979	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502980	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502981	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502982	55	446	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502983	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502984	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502985	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502986	55	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502987	55	188	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W502988	85 OP	452	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W503554	55	450	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029
20003	W504629	55	27	0.01	0.950	DEGREASING SOLVENT	F001	F003	F005	D001	D019	D022	D028	D029

Total # of drums - 502

	INV. #		SIZE	INCEMT	% U	KU-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
00023	W504205	R099	55 GAL	362	0.01	0.990	USED OIL, CONTAINS 1.1.1-TRICHLOR	F002	D008						
00379	W506522	R020	55	169	0.01	0.200	SPENT 1,1,1-TRICHLOROETHANE	F001	F002	D018	D008				
00385	W507946	R050	55	238	0.01	0.500	SOLVENT/OIL	F001	F002	D018					
00388	W506304	R050	55	382	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506320	R050	55	401	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506416	R050	55	375	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506453	R050	55	324	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506526	R050	55	328	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506529	R050	55	393	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506605	R050	55	396	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506615	R050	55	393	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506632	R050	55	378	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506649	R050	55	415	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506654	R050	55	367	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506680	R050	55	357	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506818	R050	55	347	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506835	R050	55	378	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506844	R050	55	403	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506847	R050	55	367	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506863	R050	55	345	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506876	R050	55	351	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506885	R050	55	393	0.01	0.500	USED OILS	F002	D010	D018					
00388	W506887	R050	55	271	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507419	R050	55	366	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507596	R050	55	400	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507612	R050	55	343	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507624	R050	55	362	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507630	R050	55	353	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507637	R050	55	311	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507639	R050	55	403	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507729	R050	55	391	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507771	R050	55	367	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507788	R050	55	334	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507813	R050	55	350	0.01	0.500	USED OILS	F002	D010	D018					
00388	W507944	R050	55	359	0.01	0.500	USED OILS	F002	D010	D018					
00400	W506617	R020	55	231	0.01	0.200	CONTAMINATED SITE OILS	F002	D001	D008	D019				
00402	W506525	R099	55	342	0.01	0.990	USED OIL	F001	F002	D008	D018				
00402	W506832	R099	55	132	0.01	0.990	USED OIL	F001	F002	D008	D018				
00402	W507945	R099	55	380	0.01	0.990	USED OIL	F001	F002	D008	D018				
00402	W507954	R099	55	35	0.01	0.990	USED OIL	F001	F002	D008	D018				

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			SIZE				MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8		
00422	W503711	R098	5 GAL	33	0.01	0.980	METHYLENE CHLORIDE	F002									
00438	W506369	R050	55	389	0.01	0.500	HYDRAULIC OIL	D018									
00438	W506582	R050	85 OP	409	0.01	0.500	HYDRAULIC OIL	D018									
00438	W506583	R050	85 OP	246	0.01	0.500	HYDRAULIC OIL	D018									
00438	W506584	R050	85 OP	45	0.01	0.500	HYDRAULIC OIL	D018									
00460	W506321	R020	55	25	0.01	0.200	LIQUID & SOLID WASTE SAMPLES	F002	D004	D005	D006	D007	D008	D010	D018		
00480	W506445	R050	55	398	0.01	0.500	USED OIL	D018	F002								
00480	W506508	R050	55	380	0.01	0.500	USED OIL	D018	F002								
00480	W506509	R050	55	385	0.01	0.500	USED OIL	D018	F002								
00480	W506510	R050	55	365	0.01	0.500	USED OIL	D018	F002								
00480	W506511	R050	55	380	0.01	0.500	USED OIL	D018	F002								
00480	W506512	R050	55	385	0.01	0.500	USED OIL	D018	F002								
00480	W513926	R050	55	290	0.01	0.500	USED OIL	D018	F002								
00742	W506637	R050	110 OP	542	0.01	0.500	OILY SLUDGE	F001									
00742	W506638	R050	85 OP	663	0.01	0.500	OILY SLUDGE	F001									
01414	W506332	R050	55	401			CONTAMINATED INSOLUBLE OIL	D001	D008								
01414	W506396	R050	55	383			CONTAMINATED INSOLUBLE OIL	D001	D008								
01423	W506307	R099	55	375			CONTAMINATED INSOLUBLE OIL	D008	D009	D039	D040	F001	F002	F003	F005		
10006	W501339	R050	85 OP	269	1.00	0.500	USED OIL FROM EQUIPMENT IN LAB	D008	D009	D039	F002	F003	F005				
10007	W500392	X500	85 OP	292	1.60	0.947	OILY SLUDGE	D007	F001								
10007	W500190	X500	85 OP	330	1.60	0.947	OILY SLUDGE	D007	F001								
10007	W500192	X500	85 OP	325	1.60	0.947	OILY SLUDGE	D007	F001								
10021	W503657	R095	55	149	0.01	0.950	OILY SLUDGE	F001	D008	D039	D040						
10021	W503658	R095	55	536	0.01	0.950	OILY SLUDGE	F001	D008	D039	D040						
10028	W500388	H082	85 OP	525	1.60	0.200	OILY SLUDGE	D008	F001								
10028	W502410	S095	55	577	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502411	S095	55	243	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502412	S095	85 OP	316	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502413	S095	55	29	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502414	S095	55	188	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502415	S095	55	266	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502416	S095	55	311	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502417	S095	55	361	1.60	0.950	OILY SLUDGE	D008	F001								
10028	W502418	S095	55	436	1.60	0.950	OILY SLUDGE	D008	F001								
10029	W500191	X500	55	599	0.50	0.947	U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040			
10029	W500197	X888	85 OP	412	0.50	1.100	U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040			
10029	W500198	X888	55	452	0.50	1.100	U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040			
10029	W500199	X888	85 OP	430	0.50	1.100	U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040			
10029	W500200	X888	55	380	0.50	1.100	U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040			
10029	W500256	X888	30	184	0.50	1.100	U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040			

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			SIZE	NET WT	% U	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10029	W500257	X888	30	145	0.50	1.100 U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040	
10029	W500336	X900	85 OP	454	0.50	0.900 U–CONTAM. OIL, INSOLUBLE IN WATER	F001	D006	D007	D008	D029	D019	D040	
10032	W501654	R125	85 OP	330	0.01	1.250 U–CONTAM. OIL, INSOLUBLE IN WATER	F001							
10032	W501652	R125	55	338	0.01	1.250 U–CONTAM. OIL, INSOLUBLE IN WATER	F001							
10035	W500115	R050	55	43	0.01	0.500 CARBON TETRACHLORIDE	U211	D019						
20021	W500090	H093	55	427	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500091	H093	55	434	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500092	H093	55	350	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500093	H093	55	440	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500141	X948	55	266	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500143	H093	55	246	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500144	H093	55	409	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500146	H093	55	454	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500163	H093	85 OP	437	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500164	H093	55	434	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500165	H093	85 OP	434	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W500166	H093	55	424	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W501120	S020	55	341	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W501122	S020	55	374	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20021	W501123	S020	55	338	0.50	0.200 HYDRAULIC OIL	F001	D019	D029	D039	D040			
20028	W502096	R099	55	284	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502097	R099	55	300	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502098	R099	85 OP	275	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502099	R099	85 OP	260	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502100	R099	55	286	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502101	R099	55	270	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502102	R099	55	260	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502103	R099	55	268	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502104	R099	55	302	0.50	0.990 QUENCH OIL	D039	D040	F001					
20028	W502105	R099	85 OP	238	0.50	0.990 QUENCH OIL	D039	D040	F001					
20031	W500142	S020	55	303	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502823	R020	55	402	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502824	R020	55	409	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502825	R020	55	423	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502826	R020	55	410	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502827	R020	55	296	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502828	R020	55	51	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W502829	R020	55	413	0.50	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20031	W504848	R020	55 OP	74	0.01	0.200 CONTAMINATED OIL, INSOLUBLE	F002	D008	D018	D019	D028	D029	D039	D040
20038	W501337	R020	55	307	0.50	0.200 OIL	F002	F005	D006	D008	D018	D019	D028	D029

080000

7372

							MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
20038	W502216	R020	55	327	0.50	0.200	OIL	F002	F005	D006	D008	D018	D019	D028	D029
20045	W500013	S109	55 OP	111	0.01	1.090	TBP, KEROSENE	F002	D019	D022	D039				
20054	W501691	H093	110 Of	376	0.03	0.200	CONTAM. SOLV.–TRICHLOR, PERCH., GREASES	F001	F005	D019	D022	D028	D029	D039	
20055	W501336	R095	55	413	0.50	0.950	OIL	F002	D029	D039					
30034	W500201	R050	55	317	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500202	R050	85 OP	391	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500203	R050	55	306	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500337	R095	55	385	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500339	R095	55	409	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500340	R095	55	363	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500341	R095	55	83	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500342	R095	55	393	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500343	R095	55	376	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500344	R095	55	330	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500345	R095	55	373	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500346	R095	55	328	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500347	R095	55	323	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500348	R095	55	343	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500349	R095	55	424	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500350	R095	85 OP	430	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500351	R095	55	199	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500393	R095	85 OP	578	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500394	R095	55	304	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500398	R095	85 OP	366	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500399	R095	55	389	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500400	R095	55	361	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500401	R095	55	373	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500552	R095	55	10	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500553	R095	55	8	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500554	R095	55	6	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500555	R095	55	4	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500556	R095	55	227	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500557	R095	55	241	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500558	R095	55	276	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500562	R095	85 OP	291	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500563	R095	85 OP	379	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500564	R095	85 OP	397	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500565	R095	55	218	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500566	R095	85 OP	289	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500567	R095	55	221	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						

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92372

							MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
30034	W500568	R095	85 OP	347	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500569	R095	55	301	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500570	R095	55	313	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500571	R095	55	285	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500572	R095	55	353	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500607	R095	30 OP	96	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500616	R095	55	406	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500619	R095	55	312	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500621	R095	55	346	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500646	R095	55	421	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500647	R095	55	383	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500648	R095	85 OP	362	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500649	R095	55	366	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500650	R095	55	268	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500651	R095	55	335	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500652	R095	55	268	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500653	R095	55	482	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500679	R095	55	348	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500680	R095	55	375	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500681	R095	55	361	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500682	R095	55	378	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500684	R095	55	301	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500685	R095	55	267	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500686	R095	55	365	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500687	R095	55	318	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W500854	R050	85 OP	399	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501159	R020	55	510	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501160	R020	55	410	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501161	R020	55	590	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501162	R020	55	450	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501163	R020	55	299	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501164	R020	85 OP	230	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501165	R020	55	270	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501166	R095	55	112	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501167	R095	85 OP	236	0.01	0.950	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501338	R020	55	358	0.01	0.200	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501629	R050	55	343	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501630	R050	55	471	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501631	R050	55 OP	300	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						
30034	W501772	R050	55	251	0.50	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001	D018						

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92376

30034	W501773	R050	55	370	0.50	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W501774	R050	55	340	0.50	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W502083	R050	55	419	0.50	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W502084	R050	55	364	0.50	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W503684	R050	55	55	0.01	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W503685	R050	55	420	0.01	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W503686	R050	55	389	0.01	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W503687	R050	55	431	0.01	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
30034	W503688	R050	55	383	0.01	0.500	U-CONTAM. OIL, NOT WATER SOLUBLE		F001	D018					
60042	W506296	R099													
60044	W502214	R020	85 OP	45	0.50	0.200	SOLVENT		F002						
60044	W502213	R020	55	500	0.50	0.200	SOLVENT		F002						
60049	W500437	R050	55	148	0.01	0.500	SOLVENT		F002						
60049	W500438	R050	55	135	0.01	0.500	SOLVENT		F002						
60049	W500439	R050	55	150	0.01	0.500	SOLVENT		F002						
60049	W500440	R050	85 OP	151	0.01	0.500	SOLVENT		F002						
60049	W500492	R050	55	93	0.01	0.500	SOLVENT		F002						
60049	W500493	R050	55	89	0.01	0.500	SOLVENT		F002						
60049	W500494	R050	55	112	0.01	0.500	SOLVENT		F002						
60049	W500495	R050	55 OP	50	0.01	0.500	SOLVENT		F002						
60049	W500513	R050	55 OP	5	0.01	0.500	SOLVENT		F002						
60049	W069781	W050	85	473	0.01	0.500		WASTE INVENTORY							
60049	W066894	W050	85	85	0.01	0.500		WASTE INVENTORY							
60049	W074820	W050	110	348	0.01	0.500		WASTE INVENTORY							
60051	W500025	R050	85 OP	517	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500026	R050	55	44	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500027	R050	85 OP	60	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500028	R050	85 OP	526	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500029	R050	55	283	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500030	R050	85 OP	373	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500031	R050	55	283	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500032	R050	85 OP	507	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500033	R050	85 OP	395	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500034	R050	110 OF	389	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500043	R050	85 OP	168	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500061	R050	55	291	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500062	R050	85 OP	195	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500063	R050	55	389	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W500070	R050	55	87	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						
60051	W501129	R050	55	36	0.01	0.500	DRY CLEANING SLUDGES/CAKE		F001						

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23276

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60051	W501130	R050	55	56	0.01	0.500	DRY CLEANING SLUDGES/CAKE	F001							
60051	W501131	R050	55	84	0.01	0.500	DRY CLEANING SLUDGES/CAKE	F001							
60051	W501132	R050	55	94	0.01	0.500	DRY CLEANING SLUDGES/CAKE	F001							
60051	W502687	R050	55	115	0.01	0.500	DRY CLEANING SLUDGES/CAKE	F001							
60051	W502688	R050	55	65	0.01	0.500	DRY CLEANING SLUDGES/CAKE	F001							
60051	W502697	R020	85 OP	71	0.01	0.200	USED OIL	F002							
60051	W502698	R020	55	400	0.01	0.200	USED OIL	F001							
60051	W502699	R020	55	42	0.01	0.200	USED OIL	F001							
60051	W502700	R020	55	415	0.01	0.200	USED OIL	F001							
60062	W500193	S095	55	327	0.50	0.950	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W500194	S095	55	361	0.50	0.950	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W500196	S095	55	315	0.50	0.950	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W503524	R050	55	365	0.01	0.500	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W503525	R050	85 OP	340	0.01	0.500	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W503526	R050	55	391	0.01	0.500	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W503527	R050	55	352	0.01	0.500	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W503553	R050	55	87	0.01	0.500	SOLVENT CONTAMINATED OIL	D001	D008	D009	F002				
60062	W081754	W095	85	399	0.50	0.950	WASTE INVENTORY								
60062	W081755	W095	85	38	0.50	0.950	WASTE INVENTORY								
60062	W081756	W095	85	84	0.50	0.950	WASTE INVENTORY								
60062	W066927	W099	85	175	0.50	0.990	WASTE INVENTORY								
60062	W066926	W099	85	172	0.50	0.990	WASTE INVENTORY								
60062	W077671	W099	85	384	0.50	0.990	WASTE INVENTORY								
60062	W074522	W099	85	38	0.50	0.990	WASTE INVENTORY								
60062	W066925	W099	85	155	0.50	0.990	WASTE INVENTORY								
60065	W501340	R050	85 OP	402	0.01	0.500	USED OIL	F002							
60066	W503522	R050	55	112	0.01	0.500	CONTAMINATED INSOLUBLE OIL	D008	F002						
60067	W501335	R020	55	341	0.50	0.200	SOLVENT CONTAMINATED WASTE OIL	D008	F002						
60068	W503735	R020	55	381	0.01	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60068	W504808	R020	55	401	0.01	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60068	W503012	R020	55	313	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500111	H093	55	413	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500112	H093	55	372	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500113	H093	55	379	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500114	H093	55	389	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500145	H093	55	247	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500389	H093	55 OP	170	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500390	H093	55 OP	197	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500391	H093	55 OP	195	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W500395	H093	55	306	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						

* Shading Indicates Waste drums

000094

7376

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60069	W501047	R050	55	408	0.01	0.500	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W501048	R050	55	247	0.01	0.500	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W501749	H093	55 OP	258	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60069	W501750	H093	55 OP	567	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001	D008						
60070	W500094	H093	85 OP	372	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500095	H093	85 OP	378	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500096	H093	55	372	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500097	H093	55	393	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500098	H093	55 OP	211	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500099	H093	30	121	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500100	H093	30	237	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500101	H093	55 OP	198	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500102	H093	30	199	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500103	H093	55	377	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500104	H093	55	387	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F001							
60070	W500105	H093	55	392	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500106	H093	55	399	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500107	H093	85 OP	383	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500108	H093	55	362	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500109	H093	55	346	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500110	H093	55	352	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500147	H093	55	368	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500148	H093	55	368	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500149	H093	55	408	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500150	H093	85 OP	374	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500151	H093	55	211	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500152	H093	85 OP	128	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500153	H093	55 OP	80	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500154	H093	55 OP	1	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500155	H093	55	372	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500156	H093	85 OP	393	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500157	H093	85 OP	351	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500158	H093	55	307	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500159	H093	85 OP	368	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500160	H093	85 OP	363	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500161	H093	55	392	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500162	H093	85 OP	365	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500331	H093	55 OP	149	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500332	H093	55 OP	145	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W500333	H093	55 OP	157	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							

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INCINERA[illegible] PROJECT – BATCH 3

[illegible]	[illegible]	[illegible]	SIZE	NET WT	[illegible]	[illegible]	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60070	W500334	H093	55 OP	152	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501655	H093	55 OP	173	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501656	H093	55 OP	80	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501657	H093	55 OP	131	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501658	D690	55 OP	160	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501662	H093	55 OP	164	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501702	H093	55	360	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501703	H093	55	392	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501704	H093	55	92	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501705	H093	55	391	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501706	H093	55 OP	138	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501707	H093	55 OP	228	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501708	H093	55 OP	212	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501709	H093	55 OP	207	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501714	D690	55	3890	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501715	H093	55	348	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501716	D690	55	260	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501717	D690	85 OP	373	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501733	H093	55 OP	203	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501734	H093	55 OP	215	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501735	H093	55 OP	193	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501736	H093	55 OP	185	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501737	H093	55 OP	213	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60070	W501738	H093	55 OP	200	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002							
60072	W502999	R020	85 OP	329	0.50	0.200	SOLVENT CONTAMINATED WASTE OIL	D008	F002						
60072	W503000	R020	85 OP	126	0.50	0.200	SOLVENT CONTAMINED WASTE OIL	D008	F002						
60072	W503001	R020	85 OP	415	0.50	0.200	SOLVENT CONTAMINATED WASTE OIL	D008	F002						
60072	W503002	R020	85 OP	413	0.50	0.200	SOLVENT CONTAMINATED WASTE OIL	D008	F002						
60073	W502741	R020	85 OP	214	0.50	0.200	USED OIL	F002	D008						
60074	W503856	R020	55	395	0.01	0.200	USED OIL	F002							
60074	W501330	D690	55	362	0.50	0.200	USED OIL	F002							
60074	W503857	R020	55	137	0.01	0.200	USED OIL	F002							
60074	W066918	H093	85	390	0.50	0.200	WASTE INVENTORY								
60074	W066849	H093	55	432	0.50	0.200	WASTE INVENTORY								
60074	W066852	H093	55	468	0.50	0.200	WASTE INVENTORY								
60074	W067437	H093	55	362	0.50	0.200	WASTE INVENTORY								
60074	W067431	H093	85	476	0.50	0.200	WASTE INVENTORY								
60074	W067434	H093	85	409	0.50	0.200	WASTE INVENTORY								
60074	W067433	H093	85	463	0.50	0.200	WASTE INVENTORY								
60074	W066851	H093	55	424	0.50	0.200	WASTE INVENTORY								

	INV	SIZE	NETWT	% U	U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60080	W502570	R050 55	408	0.01	0.500	USED OIL	D008	F002						
60080	W502571	R050 85 OP	377	0.01	0.500	USED OIL	D008	F002						
60080	W502572	R050 55	431	0.01	0.500	USED OIL	D008	F002						
60080	W502573	R050 55	417	0.01	0.500	USED OIL	D008	F002						
60080	W502574	R050 85 OP	373	0.01	0.500	USED OIL	D008	F002						
60080	W502575	R050 55	376	0.01	0.500	USED OIL	D008	F002						
60080	W502576	R050 85 OP	430	0.01	0.500	USED OIL	D008	F002						
60080	W502577	R050 55	417	0.01	0.500	USED OIL	D008	F002						
60080	W502578	R050 55	390	0.01	0.500	USED OIL	D008	F002						
60080	W502579	R050 55	423	0.01	0.500	USED OIL	D008	F002						
60080	W502580	R050 85 OP	502	0.01	0.500	USED OIL	D008	F002						
60080	W502581	R050 85 OP	372	0.01	0.500	USED OIL	D008	F002						
60080	W502582	R050 55	337	0.01	0.500	USED OIL	D008	F002						
60080	W502583	R050 55	416	0.01	0.500	USED OIL	D008	F002						
60080	W502584	R050 55	392	0.01	0.500	USED OIL	D008	F002						
60080	W502792	R050 55	116	0.50	0.500	USED OIL	D008	F002						
60080	W502793	R050 55	103	0.50	0.500	USED OIL	D008	F002						
60080	W502794	R050 85 OP	461	0.50	0.500	USED OIL	D008	F002						
60080	W503011	R020 55	407	0.50	0.500	USED OIL	D008	F002						
60081	W500012	R020 85 OP	140	0.01	0.200	CONTAMINATED INSOLUBLE OIL	D008	F002						
60081	W502085	R050 55	41	0.50	0.500	CONTAMINATED INSOLUBLE OIL	D008	F002						
60081	W502086	R050 55	9	0.50	0.500	CONTAMINATED INSOLUBLE OIL	D008	F002						
60081	W507960	R050 55	394	0.01	0.500	USED OIL	D018	F002	D008					
60081	W507961	R050 55	392	0.01	0.500	USED OIL	D018	F002	D008					
60081	W507969	R050 55	288	0.01	0.500	USED OIL	D018	F002	D008					
60083	W503582	R020 55	440	0.01	0.200	CONTAMINATED SITE OILS	F002	D001	D008	D019				
60083	W506319	R020 55	334	0.01	0.200	CONTAMINATED SITE OILS	F002	D001	D008	D019				
60083	W506892	R020 55	386	0.50	0.200	CONTAMINATED SITE OILS	F002	D001	D008	D019				
60083	W513979	R020 55	326	0.01	0.200	CONTAMINATED SITE OILS	F002	D001	D008	D019				
60083	W067558	W020 85	327	0.01	0.200	WASTE INVENTORY								
60084	W500083	R050 85 OP	83	0.01	0.500	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500136	H082 85 OP	131	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500248	S095 55	267	0.50	0.950	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500249	S095 55	403	0.50	0.950	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500250	S095 55	311	0.50	0.950	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500327	H082 55	373	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500328	H082 55	366	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500329	H082 85 OP	298	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500330	H082 55	360	0.50	0.200	CONTAMINATED INSOLUBLE OIL	F002	D008						
60084	W500385	H082 55	263	3.00	0.200	OIL FIBERS; OILY SUMP CAKE	F002	D008						

60085	W502602	R095	55	461	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502603	R095	55	384	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502604	R095	55	53	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502605	R095	55	359	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502606	R095	85 OP	222	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502607	R095	85 OP	389	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502608	R095	55	331	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502609	R095	55	423	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502610	R095	85 OP	483	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502611	R095	85 OP	434	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502612	R095	55	407	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502632	R095	55	406	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502633	R095	55	453	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502634	R095	55	432	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502635	R095	55	423	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502636	R095	85 OP	296	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502637	R095	85 OP	382	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502638	R095	85 OP	260	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502639	R095	85 OP	261	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502640	R095	85 OP	12	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502641	R095	85 OP	49	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502642	R095	85 OP	10	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502643	R095	55	141	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502644	R095	55	327	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502645	R095	85 OP	358	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502646	R095	55	175	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502647	R095	55	307	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502648	R095	55	201	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502649	R095	55	417	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502650	R095	55	335	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502651	R095	55	359	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502653	R095	55	521	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502656	R095	55 OP	235	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502657	R095	85 OP	333	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502691	R095	85 OP	401	0.01	0.950	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502707	R020	55	416	0.50	0.200	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502708	R020	55	415	0.01	0.200	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60085	W502709	R020	55	416	0.50	0.200	CONTAMINATED OILS	D001	D005	D006	D007	D008	D010	F002		
60086	W503736	W095	55	326	0.01	0.950	WASTE INVENTORY									
60087	W500003	X095	85 OP	363			CONTAMINATED INSOLUBLE OIL	D001	D008	D039	F002					

INCINERA PROJECT – BATCH 3

[illegible]	[illegible]	[illegible]	SIZE	NET WT.	% U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60328	W503692	R020	55	398	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503693	R020	55	360	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503694	R020	55	353	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503695	R020	85 OP	356	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503696	R020	55	375	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503918	R020	55	278	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503919	R020	55	346	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503920	R020	55	361	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60328	W503921	R020	55	326	0.01	0.200	OILY SLUDGES	F001	D039	D029	D040				
60342	W504619	R050	55	409	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504626	R050	55	385	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504624	R050	55	416	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504627	R050	55	457	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504618	R050	55	422	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504620	R050	85 OP	462	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504625	R050	55	401	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504617	R050	55	445	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504621	R050	55	445	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504623	R050	85 OP	474	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							
60342	W504622	R050	55	366	0.01	0.500	U–CONTAM. OIL, NOT WATER SOLUBLE	F001							

TOTAL # OF DRUMS – 580

FILE [illegible]Y

00414	W506801	R050	55	348	0.01	0.500	USED OIL	D001	D006	D008	D009	D039	F001	F002		
00414	W507972	R050	55	89	0.01	0.500	USED OIL	D001	D006	D008	D009	D039	F001	F002		
00418	W503626	R090	5 GAL	39	0.01	0.900	WASTE ACETONE	D001	F003							
00418	W503628	R090	5 GAL	31	0.01	0.900	WASTE ACETONE	D001	F003							
00418	W503779	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W503820	R098	5 GAL	30	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W503889	R098	5 GAL	38	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W503907	R098	5 GAL	40	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W503916	R098	5 GAL	33	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W504809	R090	5 GAL	21	0.01	0.900	WASTE ACETONE	D001	F003							
00418	W506314	R098	5 GAL	42	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506315	R098	5 GAL	40	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506578	R098	5 GAL	42	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506579	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506814	R098	5 GAL	37	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506815	R098	5 GAL	34	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506865	R098	5 GAL	40	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W506866	R098	5 GAL	40	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507618	R098	5 GAL	42	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507619	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507620	R098	5 GAL	34	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507621	R098	5 GAL	37	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507622	R098	5 GAL	31	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507739	R098	5 GAL	32	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507740	R098	5 GAL	32	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507741	R098	5 GAL	31	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507748	R098	5 GAL	37	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507749	R098	5 GAL	26	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507750	R098	5 GAL	34	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507751	R098	5 GAL	31	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507752	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507820	R098	5 GAL	29	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507821	R098	5 GAL	29	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W507822	R098	5 GAL	33	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W510099	R098	5 GAL	38	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W510100	R098	5 GAL	34	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W510101	R098	5 GAL	33	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W510815	R098	5 GAL	38	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W513836	R098	5 GAL	32	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W513880	R098	5 GAL	31	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W513881	R098	5 GAL	30	0.01	0.980	WASTE ACETONE	D001	F003							
00418	W513963	R098	5 GAL	28	0.01	0.980	WASTE ACETONE	D001	F003							

							MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
00418	W513964	R098	5 GAL	27	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W513965	R098	5 GAL	31	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514001	R098	5 GAL	37	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514067	R098	5 GAL	34	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514160	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514267	R098	5 GAL	39	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514300	R098	5 GAL	30	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514340	R098	5 GAL	30	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514341	R098	5 GAL	38	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514374	R098	5 GAL	29	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514375	R098	5 GAL	33	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514376	R098	5 GAL	28	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514800	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514801	R098	5 GAL	38	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514802	R098	5 GAL	38	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514882	R098	5 GAL	35	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514883	R098	5 GAL	32	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514884	R098	5 GAL	29	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W514885	R098	5 GAL	36	0.01	0.980	WASTE ACETONE	D001	F003						
00418	W515103	R098	55 POLY	138	0.01	0.980	WASTE ACETONE	D001	F003						
00419	W501334	R020	55	330	0.01	0.200	XYLENE	D001	F003						
00419	W501634	R050	30 OP	10	0.01	0.500	XYLENE	D001	F003						
00419	W506401	R098	5 GAL	32	0.01	0.980	XYLENE	D001	F003						
00419	W506816	R098	5 GAL	32	0.01	0.980	XYLENE	D001	F003						
00419	W507742	R098	5 GAL	30	0.01	0.980	XYLENE	D001	F003						
00419	W510816	R098	5 GAL	30	0.01	0.980	XYLENE	D001	F003						
00419	W513882	R098	5 GAL	32	0.01	0.980	XYLENE	D001	F003						
00419	W513978	R098	5 GAL	30	0.01	0.980	XYLENE	D001	F003						
00419	W514159	R098	5 GAL	37	0.01	0.980	XYLENE	D001	F003						
00419	W514813	R070	5 GAL	34	0.01	0.700	XYLENE	D001	F003						
00421	W503619	R020	5 GAL	37	0.01	0.200	METHANOL	F003	D001						
00421	W503620	R020	5 GAL	34	0.01	0.200	METHANOL	F003	D001						
00421	W503621	R020	30 OP	41	0.01	0.200	METHANOL	F003	D001						
00421	W503622	R020	5 GAL	32	0.01	0.200	METHANOL	F003	D001						
00421	W503623	R020	5 GAL	38	0.01	0.200	METHANOL	F003	D001						
00421	W503624	R020	5 GAL	20	0.01	0.200	METHANOL	F003	D001						
00421	W503625	R020	5 GAL	18	0.01	0.200	METHANOL	F003	D001						
00421	W504630	R070	5 GAL	28	0.01	0.700	METHANOL	F003	D001						
00421	W504632	R070	5 GAL	31	0.01	0.700	METHANOL	F003	D001						
00421	W504633	R070	5 GAL	29	0.01	0.700	METHANOL	F003	D001						
00479	W507812	R050	55	535	0.01	0.500	PAINT THINNER	D001	D006	D007	D008	D009	D011	D035	F003
00479	W506817	R050	55	425	0.01	0.500	PAINT THINNER	D001	D006	D007	D008	D009	D011	D035	F003

00C201

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[illegible]	[illegible]	[illegible]	SIZE	NET WT	SU	SU-236	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
00514	W506427	R050	85 OP	77	0.01	0.500	PAINT	F002	F003	F005	D001	D007	D008		
00514	W506428	R050	85 OP	139	0.01	0.500	PAINT	F002	F003	F005	D001	D007	D008		
00514	W506429	R050	85 OP	481	0.01	0.500	PAINT	F002	F003	F005	D001	D007	D008		
00514	W506430	R050	85 OP	448	0.01	0.500	PAINT	F002	F003	F005	D001	D007	D008		
00514	W506431	R050	85 OP	32	0.01	0.500	PAINT	F002	F003	F005	D001	D007	D008		
00514	W506432	R050	85 OP	83	0.01	0.500	PAINT	F002	F003	F005	D001	D007	D008		
00777	W506807	R020	55	338	0.01	0.200	AGITENE	D001	D008	F001	F002				
00777	W507963	R020	55	252	0.01	0.200	AGITENE	D001	D008	F001	F002				
01229	W511744	R069	55	454	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W511745	R069	55	458	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W511746	R069	55	454	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W511747	R069	55	377	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513854	R069	55 PLAST	441	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513855	R069	55 PLAST	376	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513856	R069	55 PLAST	462	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513857	R069	55 PLAST	455	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513877	R069	55	431	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513878	R069	55	441	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513879	R069	55	386	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513922	R069	55	413	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513923	R069	55	282	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513924	R069	55	410	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513925	R069	55	446	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513940	R069	55	179	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W513941	R069	55	370	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514060	R069	55	453	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514061	R069	55	415	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514062	R069	55	446	0.01	0.690	COMTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514063	R069	55	166	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514263	R069	55 PLAST	449	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514264	R069	55 PLAST	446	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514265	R069	55 PLAST	458	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514266	R069	55 PLAST	234	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514311	R069	55 PLAST	434	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514312	R069	55 PLAST	434	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514313	R069	55 PLAST	455	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514314	R069	55 PLAST	359	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514325	R069	55 PLAST	437	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514326	R069	55 PLAST	462	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514327	R069	55 PLAST	457	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01229	W514328	R069	55 PLAST	318	0.01	0.690	CONTAMINATED SUMP WATER	D001	D008	D018	D019	D039	D040		
01411	W506316	R050	55	479			CONT. SOLVENT–F002,F003,F005	D001	D005	D007	D008	D009	D010	D011	D019

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
01709	W514036	R050	55	353	0.01	0.500	LAB GEN. WASTE, FLAM. ORG. EXTRACTS	D001	D002						
01709	W514848	R067	55	296	0.01	0.670	AQUEOUS FLAMMABLE WASTE	D001	D002						
01998	W513795	R050	5 GAL	36	0.01	0.500	MEOH/CYCLOHEXANE	D001	F003						
01998	W513796	R050	5 GAL	38	0.01	0.500	MEOH/CYCLOHEXANE	D001	F003						
01998	W513997	R050	5 GAL	39	0.01	0.500	MEOH/CYCLOHEXANE	D001	F003						
01998	W514168	R020	5 GAL	39	0.01	0.200	MEOH/CYCLOHEXANE	D001	F003						
01998	W514337	R050	5 GAL	39	0.01	0.500	MEOH/CYCLOHEXANE	D001	F003						
01998	W514403	R050	5 GAL	37	0.01	0.500	MEOH/CYCLOHEXANE	D001	F003						
10003	W500138	S095	85 OP	645	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500189	S095	85 OP	116	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500204	S095	85 OP	436	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500251	S095	85 OP	586	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500252	S095	85 OP	328	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500253	S095	85 OP	429	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500254	S095	85 OP	321	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500255	S095	55	421	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500258	S095	85 OP	396	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500259	S095	85 OP	367	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500260	S095	85 OP	378	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500261	S095	85 OP	244	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500262	S095	85 OP	574	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10003	W500263	S095	85 OP	464	10.00	0.950	OILY OXID. SLUDGES W/ HIGH FREE METAL	D001	F001	D039					
10009	W503746	X948	55	248	0.01	0.200	SOLVENT SLUDGE	D001	D008	D035	F005				
10009	W500338	X948	85 OP	44	0.01	0.200	SOLVENT SLUDGE	D001	D008	D035	F005				
10026	W500295	S000	85 OP	255	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500296	S000	85 OP	186	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500297	S000	85 OP	418	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500298	S000	85 OP	338	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500299	S000	85 OP	345	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500300	S000	85 OP	353	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500352	S000	85 OP	380	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500353	S000	85 OP	364	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500354	S000	85 OP	400	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500355	S000	85 OP	454	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500356	S000	55	330	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500359	S000	85 OP	386	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500360	S000	85 OP	510	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500491	S000	85 OP	474	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500690	S000	85 OP	524	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500691	S000	85 OP	412	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500692	S000	85 OP	462	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500693	S000	85 OP	530	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						

000503

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[illegible]	INV #	[illegible]	SIZE	NET WT	PBU	SU-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
10026	W500694	S000	85 OP	328	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500698	S000	85 OP	478	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500699	S000	85 OP	476	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500700	S000	85 OP	425	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500709	S000	85 OP	478	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500710	S000	85 OP	415	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500712	S000	85 OP	33	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500718	S000	85 OP	465	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500719	S000	85 OP	565	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500722	S000	85 OP	453	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500728	S000	85 OP	454	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500729	S000	85 OP	443	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W500730	S000	85 OP	461	0.01	1.000	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W503677	R095	55	360	0.01	0.950	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W503678	R095	85 OP	356	0.01	0.950	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W503679	R095	55	367	0.01	0.950	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W503680	R095	55	350	0.01	0.950	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W503681	R095	55	318	0.01	0.950	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10026	W503682	R095	55	177	0.01	0.950	1,1,1-TRICHLOROETHANE STILL BOTTOMS	D001	F001						
10030	W500662	R050	85 OP	104	0.01	0.500	CONTAMINATED SOLVENTS (METHANOL)	F003	D001						
10030	W500661	R050	85 OP	55	0.01	0.500	CONTAMINATED SOLVENTS (METHANOL)	F003	D001						
10034	W500118	R050	55	6	0.01	0.500	BENZENE (LABPACKED)	D001	D018	U019					
30005	W500001	X095	55	450	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500002	X095	55	504	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500004	X095	85 OP	407	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500005	X095	55	405	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500006	X095	85 OP	392	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500007	X095	55	446	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500008	X095	55	576	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500049	X095	85 OP	314	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500050	X095	55	437	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500051	X095	55	378	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500052	X095	55	403	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500053	X095	85 OP	398	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500054	X095	55	464	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500056	X095	55	492	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500177	X095	85 OP	406	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500178	X095	55	487	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500179	X095	55	517	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500180	X095	55	355	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500181	X095	55	545	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500182	X095	85 OP	331	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	

	INV		SIZE	NET WT	SKU	SKU-236	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
30005	W500183	X095	55	581	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500184	X095	85 OP	534	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500209	X095	85 OP	324	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500210	X095	85 OP	466	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500211	X095	85 OP	336	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500212	X095	55	315	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500213	X095	55	616	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500214	X095	85 OP	485	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500215	X095	85 OP	467	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500216	X095	85 OP	546	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500217	X095	55	306	1.60	0.950	OILY SLUDGE	F001	F005	D019	D039	D040			
30005	W500218	X095	55	289	1.60	0.950	OILY SLUDGE	F001	F005	D019	D039	D040			
30005	W500219	X095	85 OP	375	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500220	X095	85 OP	510	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500221	X095	85 OP	468	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500222	X095	85 OP	589	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500223	X095	55	461	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500224	X095	85 OP	453	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500225	X095	55	445	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500226	X095	85 OP	388	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500227	X095	85 OP	411	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500228	X095	85 OP	400	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500229	X095	55	227	1.60	0.950	OILY SLUDGE	F001	F005	D019	D039	D040			
30005	W500230	X095	85 OP	453	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500231	X095	85 OP	296	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500232	X095	85 OP	329	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500237	X095	55	456	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500238	X095	55	482	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500239	X095	85 OP	463	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500240	X095	85 OP	423	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500241	X095	55	477	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500242	X095	55	477	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500243	X095	55	422	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500244	X095	55	444	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500264	X095	85 OP	514	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500265	X095	55	345	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500266	X095	55	415	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500267	X095	85 OP	398	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500268	X095	85 OP	366	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500269	X095	55	556	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500270	X095	55	572	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500271	X095	55	492	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	

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[illegible]	INV. #	[illegible]	SIZE	NET WT	%U	%U-236	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
30005	W500272	X095	55	462	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500273	X095	55	399	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500274	X095	55	428	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500275	X095	55	444	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500276	X095	85 OP	344	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500277	X095	55	143	0.01	0.950	CONTAINERIZING SLUDGE FRM MEF 30005	F001	F005	D019	D039	D040			
30005	W500278	X095	85 OP	324	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500279	X095	55	370	1.60	0.950	OILY SLUDGE	F001	F005	D019	D039	D040			
30005	W500280	X095	85 OP	522	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500281	X095	55	540	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500282	X095	85 OP	326	1.60	0.950	OILY SLUDGE	F001	F005	D019	D039	D040			
30005	W500283	X095	85 OP	513	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500284	X095	85 OP	548	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500285	X095	55	482	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500286	X095	85 OP	494	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30005	W500287	X095	85 OP	415	1.60	0.950	OILY SLUDGE	D001	F001	F005	F003	D019	D039	D040	
30033	W500134	R050	55	417	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W500135	R050	55	415	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501038	R050	85 OP	230	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501039	R050	85 OP	216	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501040	R050	85 OP	212	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501333	R050	55	371	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501341	R050	55	451	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501765	R020	85 OP	462	0.20	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W501768	R020	55	467	0.01	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W502419	R020	85 OP	465	0.01	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W502563	R020	85 OP	505	0.01	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W502564	R020	85 OP	445	0.01	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W502566	R020	85 OP	53	0.01	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W502701	R020	85 OP	157	0.10	0.200	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W503890	R050	55	313	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W503891	R050	55	321	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
30033	W506288	R050	55	103	0.01	0.500	U-CONTAM. SOLVENT, PAINT THINNER	D001	D039	F003	F005				
50022	W513863	R125	55 OP	24	0.01	1.250	CONTAMINATED WATER	D001	F003						
50072	W511772	R070	85 OP	423	0.01	0.700	CONTAMINATED WATER	D001	D008	D019	D039	D040	F002	F003	F005
50072	W511774	R070	85 OP	701	0.01	0.700	CONTAMINATED WATER	D001	D008	D019	D039	D040	F002	F003	F005
50072	W511773	R070	85 OP	354	0.01	0.700	CONTAMINATED WATER	D001	D008	D019	D039	D040	F002	F003	F005
50096	W511755	R050	85 OP	337	0.01	0.500	CONTAMINATED SOLVENTS OR ORGANIC	D001	D007						
60027	W500140	A948	55	272	0.01	1.000	CONTAMINATED OIL-SOLUBLE	F001	F002	F003	D001				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	WASTE INVENTORY	[illegible]							
60027	W048311	D690	55	55	0.20	0.200	WASTE INVENTORY								
60027	W048309	D690	55	276	0.20	0.200	WASTE INVENTORY								

INCINER[illegible]N PROJECT – BATCH 4

[illegible]	INV	[illegible]	SIZE	NET WT	[illegible]	[illegible]	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.200	WASTE INVENTORY								
60039	W502685	R099	85 OP	459	0.01	0.990	SOLVENT	F001	D001						
60039	W502686	R099	85 OP	472	0.01	0.990	SOLVENT	F001	D001						
[illegible]	W067812	W060	110	110	0.01	0.500	WASTE INVENTORY								
[illegible]	W07[illegible]	W060	[illegible]	525	0.01	0.500	WASTE INVENTORY								
60041	W502565	R020	85 OP	120	0.01	0.200	SOLVENT	F001	D001						
60041	W502703	R099	85 OP	148	0.01	0.990	SOLVENT	F001	D001						
60045	W502659	R050	85 OP	94	0.10	0.500	CONTAMINATED SOLVENT	F001	D001						
60045	W502660	R050	85 OP	170	0.02	0.500	CONTAMINATED SOLVENT	F001	D001						
60052	W503014	R050	85 OP	336	0.02	0.500	SOLVENT	F001	D001						
[illegible]	W073582	W060	85	374	0.01	0.500	WASTE INVENTORY								
[illegible]	W071592	W020	85	48	0.01	0.200	WASTE INVENTORY								
[illegible]	W075640	W020	55	110	0.01	0.200	WASTE INVENTORY								
[illegible]	W074691	W020	55	123	0.01	0.200	WASTE INVENTORY								
[illegible]	W074535	W020	85	256	0.01	0.200	WASTE INVENTORY								
[illegible]	W073422	W020	85	51	0.01	0.200	WASTE INVENTORY								
60053	W500606	R095	30 OP	28	0.01	0.950	SOLVENT	D001	F001						
60053	W500605	R095	30 OP	15	0.01	0.950	SOLVENT	D001	F001						
60056	W500074	R050	85 OP	440	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60056	W500411	R050	85 OP	241	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60056	W500413	R050	85 OP	461	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60056	W500464	R050	110 OP	404	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60056	W500465	R050	55	147	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60056	W500466	R050	85 OP	2290	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500834	R050	85 OP	693	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500835	R050	85 OP	651	0.01	0.500	CONTAMINATED SOLVENT	F001							
60056	W500838	R050	85 OP	553	0.01	0.500	CONTAMINATED SOLVENT	F001	F003						
60056	W500841	R050	85 OP	628	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500842	R050	85 OP	591	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500843	R050	85 OP	543	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500845	R050	85 OP	600	0.01	0.500	CONTAMINATED SOLVENT	F001							
60056	W500846	R050	85 OP	548	0.01	0.500	CONTAMINATED SOLVENT	F001							
60056	W500847	R050	85 OP	493	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500848	R050	85 OP	549	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500850	R050	85 OP	524	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500851	R050	85 OP	523	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500853	R050	85 OP	661	0.01	0.500	CONTAMINATED SOLVENT	F002							
60056	W500886	R050	85 OP	634	0.01	0.500	CONTAMINATED SOLVENT	F002							
[illegible]	W078277	W050	85	614	0.01	0.600	WASTE INVENTORY								
[illegible]	W067881	W060	85	396	0.01	0.500	WASTE INVENTORY								
[illegible]	W067882	W060	85	447	0.01	0.500	WASTE INVENTORY								
[illegible]	W067833	W060	85	489	0.01	0.500	WASTE INVENTORY								

[illegible]	[illegible]	W050	85	[illegible]	574	0.01	0.500	MATERIAL DESCRIPTION	WASTE INVENTORY	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
[illegible]	[illegible]	W050	85	[illegible]	635	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	440	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	587	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	285	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	618	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	91	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	607	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	536	0.01	0.500		WASTE INVENTORY								
[illegible]	[illegible]	W050	85	[illegible]	6	0.01	0.500		WASTE INVENTORY								
[illegible]	W070787	W050	85	[illegible]	751	0.01	0.500		WASTE INVENTORY								
[illegible]	W067658	W050	85	[illegible]	638	0.01	0.500		WASTE INVENTORY								
[illegible]	W067636	W050	85	[illegible]	489	0.01	0.500		WASTE INVENTORY								
[illegible]	W067645	W050	85	[illegible]	680	0.01	0.500		WASTE INVENTORY								
[illegible]	W067657	W050	85	[illegible]	654	0.01	0.500		WASTE INVENTORY								
[illegible]	W067634	W050	85	[illegible]	654	0.01	0.500		WASTE INVENTORY								
[illegible]	W070788	W050	85	[illegible]	610	0.01	0.500		WASTE INVENTORY								
[illegible]	W073278	W050	85	[illegible]	278	0.01	0.500		WASTE INVENTORY								
[illegible]	W073280	W050	85	[illegible]	640	0.01	0.500		WASTE INVENTORY								
[illegible]	W073279	W050	85	[illegible]	269	0.01	0.500		WASTE INVENTORY								
60057	W500011	R050	85 OP	235	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500292	R050	85 OP	40	0.01	0.500	CONTAMINATED SOLVENT	D001									
60057	W500293	R050	55	30	0.01	0.500	CONTAMINATED SOLVENT	D001									
60057	W500756	R050	55	430	0.01	0.500	CONTAMINATED SOLVENT	F002									
60057	W500758	R050	55	406	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500759	R050	85 OP	447	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500760	R050	55	391	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500761	R050	85 OP	295	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500778	R050	85 OP	449	0.01	0.500	CONTAMINATED SOLVENT	F002									
60057	W500784	R050	85 OP	415	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500785	R050	55	388	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500801	R050	85 OP	457	0.01	0.500	CONTAMINATED SOLVENT	D001 F002									
60057	W500802	R050	85 OP	455	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500803	R050	85 OP	396	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500804	R050	85 OP	337	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500823	R050	55	394	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500824	R050	85 OP	396	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500825	R050	85 OP	380	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500826	R050	85 OP	358	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500827	R050	85 OP	363	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500828	R050	85 OP	483	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									
60057	W500829	R050	85 OP	352	0.01	0.500	CONTAMINATED SOLVENT	F002 D001									

			SIZE	NET WT	SKU	SKU-/35	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60057	W500830	R050	85 OP	489	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500831	R050	85 OP	332	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500832	R050	85 OP	316	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500833	R050	85 OP	366	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500863	R050	30	212	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500864	R050	55	170	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500865	R050	55	155	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500866	R050	55	240	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500867	R050	85 OP	475	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500868	R050	85 OP	496	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500869	R050	85 OP	418	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500870	R050	85 OP	373	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500871	R050	85 OP	413	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500872	R050	85 OP	463	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500873	R050	85 OP	270	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500874	R050	85 OP	345	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500898	R050	85 OP	415	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500899	R050	85 OP	382	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500900	R050	85 OP	474	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W500901	R050	85 OP	300	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W501027	R050	55	32	0.01	0.500	CONTAMINATED SOLVENT	D001	F002						
60057	W501028	R050	55	147	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W501029	R050	55	144	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W501030	R050	85 OP	116	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W501126	R050	85 OP	392	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W501127	R050	55	278	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W501128	R050	55	398	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W502998	R050	55	445	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W503380	R050	85 OP	466	0.20	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W503555	R050	55	549	0.20	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W503697	R050	55	507	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W503884	R050	55	504	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W503929	R050	55	512	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W504636	R050	55	499	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W504960	R050	55	487	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60057	W506394	R050	55	443	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W506513	R050	55	447	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W506641	R050	55	415	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W506813	R050	55	442	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W506878	R050	55	475	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W507489	R050	55	453	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W507632	R050	55	410	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				

LINE	INV. #		SIZE	NET WT	%U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60057	W507780	R050	55	434	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60057	W507953	R050	55	292	0.01	0.500	CONTAMINATED SOLVENT	D001	F002	F003	F005				
60058	W500057	R071	55	372	0.01	0.711	CONTAMINATED SOLVENT	F002	D001						
60058	W500058	R071	55	451	0.01	0.711	CONTAMINATED SOLVENT	F002	D001						
60058	W500059	R071	55	414	0.01	0.711	CONTAMINATED SOLVENT	F002	D001						
60058	W500060	R071	55	325	0.01	0.711	CONTAMINATED SOLVENT	F002	D001						
60058	W500326	R050	55	384	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60058	W500384	R050	55	487	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60058	W500462	R050	55	33	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60058	W500463	R050	55	53	0.01	0.500	CONTAMINATED SOLVENT	F002	D001						
60058	W500654	R095	55	358	0.01	0.950	CONTAMINATED SOLVENT	F002	D001						
60058	W500655	R095	55	383	0.01	0.950	CONTAMINATED SOLVENT	F002	D001						
60058	W500656	R095	55	365	0.01	0.950	CONTAMINATED SOLVENT	F002	D001						
60058	W500657	R095	55	285	0.01	0.950	CONTAMINATED SOLVENT	F002	D001						
60058	W070748	W050	85	466	0.01	0.500	WASTE INVENTORY								
60058	W070745	W050	55	368	0.01	0.500	WASTE INVENTORY								
60058	W066853	W050	55	315	0.01	0.500	WASTE INVENTORY								
60059	W503698	R020	85 OP	419	0.01	0.200	CONTAMINATED SOLVENT	D001	D008	F002					
60059	W506318	R020	55	413	0.01	0.200	CONTAMINATED SOLVENT	D001	D008	F002					
60059	W506809	R020	55	227	0.01	0.200	CONTAMINATED SOLVENT	D001	D008	F002					
60119	W501143	S095	55	310	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501144	S095	55	370	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501145	S095	55	370	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501146	S095	55	410	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501147	S095	55	390	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501148	S095	55	370	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501149	S095	55	350	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501150	S095	55	350	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501151	S095	85 OP	138	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501152	S095	85 OP	590	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501153	S095	55	210	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501154	S095	55	530	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501155	S095	55	608	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501157	S095	55	393	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60119	W501672	R095	55	450	0.01	0.950	OILY SLUDGE FOR OXIDATION	D001	F001	F002					
60124	W500812	R050	85 OP	29	0.01	0.500	PERCHLOR	F001	D001						
60124	W070798	W050	85	87	0.01	0.500	WASTE INVENTORY								

TOTAL # OF DRUMS – 457

REF	INV #		SIZE	NET WT.	% U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
00393	W507952	R020	55 GAL	29	0.01	0.200	LUBRICATING OIL	D008							
00393	W506824	R020	55 GAL	320	0.01	0.200	LUBRICATING OIL	D008							
00393	W506825	R020	55 GAL	377	0.01	0.200	LUBRICATING OIL	D008							
00425	W503904	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W504295	R070	5 GAL	30	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W504805	R070	5 GAL	28	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506201	R070	5 GAL	26	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506309	R070	5 GAL	30	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506570	R070	5 GAL	30	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506647	R070	5 GAL	28	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506657	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506826	R070	5 GAL	28	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W506868	R070	5 GAL	31	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W507605	R070	5 GAL	27	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W507629	R070	5 GAL	33	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W507654	R070	5 GAL	28	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W507747	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W507782	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W507824	R070	5 GAL	30	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W508117	R070	5 GAL	31	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W509631	R070	5 GAL	27	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W510105	R070	5 GAL	30	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W511796	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W513861	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W513920	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W513952	R070	5 GAL	30	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W513973	R070	5 GAL	31	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514102	R070	5 GAL	26	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514199	R070	5 GAL	32	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514299	R070	5 GAL	27	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514301	R070	5 GAL	25	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514334	R070	5 GAL	26	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514335	R070	5 GAL	29	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514364	R070	5 GAL	23	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						

92376

MEP	INV #		SIZE	NET WT	% U	% U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
00425	W514542	R070	5 GAL	19	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514548	R070	5 GAL	20	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514669	R070	5 GAL	25	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514670	R070	5 GAL	26	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514699	R070	5 GAL	33	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514792	R070	5 GAL	37	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514793	R070	5 GAL	24	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514820	R070	5 GAL	23	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514851	R070	5 GAL	27	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00425	W514907	R070	5 GAL	21	0.01	0.700	NITRIC ACID/CYCLOHEXANE	D001	D002						
00447	W093005	W050	85	392	0.01	0.500	WASTE INVENTORY								
00447	W093006	W050	85	63	0.01	0.500	WASTE INVENTORY								
00447	W146001	W050													
00448	W093004	W050	85	572	0.01	0.500	WASTE INVENTORY								
00455	W506333	R050	85 OP	245	0.01	0.500	BENZENE	D001	F001						
00459	W506334	R050	85 OP	450	0.01	0.500	PAINT	D001	F001	F002					
00485	W506406	R095	85 OP	202	0.01	0.950	KEROSENE	D001							
00507	W506420	R050	85 OP	249	0.01	0.500	CONTAMINATED SOLVENT	D001	D035						
00508	W506419	R050	85 OP	484	0.01	0.500	PAINT THINNER	D001	D035						
00584	W506483	R050	55	367	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00584	W506484	R050	55	377	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00584	W506485	R050	55	219	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00584	W506486	R050	55	389	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00584	W506487	R050	55	371	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00584	W506489	R050	55	134	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00584	W506490	R050	55	408	0.01	0.500	KEROSENE/SLUDGE/WATER FROM UST	D018							
00587	W513835	R050	85 OP	249	0.01	0.500	GREASE & WATER	D001							
00633	W506335	R050	85 OP	493	0.01	0.500	OIL	D007	D008	D009					
00633	W506587	R050	85 OP	138	0.01	0.500	OIL	D007	D008	D009					
00633	W506588	R050	85 OP	86	0.01	0.500	OIL	D007	D008	D009					
00633	W506590	R050	85 OP	140	0.01	0.500	OIL	D007	D008	D009					
00633	W506591	R050	85 OP	478	0.01	0.500	OIL	D007	D008	D009					
00633	W506592	R050	85 OP	343	0.01	0.500	OIL	D007	D008	D009					
00633	W506593	R050	85 OP	399	0.01	0.500	OIL	D007	D008	D009					

000112

9279

REF	INV #		SIZE	NET WT	% U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
00633	W506594	R050	85 OP	323	0.01	0.500	OIL	D007	D008	D009					
00633	W506595	R050	85 OP	139	0.01	0.500	OIL	D007	D008	D009					
00633	W506596	R050	85 OP	479	0.01	0.500	OIL	D007	D008	D009					
00633	W506597	R050	85 OP	162	0.01	0.500	OIL	D007	D008	D009					
00633	W506598	R050	85 OP	85	0.01	0.500	OIL	D007	D008	D009					
00637	W506586	X948	85 OP	242	0.50	0.200	USED OIL	D018							
00638	W506585	R050	85 OP	313	0.01	0.500	OIL FROM DRUM BALER, PLANT 1	D018							
00658	W506604	S000	85 OP	89	0.50	0.947	OIL	D018							
00870	W511556	R050	85 OP	197	0.01	0.500	VARNISH, UNUSED	D001							
00873	W506871	R000	85 OP	501	0.01	0.200	SPENT FIXER	D011							
00873	W506872	R000	85 OP	503	0.01	0.200	SPENT FIXER	D011							
00873	W513837	R050	55 OP	38	0.01	0.500	SPENT FIXER	D011							
00873	W513954	R050	85 OP	148	0.01	0.500	SPENT FIXER	D011							
00873	W513955	R050	55 OP	102	0.01	0.500	SPENT FIXER	D011							
00873	W513956	R050	55 OP	55	0.01	0.500	SPENT FIXER	D011							
01337	W513849	R050	85 OP	373	0.01	0.500	CONTAM. WATER, NON-CHLORIDE	D001							
01432	W513846	R050	85 OP	347	0.01	0.500	CONT. WATR OR SUMP LIQR., NON-CHL	D001							
01432	W513847	R050	85 OP	218	0.01	0.500	CONT. WATR OR SUMP LIQR., NON-CHL	D001							
01432	W513848	R050	85 OP	77	0.01	0.500	CONT. WATR OR SUMP LIQR., NON-CHL	D001							
01432	W513850	R050	85 OP	428	0.01	0.500	CONT. WATR OR SUMP LIQR., NON-CHL	D001							
01432	W513862	R050	85 OP	407	0.01	0.500	CONT. WATR OR SUMP LIQR., NON-CHL	D001							
01432	W514362	R125	55	437	0.01	1.250	CONT. WATR OR SUMP LIQR., NON-CHL	D001							
01725	W513947	R050	55	295	0.01	0.500	LUBRICATING OILS	D018							
01725	W513950	R050	55	366	0.01	0.500	LUBRICATING OILS	D018							
01725	W513957	R050	55	369	0.01	0.500	LUBRICATING OILS	D018							
01725	W514000	R050	55	378	0.01	0.500	LUBRICATING OILS	D018							
01725	W514187	R050	55	403	0.01	0.500	LUBRICATING OILS	D018							
01725	W514290	R050	55	356	0.01	0.500	LUBRICATING OILS	D018							
01725	W514316	R050	55	303	0.01	0.500	LUBRICATING OILS	D018							
01725	W514350	R050	55	345	0.01	0.500	LUBRICATING OILS	D018							
01725	W514538	R050	55	350	0.01	0.500	LUBRICATING OILS	D018							
01725	W514695	R050	55	389	0.01	0.500	LUBRICATING OILS	D018							
01725	W514806	R050	55	405	0.01	0.500	LUBRICATING OILS	D018							
01725	W514850	R050	55	388	0.01	0.500	USED OIL	D018							

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MEG	INV #		SIZE	NET WT	X-U	SU-236	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
01725	W514878	R050	55	392	0.01	0.500	USED OIL	D018							
01725	W514997	R050	55	397	0.01	0.500	USED OIL FROM GASOLINE ENGINES	D018							
01725	W515003	R050	55	365	0.01	0.500	USED OIL FROM GASOLINE ENGINES	D018							
01725	W515053	R050	55	291	0.01	0.500	USED OIL	D018							
01725	W515099	R050	55	407	0.01	0.500	USED OIL FROM GASOLINE ENGINES	D018							
01728	W514287	R050	85 OP	215	0.01	0.500	USED OIL	D018							
01728	W514372	R050	55	395	0.01	0.500	USED OIL	D018							
01728	W514422	R050	55	386	0.01	0.500	USED OIL	D018							
01728	W514539	R050	55	373	0.01	0.500	USED OIL	D018							
01728	W514559	R050	55	328	0.01	0.500	USED OIL	D018							
01728	W514809	R050	55	22	0.01	0.500	USED OIL	D018							
01728	W514897	R050	55	289	0.01	0.500	USED OIL	D018							
01728	W514901	R050	55	246	0.01	0.500	USED OIL	D018							
01729	W514106	R050	55	320	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514203	R050	55	295	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514288	R050	55	56	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514349	R050	55	342	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514363	R050	55	339	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514540	R050	55	336	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514541	R050	55	315	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514560	R050	55	295	0.01	0.500	GASOLINE	D001	D008	D018					
01729	W514808	R050	55	90	0.01	0.500	GASOLINE	D001	D008	D018					
02006	W513995	R050	85 OP	103	0.01	0.500	CURING COMPOUND	D001							
02006	W513996	R050	85 OP	280	0.01	0.500	CURING COMPOUND	D001							
30045	W507544	D690	85 OP	282	15.13	0.200	OILY SLUDGE	D001							
30045	W507543	D690	85 OP	311	15.13	0.200	OILY SLUDGE	D001							
30045	W507542	D690	85 OP	338	40.00	0.200	OILY SLUDGE	D001							
30045	W050194	D690	85	509	15.13	0.193	WASTE INVENTORY								
30045	W050192	D690	85	502	15.13	0.193	WASTE INVENTORY								
30045	W050193	D690	85	391	15.13	0.193	WASTE INVENTORY								
30045	W050283	D690	85	491	15.13	0.193	WASTE INVENTORY								
30045	W050197	D690	85	449	15.13	0.193	WASTE INVENTORY								
30045	W050221	D690	85	482	15.13	0.193	WASTE INVENTORY								
30045	W050219	D690	85	473	15.13	0.193	WASTE INVENTORY								

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MEP	INV #		SIZE	NET WT	% U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
30045	W049437	D690	85	429	15.66	0.192	WASTE INVENTORY								
30045	W049438	D690	85	481	15.66	0.192	WASTE INVENTORY								
30045	W049436	D690	85	455	15.66	0.192	WASTE INVENTORY								
30045	W076671	D690	85	422	15.66	0.192	WASTE INVENTORY								
30045	W050195	D690	85	495	15.66	0.192	WASTE INVENTORY								
30045	W050282	D690	85	515	15.66	0.192	WASTE INVENTORY								
30045	W050284	D690	85	479	15.66	0.192	WASTE INVENTORY								
30045	W076670	D690	85	483	15.66	0.192	WASTE INVENTORY								
30045	W076669	D690	85	452	15.66	0.192	WASTE INVENTORY								
30045	W050296	D690	85	485	15.66	0.192	WASTE INVENTORY								
30045	W050295	D690	85	499	15.66	0.192	WASTE INVENTORY								
30045	W050294	D690	85	488	15.66	0.192	WASTE INVENTORY								
30045	W049435	D690	85	517	15.66	0.192	WASTE INVENTORY								
30045	W049434	D690	85	442	15.66	0.192	WASTE INVENTORY								
30045	W049433	D690	85	474	15.66	0.192	WASTE INVENTORY								
30045	W050196	D690	85	470	15.66	0.192	WASTE INVENTORY								
50202	W507958	R071	55 OP	194	50.00	0.711	OILY SLUDGE FOR OXIDATION	D001	D010						
50204	W508155	X888	55 OP	336	10.00	1.100	OILY SLUDGE FOR OXIDATION	D001	D010						
50346	W511555	X888	85 OP	493	0.34	1.100	OILY SLUDGE FOR OXIDATION	D001							
50346	W511554	X888	85 OP	150	0.34	1.100	OILY SLUDGE FOR OXIDATION	D001							
50347	W511754	R095	85 OP	395	0.01	0.950	DISCARD PROCESS RESIDUE	D001							
50355	W509039	R050	85 OP	514	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509040	R050	85 OP	517	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509136	R050	55	451	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509137	R050	55	250	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509138	R050	55	471	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509139	R050	55	525	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509140	R050	55	531	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509141	R050	55	554	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509142	R050	55	574	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509143	R050	55	572	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509144	R050	55	587	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509145	R050	55	560	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509146	R050	55	543	0.01	0.500	DISCARD PROCESS RESIDUE	D001							

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MEF	INV #		SIZE	NET WT	%U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
50355	W509147	R050	55	475	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509148	R050	55	529	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
50355	W509149	R050	55	442	0.01	0.500	DISCARD PROCESS RESIDUE	D001							
60013	W506359	R020	55 OP	121	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506360	R020	55 OP	112	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506361	R020	55 OP	83	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506362	R020	55 OP	82	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506363	R020	55 OP	89	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506364	R020	55 OP	122	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506365	R020	55 OP	114	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506366	R020	55 OP	90	0.01	0.200	NON RECOVERABLE TRASH	D001							
60013	W506367	R020	55 OP	40	0.01	0.200	NON RECOVERABLE TRASH	D001							
60022	W504639	R020	85 OP	442	0.01	0.200	NON RECOVERABLE TRASH	D001							
60022	W504638	R020	85 OP	394	0.01	0.200	NON RECOVERABLE TRASH	D001							
60055	W506272	R050	55	312	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506273	R050	55	246	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506274	R050	55	253	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506275	R050	55	2870	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506276	R050	55	254	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506277	R050	55	261	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506278	R050	55	266	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506279	R050	55	256	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506280	R050	55	252	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506281	R050	55	223	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506282	R050	55	273	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506283	R050	55	257	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506284	R050	85 OP	353	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506285	R050	55	253	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506286	R050	55	243	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506287	R050	55	248	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506290	R050	55	235	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506291	R050	55	298	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506292	R050	55	192	0.01	0.500	LEADED GASOLINE	D001	D008	D018					
60055	W506293	R050	55	268	0.01	0.500	LEADED GASOLINE	D001	D008	D018					

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REF	INV #		SIZE	NET WT	%U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60060	W500757	R050	85 OP	317	0.01	0.500	MISCELLANEOUS SUSPECT RESIDUE	D001							
60301	W500926	R050	55	405	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500927	R050	55	430	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500928	R050	55	411	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500929	R050	55	397	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500930	R050	55	396	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500931	R050	55	308	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500932	R050	55	395	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500933	R050	55	449	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500934	R050	55	401	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500935	R050	55	390	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500936	R050	55	404	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500937	R050	55	405	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500938	R050	55	128	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500939	R050	55	455	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500940	R050	55	486	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500941	R050	55	205	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500942	R050	55	257	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500943	R050	55	301	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500944	R050	85 OP	489	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500945	R050	55	96	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500946	R050	55	388	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500947	R050	55	406	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500948	R050	55	407	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500950	R050	55	351	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500953	R050	55	375	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500954	R050	55	394	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500955	R050	55	390	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500956	R050	55	415	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500958	R050	55	409	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500959	R050	85 OP	420	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500960	R050	85 OP	422	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500961	R050	85 OP	459	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500962	R050	55	362	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							

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MEF	INV #		SIZE	NET WT	% U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60301	W500963	R050	55	417	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500964	R050	55	459	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500965	R050	55	436	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500986	R050	55	343	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500987	R050	55	370	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500988	R050	55	375	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500989	R050	55	414	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500990	R050	55	365	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500991	R050	55	423	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500992	R050	55	348	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500993	R050	55	379	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500994	R050	55	405	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500995	R050	55	394	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500996	R050	55	351	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500997	R050	55	378	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500998	R050	55	440	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W500999	R050	55	424	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501000	R050	55	430	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501001	R050	55	166	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501002	R050	55	356	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501003	R050	55	161	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501004	R050	55	374	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501005	R050	55	374	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501006	R050	55	364	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501007	R050	55	368	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501008	R050	55	372	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501010	R050	55	387	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501011	R050	55	375	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501012	R050	85 OP	485	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501013	R050	55	455	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501014	R050	55	426	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501015	R050	55	403	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501016	R050	55	440	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501017	R050	55	414	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							

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MEF	INV. #		SIZE	NET WT.	% U	%U-235	MATERIAL DESCRIPTION	EPA1	EPA2	EPA3	EPA4	EPA5	EPA6	EPA7	EPA8
60301	W501018	R050	55	427	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501019	R050	85 OP	436	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501020	R050	55	412	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60301	W501021	R050	55	297	0.01	0.500	U-CONTAM. OIL, INSOLUBLE IN WATER	D008							
60331	W506370	R050	55	342	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506371	R050	85 OP	422	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506372	R050	55	426	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506373	R050	55	430	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506374	R050	55	427	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506375	R050	85 OP	410	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506376	R050	85 OP	414	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506377	R050	55	433	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506378	R050	85 OP	433	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506379	R050	85 OP	433	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506380	R050	55	428	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506381	R050	85 OP	431	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506382	R050	55	323	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506383	R050	85 OP	415	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506384	R050	85 OP	421	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506385	R050	85 OP	417	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506386	R050	85 OP	414	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506387	R050	55	411	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506388	R050	55	413	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506389	R050	55	419	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						
60331	W506390	R050	55	418	0.01	0.500	CONTAMINATED WATER, NON-CL	D001	D018						

TOTAL # OF DRUMS – 297

ATTACHMENT B

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K/TSCA-030

WASTE ACCEPTANCE PLAN

AND

ANALYTICAL PROTOCOL FOR THE

TOXIC SUBSTANCES CONTROL ACT

INCINERATOR

July 1993

Prepared by:
Oak Ridge K-25 Site
Oak Ridge, Tennessee 37831
Operated by
MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U. S. Department of Energy
under contract DE-AC05-84OR21400

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K/TSCA-030

WASTE ACCEPTANCE PLAN

AND

ANALYTICAL PROTOCOL FOR THE

TOXIC SUBSTANCE CONTROL ACT

INCINERATOR

Effective Date of Plan: 8-2-93

Prepared by: B. S. Snyder
Burn Plan Manager

6-30-93
Date

Technical Operations

6-30-93
Date

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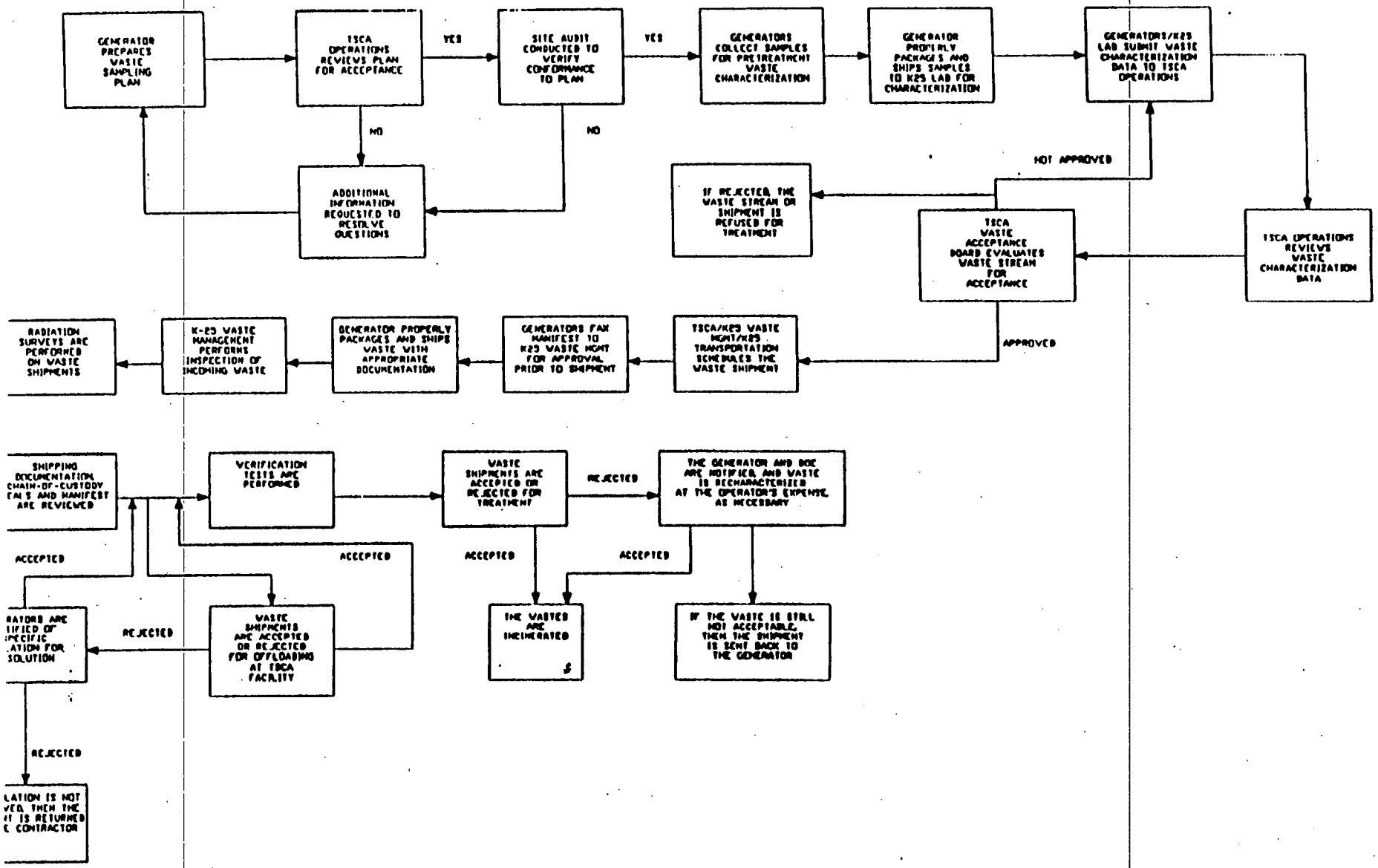

FIG. 1 WASTE ACCEPTANCE PLAN ACTIVITIES EFFECTIVE JULY 30, 1993

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2.4 Characterization of Batch Process Wastes

If the waste, which may be either homogeneous or heterogeneous, is being generated through a short-term or infrequent operation, such that the composition of the waste is expected to vary appreciably over time, the waste may be characterized as a batch process. For such operations, the sampling plan should describe the method for determining batch sizes and the mechanism for grouping wastes into batches. Batches may be defined by the following:

- specific waste generating operation with several similar operations grouped together (e.g., the applicable wastes collected from several different chemistry laboratories)
- the type of waste being generated (e.g., waste oils regardless of the point of origin)
- point of origin (e.g., all applicable wastes - either solids, liquids, or sludges, but not combinations of the three - from a given building, regardless of the generating process), or by some other method appropriate to the specific generator.

For this type of waste stream, the following information should be included in the sampling plan.

- Method of grouping waste into batches (e.g., by waste type, by generator, by point of origin, etc.)
- Size of batches which will be characterized in this manner (e.g., the amount of waste collected in one week, number of 55 gallon drums, etc.)
- Waste characterization technique (e.g., sampling and analysis, etc.)

2.5 Sample Collection Procedures

Whether waste streams arise from long-term constant processes or from inconstant operations, waste characterization techniques must include sampling the waste form for laboratory analysis, whether as the primary method of waste certification or as a method of verifying other characterization techniques, such as process controls. The sampling plan should include a description of the sampling and analytical methods which will be used to characterize the waste stream, unless the K-25 Analytical Services Division is performing the sampling and is already described in a Sampling and Analysis Plan, in which case the plan should be referenced.

2.5.1 Sample Collection Methods for Homogeneous Waste Forms

The following table summarizes the sample collection methods considered appropriate for the given waste forms. Alternate sampling methods may be acceptable, but should be submitted in advance, following the Request for Variance process described in Section 4. All the methods listed below are described in EPA SW-846, Test Methods for Evaluating Solid Waste,* the most current edition.

Waste Form	Container Type	Sampling Method
Oils, solvents, chemicals, or aqueous waste	Drum	Coliwasa
	Tank truck	Coliwasa
	Tank	Grab*
Sludges	Drum or other	Thief sampler container
Solids	Any	Auger sampler
Unknown liquids	Drum	Coliwasa
	Tank truck	Coliwasa
Unknown solids	Any	Auger sampler

2.7 Drum Certification

For wastes contained in drums, the generator is required to describe the methods used to assess the structural integrity of the drums and overpacks, to provide information on drum age and prior life, to supply data on chemical exposure of the drums within the Waste Sampling Plan. This information will be used to evaluate potential risks (i.e., drum bulging or leaking) related to storage of the wastes. The information provided shall support the certification of the drums according to the requirements specified in Section 6.0 of this WAP.

3.0 WASTE ACCEPTANCE CRITERIA

3.1 Definition of Liquid, Sludge and Solid

The requirements for characterizing wastes to be accepted at the TSCA Incinerator are described in the following section. Characterization requirements include evaluating the physical form of the waste, analysis for specific chemical constituents, and a description of the radionuclide content for each waste form. Waste characterization requirements are operationally grouped according to the physical form of the waste as solid, liquid, or sludge, with radionuclide characterization requirements discussed separately. For the purposes of this waste acceptance criteria, the following operational definitions apply.

3.1.1 Liquid

A liquid waste form has no fixed shape, thus takes the shape of its container. Liquid wastes are easily extruded through a small orifice, and have the following physical characteristics:

viscosity	< 5,000 centipoise at 100°F
suspended solids	< 10% by weight
freezing point	< 32°F
boiling point	> 100°F

For the purposes of this document, wastes with a water content of 90 or more percent by weight are considered to be aqueous solutions.

3.1.2 Sludge

A waste in the form of a sludge is a mixture of liquid and fine solids, varying from a form that has no specific shape, thus taking that of its container, to one that has a fixed shape. A sludge can be extruded through an orifice, but high pressure may be required. Sludges have the following physical characteristics:

viscosity	> 5,000 cp and < 500,000 cp at 100°F
solids	> 10% and < 50% by weight
particle size	< $^1/_{16}$ inch (0.16 cm)

3.1.3 Solid

A solid waste form is one that has a fixed shape such that the waste cannot be extruded through an orifice. Application of pressure to accomplish extrusion may cause the material to compact. The specific physical characteristics of a solid are:

solids	> 50% by weight
particle size	> $^1/_{16}$ inch (0.16 cm)

3.3.2.2 Values reported on the Waste Analysis Form must be reported in terms of the "*as received*" concentration, (i.e., the actual concentration of each parameter in the waste received at the TSCA Incinerator, as opposed to reporting the concentration on a dry weight basis). The "as received" concentration is the measurement of critical importance to incinerator operation, storage requirements and treatment. Reporting all values in those terms will help minimize potential misinterpretation of data.

3.3.3 Waste Analysis Form - General Information (Appendix B)

3.3.3.1 The Disposal Number is the number assigned by TSCA Operations to a particular waste shipment from the "Request for Disposal/Storage of Waste Materials and Equipment", form UCN-12463. This number may be filled in by the Waste Generator.

The Laboratory Number is the internal tracking number assigned at a particular site. It shall be filled in by the generator to provide cross-referencing and tracking of reported results.

3.3.3.2 The first section of the Waste Analysis Form - General Information should indicate whether the waste being submitted is a solid, liquid, or sludge, based on the definitions in Section 3.1.

3.3.3.3 In the second line of the form, indicate whether the waste is soluble or insoluble in water.

3.3.3.4 The next three lines on the form are used to specifically identify the waste in terms of the regulatory, safety, and operational considerations for the TSCA Incinerator. The Environmental Protection Agency (EPA) Hazardous Waste Identification Code as described in 40 CFR 261 must be provided for the waste.

NOTE: Since the toxicity characteristic hazard under RCRA imposes some special considerations, it should be specifically noted that if any of the EPA codes D004 through D043 are not listed on the form, that indicates the waste is known to *not* be characteristically toxic for the specific material, according to the limitations imposed under the Toxicity Characteristic Leaching Procedure (TCLP) as described in Table 2.

If the waste is classified as carcinogenic by the OSHA, certain additional storage and labelling precautions may be required at the TSCA Incinerator facility. Indicate, by marking the appropriate box on the form, whether the waste is known to be carcinogenic. If the waste is not classified by the OSHA as carcinogenic, mark the "no" box.

The TSCA Incinerator Waste Stream Identification Number is the number assigned to an individual waste stream being generated within a given plant process (i.e., from the Long-Range Burn Plan). If the waste being prepared for shipment has not been assigned an identification number, contact the TSCA Incinerator Operations staff.

3.3.3.5 Major Constituents

In the next section of the form, indicate the category or categories that best describe the waste form, providing an estimated percentage by weight for each item marked. The weight percent does not need to be precise and can be based on the generation history of the waste rather than on specific analyses. However, the estimate of weight percentages listed on the form must total at least 90%. If 90% of the weight of the waste cannot be determined, constituents of the waste should be determined using gas chromatography/infrared analysis.

Chemical parameters:

total sulphur
total chloride
total fluoride
metals

3.4.1.3 For the following parameters, the analytical method used must be capable of attaining at least the following lower limits of detection.

Parameter	Lower Limit of Detection
Total chloride	0.1%
Ash	0.05%
Viscosity	5 cp
Heating Value	50 BTU/lb
PCBs	0.5 ppm
Lead	3 ppm
Beryllium	0.045 ppm
Mercury	0.08 ppm

3.5 Acceptance Criteria for Solid Waste

NOTE: Refer to Table 2 for specific analytical methods required by the K-1435 TSCA Incinerator Operating Permit.

3.5.1 General Criteria

3.5.1.1 The set of Waste Analysis Forms addressing solid wastes (Appendix C) describes the data required on such wastes, specifying the limits which must be met where such limits are applicable. The specific analytical procedures for obtaining waste characterization information are listed in the following narrative descriptions.

3.5.1.2 The contents of drummed solids should be shreddable, so that rebar, pipe, and concrete over 2 inches in diameter should be excluded. Uncontainerized bulk solids must be free of solid material over 4 inches in diameter. Material that cannot be compacted such as bolts or rebar, must not exceed 2 inches in diameter. If it cannot be shown that wastes are free of such material, the uncontainerized bulk solid waste must be screened prior to shipment.

3.5.1.3 The following parameters must be known to within ± 10% accuracy:

Physical parameters: ash content
heating value

Chemical parameters: total chloride
total fluoride
total sulfur
metals

3.6.1.3 For the following parameters, the analytical method used must be capable of attaining at least the following lower limits of detection.

Parameter	Lower Limit of Detection
Total chloride	0.1%
Ash	0.05%
Heating Value	50 BTU/lb
PCBs	20 ppm
Lead	3 ppm
Beryllium	0.5 ppm
Mercury	0.08 ppm

3.7 Acceptance Criteria for Radionuclides

3.7.1 Process Knowledge as Basis for Analysis

Analysis of waste streams for radionuclides is based on knowledge of the waste generation process. By reviewing the history of the facility in which the waste was generated, the activities that resulted in its generation, and the radionuclides which were involved in the process, a list of the specific radionuclides which may be expected to occur in the waste can be developed. This list may be developed for individual processes at a given facility or, if the operations are sufficiently similar, to encompass all waste from a given facility. Through a series of discussions with the waste generating sites which will ship waste to the TSCA Incinerator, two general lists of radionuclides were developed. The first list includes radionuclides which may result from operations at the Oak Ridge K-25 Site, the Paducah Gaseous Diffusion Plant, the Portsmouth Gaseous Diffusion Plant, the Oak Ridge Y-12 plant, Fernald Environmental Management Project, or the RMI Extrusion Plant. The second list is specific to the Oak Ridge National Laboratory. These two lists are shown on the respective forms in this Section. The rationale for developing the lists was similar to the approach taken to determine radionuclide parameters for environmental monitoring at the facilities (i.e., after examining the operations, the radionuclides considered to be potentially present in the waste were listed).

3.7.1.1 Required Analysis

Each waste stream shall be analyzed (refer to Section 3.7.4.) for all radionuclides considered as being potentially present, based on the waste generator's process knowledge.

3.7.1.2 Excluding Radionuclides from Waste Analysis List

The lists shown on the Waste Analysis Forms - Appendix D and Appendix E were developed to be as complete an inventory as possible of radionuclides that may be expected to occur in waste sent to the TSCA Incinerator. In many instances, the waste generator's knowledge of a specific process within the facility may indicate that some of the general list of radionuclides would not be expected to be present in the waste resulting from that process. In those instances, it is not necessary to analyze for the excluded radionuclides. If that applies to a given waste being shipped to the TSCA Incinerator, the waste generator should:

(a) write "NA" on the Waste Analysis Form in the blank beside the applicable radionuclide, and

3.7.2.3 Screening Methods

Screening analysis should be performed by gross liquid scintillation counting. Gross alpha/beta gas proportional counting may also be used, but, due to loss of volatile radionuclides during analysis, it is not the preferred method. A gamma spectroscopy screen shall also be performed and each identified activity shall be reported.

3.7.3 Reporting Analytical Results

All radionuclide analyses must be reported as the actual measurement result, whether positive or negative, with its associated uncertainty. Reporting results as "less than" values or as "not detected" is not acceptable. The precision of radionuclide analytical results shall be reported as a range, a variance, a standard deviation, a standard error, or a confidence interval.

3.7.4 Radioanalytical Procedures

3.7.4.1 Lower Limits of Detection

Methods used for analysis of radionuclides in waste must be capable of achieving the following lower limits of detection:

Radionuclide	Required LLD (pCi/g)	Radionuclide	Required LLD (pCi/g)
H^{3}	60	Pb^{210}	1
C^{14}	60	Th^{228}	1
P^{32}	5	Th^{230}	1
Co^{57}	0.1	Th^{232}	1
Co^{60}	0.5	Th^{234}	1
Kr^{85}	5	Pa^{234m}	1
Sr^{90}	5	U-alpha	1
Tc^{99}	20	Np^{237}	1
I^{131} [a]	0.7	Pu^{238}	1
Cs^{137}	1	Pu^{239}	1

[a] If the waste has been in storage for more than six months, analysis for I^{131} is not required.

3.7.4.2 Recommended Methods

The following procedures are recommended:

Parameter	Method
Np, Pu, Th,	ACD-1664, K-25 Site Analytical Chemistry
U-alpha	Department Technical Procedures Manual
Technetium-99	(1) EC-186, "Technetium-99 in Water (Radiochemical Method)," Martin Marietta Energy Systems Environmental and Effluent Analysis Manual
	(2) EC-260, "Technetium-99 in Air Filters (Radiochemical Method)," Martin Marietta Energy Systems Environmental and Effluent Analysis Manual
	(3) EC-355, "Technetium-99 in Sediment and Soil (Radiochemical Method)," Martin Marietta Energy Systems Environmental and Effluent Analysis Manual

4.1 Initiating a Request for Variance

4.1.1 Initial Discussions

When a generator considers requesting a variance from one of the waste acceptance criteria, the specific criterion in question and the difficulty in meeting it should first be discussed informally with the K-25 Site Waste Management Operations and TSCA Operations Division. These initial discussions will serve as an alert that a request for variance may be submitted, will assist in identifying the specific difficulties in meeting the criterion, and will allow investigation of possible options for supplying acceptable alternative characterization data as a substitute for the specific criterion.

4.1.2 Formal Request

If the informal discussion indicates that it may be possible to accept the variant waste through some other mechanism than that described in the waste acceptance criteria, a formal request for variance must be submitted to the TSCA Operations Division during the waste acceptance process. The request must contain the following information:

4.1.2.1 Specific criterion for which the variance is requested. The criterion may be an analytical procedure, a specific chemical, physical, or radiological limit, a sample collection procedure, or other criteria listed in Section 3.0.

4.1.2.2 Explanation of why the variance from the waste acceptance criteria is needed.

4.1.2.3 Indication whether the variance is needed for a single waste shipment or on a continuing basis.

4.1.2.4 Description of the method or limit being proposed as a substitute, including the type and quality of data that will be collected, as appropriate.

4.1.2.5 Comparison of the proposed method or limit with the published waste acceptance criteria, including evaluation of the comparative impacts on waste characterization activities, personnel exposures, and quality of characterization data.

4.1.2.6 Additional procedures or process controls that will be implemented at the generator facility as a result of the variance, if applicable.

4.2 Disposition of Requests

Requests for variances from the waste acceptance criteria will be reviewed and evaluated on an individual basis. If additional information is needed to adequately evaluate the impact on operations of granting the request, the applicable information will be requested and must be provided before disposition of the request can be made. Disposition of each request will be approved by TSCA Operations and will be made formally in writing. Variance to the Waste Acceptance Criteria can be granted by the TSCA Program Manager, Deputy Program Manager, Blend Master, or Burn Plan Manager. The actions that may be taken on an individual request are:

5.1.3 Nuclear Materials Transfer Documentation

The appropriate documentation for shipments of special nuclear materials must be completed when applicable and must accompany the shipments to the K-1435 TSCA Incinerator. The documents are as follows:

"Nuclear Materials Transportation Request" form DOE/NRC-741
"Request for Authorization to Ship Material to K-25" form UCN-16409

5.1.4 Material Safety Data Sheet

A Material Safety Data Sheet (MSDS) must be provided to the TSCA Incinerator personnel for compounds identified in the waste when the waste characterization analytical data or process knowledge information is available.

5.1.5 LDR Notification

As required by 40 CFR 268; use standard forms such as McCoy and Associates.

5.1.6 Operation Records

Files are maintained for each generator at the TSCA Operations Division offices at the K-25 Site. These files contain all correspondence, pretreatment information, DAC numbers and shipment schedules, shipment inspection information, and waste verification results.

5.2 Review of Waste Characterization Data

The TSCA Division reviews the waste characterization analytical data and process knowledge provided by the waste generator. The information is complied into a DAC package and is reviewed by the K-25 Site Industrial Hygiene, Health Physics, and Waste Managements groups to specify personnel protective equipment, and anti-C clothing. During the reviews, variances can be granted on a case-by-case basis. A representative from all four groups signs the DAC package after the review cycle is completed.

6.0 WASTE PACKAGING REQUIREMENTS

6.1 General Information

All material shall be packaged, labeled, and shipped according to Department of Transportation (DOT) regulations, the requirements of the Resource Conservation and Recovery Act Toxic Substances Control Act, and applicable state regulations.

6.2 DOT Regulations

All transport containers must comply with the DOT shipping regulations of Title 49 Code of Federal Regulations, and with DOE Order 5820.2A, Radioactive Waste Management.

6.3 Radiation Requirements

Individual shipping containers of waste must not exceed the following radiation levels:

6.3.1 The maximum dose equivalent rate at the surface of the container must not exceed 50 mrem/h.

6.3.2 The maximum dose equivalent rate at two feet from the surface of the container must not exceed 5 mrem/h.

6.3.3 The amount of transferrable contamination on exterior surfaces of the container must not exceed 1000 dpm/100 cm^2 for beta-gamma contamination or 200 dpm/100 cm^2 for alpha contamination.

6.5.3 Drum Freeboard Specification

In waste shipments contained in drums, the generator shall leave a minimum drum freeboard of 5%. This requirement will provide protection against drum damage due to weather-related phase changes, liquid expansion, and gas over-pressure.

6.5.4 Handling and Department of Transportation Requirements

Liquid wastes must be packaged in 17E specification bung drums to allow for easier access to and removal of the waste in the drum.

PCB containing wastes must be packaged in drums which meet DOT Specification and the requirements of 40 CFR 761. Present requirements are 17E for liquids and 17C for solids.

TABLE 1
SUMMARY OF WASTE INFORMATION

Hazardous Waste	Hazard	EPA Hazardous Waste Code
2,4-Dinitrotoluene	Toxic	D030
Heptachlor	Toxic	D031
Hexachlorobenzene	Toxic	D032
Hexachlorobutadiene	Toxic	D033
Hexachloroethane	Toxic	D034
Methyl Ehtyl Ketone	Toxic	D035
Nitrobenzene	Toxic	D036
Pentachlorophenol	Toxic	D037
Pyridine	Toxic	D038
Tetrachloroethylene	Toxic	D039
Trichloroethylene	Toxic	D040
2, 4, 5-Trichlorophenol	Toxic	D041
2, 4, 6-Trichlorophenol	Toxic	D042
Vinyl Chloride	Toxic	D043
Spent Halogenated Solvents, Sludges from the Recovery of Specific Solvents	Toxic	F001 and F002
Spent Non-Halogenated Solvents, Sludges from the Recovery of Specific Solvents	Ignitable	F003
Spent Non-Hazardous Solvents, Sludges from the Recovery of Specific Solvents	Toxic	F004
Spent Non-Halogenated Solvents Sludges from the Recovery of Specific Solvents	Ignitable, Toxic	F005
Waste Water Treatment Sludges from Electroplating Operations except from Specific Processes	Toxic	F006
Plating Bath Residues from the Bottom of Plating Baths from Electroplating Operations where Cyanides are used in the Process	Reactive, Toxic	F008

TABLE 1

"P" and "U" HAZARDOUS WASTE CODES

The basis for hazardous designation for all EPA Hazardous Waste Codes is derived from Tennessee Rule Chapter 1200-1-11-.02. The name of the substance is also found in Tennessee Rule Chapter 1200-1-11-.02.

"U" Hazardous Waste Codes								
U001	U028	U056	U083	U111	U137	U164	U191	U221
U002	U029	U057	U084	U112	U138	U165	U192	U222
U003	U030	U058	U085	U113	U140	U166	U193	U223
U004	U031	U059	U086	U114	U141	U167	U194	U225
U005	U032	U060	U087	U115	U142	U168	U196	U226
U006	U033	U061	U088	U116	U143	U169	U197	U227
U007	U034	U062	U089	U117	U144	U170	U200	U228
U008	U035	U063	U090	U118	U145	U171	U201	U234
U009	U036	U064	U091	U119	U146	U172	U202	U235
U010	U037	U066	U092	U120	U147	U173	U203	U236
U011	U038	U067	U093	U121	U148	U174	U204	U237
U012	U039	U068	U094	U122	U149	U176	U205	U238
U014	U041	U069	U095	U123	U150	U177	U206	U239
U015	U042	U070	U096	U124	U151	U178	U207	U240
U016	U043	U071	U097	U125	U152	U179	U208	U243
U017	U044	U072	U098	U126	U153	U180	U209	U244
U018	U045	U073	U099	U127	U154	U181	U210	U246
U019	U046	U074	U101	U128	U155	U182	U211	U247
U020	U047	U075	U102	U129	U156	U183	U213	U248
U021	U048	U076	U103	U130	U157	U184	U214	U249
U022	U049	U077	U105	U131	U158	U185	U215	U328
U023	U050	U078	U106	U132	U159	U186	U216	U353
U024	U051	U079	U107	U133	U160	U187	U217	U359
U025	U052	U080	U108	U134	U161	U188	U218	
U026	U053	U081	U109	U135	U162	U189	U219	
U027	U055	U082	U110	U136	U163	U190	U220	

APPENDIX A

7376

TSCA INCINERATOR OPERATIONS
WASTE ANALYSIS FORM
GENERAL INFORMATION

Disposal Number _____ Laboratory Number _____

General Plant _____

Department _____

Generator EPA ID No. _____

Quantity _____(Lbs. or Gal.) - Indicate one by circling

PCB _____ Non-PCB _____

Drum Numbers:

Prepared by _____ date _____

000135

APPENDIX B
TSCA INCINERATOR OPERATIONS
WASTE ANALYSIS FORM - PHYSICAL PARAMETERS FOR LIQUID WASTES

Disposal Number _____ Laboratory Number _____

Drummed Waste Certification: Minimum 1 year drum shelf life: [] yes [] no
Drum Liner Compatibility [] yes [] no
Minimum 5% drum freeboard: [] yes [] no

Specific Gravity _____ Heating Value (BTU/lb) _____

Flash Point (°F) _____ Ash Content (weight %) _____

Number of phases _____ _____%

_____% _____%

Parameter	Limit	Result
Viscosity (cp)	5000	_____
Corrosivity (Organic waste only)	< 6.35 (mm/yr)	_____
OR		
pH (aqueous waste only)	8-10	_____
PCB		_____ ppm or _____ WT%

Boiling Point (°F)	>100	_____
Freezing Point (°F)	<32	_____

METAL ANALYSIS

Metal (µg/g)	Result	Metal (µg/g)	Result	Metal (µg/g)	Result
Antimony	_____	Lithium	_____	Selenium	_____
Arsenic	_____	Magnesium	_____	Sodium	_____
Barium	_____	Manganese	_____	Thallium	_____
Copper	_____	Nickel	_____	Titanium	_____
Iron	_____	Silver	_____		

Prepared by _____ date _____

APPENDIX C
TSCA INCINERATOR OPERATIONS 7376
WASTE ANALYSIS FORM - PARAMETERS FOR SOLID/SLUDGE WASTE

sposal Number _____ Laboratory Number _____

PHYSICAL PARAMETERS

Parameter	Result
Ash Content (weight %)	_____
Heating Value	_____BTU/lb

CHEMICAL PARAMETERS

Parameter	Limit	Weight %	Parameter	Results
Total Chloride	75.0 %	_____	Phosphorus	_____ppm
Total Sulfur	10.0 %	_____	PCB	_____ppm or _____% WT
Total Fluoride	21.0 %	_____		

Provide the following information (if applicable and known) for any equipment from which PCB wastes are removed:

Location_____ Manufacturer_____
erial Number _____ Date removed from service_____

Does this waste contain brominated compounds? [] yes [] no

URANIUM ANALYSIS

Requirements: Duplicate uranium and U235 analyzes are required for criticality control.

Analysis #1		Analysis #2	
Total Uranium	_____ppm	Total Uranium	_____ppm
Uranium-235	_____% by weight	Uranium-235	_____% by weight

	Limit	Result	Uncertainty
Pu-238, Pu-239, Np-237	246 pCi/g or 4 ppb	_____	_____

Prepared by _____ date _____

7376

APPENDIX D
TSCA INCINERATOR OPERATIONS
WASTE ANALYSIS FORM - RADIONUCLIDE PARAMETERS
ALL SITES EXCEPT ORNL

Disposal Number _____ Laboratory Number _____

RESULTS NUCLIDE	UNCERTAINTY (pCi/g)	(pCi/g)	RESULTS NUCLIDE	UNCERTAINTY (pCi/g)	(pCi/g)
Tc^{99}	_____	_____	Pa^{234m}	_____	_____
Cs^{137}	_____	_____	U-alpha	_____	_____
Th^{228}	_____	_____	Np^{237}	_____	_____
Th^{230}	_____	_____	Pu^{238}	_____	_____
Th^{232}	_____	_____	Pu^{239}	_____	_____
Th^{234}	_____	_____	_____ ^	_____	_____
_____	_____	_____	_____	_____	_____

SCREENING ANALYSIS

Gross Radioactivity Measured _____ ± _____
(pCi/g)

^ Identify and quantify other radionuclides present in the waste, but not included on this list. Include explanation if any listed radionuclides are not expected to be present in the waste.

Prepared by _____ date _____

000138

APPENDIX F. CHECKLIST FOR GENERATORS

The following steps must be performed in order to ship waste to the TSCA incinerator:

_____ 1. Waste Sampling Plan prepared and approved by Incinerator Operations.

_____ 2. Waste Analysis form -Part I (General Information) completed.

_____ 3. Applicable Waste Analysis forms - Part II (specific physical and chemical characterization data) completed.

_____ 4. Waste Analysis form - Part III (Radionuclide Data) completed.

_____ 5. Request for Disposal/Storage of Waste Material and Equipment Form UCN-12463 is completed.

_____ 6. Uniform Hazardous Waste Manifest completed.

_____ 7. Uniform Hazardous Waste Manifest attachment for TSCA waste completed.

_____ 8. DOE/NRC form 741 for special nuclear material completed, if applicable.

_____ 9. UCN-16409 for special nuclear material completed, if applicable.

_____ 10. Material Safety Data Sheet(s) for waste form submitted as necessary.

_____ 11. Applicable data submitted to TSCA Operations for review.

_____ 12. Approval from TSCA Operations to ship waste granted.

_____ 13. Land Disposal Restriction attachment to Uniform Hazardous Waste Manifest, if applicable.

ATTACHMENT C

MARTIN MARIETTA

respondence

MARTIN MARIETTA ENERGY SYSTEMS, INC.

May 22, 1991

7376

Waste Generators

Loading Bulk Liquids Tanker

The liquid waste tanker can be filled by two different methods. The first method involves opening the tanker top dome and filling the tanker thru the top with a chemical hose and pumping system.

The second method involves filling the tanker through the rear loading/unloading piping as described by the attached procedure. The procedure also contains a description of the tanker and associated equipment.

Contact Fidel Perez (FTS 626-7734) if you have any questions.

Fidel Perez

Fidel Perez, K-1435-1, MS 7345

FP:tlc:TO91-2074

Attachment

000140

2 IN. AIR OPERATED VALVE IN THE SPILL DAM AND THE SECURITY VALVE AT THE REAR OF THE TANKER ARE OPENED AND CLOSED BY PULLING AND PUSHING THE LEVER LOCATED IN THE TANKER SIDE COMPARTMENT.

PROCEDURE

1. Place chocks at the tanker rear tires.

2. Connect the grounding cable from the facility structure to the tanker.

3. Wear the appropriate PPE for handling the liquid waste.

4. Place a drip pan under the tanker rear valves and connect the loading hose to the 4 in. quick connect. Note: Paducah requires a 2 in. quick connect.

5. Open the appropriate valves between the source tank and the transfer pump.

6. Slowly open the loading pump discharge valve and check the hose and hose connections for leaks. Close the necessary valves to isolate any leaks. Cleanup the leaks and repair the leak sources. Proceed with the procedure when there are no leaks.

7. Open the unloading/loading 4 in. valve connected to the loading hose.

8. Pull the lever in the side compartment until the lever locks. This action opens the rear security valve and the 2 in. pressure/vent valve at the top of the tanker.

9. Open the 2 in. valve at the rear of the tanker to provide a vent while loading the tanker.

10. Loosen the bolts on the full opening dome at the top of the tanker.

11. Turn on the pump and transfer the bulk liquid waste into the tanker.

12. Visually verify the level in the tanker to insure that the tanker does not overfill. Wear the necessary protective equipment when inspecting the liquid level by opening the top dome.

13. Stop the loading pump when the liquid level is one foot below the top of the tanker.

14. Close the tanker security valve by pushing the lever in the side compartment.

15. Close the tanker unloading/loading valve.

16. Close the pump discharge valve and drain the loading hose into a drip pan or bucket and pour the liquid waste into the open tanker dome, the source tank, or into an appropriately labeled drum.

17. Disconnect the loading hose from the tanker and catch any residual liquid waste in a drip pan.

18. Install the cover cap on the tanker valve.

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Co.	Co. MMES
Dept.	Phone # (615) 241-2100
Fax # 513-738-6958	Fax #

7376

Oak Ridge K-25 Site
TSCA Division, Operations Department
Operating Procedure

Operation of Vacuum Tanker
xxxx-OP-xxxx
Rev.0, Draft 1

Prepared by: William G. Melton Independent Review By:_____ Date:___

Approved by:_____ Date:_____

Walked down by:_____ Date:_____

Effective Date: _____ Limits on Effectivity:

Procedure Categories:

In Hand: Yes _ No _
___ Safety-Related/Safety Systems
___ Quality-Related
___ Nonquality-Related

Record of Changes

Change No.	Affected Pages	Approved Date	Expiration Date	Change No.	Affected Pages	Approved Date	Expiration Date

Next 3-year review required no later than: _____
Date

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6.1 (Continued) Pre-Startup Operations

6. Verify that vacuum pump oil is at acceptable level via sight glass on vacuum pump.

7. Check that the following are closed:

- Rear knife valve
- Rear gate valve (hydraulic)
- All manways

8. Inspect pressure gauges for plugging.

9. If the vacuum pump has not been used for one week or more, then prime the pump manually.

   A. Remove crank handle located to the right of pump filler cap.

   B. Remove oil filler cap.

   C. Insert crank handle into oil filler opening.

   D. Press handle down.

   E. Turn crank until small ball in oil-flow indicator rises and falls.

   F. Turn crank an additional 80 rotations.

10. Open the primary shutoff butterfly valve via the remote air actuator switch located next to the hydraulic valve pump on side of tanker.

11. Verify that purge line valve located at rear of tanker is closed.

12. Attach hoses and attachments as required.

6.2 Operation of Vacuum Pump

1. Disengage clutch lever by pushing toward engine.

2. Set throttle at 1-1/2 inches from gauge plate.

6.2 (Continued) Operation of Vacuum Pump

10. Place "Pressure/Vacuum" valve in open position (Handle pointing toward tanker).

CAUTION:

Engaging clutch at engine speeds other than 1500 to 1800 RPM could result in failure of the clutch and other drive line components.

11. Engage clutch by pulling handle away from engine.

12. Check pressure gauge reading.

13. If pressure gauge reads a vacuum, then

    continue with startup.

14. If not reading a vacuum, then

    recheck position of "Pressure/Vacuum" valve.

CAUTION:

Increasing engine speed in excess of 2100 RPM could result in damage to the engine.

15. Adjust engine throttle knob until engine reaches 2100 RPM.

16. Recheck all manways for leaks, and

    tighten if needed.

14. Close hydraulic discharge valve.

    A. Turn knob on hydraulic pump counter-clockwise.

    B. When valve closes, then

    retighten knob.

6.4 Pumping From Tanks

1. If tank is equipped with a drain outlet, then connect transfer hose to tank outlet.

2. If not equipped with outlet, then place long wand into tank.

3. Perform startup operations in sections 6.1 and 6.2.

4. Open hydraulic discharge valve.

    A. Turn knob on hydraulic pump clockwise until tight.

    B. Pump until valve opens.

5. If tank is equipped with a drain outlet, then open drain valve.

6. Open the knife valve located at the rear of the tanker.

7. Allow tanker to fill to desired level.

8. Close tank drain.

9. Close the knife valve at the rear of tanker.

10. Close hydraulic discharge valve.

    A. Turn knob on hydraulic pump counter-clockwise.

    B. When valve closes, then

    retighten knob.

11.0 REFERENCES

11.1 Use References

11.1.1

11.2 Source References

11.2.1

11.3 Developmental References

11.3.1

ATTACHMENT D

7376

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FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION

PROJECT SPECIFIC HEALTH AND SAFETY PLAN

FOR

THE LIQUID WASTE
SAMPLING, TRANSFERRING, AND SHIPPING

EMERGENCY PHONE: 738-6511

RADIO: "CONTROL" (202)

JULY 1994

APPROVAL:

8-1-94

Robert Schulten, Project Manager — Date
Waste Minimization and Disposal Planning

8/01/94

Daryl C. Mills, Manager — Date
Occupational Safety & Health Compliance

7/29/94

Richard E. Maurer, Health and Safety Manager — Date
RSO

FERMCO
V&M&DP
RECEIVED
AUG 2 1 55 PM '94

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Attachment G PSHSP Acknowledgement Form

HEALTH AND SAFETY PLAN
FOR
THE LIQUID WASTE SAMPLING, TRANSFERRING, AND SHIPPING

1.0 INTRODUCTION

The provisions of this Project Specific Health and Safety Plan (PSHSP) are to be used for the Liquid Waste Sampling, Transferring, and shipping project.

All personnel entering the area (south of the 4A Warehouse, Building 77) will be required to be briefed in the requirements of this Project Specific Health and Safety Plan. In addition, all personnel will be required to be oriented on the Health and Safety Requirements Matrix (Attachment A). All personnel must sign an acknowledgement log stating they have been oriented on the requirements of this plan, understand, and will abide by the provisions of this plan.

1.1 PROCESS LOCATION

The ignitable and combustible liquid wastes will be pumped into bulk storage tanks for consolidation, and sampling prior to shipping in an area located south of the 4A Warehouse (Building 77) and north of Building 79. This area located on "E" Street between 1st and 2nd Streets is located in a Radiological Controlled Area. Access and all work performed in this area will be controlled by the Operations Supervisor.

1.2 PROJECT DESCRIPTION

Activities covered by the provisions of this PSHSP are:

- Transfer waste liquids from drums to mobile bulk storage tanks
- Consolidating sludge and solids within drums
- Sampling and characterizing the commingled waste
- Shipment of the material to the incinerator

1.2.1 Project Objective

The overall objective of this project is for FERMCO Operations Personnel to perform the work necessary to consolidate the ignitable and combustible liquid waste from the approximate 2,500 drums on-site into bulk batches for final off-site disposal (incineration) of the material.

1.2.2 Description

Two waste streams currently stored at the FEMP are ignitible and combustible liquid wastes. These mixtures are made up of waste oils and spent solvents (both waste streams contain listed Resource Conservation and Recovery Act / Hazardous Wastes - RCRA).

Six mobile tanks, each having the capacity of approximately 21,000 gallons, will be located on a sealed and diked area, south of the 4A Warehouse, Building 77. Drums of ignitable and combustible liquids will be taken to this area and pumped into the bulk storage tanks for consolidation and sampling prior to shipping.

Pumping will be accomplished by using an air operated diaphragm pump with stainless steel wetted areas and teflon diaphragms. This type of pump will be used for both the ignitable and combustible liquid wastes.

2.0 ORGANIZATION STRUCTURE AND KEY PERSONNEL RESPONSIBILITIES

2.1 MANAGER, OCCUPATIONAL SAFETY AND HEALTH COMPLIANCE - Daryl Mills. Responsible for the oversight of all safety and health compliance. Rick Maurer is Daryl Mills' alternate.

2.2 MANAGER, RSO HEALTH AND SAFETY - Richard E. Maurer. Responsible for auditing RSO health and safety programs. Acts as the single point of contact for all environmental, safety, industrial hygiene, fire, and radiological issues/concerns. Wayne Mallory is Richard Maurer's alternate.

2.3 PROJECT MANAGER - Robert Schulten. Responsible for all aspects of the safe transfer, sampling, and shipping of the ignitable and combustible liquid waste. Robert Schulten's alternate is Kevin Crosson.

2.4 OPERATIONS MANAGER - Kevin Crosson. Responsible to the Project Manager for the day-to-day operation of staff. Provide technical advice coordination and progress planning and scheduling.

3.0 SITE CONTROL

3.1 WORK AREA REQUIREMENTS

During the conduct of activities, various work areas will be established. The following sections provide a brief description of these areas.

3.1.1 Radiological Areas

Entrances to, and perimeters of, radiological areas will be defined by yellow and magenta rope or, where practical, by physical structures, such as fences or buildings. All radiological areas will be identified by signs having the standard radiation symbol, the trifoil, on a yellow background.

3.1 WORK AREA REQUIREMENTS (Continued)

The following lists the types of radiological areas to be encountered during the performance of activities covered by this PSHSP:

Controlled Area - a controlled area is any area, room. or enclosure to which access is controlled to protect individuals from exposure to radiation or radioactive materials, or where radioactive materials may be present. Surface contamination, radiation, and airborne contaminants are less than applicable limits for further posting. Personnel exposure is not expected to exceed 100 mRem in one year while working in a Controlled Area. The following radiological areas are found within Controlled Areas.

Radioactive Material Area - any area, room, or enclosure where radioactive material is used, handled, or stored.

Fixed Contamination Area - any area, room, or enclosure where fixed contamination exists greater than limits, but removable contamination is less than the limits. These areas may be outside of a Controlled Area.

Contamination Area - any area, room, or enclosure where removable contamination levels exceeds applicable limits, but are less than 100 times these values.

3.1.2 Exclusion Zone

An exclusion zone or radiologically controlled area (based on survey results) is a previously established zone of high potential hazard due to physical, radiological, or chemical hazards. Access to an exclusion zone is restricted to employees who require entrance to perform their job function. An exclusion zone or radiologically controlled area will be marked with early recognizable devices, such as: ropes, tape, or fence. Signs shall be posted indicating the type of exclusion zone or radiologically controlled are (based on Industrial Hygiene and/or Radiological survey results) and the specific protection requirements. Exclusion zones or radiologically controlled areas may be expanded if additional hazards are detected.

4.0 TRAINING

Training requirements specific to each task to be performed are outlined in the Health and Safety Requirements Matrix provided as Attachment A to the PSHSP.

4.1 HAZARD COMMUNICATION

4.1.1 Material Safety Data Sheets (MSDSs)

MSDSs for all products or chemicals to be used on the job shall be provided to FERMCO (Industrial Hygiene) for review prior to the start of the project.

4.1 HAZARD COMMUNICATION (Continued)

A complete set of MSDS sheets for all chemicals used on this project shall be maintained by the Facility Owner at the 4A Warehouse.

4.1.2 Job Briefings / Safety Meetings

All personnel involved in this project shall be given a PSHSP safety briefing prior to receiving authorization to begin work. This PSHSP safety briefing shall include review of this Project Specific Health and Safety Plan. A prework/kick off safety meeting will be conducted by the RSO Health and Safety Manager (HSM) with the Liquid Waste Sampling, Transferring, and Shipping Manager, and will satisfy the requirements for this PSHSP safety briefing.

As a minimum, safety meetings shall be held weekly. The safety meetings will be conducted by the Project Supervisor in Charge or designee. Written documentation of the briefings and attendance sheets will be maintained as part of the project.

4.2 RECORDS

Documentation of training classes attended by project personnel shall be maintained by the Centralized Training Department.

4.3 VISITORS

Anyone coming to the work site with the sole purpose of observation or viewing the activity in progress (hands-off inspections) is considered a "visitor". Visitors can not operate any equipment or supervise/oversee any work activity.

Visitors shall be oriented to the hazards of the site and the control measures through the same means as all other project personnel.

Visitors will comply with the training requirements specified for the activities in progress. Visitors who need to enter the contamination area (or Radiation or Airborne Radioactivity Areas) must receive authorization from the Manager of Radiological Control and the Manager of Radiological Compliance.

5.0 MEDICAL MONITORING AND SURVEILLANCE

5.1 REQUIREMENTS

All personnel will be required to participate in the FEMP medical monitoring program.

5.2 RECORDS

The FERMCO Medical Services Department will maintain a copy of all medical records.

6.0 HAZARD ASSESSMENT

This section addresses the identified health and safety hazards associated with the conduct of activities covered by this PSHSP.

6.1 RADIOLOGICAL ISSUES

Work activities which involve the disturbance of fixed radioactive surface contamination, or which may introduce other hazards (outside the scope of this operation), will require additional evaluations, planning, and controls.

6.1.1 Uranium

Uranium can be found in most buildings and in the soils and water on-site. Uranium is a radioactive material and in its soluble form is highly toxic. Soluble uranium is absorbed through the skin and effects the kidneys. Insoluble uranium is chiefly absorbed by inhalation where as soluble uranium is also readily absorbed through the skin.

Contaminant:	Exposure-Potential Mode:	Exposure Limit(1):	Action Level(2):
Uranium	Inhalation/ skin contact/ ingestion	$2x10^{-11}$uCi/cc	4 DAC-Hrs/wk or 1 DAC

Notes:

(1) 1 DAC (derived air concentration) = $2x10^{-11}$uCi/cc

(2) 1 DAC-Hr = Exposure to concentration of 1 DAC for 1 hour

(3) Any circumstance involving the possibility of an intake of radioactive materials by inhalation, ingestion, or absorption shall immediately be reported to the process supervisor. The Supervisor shall immediately report the circumstances of possible radioactive materials intake to ES&H Radiological Control Department for evaluation. When the suspect material is uranium, the involved personnel shall report to the Urine Sampling station at the end of their shift to complete an Incident Investigation Report (IIR) (Form NO. FS-F-1458), and submit an incident urine sample. The involved personnel shall also report to the Urine Sampling Station at the start of their next shift to submit a follow up urine sample. When the suspect material is other than uranium, the involved personnel shall report to the Dosimetry Group of the Radiological Control Department for further determination of actions. Employees are responsible for complying with additional requirements as specified by the Radiological Control Department.

6.2 INDUSTRIAL HYGIENE ISSUES

6.2.1 Heat Stress

Heat stress is a concern and may limit work for employees in anti-C clothing and respirators when outdoor dry bulb temperatures exceed 80°F, which may occur anytime from May through September. When ambient temperatures exceed 80°F, Industrial Hygiene shall be contacted to review and/or control measures to minimize heat stress. Time limits may be extended if an air-cooled vest, ice vest, or vortex cooled hooded airline respirator is used. Ice vest users will periodically (every hour) have to leave the work area to exchange melted ice packs for frozen ones. When personal cooling devices are not worn, then time limits specified by Industrial Hygiene will be utilized.

Personnel should become aware of the symptoms of heat stress and be able to recognize these symptoms in themselves and in other workers. Symptoms of heat stress include muscle cramps, fatigue, weakness, loss of coordination, nausea; and in later stages, hot/dry skin (absence of sweating), delirium and seizures.

6.2.2 Cold Stress

Tasks may be conducted when temperatures could present the potential for cold stress situations. Personnel should become aware of symptoms of cold stress and be able to recognize these symptoms in oneself and in other workers.

During cold weather, special care should be taken to dress appropriately for the anticipated weather conditions. Specific attention will be given to the hands and feet and other exposed body parts to prevent frostbite. When equivalent chill temperature drops below 0°F, Industrial Hygiene shall be contacted to review and/or control measures to minimize cold stress.

When a worker desires to wear a coat (or other type of cold weather gear) and anti-contamination clothing is required, cold weather gear must be worn <u>under</u> the anti-contamination clothing.

6.2.3 Lifting

Lifting is the most common task associated with lower back pain. Many injuries do not result from a single incident, but develop over a period of time. Personnel should know their lifting limits and the object to be lifted should be lifted by such factors as: the rate and distance to be traveled, the amount of time required, and the center of gravity necessary to handle the load safely. A worker shall NOT lift more than 50 pounds without another person or mechanical help.

6.2.4 Slips, Trips, and Falls

Always walk where you have a firm footing, taking short steps in slippery places. Avoid carrying anything bulky that will obstruct your vision. Look for falling, slipping, and tripping hazards. All work paths and work areas shall be kept clear of slip and trip hazards. If workers must work in or near areas where these hazards and the hazards cannot be removed, then proper barricades and signs shall be used to route personnel away from the hazard.

6.3 SAFETY ISSUES

6.3.1 Illumination

Areas accessible to employees shall be lighted to not less than the minimum illumination intensities listed in the following table while any work is in progress:

Foot Candles	Area of Operation
5	General site areas
5	Indoors: Warehouses, corridors, hallways, and exitways
10	General shops - mechanical and electrical areas

6.3.2 Sanitation

An adequate supply of potable water shall be provided in the Plant 6 office. The containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a tap. Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not for any other purpose. A supply of disposable cups shall be available at the water container as well as a refuse container to dispose of them.

6.3.3 Fire Protection

The potential for fires and explosions may occur during tasks. To protect against explosions and fires, the environment will be monitored for explosive atmospheres and flammable vapors; all potential ignition sources will be kept away from areas where explosive or flammable environments may occur; and work practices that will minimize the agitation or release of chemicals will be used.

Storage, use or transfer of flammable and/or combustible liquids shall be in accordance with NFPA 30, Flammable and Combustible Code, or approved by FERMCO Fire Protection.

6.3 SAFETY ISSUES (Continued)

Combustible scrap and debris shall be removed at regular intervals during the course of construction. Disposal shall be in accordance with established FERMCO requirements.

The storage of combustible materials shall be kept at least 50 feet from any building or structure.

7.0 HAZARD CONTROL

7.1 ENGINEERING / ADMINISTRATIVE CONTROLS

When feasible, administrative controls will be used to control physical, chemical, and radiological hazards. Administrative controls anticipated to be used during the work covered by this Project Specific Health and Safety Plan (PSHSP) include:

- Comprehensive Environmental Occupational Safety and Health Procedures (ESH-1-1000)
- Work plans for the FEMP Liquid Mixed Waste Sampling, Transferring, and Shipping Project
- FERMCO Work Permit
- Radiological Work Permit
- Project Specific Health & Safety Requirement Matrix
- Use mechanical equipment when moving material

Administrative controls (used to address potential hazards) include: this PSHSP, all FERMCO requirements, and operational procedures.

7.2 PERSONAL PROTECTIVE EQUIPMENT/RESPIRATORY PROTECTION

The level of personal protective equipment (PPE) and respiratory protection to be worn by field personnel involved with task activities is defined on an activity basis in the Health and Safety Requirements Matrix.

Modification to the protective equipment ensembles may be necessary for specific operations or when unexpected conditions arise. In these cases, changes will be made based on review of specific hazards, weather, work conditions, operating requirements, and air monitoring at the work area. In addition, respiratory protection may be upgraded or downgraded, as deemed appropriate by the RSO Health and Safety Manager or designee within the constraints of this PSHSP. With the written approval of the RSO Health and Safety Manager, substitution of some PPE items may be appropriate. Approved written revisions will be made in the PSHSP and PSHSRM.

8.0 DECONTAMINATION

8.1 SITE DECONTAMINATION REQUIREMENTS

Area decontamination of radiological and some chemical contaminants should be done with a combination of HEPA-filtered vacuum units, wet wiping techniques, approved detergents or soaps, and the use of sealants or fixatives when immediate decontamination is not feasible or practical.

8.1.1 Personal

Personal contamination on the skin, or on the inner personal company-issued clothing shall require contact with a Radiological Control Technician (RCT) immediately. Detection of a count rate above background with a field portable monitoring instrument ("frisker") should alert personnel of possible contamination. The ambient background count rate is not to exceed 300 counts per minute (CPM) in the location of the personnel monitoring. If background levels exceed 300 CPM, proceed to an area of lower background to perform the personal monitoring of the potentially contaminated individual. Surface contaminated skin or clothing is to be limited to 1000 dpm/100 cm^2. Ideal background levels in the monitoring area are less than 100 CPM.

Responding RCTs are to follow appropriate FEMP requirements for personnel decontamination, event notification and reporting of radiological control occurrences. Contaminated personnel are to initiate a bioassay analysis for assessing potential internal radiation dose from possible inhalation, ingestion, or absorption of radioactive materials.

8.1.2 Equipment

Equipment for decontamination of radiological hazards shall be kept available in the area surrounding the controlled areas (Contamination Reduction Zone).

Equipment must be monitored by a RCT prior to the removal from a radiologically controlled area. Equipment found to be contaminated when exiting a controlled point will be bagged and taken to the FEMP Decontamination Facility for decontamination.

9.0 EMERGENCY / CONTINGENCY PLANS

9.1 REPORTING

9.1.1 Emergency Numbers

9.1.1.1 On-Site (FEMP) Emergencies

NAME	FEMP TELEPHONE NO.	RADIO*
Ambulance	738-6511	CONTROL
Hospital	738-6511	CONTROL
Fire	738-6511	CONTROL
Security	738-6511	CONTROL
Emergency Response	738-6511	CONTROL
RSO Health & Safety Manager	738-6405	Pager 554-5516
Industrial Hygiene	738-6207	357
Radiological Control	738-6257/6577	355
Fire and Safety Inspectors	738-6235	303
Assistant Emergency - Duty Manager (AEDO)	738-6295/6431	202/CONTROL
Accountability Center	738-6202	

* Call numbers listed are for FERMCO frequency 2.

9.1.2 Site Notification Procedures

All on-site (FEMP) emergencies shall be reported to the FERMCO "Communication Center" to ensure rapid response. A means to report an emergency shall be available at all work locations whenever personnel are working. This may be accomplished by one of the following methods:

- Phone 738-6511
- Activate a local site fire alarm station
- Radio to "Control"

9.1 REPORTING (Continued)

Any injury, no matter how minor, shall be reported immediately to FEMP Medical for evaluation or treatment. The injured employee shall be accompanied to medical by the supervisor in charge or designee. The FERMCO RSO Health & Safety Manager shall be notified as soon as possible after the injury/accident has occurred.

Employees working on-site will be notified of emergency or abnormal conditions by the plant wide alarm system and radio announcements. This announcement follows the sounding of the site alarm horn signal, 3-3.

9.1.3 What to Report

The following are examples of emergencies that would justify calling and reporting an emergency:

- Serious Injury
- Injury Complicated by Contamination
- Chemical/Radiation Release
- Chemical Splash (Eye and Skin)
- Any Fire
- Major Property Damage
- Detrimental Weather Conditions
- Property Damage
- Unusual Occurrence(s)

When an emergency or abnormal condition is observed, personnel shall contact the Communications Center at extension 6511 or via radio (CONTROL) for on-site emergencies. **Stay on the phone line until the dispatcher hangs up.**

The following information **must** be given to the Communication Center operator:

- Name
- Badge number
- Location where emergency has occurred
- Nature of the emergency
- Number of personnel with injuries
- Unusual conditions (odors, symptoms, vapors, smoke)
- Current status of the emergency

9.2 EVACUATION ROUTES / ACCOUNTABILITY

9.2.1 Rally Point Accountability

Should a situation require an emergency evacuation of the work area, all equipment should be turned off (if possible) and left in place. On-site personnel should immediately proceed to the nearest established rally point as identified on the map found in Attachment B. The primary rally point is no. 5 and the alternate rally point is no. 3.

9.2.2 In-Place Accountability

When in-place accountability is required, employees shall contact his or her supervisor and report their current position. The supervisor in charge shall report the names of any unaccounted personnel to the Project Manager within 10 minutes.

9.3 EMERGENCY EQUIPMENT

9.3.1 FEMP Site Equipment

The FEMP Medical Facility is staffed and equipped to handle most types of medical emergencies that would occur during a task. The medical facility is staffed with Emergency Medical Technicians (EMT) and is equipped with an ambulance to transport the injured person to the nearest off-site hospital should extended or specialized treatment be necessary.

The FEMP Medical Facility is located at the east end of the first floor of the ES&H Building (Building 53). The location of the FEMP Medical Facility can be seen in Attachment C.

9.4 EMERGENCY RESPONSE

The FEMP Emergency Services will handle all on-site emergencies. Any request for emergency help should be requested by telephone (738-)6511 or on any FEMP radio frequency by calling "CONTROL".

9.4.1 Medical Emergencies

The FEMP medical department personnel shall serve as the first aid response team. The emergency site ambulance shall serve as the first-aid person, as they can respond within 3-4 minutes to FEMP site emergencies.

9.4.2 Fire Emergencies

All work sites shall maintain effective communication to summon fire fighting assistance. Access to the work area shall be maintained at all times to permit fire trucks and fire fighting crews to safely approach the fire emergency.

9.4 EMERGENCY RESPONSE (Continued)

Only trained personnel shall attempt to operate any fire fighting equipment and only when the fire is clearly within the capability of the fire fighting equipment.

The FEMP Emergency Response Team (ERT) will also respond to all on-site fire emergencies. For any fire emergency at FEMP, call (738-)6511.

9.4.3 Explosion Emergency

When an explosion has occurred the following actions are to be taken:

- Activate nearest fire alarm if possible. Note: Notify other employees by alternate method if fire alarm is not available
- Evacuate building or work area
- Proceed to an appointed rally point
- If qualified, render first aid to any injured personnel
- Instruct all persons in transit to avoid the work area and surrounding area
- Contact CONTROL by radio or phone (6511)
- Call for medical assistance if necessary
- Report to supervisor for accountability

9.4.4 Chemical Emergency

9.4.4.1 Splashes

Flush the effected area with clean water for 15 minutes. Report to FERMCO Medical Services.

9.4.4.2 Personal Contamination

When contaminated with a corrosive material, flush the affected area with clean water for 15 minutes. Report to FERMCO Medical Services.

9.4 EMERGENCY RESPONSE (Continued)

All instances of personal chemical contamination shall be reported to Industrial Hygiene, RSO Health and Safety Manager, and the Assistant Emergency Duty Officer.

When contaminated with other materials, contact Industrial Hygiene and remain at the work location until a representative of Industrial Hygiene arrives and provides further instructions.

9.4 EMERGENCY RESPONSE (Continued)

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9.4.5 Radiological Emergencies

9.4.5.1 Releases

The release area shall be evacuated. The supervisor in charge, Assistant Emergency Duty Officer, Radiological Control Technicians, and RSO HSM shall be notified of the release.

9.4.5.2 Personal Contamination

Contamination should be avoided where possible by making minimum contact with the contaminant. All instances of personnel radiological contamination must be reported to Radiological Control, RSO Health & Safety Manager, and the Assistant Emergency Duty Officer.

9.4.6 Accident Investigation

Any injury or accident shall require the supervisor to complete an accident report. This report shall be completed within 24 hours of the event and forwarded to the FERMCO Worker's Compensation Coordinator at site Mail Stop 31. Should a serious accident/injury occur, the involved area should not be disturbed until approved by the RSO Health & Safety Manager.

10.0 CHANGES TO THE PSHSP

This Health & Safety Plan for RSO activities is based on information available at the time of preparation. It is important that this plan be routinely reassessed by supervision, project management, and the RSO Health & Safety Manager. In addition, unexpected conditions/events may arise which require reassessment of the health & safety issues. Upgrading or downgrading of precautions, personal protective equipment, etc. identified in this plan must be approved in writing by the RSO Health and Safety Manager or designee upon consultation with Subject Matter Experts (SMEs) (i.e. Industrial Hygiene, Rad Engineering). Amendments to this plan are not required for such changes in activity; however, formal documentation of the change must be made.

Unplanned operations and/or changes in work scope shall require a review and may require an amendment to the Project Specific Health & Safety Plan. All amendments must be approved by the RSO Health & Safety Manager and the Manager of Occupational Safety & Health Compliance.

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10.1 CONTROL OF HEALTH & SAFETY PLAN

For the purpose of ensuring that all personnel are informed of any changes in the scope of this Health & Safety Plan, CONTROLLED copies of this document shall be maintained by ES&H Document Control. Only essential personnel shall maintain controlled copies of this document. The following is the list of personnel with the controlled copies of this PSHSP.

Project Manager, Robert Schulten
Operations Manager, Kevin Crosson
Health & Safety Manager, Richard E. Maurer
Occupational Safety & Health Compliance Manager, Daryl Mills
Radiological Engineering (RSO Support), Dave Allen
Medical Services, Doran Christensen
DOE, John Simak
Industrial Hygiene Technician Manager, Jack Patrick
Industrial Hygiene, Sherman Russell

Changes, corrections, and/or additions not directed through ES&H Document Control will not be considered "controlled and approved". Operations conducted under such plans will be subject to work stoppage until control numbers are assigned.

10.2 REVIEW OF CONTENTS

This Project Specific Health and Safety Plan will be reviewed on a quarterly basis, as a minimum, by the RSO Health and Safety Manager for currency and applicability to the job task. Required revisions (only affected pages) will be submitted to ES&H Document Control for updating and distribution.

ATTACHMENT A
PROJECT SPECIFIC
HEALTH & SAFETY REQUIREMENTS MATRIX

HEALTH AND SAFETY REQUIREMENTS MATRIX

PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

The requirements listed in Section 1.0 of this matrix apply to all activities addressed on this matrix.

ACTIVITY (TASKS)	HAZARD IDENTIFICATION	FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED	PERSONAL PROTECTIVE EQUIPMENT	TRAINING REQUIREMENTS	MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS	ADMINISTRATIVE & ENGINEERING CONTROL MEASURES	PERMIT(S)	DECONTAMINATION & DISPOSAL PROCEDURES
1.0) General Project 1.1) Minimum requirements to access work site	• Uranium contamination • General industrial safety hazards	• Thermoluminescent Dosimeter (TLD) required for entry into the controlled area • All personnel must monitor for uranium contamination prior to leaving the controlled area • Air monitoring where applicable as determined by Industrial Hygiene	• FERMCO issued clothing • Safety glasses w/rigid side shields • Steel toed safety shoes • Hard hats	• Site GET Training • Site Worker Training • RW I or RW II for unescorted entry into the controlled area • RW II for work in the controlled area • 24 Hour Supervised Field Experience • 8 Hour Supervised Training for Supervisory Personnel • Orientation of Project H&S Requirements Matrix • Orientation on Project Specific MSDSs • Training required to operate specialized equipment • Site NVO.325 Training required for supervisors required to load waste containers	• FERMCO must have proof of physical examination signed by a physician • Initial, bi-monthly, and termination urinalysis • Initial, annual, and termination in-vivo	Provide warning signs and barriers to establish work area		• FERMCO supplies respirator cleaning facility • FERMCO supplies bags and drums for disposition of contaminated waste • All tools, equipment, and materials must be monitored for uranium contamination prior to leaving the controlled area • Unpackage as much material as possible prior to entering the controlled area

The requirements of this document are based upon current conditions and/or operations in areas near the planned work zone. This document is to be used as an aid to assist in understanding the requirements of the project. This document does not relieve the project management of planning for or providing a safe work site. This document does not relieve the project management from recognizing and complying with other appropriate state, federal and FEMP regulations.

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HEALTH AND SAFETY REQUIREMENTS MATRIX

PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

The requirements listed in Section 1.0 of this matrix apply to all activities addressed on this matrix.

ACTIVITY (TASKS)	HAZARD IDENTIFICATION	FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED	PERSONAL PROTECTIVE EQUIPMENT	TRAINING REQUIREMENTS	MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS	ADMINISTRATIVE & ENGINEERING CONTROL MEASURES	PERMIT(S)	DECONTAMINATION & DISPOSAL PROCEDURES
2.0) Testing of drum waste to verify compatibility prior to the waste being co-mingled (Continued on next page)	Contamination due to the contact with waste. Exposure to air borne vapors	• Permits will specify the type of air and personal monitoring. • FERMCO (IH) to perform initial real-time monitoring with detector tubes and photoionization detector (PID) when drums are opened. • Samples collected and testing performed to ensure PPE is sufficient for workers protection. • FERMCO IH to perform BZ monitoring during initial sampling/testing of each drum lot to document exposure to the worker	• Respiratory protection as required by IH based on materials being handled and air monitoring results • Anti-C coveralls must be chemically resistant based on material and potential for skin contact • Chemical resistant gloves to be specified by IH based on materials being sampled • Latex rubber shoe covers • Cotton inner gloves and latex/vinyl surgical gloves • Leather palm gloves when handling sharp edge objects	Respirator training and quantitive fit test		• Provide warning signs and safety barricade to establish exclusion zone • Compatibility testing to be conducted inside an approved laboratory fume hood	Chemical Hazardous Material Work Permit	• Disposable PPE to be disposed of as possible RCRA waste • Degreasing soaps and water required to decontaminate reusable PPE and equipment • Workers shall wash hands and face before break, lunch, and at the end of the shift
	Heat stress	Physiological monitoring of workers for control of heat stress	Cool vest when heat stress controls are necessary		Work/rest regimen for heat stress control if necessary			

HEALTH AND SAFETY JIREMENTS MATRIX

PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

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ACTIVITY (TASKS)	HAZARD IDENTIFICATION	FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED	PERSONAL PROTECTIVE EQUIPMENT	TRAINING REQUIREMENTS	MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS	ADMINISTRATIVE & ENGINEERING CONTROL MEASURES	PERMIT(S)	DECONTAMINATION & DISPOSAL PROCEDURES
2.0) Testing of drums waste to verify compatibility prior to the waste being co-mingled (continued)	Skin/eye contact with organic solvents and oily sludges		Respirator protection as required by IH based on monitoring results			Eye wash/safety shower required within 10 seconds or 100 foot of the operator requiring the handling of waste materials		
3.0) Transfer drums of liquid waste from the sampling area to the bulk consolidation storage tank area	Drum - fall hazards and spills/exposure while in route		Wear leather palm gloves when placing the nylon straps from the drum	Training requirements to operate specialized equipment (i.e., fork trucks, tuggers)		Mechanical assistance when loading drums on the cart for transfer from one location of the plant to another		
4.0) Transfer of the liquid waste from the drum to the mobile storage tanker (Continued on next 2 pages)	Elevated work - trip/fall hazard		Safety harness for fall protection			Fall protection required for work above 6'		

HEALTH AND SAFETY REQUIREMENTS MATRIX

PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

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ACTIVITY (TASKS)	HAZARD IDENTIFICATION	FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED	PERSONAL PROTECTIVE EQUIPMENT	TRAINING REQUIREMENTS	MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS	ADMINISTRATIVE & ENGINEERING CONTROL MEASURES	PERMIT(S)	DECONTAMINATION & DISPOSAL PROCEDURES
4.0) Transfer of the liquid waste from the drum to the mobile storage tanker (continued)	Contamination due to contact with the waste stream exposure to air borne vapors	• Permits will specify the type of air and personal monitoring FERMCO (IH) to perform initial real-time monitoring with detector tubes and photoionization detector (PID) when drums are opened and liquid transferred to ensure PPE is sufficient for worker protection • FERMCO IH to perform BZ monitoring to document exposure to the worker • Visual inspection of the hoses prior to use	• Respiratory protection as required by IH based on materials being handled and air monitoring results • Anti-C coveralls must be chemically resistant based on material and potential for skin contact • Chemical resistant gloves to be specified by IH based on materials being sampled • Latex rubber shoe covers • Cotton inner gloves and latex/vinyl gloves • Leather palm gloves when handling sharp edge objects	Respirator training and fit test		• Provide warning signs and safety barricades to establish exclusion zone • Work area to be completely diked and sealed with herculite subsurface • Eyewash/safety shower required • Fixed fire extinguisher required when work in progress • Visual inspection of hoses and equipment prior to use		• Disposable PPE to be disposed of as a possible RCRA waste • Degreasing soap and water required to decontaminate reusable PPE and equipment • Workers shall wash hands and face before breaks, lunch, and at the end of the shift • All tools and equipment must be monitored for uranium contamination area
	Cold stress	Monitoring of workers for control of cold stress	Additional layering of clothing					

HEALTH AND SAFETY [illegible]UIREMENTS MATRIX

PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

The requirements listed in Section 1.0 of this matrix apply to all activities addressed on this matrix.

ACTIVITY (TASKS)	HAZARD IDENTIFICATION	FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED	PERSONAL PROTECTIVE EQUIPMENT	TRAINING REQUIREMENTS	MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS	ADMINISTRATIVE & ENGINEERING CONTROL MEASURES	PERMIT(S)	DECONTAMINATION & DISPOSAL PROCEDURES
4.0) Transfer of the liquid waste from the drum to the mobile storage tanker (continued)	Fire/explosion due to static build up during transfer operation					Grounding of the drums to earth		
	Spills		Diked area Herculite substance	FERMCO Lockout/Tagout (Hazardous Energy and Material Control) Procedure SSOP-0719 (Process Control)		• Lock and tag for (Process control) procedure • Contact the AEDO		
	Heat stress	Physiological monitoring of workers for control of heat stress	Cool ice vest when heat stress controls are necessary		Work/rest regimen for heat stress control if necessary			

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HEALTH AND SAFETY . JIREMENTS MATRIX
PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

The requirements listed in Section 1.0 of this matrix apply to all activities addressed on this matrix.

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5.0) Consolidating the sludge and sludge within the drums (Continued on next page)	Contamination due to contact with waste exposure to air borne vapors	• Permits will specify the type of air and personal monitoring • FERMCO IH to perform initial real-time monitoring with detection tubes and photoionization detector (PID) when drums are opened and sludge removal to ensure PPE is sufficient for worker protection • FERMCO IH to perform BZ monitoring to document exposure to the worker	• Respiratory protection as required by IH based on materials being handled and air monitoring results • Anti-C coveralls must be chemically resistant based on material and potential for skin contact • Chemical resistant gloves to be specified by IH based on materials being sampled • Latex rubber shoe covers • Cotton inner gloves and latex/vinyl surgical gloves • Leather palm gloves when handling sharp edge objects	Respirator training and quantitive fit test		• Provide warning signs and safety barricade to establish exclusion zone	Chemical hazardous material work permit	• Disposable PPE to be disposed of as possible RCRA waste • Degreasing soaps and water required to decontaminate reusable PPE and equipment • Workers shall wash hands and face before breaks, lunch, and at the end of the shift
	Cold stress	Monitoring of workers for control of cold stress	Layering of additional clothing					

HEALTH AND SAFETY R[illegible]UIREMENTS MATRIX

PROJECT: The Liquid Waste Sampling, Transferring, & Shipping

The requirements listed in Section 1.0 of this matrix apply to all activities addressed on this matrix.

ACTIVITY (TASKS)	HAZARD IDENTIFICATION	FREQUENCY & TYPE OF AIR AND PERSONNEL MONITORING REQUIRED	PERSONAL PROTECTIVE EQUIPMENT	TRAINING REQUIREMENTS	MEDICAL MONITORING & SURVEILLANCE REQUIREMENTS	ADMINISTRATIVE & ENGINEERING CONTROL MEASURES	PERMIT(S)	DECONTAMINATION & DISPOSAL PROCEDURES
5.0) Consolidating the sludge and sludge within the drums (continued)	Fire/explosion due to static electric buildup during sludge removal/transfer operation		Nitrile gloves			• Ground drum to earth • Use non-ferris tools to scrape the sludge from the drum		
	Back Sprain/strains					Use mechanical assistance when moving drums		
6.0) Relocate/transfer drums of sludge to a 90 day (RCRA) warehouse and empty drums to a consolidation/disposal location	Drum - fall hazards		Wear leather palm gloves when placing the nylon straps from the drum	Training requirements to operate specialized equipment (i.e., fork truck, tuggers)		• Mechanical assistance when loading drums on the cart for transfer from one location of the plant to another • Reference JSA #14		
7.0) Shipment of the liquid waste to the incinerator	Spill/exposure			Training and certification required to operate specialized equipment on-site (from the contractor performing the task)		Trailers must have proper placards in place by the waste hauler		Trailer must be surveyed out of the work area and the process area. Any detectable removable contamination must be removed prior to taking the truck out of the area

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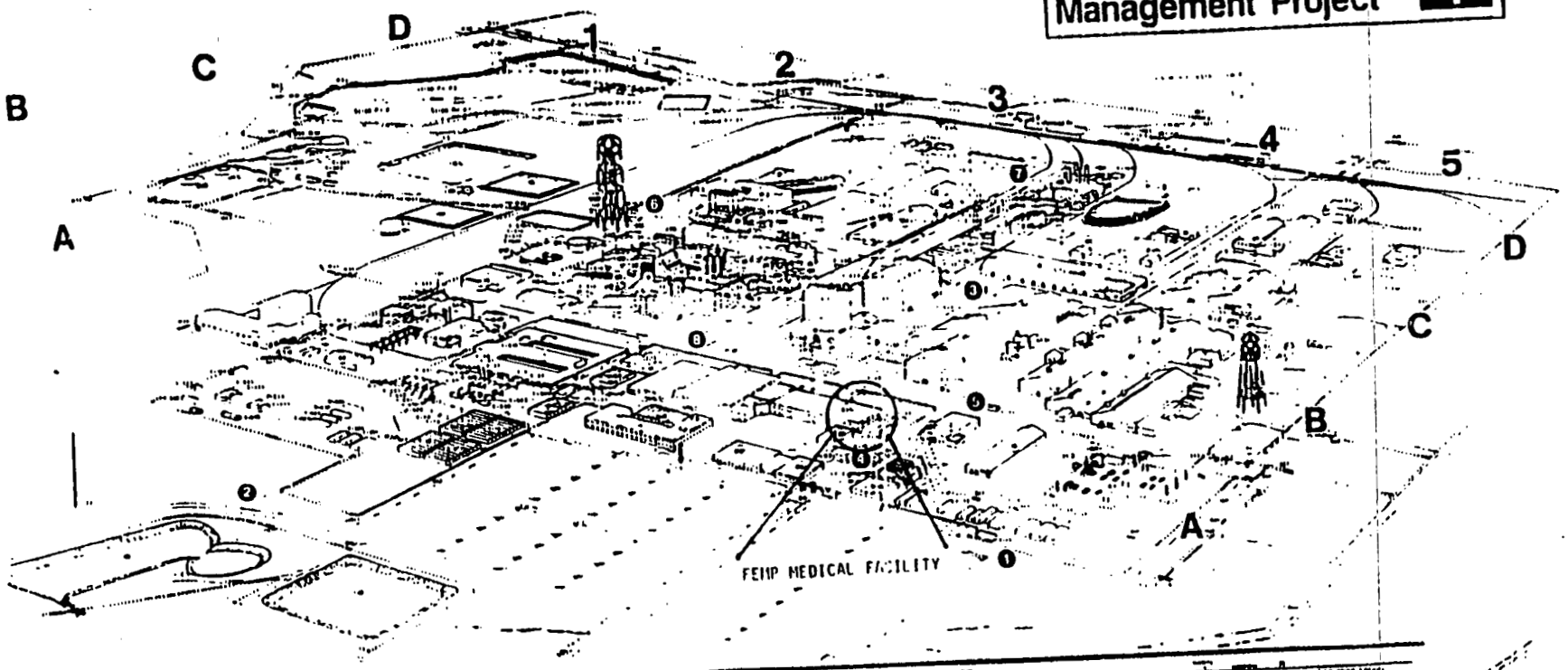
ATTACHMENT B
PERSONNEL AND ENVIRONMENTAL MONITORING AND ACTION LEVELS

Personnel and Environmental Monitoring Will Be Determined As Specified In The Health and Safety Requirements Matrix

ATTACHMENT C
FEMP RALLY POINTS

Fernald Environmental Management Project



● RALLY POINTS

BUILDING IDENTIFICATION

MAY 1992

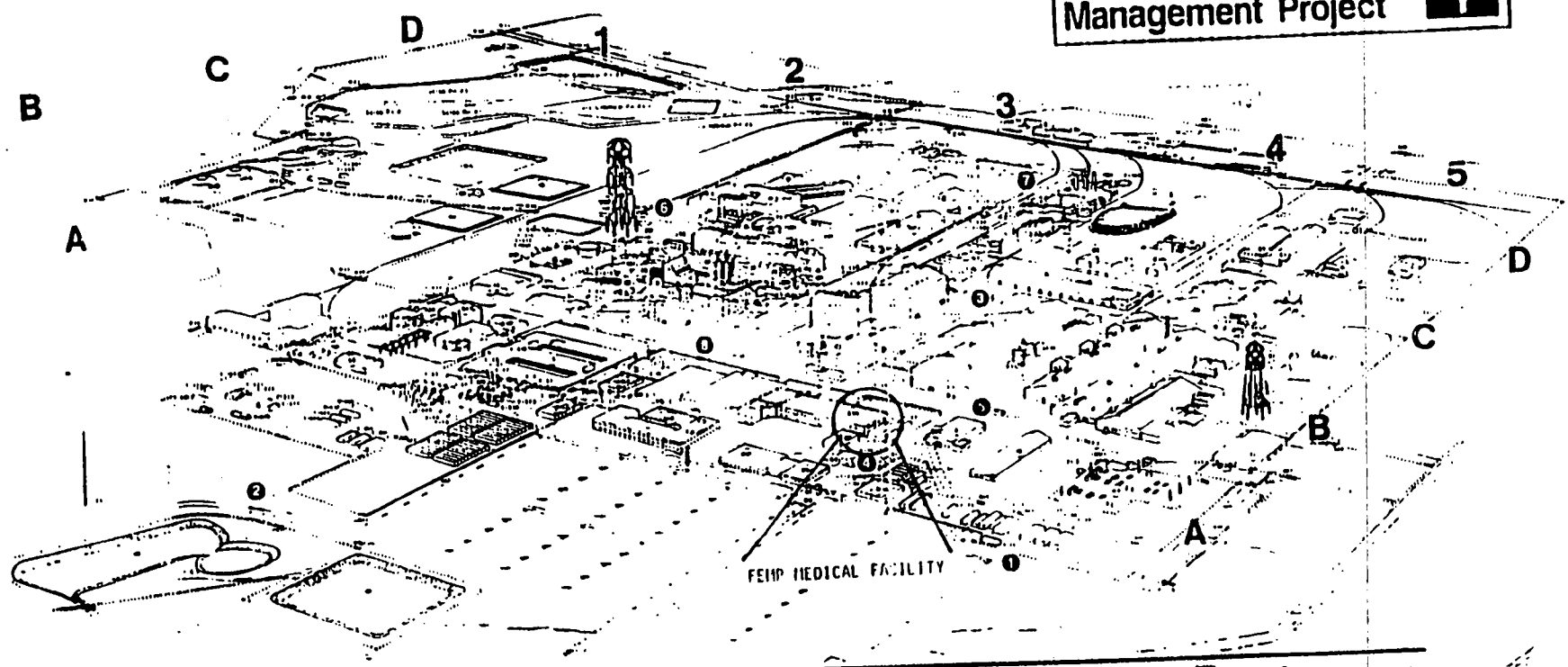
Recycled and Recyclable

000178

23276

ATTACHMENT D
LOCATION OF FEMP MEDICAL FACILITY

Fernald Environmental Management Project



● RALLY POINTS

BUILDING IDENTIFICATION

000180

2372

Recycled and Recyclable

ATTACHMENT E
WORK AREA MATERIAL SAFETY DATA SHEETS (MSDSs)

BENZENE

11825

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796- 7100

EMERGENCY NUMBER: (201) 796-7100
CHEMTREC ASSISTANCE: (800) 424-9300

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THIS INFORMATION IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. HOWEVER, WE MAKE NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND WE ASSUME NO LIABILITY RESULTING FROM ITS USE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION FOR THEIR PARTICULAR PURPOSES.

SUBSTANCE IDENTIFICATION

CAS-NUMBER 71-43-2

SUBSTANCE: **BENZENE**

TRADE NAMES/SYNONYMS:
BENZOL; CYCLOHEXATRIENE; BENZOLE; PHENE; PYROBENZOL; PYROBENZOLE;
CARBON OIL; COAL TAR NAPHTHA; PHENYL HYDRIDE; BENZOLENE;
BICARBURET OF HYDROGEN; COAL NAPHTHA; MOTOR BENZOL; ANNULENE; (6)ANNULENE;
RCRA U019; STCC 4908110; UN 1114;
B-426; 13065; B-243; B-245-S; B-245; B-411; C6H6;

CHEMICAL FAMILY:
HYDROCARBON, AROMATIC

MOLECULAR FORMULA: C6-H6

MOLECULAR WEIGHT: 78.11

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=3 REACTIVITY=0 PERSISTENCE=1

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: BENZENE PERCENT: >99
CAS# 71-43-2
OTHER CONTAMINANTS: 0.15% NON-AROMATICS; 1 PPM THIOPHENE

EXPOSURE LIMITS:
BENZENE:
1 PPM OSHA TWA; 5 PPM OSHA 15 MINUTE STEL;
0.5 PPM OSHA ACTION LEVEL
10 PPM (30 MG/M3) ACGIH TWA;
ACGIH A2-SUSPECTED HUMAN CARCINOGEN
0.1 PPM (0.32 MG/M3) NIOSH RECOMMENDED 8 HOUR TWA;
1 PPM (3.2 MG/M3) NIOSH RECOMMENDED 15 MINUTE CEILING

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10 POUNDS CERCLA SECTION 103 REPORTABLE QUANTITY
SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING
SUBJECT TO CALIFORNIA PROPOSITION 65 CANCER AND/OR REPRODUCTIVE TOXICITY WARNING AND RELEASE REQUIREMENTS- (FEBRUARY 27, 1987)

EXTINGUISH ONLY IF FLOW CAN BE STOPPED. USE WATER IN FLOODING QUANTITIES AS A FOG; SOLID STREAMS MAY SPREAD FIRE. COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER; APPLY FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING HAZARDOUS MATERIALS; KEEP UPWIND. EVACUATE TO A RADIUS OF 1500 FEET FOR UNCONTROLLABLE FIRES. CONSIDER EVACUATION OF DOWNWIND AREA IF MATERIAL IS LEAKING.

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WATER MAY BE INEFFECTIVE (NFPA 325M, FIRE HAZARD PROPERTIES OF FLAMMABLE LIQUIDS, GASES, AND VOLATILE SOLIDS, 1984)

FIRE FIGHTING PHASES: DRY CHEMICAL, ALCOHOL FOAM OR CARBON DIOXIDE. WATER MAY BE INEFFECTIVE. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL. IF A LEAK OR SPILL HAS NOT IGNITED, USE WATER SPRAY TO DISPERSE THE VAPORS AND TO PROVIDE PROTECTION FOR THE MEN ATTEMPTING TO STOP THE LEAK. WATER SPRAY MAY BE USED TO FLUSH SPILLS AWAY FROM EXPOSURES (NFPA 49, HAZARDOUS CHEMICALS DATA, 1975).

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49 CFR 172.101:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49 CFR 172.101 AND SUBPART E:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS: 49 CFR 173.119
EXCEPTIONS: 49 CFR 173.118

TOXICITY

BENZENE:

IRRITATION DATA: 20 MG/24 HOURS SKIN-RABBIT MODERATE; 15 MG/24 HOURS OPEN SKIN-RABBIT MILD; 88 MG EYE-RABBIT MODERATE; 2 MG/24 HOURS EYE-RABBIT SEVERE.

TOXICITY DATA: 2000 PPM/5 MINUTES INHALATION-HUMAN LCLO; 2 PPH/5 MINUTES INHALATION-HUMAN LCLO; 65 MG/M3/5 YEARS INHALATION-HUMAN LCLO; 100 PPM INHALATION-HUMAN TCLO; 150 PPM/1 YEAR INTERMITTENT INHALATION-MAN TCLO; 20,000 PPM/5 MINUTES INHALATION-MAMMAL LCLO; 10,000 PPM/7 HOURS INHALATION-RAT LC50; 9980 PPM INHALATION-MOUSE LC50; 146,000 MG/M3 INHALATION-DOG LCLO; 170,000 MG/M3 INHALATION-CAT LCLO; 45000 PPM/30 MINUTES INHALATION-RABBIT LCLO; 50 MG/KG ORAL-MAN LDLO: 3306 MG/KG ORAL-RAT LD50; 4700 MG/KG ORAL-MOUSE LD50; 2000 MG/KG ORAL-DOG LDLO; 88 MG/KG INTRAVENOUS-RABBIT LDLO; 2890 UG/KG INTRAPERITONEAL-RAT LD50; 340 MG/KG INTRAPERITONEAL-MOUSE LD50; 527 MG/KG INTRAPERITONEAL-GUINEA PIG LDLO; 194 MG/KG UNREPORTED-MAN LDLO; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS); TUMORIGENIC DATA (RTECS).

CARCINOGEN STATUS: OSHA CARCINOGEN; KNOWN HUMAN CARCINOGEN (NTP); HUMAN SUFFICIENT EVIDENCE, ANIMAL SUFFICIENT EVIDENCE (IARC GROUP-1). THE RELATIONSHIP BETWEEN EXPOSURE TO BENZENE AND THE DEVELOPMENT OF ACUTE MYELOGENOUS LEUKEMIA HAS BEEN ESTABLISHED IN EPIDEMIOLOGICAL STUDIES.

LOCAL EFFECTS: IRRITANT- SKIN, EYE.

ACUTE TOXICITY LEVEL: MODERATELY TOXIC BY INHALATION AND INGESTION.

TARGET EFFECTS: CENTRAL NERVOUS SYSTEM DEPRESSANT; BONE MARROW DEPRESSANT. POISONING MAY ALSO AFFECT THE IMMUNE, HEMATOPOIETIC AND NERVOUS SYSTEMS.

AT INCREASED RISK FROM EXPOSURE: PERSONS WITH CERTAIN IMMUNOLOGICAL TENDENCIES.

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OCCUR AND RARELY NEURORETINAL EDEMA AND PAPILLEDEMA HAVE ACCOMPANIED THE RETINAL HEMORRHAGES. HEMATOLOGICAL EFFECTS VARY WIDELY AND MAY APPEAR AFTER A FEW WEEKS OR MANY YEARS OF EXPOSURE OR EVEN MANY YEARS AFTER EXPOSURE HAS CEASED. THE DEGREE OF EXPOSURE BELOW WHICH NO BLOOD EFFECTS WILL OCCUR CANNOT BE ESTABLISHED WITH CERTAINTY. IN THE EARLY STAGES, THERE MAY BE BLOOD CLOTTING DEFECTS DUE TO FUNCTIONAL, MORPHOLOGICAL AND QUANTITATIVE PLATELET ALTERATION WITH RESULTANT BLEEDING FROM THE NOSE AND GUMS, EASY BRUISING AND PETECHIAE; LEUKOPENIA WITH PREDOMINANT LYMPHOCYTOPENIA OR NEUTROPENIA; AND ANEMIA WHICH MAY BE NORMOCHROMIC OR MACROCYTIC AND HYPOCHROMIC. LEUKOCYTOSIS AND CIRCULATING IMMATURE MARROW CELLS HAVE ALSO BEEN REPORTED. BONE MARROW MAY BE HYPER-, HYPO- OR NORMOBLASTIC AND DOES NOT ALWAYS CORRELATE WITH THE PERIPHERAL BLOOD PICTURE. ALSO, THE SYMPTOMS DO NOT ALWAYS PARALLEL THE LABORATORY FINDINGS. IF TREATED AT THIS STAGE, THE EFFECTS APPEAR REVERSIBLE, ALTHOUGH RECOVERY MAY BE PROTRACTED AND THERE MAY BE RELAPSES. DECREASED ERYTHROCYTE SURVIVAL, HEMOLYSIS, CAPILLARY FRAGILITY, INTERNAL HEMORRHAGES, IRON METABOLISM DISTURBANCES, AND HYPERBILIRUBINEMIA HAVE ALSO BEEN REPORTED- EXPOSURE TO HIGH LEVELS FOR LONGER PERIODS MAY RESULT IN APLASIA AND FATTY DEGENERATION OF THE BONE MARROW WITH PANCYTOPENIA. THE MOST SERIOUS CASES OF APLASTIC ANEMIA MAY BE FATAL DUE TO HEMORRHAGE AND INFECTION; DEATH MAY OCCUR WITHIN 3 MONTH OF DIAGNOSIS- ENORMOUS VARIABILITY IN INDIVIDUAL RESPONSE, INCLUDING NON-DOSE DEPENDENT APLASIA, AND THE FINDING OF EOSINOPHILIA SUGGESTS THAT, IN SOME CASES, THE BLOOD DYSCRASIA MAY PARTIALLY BE AN ALLERGIC REACTION. NUMEROUS CASE REPORTS AND SERIES HAVE SUGGESTED A RELATIONSHIP BETWEEN EXPOSURE TO BENZENE AND THE OCCURRENCE OF VARIOUS TYPES OF LEUKEMIA. SEVERAL CASE-CONTROL STUDIES HAVE ALSO SHOWN INCREASED ODDS RATIOS FOR EXPOSURE TO BENZENE, BUT MIXED EXPOSURE PATTERNS AND POORLY DEFINED EXPOSURES RENDER THEIR INTERPRETATION DIFFICULT. THREE INDEPENDENT COHORT STUDIES HAVE DEMONSTRATED AN INCREASED INCIDENCE OF ACUTE NONLYMPHOCYTIC LEUKEMIA IN WORKERS EXPOSED TO BENZENE. ALTHOUGH APLASTIC ANEMIA IS PROBABLY THE MORE LIKELY CONSEQUENCE OF LONGTERM EXPOSURE, IT IS NOT UNCOMMON FOR AN INDIVIDUAL SURVIVING THIS, TO GO THROUGH A PRELEUKEMIC PHASE INTO FRANK LEUKEMIA. CONVERSELY, LEUKEMIA WITHOUT PRECEDENT APLASTIC ANEMIA CAN OCCUR. IN ONE STUDY THE RANGE OF TIME FROM THE START OF THE EXPOSURE TO THE DIAGNOSIS OF LEUKEMIA WAS 3-24 YEARS. IT HAS BEEN SUGGESTED THAT THE CHROMOSOMAL ABERRATIONS WHICH CAN ARISE IN PERIPHERAL BLOOD AND BONE MARROW CELLS AND PERSIST FOR A LONG TIME AFTER EXPOSURE CEASES, MAY BE ASSOCIATED WITH THE INCREASED INCIDENCE OF LEUKEMIA. THE IMMUNOSUPPRESSIVE EFFECT HAS ALSO BEEN SUGGESTED AS BEING ASSOCIATED WITH THE LEUKEMOGENESIS. ADVERSE EFFECTS ON THE IMMUNOLOGICAL SYSTEM HAVE BEEN SHOWN TO MAKE RABBITS MORE SUSCEPTIBLE TO TUBERCULOSIS AND PNEUMONIA AND MAY EXPLAIN WHY THE TERMINAL EVENT IN SOME CASES OF BENZENE INTOXICATION MAY BE OVERWHELMING INFECTION. EXPOSED MICE EXHIBITED A TENDENCY TOWARD INDUCTION OF LYMPHOID NEOPLASMS. RATS EXHIBITED AN INCREASED INCIDENCE OF NEOPLASMS, MAINLY CARCINOMAS, AT VARIOUS SITES. MENSTRUAL DISTURBANCES HAVE BEEN REPORTED MORE FREQUENTLY IN EXPOSED WOMEN. TESTICULAR DAMAGE HAS BEEN REPORTED IN RATS, RABBITS AND GUINEA PIGS. SOME ANIMAL STUDIES HAVE DEMONSTRATED EMBRYO/FETOTOXICITY, SOMETIMES AT LEVELS AS LOW AS 10 PPM AND THE POTENTIAL FOR TERATOGENIC EFFECTS SUCH AS DECREASED BODY WEIGHT AND SKELETAL VARIANTS, HAVE ALSO BEEN SHOWN. OTHER STUDIES HAVE NOT PRODUCED ANY ABNORMALITIES OR EMBRYOLETHALITY.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE AND ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFECTED PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. ADMINISTRATION OF OXYGEN

HAS CAUSED HEADACHE, VERTIGO, BLADDER IRRITABILITY, IMPOTENCE, GASTRIC DISTURBANCES, AND RENAL DYSFUNCTION, IN FEMALE RATS TREATED WITH 132 SINGLE DAILY DOSES OVER 187 DAYS, NO EFFECTS WERE OBSERVED AT 1 MG/KG; SLIGHT LEUKOPENIA AT 10 MG/KG; AND BOTH LEUKOPENIA AND ANEMIA AT 50 AND 100 MG/KG. IN A 2 YEAR GAVAGE STUDY WITH RATS AND MICE, THERE WAS AN INCREASED INCIDENCE OF LYMPHOMAS AND TUMORS OF THE ORAL CAVITY, SKIN, LUNGS, OVARIES, AND MAMMARY, HARDERIAN, AND PREPUTIAL GLANDS, IN A ONE YEAR GAVAGE STUDY, RATS GIVEN 50 OR 250 MG/KG, 4-5 DAYS/WEEK FOR 52 WEEKS DID NOT EXHIBIT ACUTE OR SUBACUTE TOXIC EFFECTS, BUT A DOSE CORRELATED INCREASE OF LEUKEMIAS AND MAMMARY CARCINOMAS WAS OBSERVED, REPRODUCTIVE EFFECTS HAVE SEEN REPORTED IN ANIMALS,

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FIRST AID- EXTREME CARE MUST HE USED TO PREVENT ASPIRATION, GASTRIC LAVAGE WITH A CUFFED ENDOTRACHEAL TUBE IN PLACE TO PREVENT FURTHER ASPIRATION SHOULD DE DONE WITHIN 15 MINUTES, IN THE ABSENCE OF DEPRESSION OR CONVULSIONS OR IMPAIRED GAG REFLEX, EMESIS CAN ALSO BE INDUCED USING SYRUP OF IPECAC WITHOUT INCREASING THE HAZARD OF ASPIRATION (DREISBACH, HANDBOOK OF POISONING, 12TH ED,). TREAT SYMPTOMATICALLY AND SUPPORTIVELY, GASTRIC LAVAGE SHOULD BE PERFORMED BY QUALIFIED MEDICAL PERSONNEL, GET MEDICAL ATTENTION IMMEDIATELY,

ANTIDOTE:
NO SPECIFIC ANTIDOTE, TREAT SYMPTOMATICALLY AND SUPPORTIVELY,

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REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES,

INCOMPATIBILITIES:
BENZENE:
- ACIDS (STRONG): INCOMPATIBLE
- ALLYL CHLORIDE WITH DICHLOROETHYL ALUMINUM OR ETHYLALUMINUM SESQUICHLORIDE: POSSIBLE EXPLOSION.
- ARSENIC PENTAFLUORIDE + POTASSIUM METHOXIDE: EXFLOSIVE INTERACTION.
- BASES (STRONG): INCOMPATIBLE.
- BROMINE + IRON: INCOMPATIBLE.
- BROMINE PENTAFLUORIDE: FIRE AND EXPLOSION HAZARD.
- BROMINE TRIFLUORIDE: POSSIBLE EXPLOSION OR IGNITION.
- CHLORINE: EXPLOSION IN THE PRESENCE OF LIGHT.
- CHLORINE TRIFLUORIDE: VIOLENT REACTION WITH POSSIBLE EXPLOSION.
- CHROMIC ANHYDRIDE (POWDERED): IGNITION.
- DIBORANE: SPONTANEOUSLY EXPLOSIVE REACTION IN AIR.
- DIOXYGEN DIFLUORIDE: IGNITION, EVEN AT REDUCED TEMPERATURES.
- DIOXYGENYL TETRAFLUOROBORATE: IGNITION REACTION.
- INTERHALOGEN COMPOUNDS: IGNITION OR EXPLOSION.
- IODINE HEPTAFLUORIDE: IGNITION ON CONTACT.
- IODINE PENTAFLUORIDE: VIOLENT INTERACTION ABOVE 50 C,
- NITRIC ACID: VIOLENT OR EXPLOSIVE UNLESS PROPERLY AGITATED AND COOLED.
- NITRYL PERCHLORATE: EXPLOSIVE INTERACTION.
- OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD.
- OXYGEN (LIQUID): EXPLOSIVE MIXTURE.
- OZONE: FORMATION OF EXPLOSIVE GELATINOUS OZONIDE.
- PERCHLORATES (METAL): FORMATION OF EXPLOSIVE COMPLEX.
- PERCHLORYL FLUORIDE + ALUMINUM CHLORIDE; FORMATION OF SHOCK SENSITIVE COMPOUND.
- PERMANGANATES + SULFURIC ACID: POSSIBLE EXPLOSION.

SPILL AND LEAK PROCEDURES

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SOIL SPILL:
DIG HOLDING AREA SUCH AS LAGOON, POND OR PIT FOR CONTAINMENT,
DIKE FLOW OF SPILLED MATERIAL USING SOIL OR SANDBAGS OR FOAMED BARRIERS SUCH AS POLYURETHANE OR CONCRETE.
USE CEMENT POWDER, FLY ASH, SAWDUST OR COMMERCIAL SORBENT TO ABSORB BULK LIQUID.
REDUCE VAPOR AND FIRE HAZARD WITH FLUOROCARBON WATER FOAM.

AIR SPILL:
KNOCK DOWN VAPORS WITH WATER SPRAY, KEEP UPWIND,

WATER SPILL:
LIMIT SPILL MOTION AND DISPERSION WITH NATURAL BARRIERS OR OIL SPILL CONTROL BOOMS.
APPLY DETERGENTS, SOAPS, ALCOHOLS OR ANOTHER SURFACE ACTIVE AGENT TO THICKEN SPILLED MATERIAL.
APPLY UNIVERSAL GELLING AGENT TO IMMOBILIZE TRAPPED SPILL AND INCREASE EFFICIENCY OF REMOVAL.
IF DISSOLVED, APPLY ACTIVATED CARBON AT TEN TIMES THE SPILLED AMOUNT IN THE REGION OF 10 PPM OR GREATER CONCENTRATION,
USE SUCTION HOSES TO REMOVE TRAPPED SPILL MATERIAL.
USE DREDGES OR LIFTS TO EXTRACT IMMOBILIZED MASSES OF POLLUTION AND PRECIPITATES.

OCCUPATIONAL SPILL:
SHUT OFF IGNITION SOURCES, STOP LEAK IF YOU CAN DO IT WITHOUT RISK, USE WATER SPRAY TO REDUCE VAPORS, FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL, FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL, NO SMOKING, FLAMES OR FLARES IN HAZARD AREA, KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND RESTRICT ENTRY.

REPORTABLE QUANTITY (RQ); 1000 POUNDS
THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 304 REQUIRES THAT A RELEASE EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITY FOR THIS SUBSTANCE BE IMMEDIATELY REPORTED TO THE LOCAL EMERGENCY PLANNING COMMITTEE AND THE STATE EMERGENCY RESPONSE COMMISSION (40 CFR 355.40), IF THE RELEASE OF THIS SUBSTANCE IS REPORTABLE UNDER CERCLA SECTION 103, THE NATIONAL RESPONSE CENTER MUST BE NOTIFIED IMMEDIATELY AT (800) 424-3302 OR (202) 426-2675 IN THE METROPOLITAN WASHINGTON, D.C. AREA (40 CFR 302.6).

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST OR PROCESS ENCLOSURE VENTILATION TO MEET THE PUBLISHED EXPOSURE LIMITS. VENTILATION EQUIPMENT MUST BE EXPLOSION-PROOF.

BENZENE.
VENTILATION SHOULD MEET THE REQUIREMENTS IN 29 CFR 1910.1023(F).

RESPIRATOR:
THE FOLLOWING RESPIRATORS ARE THE MINIMUM LEGAL REQUIREMENTS AS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION FOUND IN 29 CFR 1910, SUBPART Z.

BENZENE:

CONCENTRATION:	REQUIRED RESPIRATOR;
LESS THAN OR EQUAL TO 10 PPM-	HALF-MASK AIR-PURIFYING RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE.
LESS THAN OR EQUAL TO 50 PPM-	FULL FACEPIECE RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES, FULL FACEPIECE GAS MASK WITH CHIN STYLE CANISTER.
LESS THAN OR EQUAL TO 100 PPM-	FULL FACEPIECE POWERED AIR-PURIFYING RESPIRATOR WITH ORGANIC VAPOR CANISTER.
LESS THAN OR EQUAL TO 1000 PPM-	SUPPLIED AIR RESPIRATOR WITH FULL FACEPIECE IN POSITIVE-PRESSURE MODE.
GREATER THAN 1000 PPM OR UNKNOWN CONCENTRATION-	SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE IN POSITIVE-PRESSURE MODE, FULL FACEPIECE POSITIVE-PRESSURE SUPPLIED-AIR RESPIRATOR WITH AUXILIARY SELF-CONTAINED AIR SUPPLY
ESCAPE-	ANY ORGANIC VAPOR GAS MASK. ANY SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE.
FIREFIGHTING-	FULL FACEPIECE SELF-CONTAINED BREATHING APPARATUS IN POSITIVE-PRESSURE MODE,

THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS OR NIOSH CRITERIA DOCUMENTS.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION.

AT ANY DETECTABLE CONCENTRATION:

SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE,
SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

ESCAPE- AIR-PURIFYING FULL FACEPIECE RESPIRATOR (GAS MASK) WITH A CHIN-STYLE OR FRONT- OR BACK-MOUNTED ORGANIC VAPOR CANISTER.
ESCAPE-TYPE SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

SELF CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN

MATERIAL SAFETY DATA SHEET

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SECTION I PRODUCT SPECIFICATIONS

. F6 Carbon Tetrachloride

.. 56-23-5

..ied by CHEM SERVICE, Inc. PO BOX 3108, WEST CHESTER, PA. 19381 (215)692-3026

MERGENCY PHONE #: 215-386-2100

.ot No. 96-966 Purity 99.0% Certified by JHW

This is to certify that analysis of this sample was made by various chromatographic, spectral and thermal methods. The procedures used are considered to be STATE OF THE ART. CHEM SERVICE, Inc. guarantees purity of unopened bottles until expiration on the bottle.

SECTION II TOXICITY DATA

RAT OR MOUSE LD50	RTECSW	OSHA PEL	ACGIH TLV
2800mg/kg	FG4900000	10 ppm	5 ppm(30 mg/m3)skib

This compound is considered to be slightly toxic.
This statement is based upon OSHA's assesment of the LD50

SECTION III PHYSICAL DATA

MELTING POINT	BOILING POINT	DENSITY	VAPOR PRESSURE	VAPOR DENSITY	EVAPORATION R (Butyl acetat
-23 C	76.7 C	1.589	91 mm@20 C	5.1	.33

ODOR	COLOR	PHASE	SOLUBILITY IN WAT
Ether like	Colorless	Liquid	Very slightly solu

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Non-flammable
EXTINGUISHING MEDIA: Carbon dioxide or dry chemical powder. DO NOT USE WATER!
No explosion limits are available for this compound.

SECTION V HEALTH HAZARD DATA

Contact lenses should not be worn in the laboratory.
All chemicals should be considered hazardous - Avoid direct physical contact!
Suspected Carcinogen-may produce cancer. Can be fatal if absorbed through the skin!
Can be fatal if inhaled! May be fatal if swallowed!
Prolonged exposure may cause nausea/headache/dizziness and/or eye damage.
Ingestion may cause diarrhea. Can cause liver injury. Can cause kidney injury.
Repeated exposure to vapors and/or dust can cause eye injury.
Can cause sensitization by skin contact. Can cause delayed adverse health effects.
Can cause gastro-intestinal disturbances.
..ed on the toxicity of compounds of similar structure this material is probably highly hazard
..id consumption of alcohol before and after handling of this compound because it will increas
the toxicity of the compound. Can be harmful if absorbed through the skin.
Can be harmful if inhaled. Can be harmful if swallowed. Can cause eye irritation.
Can cause skin irritation. Dust and/or vapors can cause irritation to respiratory tract.
Can be irritating to mucous membranes.
May be rapidly absorbed thru the skin with potential adverse health effects.
... nervous system injury. Can cause delayed lung injury.

000188

MATERIAL SAFETY DATA SHEET

09/11/90

Last revised June 1989

SECTION I PRODUCT SPECIFICATIONS

. F7 Chlorobenzene

. 108-90-7 Other name: Phenyl chloride

7376

.. ied by CHEM SERVICE. Inc. PO BOX 3108. WEST CHESTER, PA. 19381 (215)692-3026

MERGENCY PHONE #: 215-386-2100

.. No. 37-76A Purity 99.0% Certified by JHW

his is to certify that analysis of this sample was made by various chromatographic. spectral and hermal methods. The procedures used are considered to be STATE OF THE ART. CHEM SERVICE. Inc. uarantees purity of unopened bottles until expiration on the bottle.

SECTION II TOXICITY DATA

RAT OR MOUSE LD50	RTECSW	OSHA PEL	ACGIH TLV
2910mg/kg	CZ0175000	75 ppm (350 mg/m3)	75 ppm(350 mg/m3)

his compound is considered to be slightly toxic.
This statement is based upon OSHA's assesment of the LD50

SECTION III PHYSICAL DATA

MELTING POINT	BOILING POINT	DENSITY	VAPOR PRESSURE	VAPOR DENSITY	EVAPORATION RA (Butyl acetate
45 C	132 C	1.11	8.8 mm@20 C	3.88	NOT AVAILABLE

ODOR	COLOR	PHASE	SOLUBILITY IN WATE
Aromatic	Colorless	Liquid	Very slightly solut

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 28 C This is a flammable chemical.
EXTINGUISHING MEDIA: Carbon dioxide or dry chemical powder. DO NOT USE WATER!
UPPER EXPLOSION LIMIT: 7.1% LOWER EXPLOSION LIMIT: 1.3%

SECTION V HEALTH HAZARD DATA

Contact lenses should not be worn in the laboratory.
All chemicals should be considered hazardous - Avoid direct physical contact!
Can be harmful if absorbed through the skin. Can be harmful if inhaled.
Can be harmful if swallowed. Can cause eye irritation. Can cause skin irritation.
Dust and/or vapors can cause irritation to respiratory tract.
Can be irritating to mucous membranes.
Prolonged exposure may cause nausea/headache/dizziness and/or eye damage. Can cause liver injur
Can cause kidney injury.
All chemicals should be considered hazardous. Avoid direct physical contact.

DATE: 07/09/93 ACCT: 878202-02
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CYCLOHEXANE
CYCLOHEXANE
CYCLOHEXANE

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER (201) 796 7100
CHEMTREC ASSISTANCE (800) 424 9300

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SUBSTANCE IDENTIFICATION

CAS NUMBER 110-82 7

SUBSTANCE. **CYCLOHEXANE**

TRADE NAMES/SYNONYMS
HEXAHYDROBENZENE, HEXAMETHYLENE, HEXANAPHTHENE, BENZENE HEXAHYDRIDE
RCRA U056; STCC 4908132, UN 1145, C552, C553, C555, C620, O2093, C620SK,
C556; C6H12; ACC05870

CHEMICAL FAMILY:
HYDROCARBON, ALICYCLIC

MOLECULAR FORMULA C H2 (C H2)4 C H2

MOLECULAR WEIGHT. 84 18

CERCLA RATINGS (SCALE 0 3): HEALTH-3 FIRE-3 REACTIVITY-0 PERSISTENCE 0
NFPA RATINGS (SCALE 0 4) HEALTH-1 FIRE-3 REACTIVITY-0

COMPONENTS AND CONTAMINANTS

COMPONENT. CYCLOHEXANE PERCENT 100
CAS# 110-82-7

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
CYCLOHEXANE
300 PPM (1050 MG/M3) OSHA TWA
300 PPM (1050 MG/M3) ACGIH TWA
300 PPM (1050 MG/M3) NIOSH RECOMMENDED TWA
300 PPM (1050 MG/M3) OFG MAK TWA,
600 PPM (2100 MG/M3) OFG MAK 30 MINUTE PEAK, AVERAGE VALUE, 4 TIMES/SHIFT

MEASUREMENT METHOD CHARCOAL TUBE; CARBON DISULFIDE, GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION; (NIOSH VOL. III # 1500, HYDROCARBONS)

1000 POUNDS CERCLA SECTION 103 REPORTABLE QUANTITY
SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING

PHYSICAL DATA

DESCRIPTION COLORLESS LIQUID WITH A MILD SWEET ODOR RESEMBLING CHLOROFORM OR BENZENE BOILING POINT 179 F (81 C) MELTING POINT 44 F (7 C)

SPECIFIC GRAVITY 0 779 VOLATILITY. 100% VAPOR PRESSURE 95 MMHG @ 20 C

EVAPORATION RATE NOT AVAILABLE SOLUBILITY IN WATER 0 01%

ODOR THRESHOLD: 0 41 PPM VAPOR DENSITY 2 90

SOLVENT SOLUBILITY SOLUBLE IN METHANOL, ETHANOL, ETHER, ACETONE, BENZENE LIGROIN, CARBON TETRACHLORIDE

VISCOSITY 0 914 CP @ 72 F

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD
DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME

MODERATE EXPLOSION HAZARD WHEN EXPOSED TO HEAT OR FLAME

000190

10146

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VAPOR AIR MIXTURES ARE EXPLOSIVE

FLASH POINT 4 F (20 C) (CC) UPPER EXPLOSIVE LIMIT 8 4%

LOWER EXPLOSIVE LIMIT 1 3% AUTOIGNITION TEMP 473 F (245 C)

FLAMMABILITY CLASS(OSHA) IB

FIREFIGHTING MEDIA
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800 5)

FOR LARGER FIRES USE WATER SPRAY, FOG OR REGULAR FOAM
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800 5).

FIREFIGHTING
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK APPLY COOLING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT STAY AWAY FROM ENDS OF TANKS. FOR MASSIVE FIRE IN CARGO AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES, IF THIS IS IMPOSSIBLE, WITHDRAW FROM AREA AND LET FIRE BURN WITHDRAW IMMEDIATELY IN CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF TANK DUE TO FIRE ISOLATE FOR 1/2 MILE IN ALL DIRECTIONS IF TANK, RAIL CAR OR TANK TRUCK IS INVOLVED IN FIRE (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800 5, GUIDE PAGE 27)

EXTINGUISH ONLY IF FLOW CAN BE STOPPED. USE FLOODING AMOUNTS OF WATER AS A FOG. SOLID STREAMS MAY BE INEFFECTIVE COOL CONTAINERS WITH FLOODING AMOUNTS OF WATER. APPLY FROM AS FAR A DISTANCE AS POSSIBLE AVOID BREATHING VAPORS. KEEP UPWIND

WATER MAY BE INEFFECTIVE (NFPA 325M, FIRE HAZARD PROPERTIES OF FLAMMABLE LIQUIDS, GASES, AND VOLATILE SOLIDS, 1991)

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49 CFR 172 101
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49 CFR 172 101 AND SUBPART E
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS 49 CFR 173 119
EXCEPTIONS 49 CFR 173 118

TOXICITY

CYCLOHEXANE
IRRITATION DATA 1548 MG/2 DAYS INTERMITTENT SKIN RABBIT
TOXICITY DATA: 70 GM/M3/2 HOURS INHALATION MOUSE LCLO, 180 GM/KG SKIN RABBIT LD, 12705 MG/KG ORAL RAT LD50; 813 MG/KG ORAL MOUSE LD50, 5500 MG/KG ORAL RABBIT LDLO, MUTAGENIC DATA (RTECS)
CARCINOGEN STATUS NONE
LOCAL EFFECTS IRRITANT INHALATION, SKIN
ACUTE TOXICITY LEVEL SLIGHTLY TOXIC BY INGESTION
TARGET EFFECTS CENTRAL NERVOUS SYSTEM DEPRESSANT
AT INCREASED RISK FROM EXPOSURE PERSONS WITH A HISTORY OF CHRONIC RESPIRATORY, LIVER, KIDNEY, OR SKIN DISEASE
ADDITIONAL DATA MAY POTENTIATE THE EFFECTS OF TOXIC AGENTS, SUCH AS TRI O CRESYL PHOSPHATE THE USE OF ALCOHOLIC BEVERAGES MAY ENHANCE THE TOXIC EFFECTS

HEALTH EFFECTS AND FIRST AID

INHALATION
CYCLOHEXANE
IRRITANT/NARCOTIC 10,000 PPM IMMEDIATELY DANGEROUS TO LIFE OR HEALTH
ACUTE EXPOSURE LOW CONCENTRATIONS MAY CAUSE IRRITATION OF THE RESPIRATORY TRACT EXPOSURE TO CONCENTRATIONS ABOVE 12,000 PPM MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION WITH EXCITEMENT, HEADACHE, DIZZINESS, DULLNESS, NAUSEA, VOMITING, NARCOSIS, COMA, AND POSSIBLY DEATH DUE TO RESPIRATORY FAILURE LETHAL CONCENTRATIONS TO ANIMALS CAUSED CONVULSIONS AND GENERALIZED VASCULAR DAMAGE WITH SEVERE DEGENERATIVE CHANGES IN THE HEART LUNGS, LIVER, KIDNEYS, AND BRAIN
CHRONIC EXPOSURE REPEATED OR PROLONGED EXPOSURE TO CONCENTRATIONS ABOVE 300 PPM MAY PRODUCE MILD IRRITATION OF THE UPPER RESPIRATORY TRACT REPEATED EXPOSURES CAUSED MICROSCOPIC CHANGES IN THE LIVER AND KIDNEYS, LETHARGY, LIGHT NARCOSIS, DIARRHEA, AND SOME DEATHS IN ANIMALS

FIRST AID REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION KEEP PERSON WARM AND AT REST TREAT SYMPTOMATICALLY AND SUPPORTIVELY GET MEDICAL ATTENTION IMMEDIATELY

SKIN CONTACT

7376

DATE: 07/09/93 ACCT: 878202-02
INDEX: 12930339619 CAT NO: 0209320 PO NBR: 237073-00

OPERATED IN A PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE

ANY SUPPLIED AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE

CLOTHING
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE

GLOVES
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION
EMPLOYEE MUST WEAR SPLASH PROOF OR DUST RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE

EMERGENCY EYE WASH. WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE

AUTHORIZED FISHER SCIENTIFIC INC
CREATION DATE: 10/02/84 REVISION DATE 03/24/93

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11096

DATE: 09/15/92 ACCT: 439552-09
INDEX: 12922580147 CAT NO: M3034 PO NBR: 533737-00

N-HEXANE
N-HEXANE
N-HEXANE

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER: (201) 796-7100
CHEMTREC ASSISTANCE: (800) 424-9300

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SUBSTANCE IDENTIFICATION

CAS-NUMBER 110-54-3

SUBSTANCE: **N-HEXANE**

TRADE NAMES/SYNONYMS:
HEXANE; NCI-C60571; HEXYLHYDRIDE; NORMAL HEXANE; SKELLYSOLVE B; STCC 4908183; UN 1208; H301; C6H14; ACC10950

CHEMICAL FAMILY:
HYDROCARBON, ALIPHATIC

MOLECULAR FORMULA: C-H3-(C-H2)4-C-H3

MOLECULAR WEIGHT: 86.18

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=3 REACTIVITY=0 PERSISTENCE=1
NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

PERCENT: 100.0

COMPONENT: N-HEXANE
CAS# 110-54-3

OTHER CONTAMINANTS: NONE.

EXPOSURE LIMITS:
N-HEXANE:
50 PPM (180 MG/M3) OSHA TWA
50 PPM (180 MG/M3) ACGIH TWA
50 PPM (180 MG/M3) NIOSH RECOMMENDED TWA
50 PPM (180 MG/M3) DFG MAK TWA;
100 PPM (360 MG/M3) DFG MAK 30 MINUTE PEAK, AVERAGE VALUE, 4 TIMES/SHIFT

MEASUREMENT METHOD: CHARCOAL TUBE; CARBON DISULFIDE; GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION; (NIOSH VOL. III # 1500, HYDROCARBONS).

OSHA LIMITS ADOPTED JANUARY 19, 1989 ARE SUBJECT TO THE DECISION OF THE 11TH CIRCUIT COURT OF APPEALS (AFL-CIO V. OSHA) AS OF JULY 7, 1992.

PHYSICAL DATA

DESCRIPTION: CLEAR, COLORLESS MOBILE LIQUID WITH A MILD GASOLINE-LIKE ODOR.

BOILING POINT: 156 F (69 C) MELTING POINT: -139 F (-95 C)

SPECIFIC GRAVITY: 0.6603 VISCOSITY: .32 CPS @ 25 C VOLATILITY: 100%

VAPOR PRESSURE: 124 MMHG @ 20 C EVAPORATION RATE: (BUTYL ACETATE=1) 15.8

PH: NEUTRAL SOLUBILITY IN WATER: 0.014% @ 20 C

ODOR THRESHOLD: 84-244 PPM VAPOR DENSITY: 3.0

SOLVENT SOLUBILITY: SOLUBLE IN ALCOHOL, CHLOROFORM, ETHER, ACETONE, AND OTHER ORGANIC SOLVENTS.

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK.

VAPOR-AIR MIXTURES ARE EXPLOSIVE.

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DUE TO LOW ELECTROCONDUCTIVITY OF THE SUBSTANCE, FLOW OR AGITATION MAY GENERATE ELECTROSTATIC CHARGES RESULTING IN SPARKS WITH POSSIBLE IGNITION.

FLASH POINT: -7 F (-22 C) (CC) UPPER EXPLOSIVE LIMIT: 7.5%

LOWER EXPLOSIVE LIMIT: 1.1% AUTOIGNITION TEMP.: 437 F (225 C)

FLAMMABILITY CLASS(OSHA): IB

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. APPLY COOLING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM ENDS OF TANKS. FOR MASSIVE FIRE IN CARGO AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES; IF THIS IS IMPOSSIBLE, WITHDRAW FROM AREA AND LET FIRE BURN. WITHDRAW IMMEDIATELY IN CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF TANK DUE TO FIRE. ISOLATE FOR 1/2 MILE IN ALL DIRECTIONS IF TANK, RAIL CAR OR TANK TRUCK IS INVOLVED IN FIRE (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE PAGE 27).

EXTINGUISH ONLY IF FLOW CAN BE STOPPED; USE WATER IN FLOODING AMOUNTS AS FOG. SOLID STREAMS MAY NOT BE EFFECTIVE. COOL CONTAINERS WITH FLOODING QUANTITIES OF WATER. APPLY FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING TOXIC VAPORS; KEEP UPWIND. EVACUATE TO A RADIUS OF 1500 FEET FOR UNCONTROLLABLE FIRES. CONSIDER EVACUATION OF DOWNWIND AREA IF MATERIAL IS LEAKING.

WATER MAY BE INEFFECTIVE (NFPA 325M, FIRE HAZARD PROPERTIES OF FLAMMABLE LIQUIDS, GASES, AND VOLATILE SOLIDS, 1991)

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49-CFR 172.101:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49-CFR 172.101 AND SUBPART E:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS: 49-CFR 173.119
EXCEPTIONS: 49-CFR 173.118

FINAL RULE ON HAZARDOUS MATERIALS REGULATIONS (HMR, 49 CFR PARTS 171-180), DOCKET NUMBERS HM-181, HM-181A, HM-181B, HM-181C, HM-181D AND HM-204, EFFECTIVE DATE OCTOBER 1, 1991. HOWEVER, COMPLIANCE WITH THE REGULATIONS IS AUTHORIZED ON AND AFTER JANUARY 1, 1991. (55 FR 52402, 12/21/90)

EXCEPT FOR EXPLOSIVES, INHALATION HAZARDS, AND INFECTIOUS SUBSTANCES, THE EFFECTIVE DATE FOR HAZARD COMMUNICATION REQUIREMENTS IS EXTENDED TO OCTOBER 1, 1993. (56 FR 47158, 09/18/91)

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING NAME-ID NUMBER, 49 CFR 172.101:
HEXANES-UN 1208

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS OR DIVISION, 49 CFR 172.101:
3 - FLAMMABLE LIQUID

U.S. DEPARTMENT OF TRANSPORTATION PACKING GROUP, 49 CFR 172.101:
PG II

U.S. DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS, 49 CFR 172.101 AND SUBPART E:
FLAMMABLE LIQUID

U.S. DEPARTMENT OF TRANSPORTATION PACKAGING AUTHORIZATIONS:
EXCEPTIONS: 49 CFR 173.150
NON-BULK PACKAGING: 49 CFR 173.202
BULK PACKAGING: 49 CFR 173.242

U.S. DEPARTMENT OF TRANSPORTATION QUANTITY LIMITATIONS 49 CFR 172.101:
PASSENGER AIRCRAFT OR RAILCAR: 5 L
CARGO AIRCRAFT ONLY: 60 L

TOXICITY

N-HEXANE:
IRRITATION DATA: 10 MG EYE-RABBIT MILD.
TOXICITY DATA: 190 PPM/8 WEEKS INHALATION-HUMAN TCLO; 120 GM/M3 INHALATION-MOUSE LCLO; 28,710 MG/KG ORAL-RAT LD50; 831 MG/KG INTRAVENOUS-MOUSE LDLO; 132 MG/KG INTRAVENOUS-RABBIT LDLO; 9100 MG/KG INTRAPERITONEAL-RAT LDLO; MUTAGENIC DATA (RTECS); REPRODUCTIVE EFFECTS DATA (RTECS).
CARCINOGEN STATUS: NONE.

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500 PPM- ANY SUPPLIED-AIR RESPIRATOR.
ANY SELF-CONTAINED BREATHING APPARATUS.

1250 PPM- ANY SUPPLIED-AIR RESPIRATOR OPERATED IN A CONTINUOUS FLOW MODE.

2500 PPM- ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE.
ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE.
ANY SUPPLIED-AIR RESPIRATOR THAT HAS A TIGHT-FITTING FACEPIECE AND IS OPERATED IN A CONTINUOUS-FLOW MODE.

5000 PPM- ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ESCAPE- ANY AIR-PURIFYING FULL FACEPIECE RESPIRATOR (GAS-MASK) WITH A CHIN-STYLE OR FRONT- OR BACK-MOUNTED ORGANIC VAPOR CANISTER.
ANY APPROPRIATE ESCAPE-TYPE SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

AUTHORIZED - FISHER SCIENTIFIC, INC.
CREATION DATE: 01/29/85 REVISION DATE: 07/16/92

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10076

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER.....:

EM SCIENCE
A DIVISION OF EM INDUSTRIES
P.O. BOX 70
480 DEMOCRAT RD.
GIBBSTOWN, N.J. 08027

PREPARATION DATE.: 11/08/91
DATE MSDS PRINTED.: JUN 11, 1992

7376

INFORMATION PHONE NUMBER.: 609-354-9200
HOURS: MON. TO FRI. 8:30-5
CHEMTREC EMERGENCY NUMBER: 800-424-9300
HOURS: 24 HRS A DAY

CATALOG NUMBER(S):
MX0475 MX0480 MX0483 MX0484 MX0485 MX0487 MX0488 MX0489 MX0490
AX1699M MX0475P MX0482 MX0485P MX0485S MX0488B MX0488P MX0475RI
MX0485J

CHEMICAL NAME....: METHANOL
TRADE NAME.....: METHYL ALCOHOL, WOOD ALCOHOL
CHEMICAL FAMILY..: ALIPHATIC ALCOHOL
FORMULA.....: CH3OH

MOLECULAR WEIGHT.: 32.04

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS #	APPR %
METHANOL	67-56-1	100%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
FLAMMABLE LIQUID AND VAPOR.
VAPOR HARMFUL.
MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED.
CANNOT BE MADE NON-POISONOUS.
MAY CAUSE DAMAGE TO LUNGS AND CENTRAL NERVOUS SYSTEM.
ABSORPTION THROUGH SKIN HARMFUL.
APPEARANCE.....:
COLORLESS LIQUID, CHARACTERISTIC
ALCOHOLIC ODOR

WEAR SELF-CONTAINED BREATHING APPARATUS.

FIRE & EXPLOSION HAZARDS.:

DANGEROUS FIRE AND EXPLOSIVE HAZARD.
CLOSED CONTAINERS MAY EXPLODE UPON HEATING.
VAPOR CAN TRAVEL DISTANCES TO IGNITION SOURCE AND FLASH BACK.
HOT ORGANIC CHEMICAL VAPORS OR MISTS ARE SUSCEPTIBLE TO SUDDEN SPONTANEOUS COMBUSTION WHEN MIXED WITH AIR. IGNITION MAY OCCUR AT TEMPERATURES BELOW PUBLISHED AUTOIGNITION OR IGNITION TEMPERATURES. IGNITION TEMPERATURES DECREASE WITH INCREASING VAPOR VOLUME AND VAPOR/AIR CONTACT TIME AND ARE INFLUENCED BY PRESSURE CHANGES. IGNITION MAY OCCUR AT TYPICAL ELEVATED TEMPERATURE PROCESS CONDITIONS, ESPECIALLY IN PROCESS OPERATING UNDER VACUUM IF SUBJECTED TO SUDDEN INGRESS OF AIR, OR OUTSIDE PROCESS EQUIPMENT OPERATING UNDER ELEVATED PRESSURE IF SUDDEN ESCAPE OF VAPORS OR MISTS TO THE ATMOSPHERE OCCURS.

6. ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE:

EVACUATE THE AREA OF ALL UNNECESSARY PERSONNEL.
WEAR SUITABLE PROTECTIVE EQUIPMENT LISTED UNDER EXPOSURE / PERSONAL PROTECTION.
ELIMINATE ANY IGNITION SOURCES UNTIL THE AREA IS DETERMINED TO BE FREE FROM EXPLOSION OR FIRE HAZARDS.
CONTAIN THE RELEASE AND ELIMINATE ITS SOURCE, IF THIS CAN BE DONE WITHOUT RISK.
TAKE UP AND CONTAINERIZE FOR PROPER DISPOSAL AS DESCRIBED UNDER DISPOSAL.
COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS ON REPORTING RELEASES. REFER TO REGULATORY INFORMATION FOR REPORTABLE QUANTITY AND OTHER REGULATORY DATA.
EM SCIENCE RECOMMENDS SPILL-X ABSORBENT AGENTS FOR VARIOUS TYPES OF SPILLS. ADDITIONAL INFORMATION ON THE SPILL-X PRODUCTS CAN BE PROVIDED THROUGH THE EM SCIENCE TECHNICAL SERVICE DEPARTMENT (609) 354-9200.
THE FOLLOWING EM SCIENCE SPILL-X ABSORBENT IS RECOMMENDED FOR THIS PRODUCT:

SX0663 SOLVENT SPILL TREATMENT KIT

7. HANDLING AND STORAGE

HANDLING & STORAGE:

KEEP CONTAINER CLOSED.
STORE IN A COOL AREA AWAY FROM IGNITION SOURCES AND OXIDIZERS.
DO NOT BREATH VAPOR OR MIST.

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BOILING POINT (C 760 MMHG).: 64.5C
MELTING POINT (C)..........: -98C
SPECIFIC GRAVITY (H2O = 1).: 0.791
VAPOR PRESSURE (MM HG)....: 97 20C
PERCENT VOLATILE BY VOL (%): 99.9+
VAPOR DENSITY (AIR = 1)....: 1.1
EVAPORATION RATE (BUAC = 1): 5.91
SOLUBILITY IN WATER (%)....: MISCIBLE
APPEARANCE.................:
COLORLESS LIQUID, CHARACTERISTIC
ALCOHOLIC ODOR

7376

10. STABILITY AND REACTIVITY

STABILITY.................: YES
HAZARDOUS POLYMERIZATION:
DOES NOT OCCUR

HAZARDOUS DECOMPOSITION..:
CO, FORMALDEHYDE

CONDITIONS TO AVOID.....:
HEAT; CONTACT WITH IGNITION SOURCE.

MATERIALS TO AVOID......:
( )WATER
(X)ACIDS
( )BASES
( )CORROSIVES
(X)OXIDIZERS
(X)OTHER :

REACTIVE METALS

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:
ORL-HMN LDLO: 143 MG/KG ORL-RAT LD50: 5628 MG/KG
IHL-RAT LC50: 64000 PPM/4H SKN-RBT LD50: 15800 MG/KG
TOXICOLOGICAL FINDINGS:
TESTS ON LABORATORY ANIMALS INDICATE MATERIAL MAY PRODUCE ADVERSE
MUTAGENIC AND REPRODUCTIVE EFFECTS
CITED IN REGISTRY OF TOXIC EFFECTS OF SUBSTANCES (RTECS)

12. DISPOSAL CONSIDERATIONS

EPA WASTE NUMBERS: U154 D001

REACTIVITY : 0
SPECIAL HAZARDS:

7376

VISION HISTORY:
02/01/83 10/01/83 05/01/85 12/06/86 01/31/87 06/10/87 08/28/87
10/27/87 08/10/88 10/06/88 03/14/89 09/28/89 10/09/89 05/10/90
01/11/91 03/01/91 08/07/91

- = REVISED SECTION
N/A = NOT AVAILABLE
N/E = NONE ESTABLISHED

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000197

"ISSUED BY VWR 07/31/93"

MATERIAL SAFETY DATA SHEET 1065

01/17/92
LAST REVISED: October 30, 1991

7376

SECTION I PRODUCT SPECIFICATIONS

P. NO. F704 2-Butanone
AS NO. 78-93-3 OTHER NAME: Methyl ethyl ketone/MEK/Methyl acetone/Ethyl Methyl Ketone
Supplied by CHEM SERVICE, Inc. PO BOX 3108, WEST CHESTER, PA, 19381 (215)692-3026
EMERGENCY PHONE #: 215-692-3026

SECTION II TOXICITY DATA

ORAL RAT OR MOUSE LD50	RTECS#	OSHA PEL (TWA)	ACGIH TLV (TWA)
2737mg/kg	EL6475000	200 ppm (590 mg/m3)	200 ppm(590 mg/m3)

This compound is considered to be slightly toxic.
This statement is based upon OSHA's assesment of the LD50

SECTION III PHYSICAL DATA

MELTING POINT	BOILING POINT	DENSITY	VAPOR PRESSURE	VAPOR DENSITY	EVAPORATION RA (Butyl acetate
-87 C	80 C	0.805	70 mm@20 C	2.5	NOT AVAILABLE

ODOR	COLOR	PHASE	SOLUBILITY IN WATE
Fruity/Pleasant	Colorless	Liquid	Soluble

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: -9 C This is a flammable chemical.
EXTINGUISHING MEDIA: Carbon dioxide or dry chemical powder. DO NOT USE WATER!
UPPER EXPLOSION LIMIT: 10% LOWER EXPLOSION LIMIT: 1.8%

SECTION V HEALTH HAZARD DATA

Contact lenses should not be worn in the laboratory.
All chemicals should be considered hazardous - Avoid direct physical contact!
May be harmful if absorbed through the skin. May be harmful if inhaled.
May be harmful if swallowed.
Severe Irritant. Depending on the intensity and duration of exposure, effects may vary from s
lo irritation to sever destruction of tissue. Can cause skin irritation.
Vapors or mist is irritating to eyes, mucous membranes and upper respitory tract.
Exposure can cause nausea, headache dizziness and/or vomiting.
Can cause gastro-intestinal disturbances. Exposure can cause Dermatitis.
Narcotic at high concentrations. Target Organ - Central Nervous System. Target Organ - Lungs.

PPG INDUSTRIES, INC. ONE PPG PLACE PITTSBURGH, PA 15272

* * PERCHLOROETHYLENE

10093

MSDS NUMBER: 0041
DATE: 10/16/90
EDITION: 013
TRADE NAME: PERCHLOROETHYLENE
CHEMICAL NAME/SYNONYMS: TETRACHLOROETHYLENE, PERCHLORETHYLENE, PERCHLOR
CHEMICAL FAMILY: HALOGENATED HYDROCARBON
FORMULA: CCL2=CCL2 CAS NUMBER: 000127 18 4
U.S. DOT SHIPPING NAME: TETRACHLOROETHYLENE
U.S. DOT HAZARD CLASS: ORM-A
SUBSIDIARY RISK: N/A
I.D. NUMBER: UN1897
REPORTABLE QUANTITY: 100 LBS/45.4 KG
CANADA SHIPPING REQUIREMENTS: TETRACHLOROETHYLENE, CLASS 6.1, UN1897, PACKING GROUP III, ST. ANDREWS CROSS.

SECTION 1 * PHYSICAL DATA

BOILING POINT @ 760 MM HG: 121 C
VAPOR DENSITY (AIR=1): 5.83
SPECIFIC GRAVITY (H2O=1): 1.6 @ 20/20 C
PH OF SOLUTIONS: 6.8 TO 8.4
FREEZING/MELTING POINT: -22.3 C
SOLUBILITY (WEIGHT % IN WATER): 0.015% @ 25 C
BULK DENSITY: 13.6 LBS/GAL @ 20 C
VOLUME % VOLATILE: 100
VAPOR PRESSURE: 14.2 MM HG @ 20 C
EVAPORATION RATE: (ETHYL ETHER=1): 0.09
HEAT OF SOLUTION: N/A
APPEARANCE AND ODOR:
CLEAR, COLORLESS LIQUID WITH ETHER-LIKE ODOR.

SECTION 2 * INGREDIENTS

MATERIAL	PERCENT
PERCHLOROETHYLENE (STABILIZED)	> 99

* * * 24-HOUR EMERGENCY ASSISTANCE: (304) 843-1300 * * *

IS CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN?
NTP - YES IARC - YES OSHA - YES

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
PROLONGED EXPOSURE ABOVE THE OSHA PERMISSIBLE EXPOSURE LIMIT MAY COMPLICATE EXISTING LIVER AND KIDNEY DISEASES.

PERMISSIBLE EXPOSURE LIMITS:
OSHA: 25 PPM, 8-HOUR TWA (TIME WEIGHTED AVERAGE); 29 CFR 1910.1000, TABLE Z-2, REV. 3/1/89.
ACGIH: 50 PPM, 8-HOUR TWA; 200 PPM, 15-MINUTE STEL (SHORT-TERM EXPOSURE LIMIT).
PPG INTERNAL PERMISSIBLE EXPOSURE LIMIT: 25 PPM, 8-HOUR TWA; 100 PPM, STEL.

ACUTE:
INHALATION: PERCHLOROETHYLENE IS PRIMARILY A CENTRAL NERVOUS SYSTEM DEPRESSANT AND CAN CAUSE POSSIBLE CENTRAL NERVOUS SYSTEM DAMAGE WITH OVEREXPOSURE. INHALATION CAN CAUSE IRRITATION OF THE RESPIRATORY TRACT, DIZZINESS, NAUSEA, HEADACHE, LOSS OF COORDINATION AND EQUILIBRIUM, UNCONSCIOUSNESS AND EVEN DEATH IN CONFINED OR POORLY VENTILATED AREA. FATALITIES FOLLOWING SEVERE ACUTE EXPOSURE TO VARIOUS CHLORINATED SOLVENTS HAVE BEEN ATTRIBUTED TO VENTRICULAR FIBRILLATION.

EYE/SKIN: LIQUID SPLASHED IN THE EYE CAN RESULT IN DISCOMFORT, PAIN AND IRRITATION. PROLONGED OR REPEATED CONTACT WITH LIQUID ON THE SKIN CAN CAUSE IRRITATION AND DERMATITIS. THE PROBLEM MAY BE ACCENTUATED BY LIQUID BECOMING TRAPPED AGAINST THE SKIN BY CONTAMINATED CLOTHING AND SHOES, AND SKIN ABSORPTION CAN OCCUR.

INGESTION: SWALLOWING OF THIS MATERIAL MAY RESULT IN IRRITATION OF THE MOUTH AND GI TRACT ALONG WITH OTHER EFFECTS AS LISTED ABOVE FOR INHALATION. VOMITING AND SUBSEQUENT ASPIRATION INTO THE LUNGS MAY LEAD TO CHEMICAL PNEUMONIA AND PULMONARY EDEMA WHICH IS A POTENTIALLY FATAL CONDITION.

CHRONIC:
PROLONGED EXPOSURE ABOVE THE OSHA PERMISSIBLE EXPOSURE LIMITS MAY RESULT IN LIVER AND KIDNEY DAMAGE. PERCHLOROETHYLENE HAS BEEN EXTENSIVELY STUDIED FOR ITS CANCER POTENTIAL. A RECENT NTP STUDY HAS DETERMINED THAT THERE IS CLEAR EVIDENCE OF CARCINOGENICITY (LIVER) IN BOTH MALE AND FEMALE MICE, CLEAR EVIDENCE OF LEUKEMIA IN MALE AND FEMALE RATS AND SOME EVIDENCE OF ANIMAL CARCINOGENICITY (KIDNEY TUMORS) IN MALE RATS. THE NTP STUDY EXPOSED RATS TO 200 AND 400 PPM AND MICE TO 100 AND 200 PPM IN A LIFETIME STUDY. PRUDENT HANDLING PRACTICES SHOULD BE FOLLOWED TO MINIMIZE HUMAN EXPOSURE.

SECTION 7 * SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED:

IMMEDIATELY EVACUATE THE AREA AND PROVIDE MAXIMUM VENTILATION. UNPROTECTED PERSONNEL SHOULD MOVE UPWIND OF SPILL. ONLY PERSONNEL EQUIPPED WITH PROPER RESPIRATORY AND SKIN/EYE PROTECTION (SEE SECTION 8) SHOULD BE PERMITTED IN AREA. DIKE AREA TO CONTAIN SPILL. TAKE PRECAUTIONS AS NECESSARY TO PREVENT CONTAMINATION OF GROUND AND SURFACE WATERS. RECOVER SPILLED MATERIAL ON ADSORBENTS, SUCH AS SAWDUST OR VERMICULITE, AND SWEEP INTO CLOSED CONTAINERS FOR DISPOSAL. AFTER ALL VISIBLE TRACES, INCLUDING IGNITABLE VAPORS, HAVE BEEN REMOVED, THOROUGHLY WET VACUUM THE AREA. DO NOT FLUSH TO SEWER. IF AREA OF SPILL IS POROUS, REMOVE AS MUCH EARTH AND GRAVEL, ETC. AS NECESSARY AND PLACE IN CLOSED CONTAINERS FOR DISPOSAL.

WASTE DISPOSAL METHOD:

CONTAMINATED SAWDUST,VERMICULITE,SOIL OR POROUS SURFACE MUST BE DISPOSED OF IN A PERMITTED HAZARDOUS WASTE MANAGEMENT FACILITY. RECOVERED LIQUIDS MAY BE REPROCESSED OR INCINERATED OR MUST BE TREATED IN A PERMITTED HAZARDOUS WASTE MANAGEMENT FACILITY. CARE MUST BE TAKEN WHEN USING OR DISPOSING OF CHEMICAL MATERIALS AND/OR THEIR CONTAINERS TO PREVENT ENVIRONMENTAL CONTAMINATION. IT IS YOUR DUTY TO DISPOSE OF THE CHEMICAL MATERIALS AND/OR THEIR CONTAINERS IN ACCORDANCE WITH THE CLEAN AIR ACT, THE CLEAN WATER ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT, AS WELL AS ANY OTHER RELEVANT FEDERAL, STATE, OR LOCAL LAWS/REGULATIONS REGARDING DISPOSAL.

SECTION 8 * SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

USE A HALF OR FULL FACEPIECE ORGANIC VAPOR CHEMICAL CARTRIDGE OR CANISTER RESPIRATOR WHEN CONCENTRATIONS EXCEED PERMISSIBLE LIMITS. USE SELF-CONTAINED BREATHING APPARATUS (SCBA) OR FULL FACEPIECE AIRLINE RESPIRATOR WITH AUXILIARY SCBA OPERATED IN THE PRESSURE DEMAND MODE FOR EMERGENCIES AND FOR ALL WORK PERFORMED IN STORAGE VESSELS, POORLY VENTILATED ROOMS, AND OTHER CONFINED AREAS. RESPIRATORS MUST BE APPROVED BY NIOSH OR MSHA. THE RESPIRATOR USE LIMITATIONS MADE BY NIOSH/MSHA AND BY THE MANUFACTURER MUST BE OBSERVED. RESPIRATORY PROTECTION PROGRAMS MUST BE IN ACCORDANCE WITH 29 CFR 1910.134.

VENTILATION(TYPE):

USE LOCAL EXHAUST OR DILUTION VENTILATION AS APPROPRIATE TO CONTROL EXPOSURES TO BELOW PERMISSIBLE LIMITS.

LIMITS. OBSERVANCE OF LOWER LIMITS (OUTLINED IN SECTION 5) IS ADVISABLE.
* AVOID CONTACT WITH EYES. WILL CAUSE IRRITATION AND PAIN.
* AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. MAY CAUSE IRRITATION OR DERMATITIS.
* DO NOT SWALLOW. SWALLOWING MAY CAUSE INJURY OR DEATH.
* DO NOT EAT, DRINK, OR SMOKE IN WORK AREA.

COMMENTS:

TSCA - PERCHLOROETHYLENE IS LISTED ON THE TSCA INVENTORY UNDER CAS NO. 127-18-4.

SARA TITLE III - A) 311/312 CATEGORIES - ACUTE, CHRONIC, B) LISTED IN SECTION 313 UNDER TETRACHLOROETHYLENE, C) NOT LISTED AS AN "EXTREMELY HAZARDOUS SUBSTANCE" IN SECTION 302.

CERCLA - LISTED IN TABLE 302.4 OF 40 CFR PART 302 AS A HAZARDOUS SUBSTANCE WITH A REPORTABLE QUANTITY OF 100 POUNDS. RELEASES TO AIR, LAND OR WATER WHICH EXCEED THE RQ MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, 800-424-8802.

RCRA - WASTE PERCHLOROETHYLENE AND CONTAMINATED SOILS/MATERIALS FROM SPILL CLEAN-UP ARE U210 HAZARDOUS WASTE AS PER 40 CFR 261.33 AND MUST BE DISPOSED OF ACCORDINGLY UNDER RCRA. SEE 40 CFR 261.33(C) AND 261.7(B)(3) FOR TRIPLE RINSING REQUIREMENTS FOR EMPTY DRUMS.

CALIFORNIA PROP. 65 - THIS PRODUCT IS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

NEW JERSEY RIGHT-TO-KNOW - GREATER THAN 99% PURE, NO COMPONENT INFORMATION REQUIRED.

CANADA WHMIS - SENSITIZATION TO PRODUCT: NONE KNOWN; B) REPRODUCTIVE TOXICITY: NONE KNOWN; C) ODOR THRESHOLD: APPROXIMATELY 50 PPM; D) PRODUCT USE: DRY CLEANING SOLVENT; E) REQUIRES POISON SYMBOL (CLASS D.1), PLUS ST. ANDREW'S CROSS.

R. KENNETH LEE
MANAGER, PRODUCT SAFETY

12119

DATE: 04/30/93 ACCT: 878202-02
INDEX: 12931190355 CAT NO: T3984 PO NBR: 839527

1,1,1-TRICHLOROETHANE
1,1,1-TRICHLOROETHANE
1,1,1-TRICHLOROETHANE

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

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CHEMTREC ASSISTANCE (800) 424 9300

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **1,1,1-TRICHLOROETHANE** CAS-NUMBER 71-55-6

TRADE NAMES/SYNONYMS:
ALPHA-TRICHLOROETHANE; CHLOROTHENE, AEROTHENE TT, ETHYLIDINE CHLORIDE, METHYLTRICHLOROMETHANE; METHYLCHLOROFORM, TRICHLOROMETHYLMETHANE; TRICHLOROETHANE; T-391; T-398; RCRA U226, UN 2831; STCC 4941176, C2H3CL3, ACC14370

CHEMICAL FAMILY.
HALOGEN COMPOUND, ALIPHATIC

MOLECULAR FORMULA C2-H3 CL3

MOLECULAR WEIGHT: 133.40

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=1 REACTIVITY=0 PERSISTENCE=3
NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: 1,1,1-TRICHLOROETHANE PERCENT 98.50
CAS# 71-55-6

COMPONENT: 1,4-DIOXANE PERCENT 2.5
CAS# 123-91-1

COMPONENT 1,2-BUTYLENE OXIDE PERCENT. 0.47
CAS# 106-88-7

COMPONENT: NITROMETHANE PERCENT 0.34
CAS# 75-52-5

OTHER CONTAMINANTS: NONE.

EXPOSURE LIMITS:
METHYL CHLOROFORM (1,1,1-TRICHLOROETHANE).
350 PPM (1910 MG/M3) OSHA TWA; 450 PPM (2460 MG/M3) OSHA STEL
350 PPM (1910 MG/M3) ACGIH TWA; 450 PPM (2460 MG/M3) ACGIH STEL
350 PPM (1910 MG/M3) NIOSH RECOMMENDED 15 MINUTE CEILING
200 PPM (1080 MG/M3) DFG MAK TWA;
1000 PPM (5400 MG/M3) DFG MAK 30 MINUTE PEAK, AVERAGE VALUE, 2 TIMES/SHIFT

MEASUREMENT METHOD: CHARCOAL TUBE; CARBON DISULFIDE; GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION; (NIOSH VOL. III # 1003, HALOGENATED HYDROCARBONS).

1000 POUNDS CERCLA SECTION 103 REPORTABLE QUANTITY
SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING

1,4 DIOXANE:
25 PPM (90 MG/M3) OSHA TWA (SKIN)
25 PPM (90 MG/M3) ACGIH TWA (SKIN)
1 PPM (3.6 MG/M3) NIOSH RECOMMENDED 30 MINUTE CEILING
50 PPM (180 MG/M3) DFG MAK TWA (SKIN);
100 PPM (360 MG/M3) DFG MAK 30 MINUTE PEAK, AVERAGE VALUE, 4 TIMES/SHIFT

MEASUREMENT METHOD: CHARCOAL TUBE, CARBON DISULFIDE; GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION; (NIOSH VOL. III # 1602).

100 POUND CERCLA SECTION 103 REPORTABLE QUANTITY
SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING
SUBJECT TO CALIFORNIA PROPOSITION 65 CANCER AND/OR REPRODUCTIVE TOXICITY WARNING AND RELEASE REQUIREMENTS - (JANUARY 1, 1988)

THIS SUBSTANCE OR ITS COMPONENT(S) IS SUBJECT TO CALIFORNIA PROPOSITION 65 WARNING AND RELEASE REQUIREMENTS.

000203

DATE: 04/30/93 ACCT: 878202-02
INDEX: 12931190355 CAT NO: T3984 PO NBR: 839527

**OSHA LIMITS ADOPTED JANUARY 19, 1989 ARE SUBJECT TO THE DECISION OF THE 11TH CIRCUIT COURT OF APPEALS (AFL CIO V OSHA) AS OF JULY 7, 1992 **

PHYSICAL DATA

DESCRIPTION COLORLESS LIQUID WITH A MILD CHLOROFORM-LIKE ODOR

BOILING POINT: 165 F (74 C) MELTING POINT: -38 F (-32 C)

SPECIFIC GRAVITY 1.32 VAPOR PRESSURE 100 MMHG @ 20 C

EVAPORATION RATE (CARBON TETRACHLORIDE=1) 1 SOLUBILITY IN WATER 0.09%

ODOR THRESHOLD 100 PPM VAPOR DENSITY 4.55

SOLVENT SOLUBILITY ACETONE, BENZENE, METHANOL, ETHER, CARBON TETRACHLORIDE CARBON DISULFIDE, N HEPTANE, ETHANOL, CHLOROFORM

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD
SLIGHT FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME

THIS MATERIAL IS NEARLY NONFLAMMABLE. HIGH ENERGY, SUCH AS AN ELECTRIC ARC, IS NEEDED FOR IGNITION, AND THE FLAME TENDS TO GO OUT WHEN THE IGNITION SOURCE IS REMOVED.

FLASH POINT NOT AVAILABLE UPPER EXPLOSIVE LIMIT. 12.5%

LOWER EXPLOSIVE LIMIT 7.5% AUTOIGNITION TEMP: 932 F (500 C)

FIREFIGHTING MEDIA.
DRY CHEMICAL OR CARBON DIOXIDE
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5)

FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING
APPLY COOLING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM ENDS OF TANKS. ISOLATE FOR 1/2 MILE IN ALL DIRECTIONS IF TANK, RAIL CAR OR TANK TRUCK IS INVOLVED IN FIRE (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE PAGE 74)

EXTINGUISH USING AGENTS FOR SURROUNDING FIRE. COOL FIRE-EXPOSED CONTAINERS WITH FLOODING AMOUNTS OF WATER APPLIED FROM AS FAR A DISTANCE AS POSSIBLE. DO NOT ALLOW RUN-OFF WATER INTO SEWERS AND WATER SOURCES. AVOID BREATHING VAPORS

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49 CFR 172.101
ORM-A

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49 CFR 172.101 AND SUBPART E:
NONE

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS 49 CFR 173.605
EXCEPTIONS: 49 CFR 173.506

FINAL RULE ON HAZARDOUS MATERIALS REGULATIONS (HMR, 49 CFR PARTS 171-180), DOCKET NUMBERS HM-181, HM-181A, HM-181B, HM-181C, HM-181D AND HM-204. EFFECTIVE DATE OCTOBER 1, 1991. HOWEVER, COMPLIANCE WITH THE REGULATIONS IS AUTHORIZED ON AND AFTER JANUARY 1, 1991 (55 FR 52402, 12/21/90)

EXCEPT FOR EXPLOSIVES, INHALATION HAZARDS, AND INFECTIOUS SUBSTANCES THE EFFECTIVE DATE FOR HAZARD COMMUNICATION REQUIREMENTS IS EXTENDED TO OCTOBER 1, 1993 (56 FR 47158, 09/18/91)

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING NAME-ID NUMBER, 49 CFR 172.101.
1,1,1-TRICHLOROETHANE-UN 2831

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS OR DIVISION, 49 CFR 172.101
6.1 - POISONOUS MATERIALS

U.S. DEPARTMENT OF TRANSPORTATION PACKING GROUP, 49 CFR 172.101
PG III

U.S. DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS, 49 CFR 172.101 AND SUBPART E
KEEP AWAY FROM FOOD

U.S. DEPARTMENT OF TRANSPORTATION PACKAGING AUTHORIZATIONS
EXCEPTIONS 49 CFR 173.153
NON BULK PACKAGING 49 CFR 173.203

12319

CHRONIC EXPOSURE- REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS

1,4 DIOXANE:
NARCOTIC/HEPATOTOXIN/NEPHROTOXIN/CARCINOGEN
ACUTE EXPOSURE- MAY CAUSE LIGHT BURNING SENSATION ON CONTACT WITH ORAL MUCOUS MEMBRANES LARGE DOSES RESULTED IN WEAKNESS, INCOORDINATION, DEPRESSION, COMA AND DEATH IN ANIMALS AUTOPSY REVEALED HEMORRHAGIC AREAS IN THE PYLORIC REGION OF THE STOMACH, BLADDERS DISTENDED WITH URINE, SLIGHT PROTEINURIA AND ENLARGED KIDNEYS ASPIRATION MAY RESULT IN PNEUMONIA
CHRONIC EXPOSURE- IN ANIMAL FEEDING STUDIES, THIS COMPOUND PRODUCED LIVER AND KIDNEY DEGENERATION AND NECROSIS, ULCERATION OF THE STOMACH, HEPATOMAS, CARCINOMA OF THE NASAL CAVITY, CARCINOMA OF THE KIDNEY PELVIS, LEUKEMIA, LYMPHOSARCOMA, CHOLANGIOMAS, GALL BLADDER CARCINOMAS, AND TUMORS OF THE LUNG REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS.

FIRST AID TREAT SYMPTOMATICALLY AND SUPPORTIVELY GET MEDICAL ATTENTION AND ADVICE ON WHETHER TO USE GASTRIC LAVAGE EXTREME CARE MUST BE TAKEN TO PREVENT ASPIRATION A CUFFED ENDOTRACHEAL TUBE USED BY QUALIFIED MEDICAL PERSONNEL MIGHT BE ADVISABLE KEEP HEAD LOWER THAN HIPS TO PREVENT ASPIRATION SHOULD VOMITING OCCUR

ANTIDOTE-
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY

REACTIVITY

REACTIVITY:
SLOWLY DECOMPOSES OVER TIME YIELDING HYDROGEN CHLORIDE AN INHIBITOR MAY BE ADDED TO SCAVENGE THE ACID THAT IS FORMED AND PREVENT CORROSION TO METALS WATER MAY REACT WITH THE INHIBITOR AND ALLOW THE NATURAL DECOMPOSITION TO OCCUR.

INCOMPATIBILITIES.
METHYL CHLOROFORM (1,1,1- TRICHLOROETHANE)
ACETONE- EXOTHERMIC REACTION
ALKALI (STRONG)- POSSIBLE VIOLENT REACTION
ALUMINUM AND ALLOYS: MAY DECOMPOSE VIOLENTLY
BARIUM: FIRE AND EXPLOSION HAZARD
MAGNESIUM: VIOLENT DECOMPOSITION WITH EVOLUTION OF HYDROGEN CHLORIDE
METALS (POWDERED): FIRE AND EXPLOSION HAZARD.
NITROGEN TETROXIDE FORMS EXPLOSIVE MIXTURE.
OXIDIZERS (STRONG): POSSIBLE VIOLENT REACTION
OXYGEN (GAS): POSSIBLE EXPLOSION WHEN HEATED @ 100 C
OXYGEN (LIQUID): POSSIBLE VIOLENT EXPLOSION
POTASH FORMS FLAMMABLE OR EXPLOSIVE PRODUCT
POTASSIUM AND ALLOYS: FORMS SHOCK-SENSITIVE MIXTURE
POTASSIUM HYDROXIDE: FORMATION OF SPONTANEOUSLY FLAMMABLE PRODUCT
RUBBER, PLASTICS, COATINGS- MAY BE ATTACKED
SODIUM AND ALLOYS: FIRE AND EXPLOSION HAZARD
SODIUM HYDROXIDE: FORMS SPONTANEOUSLY FLAMMABLE PRODUCT
SODIUM-POTASSIUM ALLOY: POSSIBLE EXPLOSION
TIN AND ALLOYS- INCOMPATIBLE
ZINC AND ALLOYS. INCOMPATIBLE

1,4-DIOXANE:
DECABORANE: FORMS SHOCK SENSITIVE MIXTURE
NICKEL (RANEY CATALYST): POSSIBLE EXPLOSIVE REACTION ABOVE 210 C
NITRIC ACID + PERCHLORIC ACID: POSSIBLE EXPLOSIVE REACTION
OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD.
SILVER PERCHLORATE: MAY FORM EXPLOSIVE COMPOUND.
SULFUR TRIOXIDE: VIOLENT DECOMPOSITION ON STORAGE.
TRIETHYNYLALUMINUM: MAY EXPLODE WHEN HEATED.
SEE ALSO ETHERS.

ETHERS:
BORON TRIIODIDE VIGOROUS REACTION

DECOMPOSITION
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC AND CORROSIVE FUMES OF CHLORIDES; TOXIC FUMES OF PHOSGENE AND CHLOROACETYLENES, AND OXIDES OF CARBON

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE.

STORAGE

STORE IN A COOL, DRY, WELL-VENTILATED LOCATION (NFPA 49, HAZARDOUS CHEMICALS DATA, 1991)

STORE AWAY FROM INCOMPATIBLE SUBSTANCES

DISPOSAL

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40CFR 262 EPA HAZARDOUS WASTE NUMBER U226

****

CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY AVOID CONTACT WITH STRONG OXIDIZERS, EXCESSIVE HEAT, SPARKS, OR OPEN FLAME.

****

SPILL AND LEAK PROCEDURES

SOIL SPILL
DIG A PIT, POND, LAGOON OR HOLDING AREA TO CONTAIN LIQUID OR SOLID MATERIAL
DIKE SURFACE FLOW USING SOIL, SANDBAGS, FOAMED POLYURETHANE OR FOAMED CONCRETE ABSORB BULK LIQUID WITH FLY ASH OR CEMENT POWDER

WATER SPILL
NATURAL BARRIERS OR OIL SPILL CONTROL BOOMS SHOULD BE USED TO LIMIT SPILL TRAVEL
NATURAL DEEP WATER POCKETS, EXCAVATED LAGOONS, OR SAND BAG BARRIERS SHOULD BE USED TO TRAP MATERIAL AT BOTTOM
SUCTION HOSES SHOULD BE USED TO REMOVE TRAPPED MATERIAL

THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65) PROHIBITS CONTAMINATING ANY KNOWN SOURCE OF DRINKING WATER WITH SUBSTANCES KNOWN TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY

OCCUPATIONAL SPILL
SHUT OFF IGNITION SOURCES STOP LEAK IF YOU CAN DO IT WITHOUT RISK FOR SMALL LIQUID SPILLS, TAKE UP WITH SAND, EARTH OR OTHER ABSORBENT MATERIAL FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL NO SMOKING, FLAMES OR FLARES IN HAZARD AREA! KEEP UNNECESSARY PEOPLE AWAY

REPORTABLE QUANTITY (RQ) 1000 POUNDS
THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 304 REQUIRES THAT A RELEASE EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITY FOR THIS SUBSTANCE BE IMMEDIATELY REPORTED TO THE LOCAL EMERGENCY PLANNING COMMITTEE AND THE STATE EMERGENCY RESPONSE COMMISSION (40 CFR 355 40). IF THE RELEASE OF THIS SUBSTANCE IS REPORTABLE UNDER CERCLA SECTION 103, THE NATIONAL RESPONSE CENTER MUST BE NOTIFIED IMMEDIATELY AT (800) 424-8802 OR (202) 426-2675 IN THE METROPOLITAN WASHINGTON, D.C AREA (40 CFR 302 6)

PROTECTIVE EQUIPMENT

VENTILATION
PROVIDE LOCAL EXHAUST OR PROCESS ENCLOSURE VENTILATION TO MEET THE PUBLISHED EXPOSURE LIMITS. VENTILATION EQUIPMENT MUST BE EXPLOSION-PROOF

RESPIRATOR
THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS, NIOSH CRITERIA DOCUMENTS OR BY THE U.S. DEPARTMENT OF LABOR, 29 CFR 1910 SUBPART Z.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA)

METHYL CHLOROFORM (1,1,1 TRICHLOROETHANE):

1000 PPM- ANY SUPPLIED AIR RESPIRATOR
ANY SELF CONTAINED BREATHING APPARATUS

ESCAPE ANY AIR PURIFYING, FULL-FACEPIECE RESPIRATOR (GAS MASK) WITH A CHIN STYLE, FRONT OR BACK-MOUNTED ORGANIC VAPOR CANISTER
ANY APPROPRIATE ESCAPE TYPE, SELF-CONTAINED BREATHING APPARATUS

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE

GLOVES
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS

TRICHLOROETHYLENE
TRICHLOROETHYLENE
TRICHLOROETHYLENE

10031

MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

CAS-NUMBER 79-01-6

SUBSTANCE: **TRICHLOROETHYLENE**

TRADE NAMES/SYNONYMS: ACETYLENE TRICHLORIDE; ETHYLENE TRICHLORIDE; ALGYLEN; 1-CHLORO-2,2-DICHLOROETHYLENE; 1,1-DICHLORO-2-CHLOROETHYLENE; TCE; ANAMENTH; ETHINYL TRICHLORIDE; TRICHLOROETHENE; 1,1,2-TRICHLOROETHYLENE; TRI; CHLORYLEN; 1,1,2-TRICHLOROETHENE; DENSINFLUAT; CHLORILEN; FLUATE; GEMALGENE NARCOGEN; TRILEN; U228; UN1710; OH523850

CHEMICAL FAMILY:
HALOGEN COMPOUND, ALIPHATIC

MOLECULAR FORMULA: C2-H-CL3 MOL WT: 131.40

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=1 REACTIVITY=0 PERSISTENCE=2

COMPONENTS AND CONTAMINANTS

PERCENT: >99 COMPONENT: TRICHLOROETHYLENE

OTHER CONTAMINANTS: MAY CONTAIN ANTIOXIDANTS SUCH AS AMINES OR EPOXIDES AND ESTERS TO STABILIZE

EXPOSURE LIMITS:
50 PPM OSHA TWA; 200 PPM OSHA CEILING; 300 PPM/5 MIN
OSHA PEAK; 50 PPM ACGIH TWA; 200 PPM ACGIH STEL; 100 PPM NIOSH TWA; 150 PPM NIOSH 15 MINUTE CEILING

PHYSICAL DATA

DESCRIPTION: COLORLESS, HEAVY, MOBILE LIQUID WITH A MILD CHLOROFORM-LIKE ODOR BOILING POINT: 188 F (87 C) MELTING POINT: -99 F (-73 C)

DEC 19 1991

9232 76

000205

TRICHLOROETHYLENE IS AN EYE, MUCOUS MEMBRANE, AND SKIN IRRITANT AND A CENTRAL NERVOUS SYSTEM DEPRESSANT. POISONING AFFECTS THE LIVER, KIDNEYS, AND HEART. THE PRESENCE OF TETRACHLOROETHANE AS AN IMPURITY, OR THE CONSUMPTION OF ALCOHOLIC BEVERAGES, MAY ENHANCE THE SYSTEMIC TOXICITY.

HEALTH EFFECTS AND FIRST AID

INHALATION:
IRRITANT/NARCOTIC/TOXIC. 1000 PPM IMMEDIATELY DANGEROUS TO LIFE AND HEALTH.

ACUTE EXPOSURE- LEVELS OF 90-130 PPM FOR 8 HOURS HAVE RESULTED IN DECREASED PERFORMANCE IN TESTS OF PERCEPTION, MEMORY, COMPLEX REACTION TIME AND MANUAL DEXTERITY. ADDICTION HAS OCCURED FROM DELIBERATE INHALATION OF MODERATE AMOUNTS WHICHCAUSE EUPHORIA, DISORIENTATION, VISUAL HALLUCINATIONS, DELUSIONS, AND OTHER PSYCHOTIC SYMPTOMS. MILD RESPIRATORY IRRITATION, DROWSINESS, DIZZINESS, HEADACHE, EXCITATION, VOMITING, ABDOMINAL CRAMPS, FLUSHED SKIN MAY OCCUR. ABOVE 1000 PPM, PULMONARY EDEMA, NARCOSIS, ANESTHESIA, AND COMA ARE POSSIBLE.IF CONSCIOUSNESS IS REGAINED, NAUSEA AND VOMITING MAY FOLLOW FOR SEVERAL HOURS. ANEMIA AND DAMAGE TO THE LIVER, KIDNEYS, AND LUNGS HAVE OCCURED. ANIMAL STUDIES HAVE SHOWN SPLEEN DAMAGE ALSO. DEATH MAY OCCUR FROM RESPIRATORY ARREST OR VENTRICULLAR FIBRILLATION AND PRIMARY CARDIAC FAILURE.

CHRONIC EXPOSURE- REPEATED EXPOSURE TO LEVELS BELOW 300 PPM HAVE CAUSED NAUSEA, VOMITING, ABDOMINAL CRAMPS, SLEEPINESS, DRUNKENNESS, FLUSHING, ANOREXIA, SWELLING OF THE EYES, FACE, AND HANDS, AND MILD CARDIAC ARRYTHMIA. OTHER POSSIBLE SYMPTOMS ARE WHEEZING, FACIAL NERVE PARALYSIS, LOSS OF COORDINATION AND SENSE OF SMELL AND TASTE, IMPAIRMENT OF TACTILE AND AUDITORY SENSES, DOUBLE VISION, CHANGES IN COLOR PERCEPTION, BLINDNESS, AND JOINT AND MUSCLE PAIN. INTOLERANCE TO ALCOHOL, TREMOR, GIDDINESS, BRADYCARDIA, AND ANXIETY HAVE BEEN FOUND IN WORKERS CHRONICALLY EXPOSED TO 5-630 PPM. LIVER, KIDNEY, AND BRAIN DAMAGE MAY ALSO OCCUR.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION.

SKIN CONTACT:
IRRITANT/NARCOTIC.

ACUTE EXPOSURE- SKIN CONTACT IS UNLIKELY TO RESULT IN TOXIC AMOUNTS BEING ABSORBED, BUT IF SO, MAY LEAD TO CENTRAL NERVOUS SYSTEM DEPRESSION, WITH SYMPTOMS AS WITH ACUTE INHALATION.

CHRONIC EXPOSURE- MAY CAUSE A DEFATTING TYPE OF DERMATITIS AND VESICULATION. REPEATED CONTACT HAS RESULTED IN PARALYSIS OF THE FINGERS. CHRONIC ABSORPTION MAY PRODUCE WEIGHT LOSS, NAUSEA, ANOREXIA, FATIGUE, VISUAL IMPAIRMENT, JOINT PAIN, WHEEZING, AND DERMATITIS. JAUNDICE IS RARE.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER (APPROXIMATELY 15-20 MINUTES) UNTIL NO EVIDENCE OF CHEMICAL REMAINS. DO NOT GIVE STIMULANTS. GET MEDICAL ATTENTION. (DREISBACH, HAND-

ALUMINUM: INTENSE EXPOTHERMIC POLYMERIZATION.
DILUTE HYDROCHLORIC ACID: INTENSE EXPTHERMIC PLYMERIZATION.
SODIUM OR POTASSIUM HYDROXIDE: MAY FORM SPONTANEOUSLY FLAMMABLE AND HIGHLY TOXIC DICHLOROACETYLENE.
ALUMINUM: VIOLENT REACTION.
BARIUM: VIOLENT REACTION.
LITHIUM: VIOLENT REACTION.
NITROGEN TETROXIDE: VIOLENT REACTION.
SODIUM: VIOLENT REACTION.
POWDERED BERYLLIUM: FLASHES OR SPARKS ON IMPACT.
MAGNESIUM: FLASHES OR SPARKS ON IMPACT.
TITANIUM: FLASHES OR SPARKS ON IMPACT.

DECOMPOSITION:
UPON CONTACT WITH CERTAIN METALS, HIGH TEMPERATURES, OPEN FLAME, OR ULTRA-VIOLET LIGHT, DECOMPOSES INSTANTLY TO HIGHLY TOXIC AND CORROSIVE FUMES OF PHOSGENE AND/OR HYDROGEN CHLORIDE, CHLORINE, AND DICHLOROACETYL CHLORIDE. ABOVE 700 C VAPORS DECOMPOSE TO A MIXTURE OF DICHLORETHYLENE, TETRACHLOR-ETHYLENE, CARBON TETRACHLORIDE, CHLOROFORM, AND METHYL CHLORIDE.

POLYMERIZATION:
MAY POLYMERIZE WHEN CATALYZED BY ALUMINUM CHLORIDE IN A SELF-SUSTANING REACTION WHICH MAY DEVELOP TEMPERATURES UP TO 1350 C.

****

CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY.
CONTAINER MAY EXPLODE IN HEAT OF FIRE.
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3)

STORE IN A COOL, DRY, WELL-VENTILATED LOCATION, AWAY FROM ANY AREA WHERE THE FIRE HAZARD MAY BE ACUTE. (NFPA, FIRE PROTECTION GUIDE ON HAZARDOUS MATERIALS, 8TH ED.)

****

SPILL AND LEAK PROCEDURES

SOIL SPILL:
DIG A HOLDING AREA SUCH AS A PIT, POND OR LAGOON TO CONTAIN SPILL AND DIKE SURFACE FLOW USING BARRIER OF SOIL, SANDBAGS, FOAMED POLYURETHANE OR FOAMED CONCRETE. ADSORB LIQUID MASS WITH FLY ASH OR CEMENT POWDER.

AIR SPILL:
APPLY WATER SPRAY TO KNOCK DOWN AND REDUCE VAPORS. KNOCK-DOWN WATER IS COR-ROSIVE AND TOXIC AND SHOULD BE DIKED FOR CONTAINMENT.

WATER SPILL:
USE ACTIVATED CARBON TO ABSORB SPILLED SUBSTANCE THAT IS DISSOLVED.

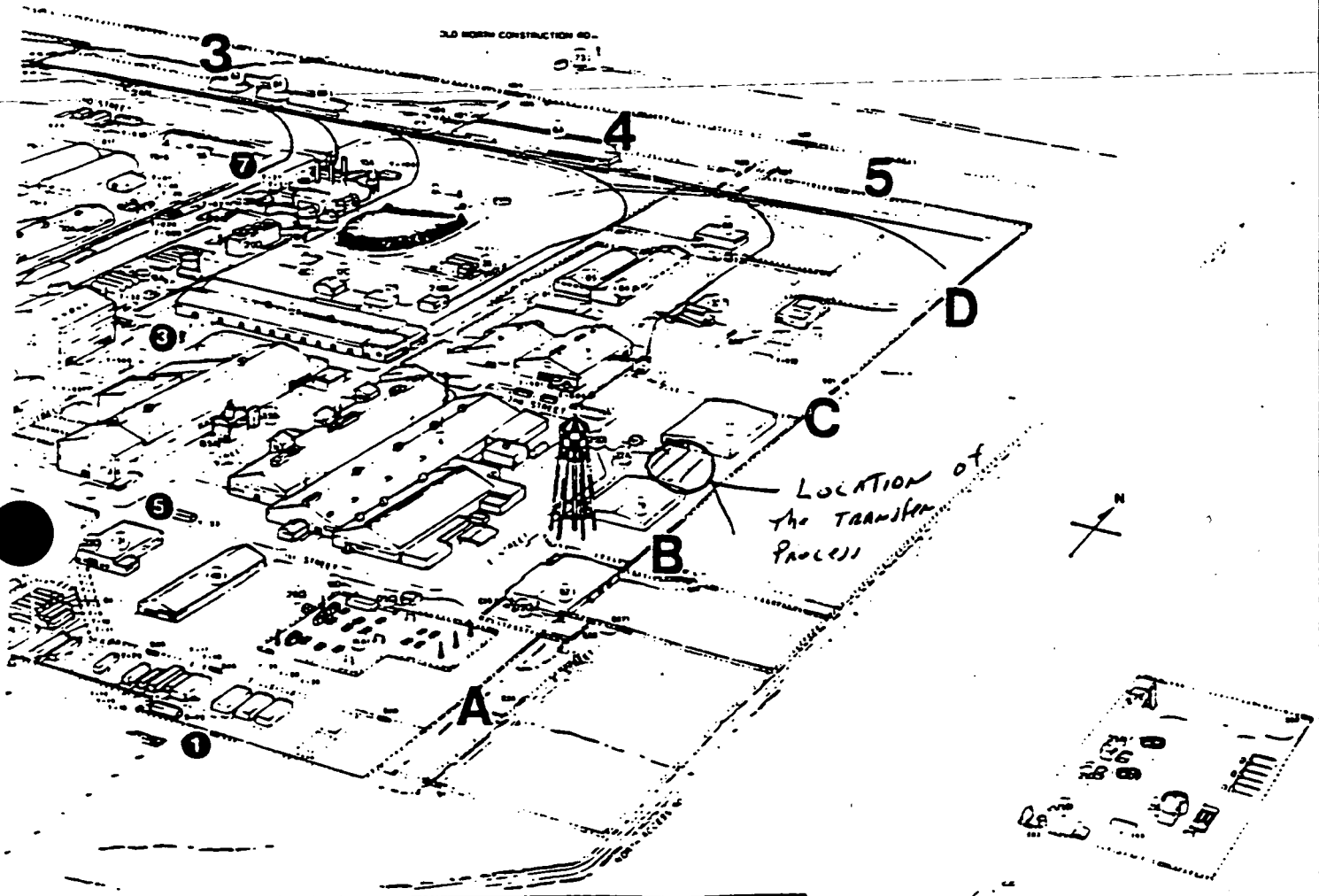
USE SUCTION HOSES TO REMOVE TRAPPED SPILL MATERIAL.

USE DREDGES OR LIFTS TO EXTRACT IMMOBILIZED MASSES OF POLLUTION AND PRECIPITATES.

OCCUPATIONAL SPILL:
SHUT OFF IGNITION SOURCES. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. FOR SMALL LIQUID SPILLS, TAKE UP WITH SAND, EARTH OR OTHER ABSORBENT MATERIAL. FOR

ATTACHMENT F
WORK AREA MAP

Fernald Environmental Management Project

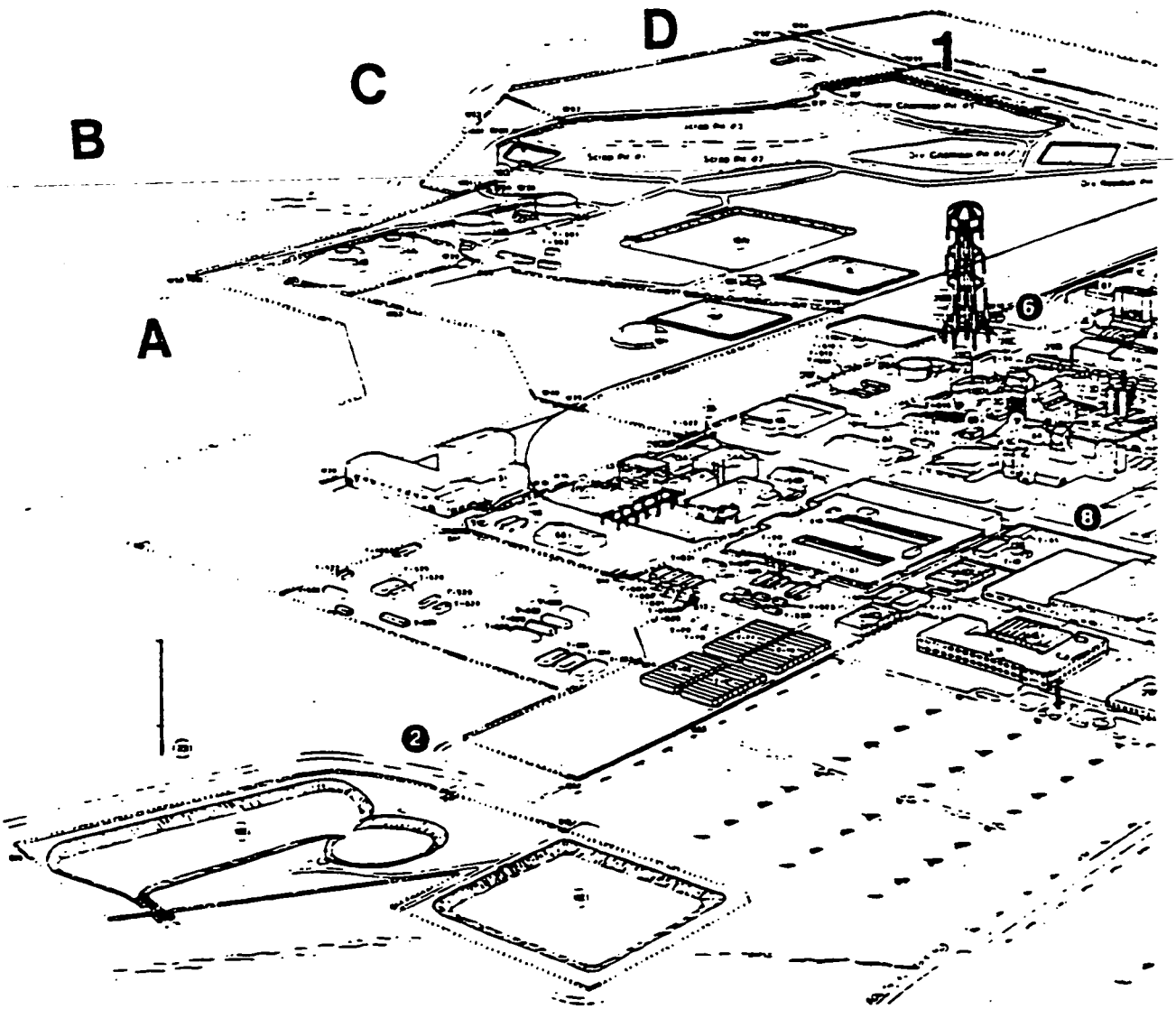


[illegible]	28c	A-5	Main Electrical Substation House	54b	A-3	UF_6 to UF_4 Reduction Facility I	
[illegible]	28d	A-4	Security Building	54b	A-3	Pilot Plant Warehouse	
[illegible] Tank Farm	28b	A-4	Human Resources Building	55a	B-4	Slag Recycling Plant	
[illegible] Center	30a	C-3	Chemical Warehouse	55b	B-4	Slag Recycling Refrigerator	
	30b	C-3	Drum Storage Warehouse	56	C-3	CP Storage Warehouse	
	31	A-5	Engine House - Garage	60	D-3	Quonset #1	
[illegible] ($MgCl_2 \cdot H_2O$)	32	D-5	Magnesium Storage	61	D-3	Quonset #2	
	34a	B-1	K-65 Storage Tank - North	62	D-3	Quonset #3	
	34b	B-1	K-65 Storage Tank - South	63	D-4	KC-2 Warehouse	
	35a	C-1	Metal Oxide Storage Tank - North	64	D-5	Thorium Warehouse	
[illegible]	35b	B-1	Metal Oxide Storage Tank - South	65	D-5	(Old) Plant 5 Warehouse	
	37	A-3	Pilot Plant Annex	66	C-3	Drum Reconditioning Building	
	38	D-4	Propane Storage	67	C-3	Plant 1 Thorium Warehouse	
[illegible]	39a	B-3	Incinerator Building	68	A-3	Pilot Plant Warehouse	
	39b	B-3	Sheeter Storage Building	69	D-5	Decontamination Building	
[illegible]	39c	B-3	Incinerator Building Sprinkler Pump House	71	C-3	General In-Process Storage Warehouse	
[illegible]	44a	A-5	Trailer Complex - 6-Plex - East	72	C-3	Drum Storage Building	
[illegible]	44c	A-3	Trailer Complex - 7-Plex - South	73		Fire Brigade Training Center Building	
[illegible]	44d	A-3	Trailer Complex - 7-Plex - North	[illegible]	C-5	Finished Products Warehouse	
	44e	A-4	Trailer Complex - 10-Plex	78	D-5	New O&D Facility	
[illegible] Building	45	B-3	Plant Engineering Building	79	B-5	Plant 6 Warehouse	
[illegible]	46	A-5	Heavy Equipment Garage	80	B-3	Plant 8 Warehouse	
[illegible]	51	A-2	UF_6 to UF_4 Reduction Facility II	81	C-5	Plant 9 Warehouse	
[illegible]	53a	A-4	Occupational Safety & Health Building	82	B-5	Receiving & Incoming Materials Inspection Area	
	53b	A-4	[illegible] Building				

** NOTE: [illegible] * Outside of Perimeter Security Fence

000209

Recycled and Recyclable



RALLY POINTS

BUILDING IDENTIFICATION

[illegible]	[illegible]	General	[illegible]	[illegible]	Special Products Plant
[illegible]	C-3	Presintaion Plant	108	[illegible]	Boiler Plant
[illegible]	C-3	Plant 1 Storage Building	109	[illegible]	Boiler Plant Maintenance Building
[illegible]	B-3	Ore Refinery Plant	[illegible]	[illegible]	Service Building
[illegible]	B-3	Lime Handling Building	128	[illegible]	Maintenance Building (Main)
[illegible]	B-3	Bulk Lime Handling Building	129	[illegible]	Container Storage Building
[illegible]	B-3	Metal Discover Building	[illegible]	[illegible]	Lumber Storage Building
[illegible]	C-3	NFS Storage and Pump House	134	[illegible]	Pilot Plant West Side
[illegible]	B-3	Maintenance Building	139	[illegible]	Pilot Plant Maintenance Building
[illegible]	B-3	Ozone Building	[illegible]	[illegible]	Sump Pump House
[illegible]	B-3	Control House	[illegible]	[illegible]	Administration Building
[illegible]	B-3	NAR Towers	[illegible]	[illegible]	Laboratories
[illegible]	B-3	Hot Refinery Building	168	[illegible]	Main Electrical Station
[illegible]	B-3	Digestion Pump Recovery	169	[illegible]	Electrical Substation
[illegible]	B-3	Refrigeration Building	186	[illegible]	Surge Lagoon
[illegible]	B-3	Refinery Sump	189	[illegible]	General Sump
[illegible]	B-4	Green Salt Plant	190	[illegible]	Coal Pile Runoff Basin
[illegible]	B-4	Plant 4 Warehouse	192	[illegible]	Bioremediation Towers
[illegible]	B-4	Plant 4 Maintenance Building	193	[illegible]	Storm Water Retention Basin
[illegible]	B-4	Metals Production Plant	[illegible]	[illegible]	Pit 5 Sluice Gate
[illegible]	B-5	Metals Fabricating Plant	198	[illegible]	Cleanroom Pump House
[illegible]	B-4	Plant 7	199	B-3	BDN Effluent Treatment Facility
[illegible]	B-3	Recovery Plant	199	B-2	Mixtanks Tank
[illegible]	B-3	Maintenance Building	199	[illegible]	Low Nitrate Tank
[illegible]	B-3	Refinery Rail/Drum Reconditioning Building	199	B-2	High Nitrate Tank

May 1992

ATTACHMENT G
PSHSP ACKNOWLEDGEMENT FORM

ACKNOWLEDGEMENT FORM
PROJECT SPECIFIC HEALTH AND SAFETY PLAN
The Liquid Waste Sampling, Transferring, and Shipping

7376

Signature	Date	Badge No.

ATTACHMENT E

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 93-660A
Date: 11-30-93

A. Identifying Information

1) **Project Name:** FEMP Liquid Waste Management
2) **Plan No.:** 93-660A
3) **Material Description/Matrix Code(s):** Solvents (M323)
4) **Number of Drums in Sub-Waste Stream:** 2271
5) **Material Type:** Various
6) **Source Code:** Various
7) **Material Evaluation Form #:** Various
8) **Sampling Location for Drums:** Plant 4
9) **Process Knowledge:** Sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

B. Sampling Information

1) **General:** Samples taken will be contained in glass or polyethylene jars with teflon lined lids.
2) **Preservation Method:** See Analytical Requirements in Section C.
3) **Holding Times:** See Preservative and Holding Time Guidelines in Section G. Holding times and sample volume/container requirements for media-specific analyses not listed in the SCQ are provided by the FEMP laboratory facility.
4) **Sample Technique:** COLIWASA
5) **Number of Drums to be Sampled and Analyzed:** 14, see page 2.
6) **Composite Samples:** No
7) **Visual Inspection to be Performed?:** No
8) **Field Contact:** Camila Wehrfritz, ext. 9306
9) **Send Results to:** Chris Wernert, ext. 8927, MS 65
10) **Charge No./Project Manager:** 8ADD4 / Robert Schulten, ext. 9430
11) **Required QA/QC Samples:**

Field QC	Yes	No	Notes
Trip Blank	___	X	no volatile organic samples
Field Blank	___	X	1 per 20 samples or 1 per sampling event
Equipment Rinsate	___	X	1 per 20 samples or 1 per sampling event
Duplicate	___	X	1 per 20 samples or 1 per sampling event
Container Blank	___	X	analytical data supplied by supplier
Preserv. Blank	___	X	assay data supplied by supplier

Laboratory QC

Laboratory QC sample type and frequency requirements are provided in Appendix G of the SCQ.

Chris Wernert / 12-1-93 — Authorized Signature/Date

Approved/Date 12/2/93

LISTED COMBUSTIBLES 1A

Sampling Information

Start with Sample Number 93-660A-1 for the first drum sample, then number consecutively until sampling is completed. Sample a portion of each drum that makes up the composite.

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660A-1	10010	IV01792	H093-655-D039-0312	1
93-660A-2	""	IV01793	H093-655-D039-0312	2
93-660A-3	""	IV02024	H093-655-D039-0303	10
93-660A-4	""	IV02385	X500-655-H039-0296	2
93-660A-5	""	IV02409	X888-655-0039-0301	7
93-660A-6	10004	IV00818	X500-735-0013-0287	7
93-660A-7	10027	IV01037	R020-600-P015-7318	10

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660A-8	10010	IV01816	D690-655-D039-0314	14
93-660A-9	""	IV01870	H093-655-D039-0308	8
93-660A-10	""	IV01913	H093-655-D039-0307	11
93-660A-11	""	IV02004	H093-655-D039-0302	5
93-660A-12	""	IV02391	X500-655-H039-0298	5
93-660A-13	10004	IV00806	R095-735-V013-0306	1
93-660A-14	10027	IV02558	R020-600-P015-7306	1

Chris Weinert / 12-1-93
Authorized Signature/Date

Jerome A. Gruenf 12/2/93
Approved/Date

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 93-660A
Date: 12-2-93

C. Analytical Requirements

In order to satisfy waste characterization requirements the following analyses may be performed:

Analysis Requested (Analysis Code) ASL = Analytical Support Level VOA = Volatile Organics Analysis SVOA = Semi-Volatile Organics Analysis U.Th = Uranium, Thorium PFLT = Paint Filter Liquids Test	Solid Matrix Samples Container and Preservative/Unit Codes oz. = ounce P00, P01 = file preservation, Cool 4 deg. C U02, U04, U07, U19 = mg/L,mg/kg,ug/g,pCi/g U99 = present/absent TLC = Teflon Lined Closure		Liquid Waste Samples Container and Preservative/Unit Codes mL, L = milliliter, Liter P00 = no preservation needed U02, U06, U18 = mg/L, ug/L, pCi/L U35, U37 = pH units, degrees Fahrenheit TLS = Teflon Lined Septum	
Samples (1 through 5) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 8oz. glass, TLC	P00/Pass,Fail	(1) x 8oz. glass, TLC	P00/Pass,Fail
Sample (6) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 40ml glass vial	P00/Pass,Fail	(1) x 40ml glass vial	P00/Pass,Fail
Sample (7) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 40ml glass vial	P00/Pass,Fail	(1) x 40ml glass vial	P00/Pass,Fail
Samples (8 through 12) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 8oz. glass, TLC	P00/Pass,Fail	(1) x 8oz. glass, TLC	P00/Pass,Fail
Sample (13) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 40ml glass vial	P00/Pass,Fail	(1) x 40ml glass vial	P00/Pass,Fail
Sample (14) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 40ml glass vial	P00/Pass,Fail	(1) x 40ml glass vial	P00/Pass,Fail
Description of material (Color, appearance, consistency, etc.)				

Chris Wernet 12-1-93
Authorized Signature/Date

Frank A. Simonfy 12/2/93
Approved/Date

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

D. Sub-Waste Stream Description

The sub-waste stream consists of 2271 drums in multiple lots. The sub-waste stream is also covered under multiple MEFs. This material is sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

E. Safety Concerns

See SOP 20-C-805, Sections 6.0 to 6.14 for Health and Safety requirements. Contact IH and Fire & Safety for additional requirements.

F. Representative Sampling Procedure

Fourteen drums are listed on page 2 of this form. If visual inspection indicates that the material has free liquid or is completely dry, then a P.F.L.T is not necessary. Record pertinent information in the Field Log Book for each drum sampled as specified in SOP 20-C-805, Section 7.2.13.

G. Preservative and Holding Time Guidelines

In accordance with the Sitewide CERCLA Quality Assurance Project Plan (SCQ) - Volume II, Appendix A, Table 6-1 "Sample Container and Preservation Requirements," sample holding times are as follows: 7 days for Total\TCLP Semi-VOAs/Pesticides/Herbicides (low to medium concentration liquids and QC samples) and Total VOAs (non-acidified low to medium concentration liquids or QC samples); 14 days for Total/TCLP VOAs (solids and acidified low-medium concentration liquids or QC samples), and Total/TCLP Semi-VOAs/Pesticides/Herbicides; 28 days for flashpoint analyses; and 180 days for Total/TCLP Metals (except Hg, which is 28 days), Total Uranium, Isotopic Uranium, Total Thorium, and Isotopic Thorium. For concentrated wastes, the following holding times are applicable: 28 days for flashpoint analyses; and 180 days for Total VOAs, Total Semi-VOAs/Pesticides/Herbicides, and Total Metals.

This form must be dated and signed by an authorized individual.
If this Sub-Waste Stream is sampled and analyzed according to the information on this form, the results generated will be in agreement with the sampling and analysis requirements of NVO-325 (Rev. 1), Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements; and the Fernald Environmental Management Project (FEMP) Sitewide CERCLA Quality Assurance Project Plan (SCQ).

12-1-93 — Authorized Signature/Date

12/2/93 — Approved/Date

Calculations for ASTM Commingling Method

MEF # 10004 : Approx. wt. = 7,663lbs
MEF # 10010 : Approx. wt. = 159,275lbs
MEF # 10027 : Approx. wt. = 5,511lbs

Convert to gallons, using a density of 8.34lbs/gal.

MEF # 10004 : Approx. gal. = 918.8gal
MEF # 10010 : Approx. gal. = 19,097.7gal
MEF # 10027 : Approx. gal. = 660.8gal

$V_{(10010)} = V_{(10004)} \bullet (918.8gal/19,097.7gal)$

Set $V_{(10010)} = 150ml$

$150ml = 20.78 \bullet V_{(10004)}$

$V_{(10004)} = 7.22ml$

Final Volumes (first two MEFs):
$V_{(10004)} = 7.2ml$
$V_{(10010)} = 150ml$

MEF # 10010 & 10004 : Approx. gal. = 20,016.5gal

$157.2ml = V_{(10027)} * (20,016.5gal/660.8gal)$

$V_{(10027)} = 5.19ml$

Final Volumes (all three MEFs):
$V_{(10004)}$ & $V_{(10010)} = 157.2ml$
$V_{(10027)} = 5.2ml$

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Place the volume amount of "B" into the 500ml beaker. Then place the volume amount of "A" into the same 500ml beaker. Follow the procedure as specified in ASTM Method 5058.

Test#1

Quantity	Sample #	MEF #	Volume
B	93-660A-1	10,010	150ml
A	93-660A-6	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-1 & 6	10,010&10,004	157.2ml
A	93-660A-7	10,027	5.2ml

Test#2

Quantity	Sample #	MEF #	Volume
B	93-660A-2	10,010	150ml
A	93-660A-6	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-2 & 6	10,010&10,004	157.2ml
A	93-660A-7	10,027	5.2ml

Test#3

Quantity	Sample #	MEF #	Volume
B	93-660A-3	10,010	150ml
A	93-660A-6	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-3 & 6	10,010&10,004	157.2ml
A	93-660A-7	10,027	5.2ml

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#4

Quantity	Sample #	MEF #	Volume
B	93-660A-4	10,010	150ml
A	93-660A-6	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-4 & 6	10,010&10,004	157.2ml
A	93-660A-7	10,027	5.2ml

Test#5

Quantity	Sample #	MEF #	Volume
B	93-660A-5	10,010	150ml
A	93-660A-6	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-5 & 6	10,010&10,004	157.2ml
A	93-660A-7	10,027	5.2ml

Test#6

Quantity	Sample #	MEF #	Volume
B	93-660A-8	10,010	150ml
A	93-660A-13	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-8 & 13	10,010&10,004	157.2ml
A	93-660A-14	10,027	5.2ml

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#7

Quantity	Sample #	MEF #	Volume
B	93-660A-9	10,010	150ml
A	93-660A-13	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-9 & 13	10,010&10,004	157.2ml
A	93-660A-14	10,027	5.2ml

Test#8

Quantity	Sample #	MEF #	Volume
B	93-660A-10	10,010	150ml
A	93-660A-13	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-10 & 13	10,010&10,004	157.2ml
A	93-660A-14	10,027	5.2ml

Test#9

Quantity	Sample #	MEF #	Volume
B	93-660A-11	10,010	150ml
A	93-660A-13	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-11 & 13	10,010&10,004	157.2ml
A	93-660A-14	10,027	5.2ml

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#10

Quantity	Sample #	MEF #	Volume
B	93-660A-12	10,010	150ml
A	93-660A-13	10,004	7.2ml

Quantity	Sample #	MEF #	Volume
B(A&B above)	93-660A-12 & 13	10,010&10,004	157.2ml
A	93-660A-14	10,027	5.2ml

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 93-660B
Date: 11-30-93

A. Identifying Information

1) Project Name: FEMP Liquid Waste Management
2) Plan No.: 93-660B
3) Material Description/Matrix Code(s): Solvents (M323)
4) Number of Drums in Sub-Waste Stream: 2271
5) Material Type: Various
6) Source Code: Various
7) Material Evaluation Form #: Various
8) Sampling Location for Drums: Plant 4
9) Process Knowledge: Sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

B. Sampling Information

1) General: Samples taken will be contained in glass or polyethylene jars with teflon lined lids.
2) Preservation Method: See Analytical Requirements in Section C.
3) Holding Times: See Preservative and Holding Time Guidelines in Section G. Holding times and sample volume/container requirements for media-specific analyses not listed in the SCQ are provided by the FEMP laboratory facility.
4) Sample Technique: COLIWASA
5) Number of Drums to be Sampled and Analyzed: 20, see page 2.
6) Composite Samples: No
7) Visual Inspection to be Performed?: No
8) Field Contact: Camila Werhfritz, ext. 9306
9) Send Results to: Chris Wernert, ext. 8927, MS 65
10) Charge No./Project Manager: 8ADD4 / Robert Schulten, ext. 9430
11) Required QA/QC Samples:

Field QC	Yes	No	Notes
Trip Blank		X	no volatile organic samples
Field Blank		X	1 per 20 samples or 1 per sampling event
Equipment Rinsate		X	1 per 20 samples or 1 per sampling event
Duplicate		X	1 per 20 samples or 1 per sampling event
Container Blank		X	analytical data supplied by supplier
Preserv. Blank		X	assay data supplied by supplier

Laboratory QC

Laboratory QC sample type and frequency requirements are provided in Appendix G of the SCQ.

Chris Wernert 12-1-93 — Authorized Signature/Date

Jerome A. Anderson 12/2/93 — Approved/Date

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 93-660B
Date: 11-30-93

LISTED IGNITABLES 1A

Sampling Information

Start with Sample Number 93-660B-1 for the first drum sample, then number consecutively until sampling is completed. Sample a portion of each drum that makes up the composite.

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660B-1	20003	IV02191	R095-YAQ-V013-PPT5	5
93-660B-2	""	IV02616	R095-YAQ-V013-PPT5	60
93-660B-3	""	IV02667	R095-YAQ-V013-PPT5	83
93-660B-4	""	IV02902	R095-YAQ-V013-PPT6	29
93-660B-5	""	IV02969	R095-YAQ-V013-PPT6	93
93-660B-6	""	IV02248	R095-YAQ-V013-PPT5	38
93-660B-7	""	IV02621	R095-YAQ-V013-PPT5	65
93-660B-8	""	IV02733	R095-YAQ-V013-PPT5	109
93-660B-9	""	IV02804	R095-YAQ-V013-PPT5	134
93-660B-10	""	IV02901	R095-YAQ-V013-PPT6	10
93-660B-11	426	IV06205	R070-733-P013-0341	6
93-660B-12	""	IV06313	R070-733-P013-0344	3
93-660B-13	""	IV06403	R070-733-P013-0346	1
93-660B-14	""	IV07786	R070-733-P013-0363	5
93-660B-15	""	IV13974	R070-733-P013-0372	5
93-660B-16	""	IV03906	R070-733-P013-0336	6
93-660B-17	""	IV04298	R070-733-P013-0338	3
93-660B-18	""	IV06644	R070-733-P013-0351	3
93-660B-19	""	IV13598	R050-721-P001-W326	42
93-660B-20	""	IV13975	R070-733-P013-0372	6

Chris Werner /12-1-93
Authorized Signature/Date

Jerome A. Simmons /12/2/93
Approved/Date

C. Analytical Requirements

In order to satisfy waste characterization requirements the following analyses may be performed:

Analysis Requested (Analysis Code) ASL = Analytical Support Level VOA = Volatile Organics Analysis SVOA = Semi-Volatile Organics Analysis U,Th = Uranium, Thorium PFLT = Paint Filter Liquids Test	Solid Matrix Samples Container and Preservative/Unit Codes oz. = ounce P00, P01 = No preservation, Cool 4 deg. C U02, U04, U07, U19 = mg/l,mg/kg,ug/g,pCi/g U99 = present/absent TLC = Teflon Lined Closure		Liquid Waste Samples Container and Preservative/Unit Codes mL, L = milliter, Liter P00 = no preservation needed U02, U06, U18 = mg/L, ug/L, pCi/L U35, U37 = pH units, degrees Fahrenheit TLS = Teflon Lined Septum	
Samples (1 through 10) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 8oz. glass, TLC	P00/Pass,Fail	(1) x 8oz. glass, TLC	P00/Pass,Fail
Samples (11 through 20) Commingling Waste (ASTM 5058, Method A) ASL B	(1) x 40ml. glass vial	P00/Pass,Fail	(1) x 40ml. glass vial	P00/Pass,Fail
Description of material (Color, appearance, consistency, etc.)				

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

D. Sub-Waste Stream Description

The sub-waste stream consists of 2271 drums in multiple lots. The sub-waste stream is also covered under multiple MEFs. This material is sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

E. Safety Concerns

See SOP 20-C-805, Sections 6.0 to 6.14 for Health and Safety requirements. Contact IH and Fire & Safety for additional requirements.

F. Representative Sampling Procedure

Twenty drums are listed on page 2 of this form. If visual inspection indicates that the material has free liquid or is completely dry, then a P.F.L.T is not necessary. Record pertinent information in the Field Log Book for each drum sampled as specified in SOP 20-C-805, Section 7.2.13.

G. Preservative and Holding Time Guidelines

In accordance with the Sitewide CERCLA Quality Assurance Project Plan (SCQ) - Volume II, Appendix A, Table 6-1 "Sample Container and Preservation Requirements," sample holding times are as follows: 7 days for Total\TCLP Semi-VOAs/Pesticides/Herbicides (low to medium concentration liquids and QC samples) and Total VOAs (non-acidified low to medium concentration liquids or QC samples); 14 days for Total/TCLP VOAs (solids and acidified low-medium concentration liquids or QC samples), and Total/TCLP Semi-VOAs/Pesticides/Herbicides; 28 days for flashpoint analyses; and 180 days for Total/TCLP Metals (except Hg, which is 28 days), Total Uranium, Isotopic Uranium, Total Thorium, and Isotopic Thorium. For concentrated wastes, the following holding times are applicable: 28 days for flashpoint analyses; and 180 days for Total VOAs, Total Semi-VOAs/Pesticides/Herbicides, and Total Metals.

This form must be dated and signed by an authorized individual.
If this Sub-Waste Stream is sampled and analyzed according to the information on this form, the results generated will be in agreement with the sampling and analysis requirements of NVO-325 (Rev. 1), Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements; and the Fernald Environmental Management Project (FEMP) Sitewide CERCLA Quality Assurance Project Plan (SCQ).

Chris Vernet 12-1-93 Jerome A. Gnoon 12/2/93
Authorized Signature/Date Approved/Date

Calculations for ASTM Commingling Method

MEF # 20003 : Approx. wt. = 125,142lbs
MEF # 426 : Approx. wt. = 4,950lbs

Convert to gallons, by using a density of 8.34lbs/gal.

MEF # 20003 : Approx. gal. = 15,005gal
MEF # 426 : Approx. gal. = 593.5gal

$V_{(20003)} = V_{(426)} * (15{,}005gal/593.5gal)$

Set $V_{(20003)} = 150ml$

$150ml = 25.28 * V_{(426)}$

$V_{(426)} = 5.9ml$

Final Volumes:

$V_{(426)} = 5.9ml$
$V_{(20003)} = 150ml$

ASTM Method 5058

Test Method A - Commingled Waste Compatibility 7376

LISTED IGNITABLES 1A

Place the volume amount of "B" into the 500ml beaker. Then place the volume amount of "A" into the same 500ml beaker. Follow the procedure as specified in ASTM Method 5058.

Test#1

Quantity	Sample #	MEF #	Volume
B	93-660B-1	20,003	150ml
A	93-660B-11	426	5.9ml

Test#2

Quantity	Sample #	MEF #	Volume
B	93-660B-2	20,003	150ml
A	93-660B-12	426	5.9ml

Test#3

Quantity	Sample #	MEF #	Volume
B	93-660B-3	20,003	150ml
A	93-660B-13	426	5.9ml

Test#4

Quantity	Sample #	MEF #	Volume
B	93-660B-4	20,003	150ml
A	93-660B-14	426	5.9ml

Test#5

Quantity	Sample #	MEF #	Volume
B	93-660B-5	20,003	150ml
A	93-660B-15	426	5.9ml

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED IGNITABLES 1A

Test#6

Quantity	Sample #	MEF #	Volume
B	93-660B-6	20,003	150ml
A	93-660B-16	426	5.9ml

Test#7

Quantity	Sample #	MEF #	Volume
B	93-660B-7	20,003	150ml
A	93-660B-17	426	5.9ml

Test#8

Quantity	Sample #	MEF #	Volume
B	93-660B-8	20,003	150ml
A	93-660B-18	426	5.9ml

Test#9

Quantity	Sample #	MEF #	Volume
B	93-660B-9	20,003	150ml
A	93-660B-19	426	5.9ml

Test#10

Quantity	Sample #	MEF #	Volume
B	93-660B-10	20,003	150ml
A	93-660B-20	426	5.9ml

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

7376

Number: 93-660C
Date: 11-29-93

A. Identifying Information

1) **Project Name:** FEMP Liquid Waste Management
2) **Plan No.:** 93-660C
3) **Material Description/Matrix Code(s):** Solvents (M323)
4) **Number of Drums in Sub-Waste Stream:** 2271
5) **Material Type:** Various
6) **Source Code:** Various
7) **Material Evaluation Form #:** Various
8) **Sampling Location for Drums:** Plant 4
9) **Process Knowledge:** Sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

B. Sampling Information

1) **General:** Samples taken will be contained in glass or polyethylene jars with teflon lined lids.
2) **Preservation Method:** See Analytical Requirements in Section C.
3) **Holding Times:** See Preservative and Holding Time Guidelines in Section G. Holding times and sample volume/container requirements for media-specific analyses not listed in the SCQ are provided by the FEMP laboratory facility.
4) **Sample Technique:** COLIWASA/Scissors
5) **Number of Drums to be Sampled and Analyzed:** see page 2.
6) **Composite Samples:** Yes, see page 2.
7) **Visual Inspection to be Performed?:** No
8) **Field Contact:** Camila Werhfritz, ext. 9306
9) **Send Results to:** Chris Wernert, ext. 8927, MS 65
10) **Charge No./Project Manager:** 8ADD4 / Robert Schulten, ext. 9430
11) **Required QA/QC Samples:**

Field QC	Yes	No	Notes
Trip Blank	___	X	no volatile organic samples
Field Blank	___	X	1 per 20 samples or 1 per sampling event
Equipment Rinsate	___	X	1 per 20 samples or 1 per sampling event
Duplicate	___	X	1 per 20 samples or 1 per sampling event
Container Blank	___	X	analytical data supplied by supplier
Preserv. Blank	___	X	assay data supplied by supplier

Laboratory QC

Laboratory QC sample type and frequency requirements are provided in Appendix G of the SCQ.

Chris Wernert 1-25-94 — Authorized Signature/Date

Lawrence Dove Jr. 1/27/94 — Approved/Date

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

LISTED COMBUSTIBLES 1B

Sampling Information

Start with Sample Number 93-660C-1 for the first drum sample, then number consecutively until sampling is completed. Sample a portion of each drum that makes up the composite.

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660C-1	30034	IV00607	R095-741-V015-7306	35
93-660C-2	60085	IV02691	R095-801-V015-7331	50
93-660C-3	60070	IV01706	H093-530-D015-0299	2
93-660C-4	60084	IV02594	R095-801-V015-7331	8
93-660C-5	388	IV07729	R050-739-P015-0361	1
93-660C-6	60080	IV02573	R050-745-P015-7331	7
93-660C-7	60328	IV00639	D690-655-D039-6319	2
93-660C-8	60078	IV04800	R050-739-P015-0340	2
93-660C-9	60051	IV00024	R050-736-P013-0306	1
93-660C-10	20021	IV00143	H093-137-D015-0299	10
93-660C-11	60342	IV04618	R050-741-P015-7339	2
93-660C-12	60087	IV00205	X095-853-0015-0016	9
93-660C-13	60069	IV00112	H093-510-D015-0295	4
93-660C-14	10028	IV02413	S095-800-0039-0321	4
93-660C-15	10029	IV00191	X500-921-0015-0309	1
93-660C-16	60115	IV00613	R095-741-V039-7306	6
93-660C-17	60079	IV06398	R050-742-P015-7342	2
93-660C-18	20031	IV02828	R020-100-P015-7331	6
93-660C-19	20028	IV02104	R099-351-V015-0299	9
93-660C-20	480	IV06508	R050-705-P015-0348	1
93-660C-21	60062	IV03524	R050-200-P015-7331	1
93-660C-22	60063	IV02562	R095-201-V015-7317	1
93-660C-23	60072	IV03002	R020-601-P015-0331	4
93-660C-24	60081	IV07969	R050-747-P015-0365	1
93-660C-25	742	IV06637	R050-100-P039-0350	1
93-660C-26	390	IV06823	R020-655-P039-7353	1
93-660C-27	60116	IV02549	X884-763-V039-0277	1
93-660C-28	60068	IV03735	R020-503-P015-0334	1
93-660C-29	10007	IV00192	X500-965-0039-0309	1
93-660C-30	60049	IV00439	R050-730-P013-0314	8
93-660C-31	60074	IV03857	R020-620-P015-0335	2
93-660C-32	402	IV06832	R099-203-V015-0354	1
93-660C-33	60075	IV01331	D690-655-D015-0318	1
93-660C-34	106	IV06239	R050-739-P015-0342	1
93-660C-35	60083	IV03582	R020-769-P015-0333	1

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660C-36	10021	IV03657	R095-200-V039-0333	1
93-660C-37	20038	IV01337	R020-301-P015-7326	1
93-660C-38	10032	IV01652	R125-901-0015-0327	1
93-660C-39	60117	IV02712	R020-767-P039-7331	1
93-660C-40	60044	IV02213	R020-301-P013-0330	1
93-660C-41	60112	IV00018	H093-530-D039-0295	1
93-660C-42	20055	IV01336	R095-300-V015-7326	1
93-660C-43	60065	IV01340	R050-401-P015-7325	1
93-660C-44	148	IV06296	R099-202-V013-0344	1
93-660C-45	438	IV06369	R050-137-P015-0344	1
93-660C-46	20054	IV01691	H093-530-D013-0295	1
93-660C-47	60064	IV06307	R099-203-V015-6344	1
93-660C-48	60067	IV01335	R020-501-P015-7326	1
93-660C-49	60110	IV00375	R050-510-P039-0320	1
93-660C-50	60086	IV03736	R095-802-V015-0334	1
93-660C-51	10006	IV01339	R050-730-P015-7326	1
93-660C-52	23	IV04205	R099-203-V015-0338	1
93-660C-53	385	IV07946	R050-738-P013-0365	1
93-660C-54	400	IV06617	R020-769-P015-0350	1
93-660C-55	397	IV06809	R020-768-P013-0353	1
93-660C-56	60073	IV02741	R020-603-D015-0331	1
93-660C-57	379	IV06522	R020-502-P013-0348	1
93-660C-58	60066	IV03522	R050-402-P015-0325	2
93-660C-59	20045	IV00013	S109-732-0022-0300	1
93-660C-60	60111	IV02652	R050-513-P039-7331	27
93-660C-61	10035	IV00115	R050-732-D013-0318	6
93-660C-62	422	IV03711	R098-733-V013-0334	1
93-660C-63	60113	IV01633	R050-700-P039-0327	1
93-660C-64	60076	IV01636	R050-700-P015-0327	1

Chris Wurmet 1-25-94
Authorized Signature/Date

Lawrence Love Jr. 1/27/94
Approved/Date

C. Analytical Requirements

In order to satisfy waste characterization requirements the following analyses may be performed:

Analysis Requested (Analysis Code) ASL = Analytical Support Level VOA = Volatile Organics Analysis SVOA = Semi-Volatile Organics Analysis U,Th = Uranium, Thorium PFLT = Paint Filter Liquids Test	Solid Matrix Samples Container and Preservative/Unit Codes oz. = ounce P00, P01 = No preservation, Cool 4 deg. C U02, U04, U07, U19 = mg/L,mg/kg,ug/g,pCi/g U09 = present/absent TLC = Teflon Lined Closure		Liquid Waste Samples Container and Preservative/Unit Codes mL, L = milliliter, Liter P00 = no preservation needed U02, U06, U19 = mg/L, ug/L, pCi/L U35, U37 = pH units, degrees Fahrenheit TLS = Teflon Lined Septum	
Commingling Waste (ASTM 5058, Method A) ASL B Samples 1,2,3	(1) x 240ml. glass, TLC	P00/Pass,Fail	(1) x 240 ml. glass TLC	P00/Pass,Fail
Commingling Waste (ASTM 5058, Method A) ASL B Samples 4 - 64	(1) x 40ml. vial, TLC	P00/Pass,Fail	(1) x 40 ml. vial, TLC	P00/Pass,Fail
Description of material (Color, appearance, consistency, etc.)				

Note: * - Perform analysis for concentrated waste samples.
** - For solid matrix samples only. Prepare sample extract, then conduct Total concentration screening analyses. If Total concentrations exceed 20 times the TCLP regulatory value, then analyze the sample extract.

D. Sub-Waste Stream Description

The sub-waste stream consists of 2271 drums in multiple lots. The sub-waste stream is also covered under multiple MEFs. This material is sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

E. Safety Concerns

See SOP 20-C-805, Sections 6.0 to 6.14 for Health and Safety requirements.

F. Representative Sampling Procedure

Two drums are listed on page 2 of this form. If visual inspection indicates that the material has free liquid or is completely dry, then a P.F.L.T is not necessary. Record pertinent information in the Field Log Book for each drum sampled as specified in SOP 20-C-805, Section 7.2.13.

G. Preservative and Holding Time Guidelines

In accordance with the Sitewide CERCLA Quality Assurance Project Plan (SCQ) - Volume II, Appendix A, Table 6-1 "Sample Container and Preservation Requirements," sample holding times are as follows: 7 days for Total\TCLP Semi-VOAs/Pesticides/Herbicides (low to medium concentration liquids and QC samples) and Total VOAs (non-acidified low to medium concentration liquids or QC samples); 14 days for Total/TCLP VOAs (solids and acidified low-medium concentration liquids or QC samples), and Total/TCLP Semi-VOAs/Pesticides/Herbicides; 28 days for flashpoint analyses; and 180 days for Total/TCLP Metals (except Hg, which is 28 days), Total Uranium, Isotopic Uranium, Total Thorium, and Isotopic Thorium. For concentrated wastes, the following holding times are applicable: 28 days for flashpoint analyses; and 180 days for Total VOAs, Total Semi-VOAs/Pesticides/Herbicides, and Total Metals.

This form must be dated and signed by an authorized individual.
If this Sub-Waste Stream is sampled and analyzed according to the information on this form, the results generated will be in agreement with the sampling and analysis requirements of NVO-325 (Rev. 1), Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements; and the Fernald Environmental Management Project (FEMP) Sitewide CERCLA Quality Assurance Project Plan (SCQ).

Chris Wenner 1-25-94 — Authorized Signature/Date

Lawrence Love Jr., 1/27/94 — Approved/Date

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 93-660D
Date: 12-30-93

A. Identifying Information

1) **Project Name:** FEMP Liquid Waste Management
2) **Plan No.:** 93-660D
3) **Material Description/Matrix Code(s):** Solvents (M323)
4) **Number of Drums in Sub-Waste Stream:** 2271
5) **Material Type:** Various
6) **Source Code:** Various
7) **Material Evaluation Form #:** Various
8) **Sampling Location for Drums:** Plant 4
9) **Process Knowledge:** Sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

B. Sampling Information

1) **General:** Samples taken will be contained in glass or polyethylene jars with teflon lined lids.
2) **Preservation Method:** See Analytical Requirements in Section C.
3) **Holding Times:** See Preservative and Holding Time Guidelines in Section G. Holding times and sample volume/container requirements for media-specific analyses not listed in the SCQ are provided by the FEMP laboratory facility.
4) **Sample Technique:** COLIWASA/Scissors
5) **Number of Drums to be Sampled and Analyzed:** see page 2.
6) **Composite Samples:** No
7) **Visual Inspection to be Performed?:** No
8) **Field Contact:** Camila Werhfritz, ext. 9306
9) **Send Results to:** Chris Wernert, ext. 8927, MS 65
10) **Charge No./Project Manager:** 8ADD4 / Robert Schulten, ext. 9430
11) **Required QA/QC Samples:**

Field QC	Yes	No	Notes
Trip Blank	___	X	no volatile organic samples
Field Blank	___	X	1 per 20 samples or 1 per sampling event
Equipment Rinsate	___	X	1 per 20 samples or 1 per sampling event
Duplicate	___	X	1 per 20 samples or 1 per sampling event
Container Blank	___	X	analytical data supplied by supplier
Preserv. Blank	___	X	assay data supplied by supplier

Laboratory QC

Laboratory QC sample type and frequency requirements are provided in Appendix G of the SCQ.

Chris Wernert 1-25-94 — Authorized Signature/Date

Lawrence Love Jr., 1/27/94 — Approved/Date

LISTED IGNITABLES 1B

Sampling Information

Start with Sample Number 93-660D-1 for the first drum sample, then number consecutively until sampling is completed. Sample a portion of each drum that makes up the composite.

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660D-1	30005	IV00055	X095-853-0039-0001	35
93-660D-2	60057	IV00827	R050-748-P013-0304	8
93-660D-3	10026	IV00695	S000-YAQ-0043-5618	10
93-660D-4	1229	IV11746	R069-380-P012-0367	3
93-660D-5	60056	IV00838	R050-746-P013-0304	16
93-660D-6	60119	IV01169	S095-741-V041-0325	16
93-660D-7	10003	IV00252	S095-800-0041-0293	4
93-660D-8	30033	IV00135	R050-745-P013-0318	1
93-660D-9	60058	IV00654	R095-767-V013-7318	2
93-660D-10	1709	IV14036	R050-CNL-P047-0371	12
93-660D-11	418	IV06314	R098-733-V013-0344	2
93-660D-12	50072	IV11773	R070-137-P012-0342	2
93-660D-13	514	IV06430	R050-135-P003-0346	4
93-660D-14	479	IV07812	R050-705-P013-0363	1
93-660D-15	60039	IV02686	R099-200-V013-0330	2
93-660D-16	419	IV01634	R050-700-P013-0327	1
93-660D-17	777	IV07963	R020-768-P015-0365	1
93-660D-18	60059	IV03698	R020-768-P013-0334	1
93-660D-19	60046	IV03903	R050-500-P013-0336	1
93-660D-20	414	IV07972	R050-776-P015-0365	1
93-660D-21	1412	IV06318	R020-768-P013-0344	1
93-660D-22	50096	IV11755	R050-765-P013-0342	1
93-660D-23	60052	IV03014	R050-738-P013-0331	1
93-660D-24	60041	IV02702	R099-201-V013-0331	1
93-660D-25	421	IV03625	R020-733-P013-0333	7
93-660D-26	10009	IV03746	X948-135-D043-0294	2
93-660D-27	60027	IV00140	A948-731-0009-0279	1
93-660D-28	60045	IV02660	R050-402-P013-0330	2
93-660D-29	50200	IV11453	H093-610-D041-0331	1
93-660D-30	10030	IV00663	R050-732-P013-0322	3
93-660D-31	1998	IV13795	R050-732-P013-0368	1
93-660D-32	50002	IV08928	R070-732-P003-7343	2
93-660D-33	60053	IV00606	R095-741-V013-0313	2
93-660D-34	60124	IV00812	R050-748-P043-0307	2
93-660D-35	50022	IV13863	R125-140-0012-0339	1

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660D-36	10034	IV00118	R050-732-D013-0318	8

Chris Wernert 1-25-94
Authorized Signature/Date

Lawrence Love Jr., 1/28/94
Approved/Date

C. Analytical Requirements

In order to satisfy waste characterization requirements the following analyses may be performed:

Analysis Requested (Analysis Code) ASL = Analytical Support Level VOA = Volatile Organics Analysis SVOA = Semi-Volatile Organics Analysis U,Th = Uranium, Thorium PFLT = Paint Filter Liquids Test	Solid Matrix Samples Container and Preservative/Unit Codes oz. = ounce P00, P01 = No preservation, Cool 4 deg. C U02, U04, U07, U19 = mg/L,mg/kg,ug/g,pCi/g U99 = present/absent TLC = Teflon Lined Closure		Liquid Waste Samples Container and Preservative/Unit Codes mL, L = milliliter, Liter P00 = no preservation needed U02, U06, U18 = mg/L, ug/L, pCi/L U35, U37 = pH units, degrees Fahrenheit TLS = Teflon Lined Septum	
Commingling Waste (ASTM 5058, Method A) ASL B Samples 1,2,3	(1) x 240ml. glass, TLC	P00/Pass,Fail	(1) x 240 ml. glass TLC	P00/Pass,Fail
Commingling Waste (ASTM 5058, Method A) ASL B Samples 4 - 36	(1) x 40ml. vial, TLC	P00/Pass,Fail	(1) x 40 ml. vial, TLC	P00/Pass,Fail
Description of material (Color, appearance, consistency, etc.)				

Note: * - Perform analysis for concentrated waste samples.
** - For solid matrix samples only. Prepare sample extract, then conduct Total concentration screening analyses. If Total concentrations exceed 20 times the TCLP regulatory value, then analyze the sample extract.

D. Sub-Waste Stream Description

The sub-waste stream consists of 2271 drums in multiple lots. The sub-waste stream is also covered under multiple MEFs. This material is sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

E. Safety Concerns

See SOP 20-C-805, Sections 6.0 to 6.14 for Health and Safety requirements.

F. Representative Sampling Procedure

Two drums are listed on page 2 of this form. If visual inspection indicates that the material has free liquid or is completely dry, then a P.F.L.T is not necessary. Record pertinent information in the Field Log Book for each drum sampled as specified in SOP 20-C-805, Section 7.2.13.

G. Preservative and Holding Time Guidelines

In accordance with the Sitewide CERCLA Quality Assurance Project Plan (SCQ) - Volume II, Appendix A, Table 6-1 "Sample Container and Preservation Requirements," sample holding times are as follows: 7 days for Total\TCLP Semi-VOAs/Pesticides/Herbicides (low to medium concentration liquids and QC samples) and Total VOAs (non-acidified low to medium concentration liquids or QC samples); 14 days for Total/TCLP VOAs (solids and acidified low-medium concentration liquids or QC samples), and Total/TCLP Semi-VOAs/Pesticides/Herbicides; 28 days for flashpoint analyses; and 180 days for Total/TCLP Metals (except Hg, which is 28 days), Total Uranium, Isotopic Uranium, Total Thorium, and Isotopic Thorium. For concentrated wastes, the following holding times are applicable: 28 days for flashpoint analyses; and 180 days for Total VOAs, Total Semi-VOAs/Pesticides/Herbicides, and Total Metals.

This form must be dated and signed by an authorized individual.
If this Sub-Waste Stream is sampled and analyzed according to the information on this form, the results generated will be in agreement with the sampling and analysis requirements of NVO-325 (Rev. 1), Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements; and the Fernald Environmental Management Project (FEMP) Sitewide CERCLA Quality Assurance Project Plan (SCQ).

Chris Wenner 1-25-94 — Authorized Signature/Date

Lawrence Love Jr., 1/28/94 — Approved/Date

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 93-660E
Date: 1-12-94

A. Identifying Information

1) **Project Name:** FEMP Liquid Waste Management
2) **Plan No.:** 93-660E
3) **Material Description/Matrix Code(s):** Solvents (M323)
4) **Number of Drums in Sub-Waste Stream:** 2271
5) **Material Type:** Various
6) **Source Code:** Various
7) **Material Evaluation Form #:** Various
8) **Sampling Location for Drums:** Plant 4
9) **Process Knowledge:** Sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

B. Sampling Information

1) **General:** Samples taken will be contained in glass or polyethylene jars with teflon lined lids.
2) **Preservation Method:** See Analytical Requirements in Section C.
3) **Holding Times:** See Preservative and Holding Time Guidelines in Section G. Holding times and sample volume/container requirements for media-specific analyses not listed in the SCQ are provided by the FEMP laboratory facility.
4) **Sample Technique:** COLIWASA/Scissors
5) **Number of Drums to be Sampled and Analyzed:** see page 2.
6) **Composite Samples:** No
7) **Visual Inspection to be Performed?:** No
8) **Field Contact:** Camila Werhfritz, ext. 9306
9) **Send Results to:** Chris Wernert, ext. 8927, MS 65
10) **Charge No./Project Manager:** 8ADD4 / Robert Schulten, ext. 9430
11) **Required QA/QC Samples:**

Field QC	Yes	No	Notes
Trip Blank	___	X	no volatile organic samples
Field Blank	___	X	1 per 20 samples or 1 per sampling event
Equipment Rinsate	___	X	1 per 20 samples or 1 per sampling event
Duplicate	___	X	1 per 20 samples or 1 per sampling event
Container Blank	___	X	analytical data supplied by supplier
Preserv. Blank	___	X	assay data supplied by supplier

Laboratory QC

Laboratory QC sample type and frequency requirements are provided in Appendix G of the SCQ.

Chris Wernert 1-25-94 — Authorized Signature/Date

Lawrence Love Jr., 1/28/94 — Approved/Date

NON-LISTED 1A

Sampling Information

Start with Sample Number 93-660E-1 for the first drum sample, then number consecutively until sampling is completed. Sample a portion of each drum that makes up the composite.

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660E-1	60301	IV01012	R050-FTA-P015-6312	1
93-660E-2	768	IV14082	R000-300-P013-PPT1	1
93-660E-3	60331	IV06373	R050-741-P012-GR09	4
93-660E-4	50355	IV09146	R050-761-P001-0339	12
93-660E-5	60304	IV00535	R095-FTA-V039-8581	1
93-660E-6	60035	IV06351	R050-741-P012-GR08	5
93-660E-7	60055	IV06285	R050-744-P013-0343	15
93-660E-8	633	IV06589	R050-100-P015-0348	3
93-660E-9	1725	IV14316	R050-739-P015-0377	1
93-660E-10	584	IV06483	R050-741-P022-GR03	1
93-660E-11	1432	IV13848	R050-100-P012-0353	1
93-660E-12	873	IV06872	R000-CAI-P013-0355	2
93-660E-13	60013	IV06368	R020-710-P003-9342	8
93-660E-14	30045	IV07542	D690-655-D041-0321	1
93-660E-15	425	IV06208	R070-733-P013-0341	2
93-660E-16	60022	IV04639	R020-743-P003-0339	2
93-660E-17	393	IV06825	R020-503-P015-0353	2
93-660E-18	1729	IV14288	R050-742-P013-0365	1
93-660E-19	1728	IV14294	R050-742-P015-0376	1
93-660E-20	448	IV06329	R050-730-P039-0345	1
93-660E-21	50346	IV11555	X888-940-0041-0310	3
93-660E-22	457	IV06335	R050-100-P015-0344	1
93-660E-23	508	IV06419	R050-300-P013-0345	1
93-660E-24	447	IV06331	R050-730-P015-0345	2
93-660E-25	459	IV06334	R050-135-P003-9344	1
93-660E-26	50347	IV11754	R095-767-0001-0331	2
93-660E-27	2006	IV13996	R050-100-P013-0370	2
93-660E-28	1337	IV13849	R050-765-P012-0355	1
93-660E-29	50204	IV08155	X888-951-0041-0309	1
93-660E-30	1692	IV14005	R000-410-P013-0000	1
93-660E-31	60060	IV00757	R050-801-P013-0307	1
93-660E-32	638	IV06585	R050-400-P015-0340	1
93-660E-33	533	IV06613	R050-742-P013-0345	1
93-660E-34	587	IV13835	R050-100-P012-0347	1
93-660E-35	507	IV06420	R050-300-P013-0345	2

Sample Number	MEF Number	Inv. Number	Lot Number	Drum Number
93-660E-36	455	IV06333	R050-100-0013-0344	1
93-660E-37	637	IV06586	X948-137-D015-0305	1
93-660E-38	485	IV06406	R095-200-V015-0344	1
93-660E-39	870	IV11556	R050-135-P003-9354	1
93-660E-40	50202	IV07958	R071-920-1041-0305	1
93-660E-41	50095	IV00379	H093-510-D020-0301	1
93-660E-42	658	IV06604	S000-YAQ-0015-0228	1
93-660E-43	30051	IV06853	H093-140-D047-0318	1
93-660E-44	493	IV06415		

Chris Weimer 1-25-94
Authorized Signature/Date

Lawrence Lowe Jr., 1/28/94
Approved/Date

C. Analytical Requirements

In order to satisfy waste characterization requirements the following analyses may be performed:

Analysis Requested (Analysis Code) ASL = Analytical Support Level VOA = Volatile Organics Analysis SVOA = Semi-Volatile Organics Analysis U,Th = Uranium, Thorium PFLT = Paint Filter Liquids Test	Solid Matrix Samples Container and Preservative/Unit Codes oz. = ounce P00, P01 = No preservation, Cool 4 deg. C U02, U04, U07, U19 = mg/l,mg/kg,ug/g,pCi/g U99 = present/absent TLC = Teflon Lined Closure		Liquid Waste Samples Container and Preservative/Unit Codes mL, L = milliliter, Liter P00 = no preservation needed U02, U06, U18 = mg/L, ug/L, pCi/L U35, U37 = pH units, degrees Fahrenheit TLS = Teflon Lined Septum	
Commingling Waste (ASTM 5058, Method A) ASL B Samples 1,2,	(1) x 240ml. glass, TLC	P00/Pass,Fail	(1) x 240 ml. glass TLC	P00/Pass,Fail
Commingling Waste (ASTM 5058, Method A) ASL B Samples 3 - 44	(1) x 40ml. vial, TLC	P00/Pass,Fail	(1) x 40 ml. vial, TLC	P00/Pass,Fail
Description of material (Color, appearance, consistency, etc.)				

Note: * - Perform analysis for concentrated waste samples.
** - For solid matrix samples only. Prepare sample extract, then conduct Total concentration screening analyses. If Total concentrations exceed 20 times the TCLP regulatory value, then analyze the sample extract.

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

D. Sub-Waste Stream Description

The sub-waste stream consists of 2271 drums in multiple lots. The sub-waste stream is also covered under multiple MEFs. This material is sludges, solvents, and oils (Ignitable and Combustible Liquid Mixed Wastes) currently contained in drums to be consolidated into storage tanks. Once accepted for disposal, will be shipped to the TSCA Incinerator facility located in Oak Ridge, Tennessee.

E. Safety Concerns

See SOP 20-C-805, Sections 6.0 to 6.14 for Health and Safety requirements.

F. Representative Sampling Procedure

Two drums are listed on page 2 of this form. If visual inspection indicates that the material has free liquid or is completely dry, then a P.F.L.T is not necessary. Record pertinent information in the Field Log Book for each drum sampled as specified in SOP 20-C-805, Section 7.2.13.

G. Preservative and Holding Time Guidelines

In accordance with the Sitewide CERCLA Quality Assurance Project Plan (SCQ) - Volume II, Appendix A, Table 6-1 "Sample Container and Preservation Requirements," sample holding times are as follows: 7 days for Total\TCLP Semi-VOAs/Pesticides/Herbicides (low to medium concentration liquids and QC samples) and Total VOAs (non-acidified low to medium concentration liquids or QC samples); 14 days for Total/TCLP VOAs (solids and acidified low-medium concentration liquids or QC samples), and Total/TCLP Semi-VOAs/Pesticides/Herbicides; 28 days for flashpoint analyses; and 180 days for Total/TCLP Metals (except Hg, which is 28 days), Total Uranium, Isotopic Uranium, Total Thorium, and Isotopic Thorium. For concentrated wastes, the following holding times are applicable: 28 days for flashpoint analyses; and 180 days for Total VOAs, Total Semi-VOAs/Pesticides/Herbicides, and Total Metals.

This form must be dated and signed by an authorized individual.
If this Sub-Waste Stream is sampled and analyzed according to the information on this form, the results generated will be in agreement with the sampling and analysis requirements of NVO-325 (Rev. 1), Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements; and the Fernald Environmental Management Project (FEMP) Sitewide CERCLA Quality Assurance Project Plan (SCQ).

Chris Ukmert 1-25-94 — Authorized Signature/Date

Lawrence Love Jr., 1/28/94 — Approved/Date

ATTACHMENT F

LISTED COMBUSTIBLES 1A

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#1

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~1~~ 5	10,010	150ml
2	93-660A-6	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~1~~ 5 & 6	10,010&10,004	157ml
3	93-660A-7 14	10,027	5ml

Test#2

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~1~~ 4	10,010	150ml
2	93-660A-6	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~1~~ 4 & 6	10,010&10,004	157ml
3	93-660A-7 14	10,027	5ml

Test#3

Sample Container	Sample #	MEF #	Volume
1	93-660A-3	10,010	150ml
2	93-660A-6	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-3 & 6	10,010&10,004	157ml
3	93-660A-7 14	10,027	5ml

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#4

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~1~~2	10,010	150ml
2	93-660A-6	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~1~~2 & 6	10,010&10,004	157ml
3	93-660A-~~7~~14	10,027	5ml

Test#5

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~5~~1	10,010	150ml
2	93-660A-6	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~5~~1 & 6	10,010&10,004	157ml
3	93-660A-~~7~~14	10,027	5ml

Test#6

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~8~~13	10,010	150ml
2	93-660A-~~15~~7	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-8 & 13	10,010&10,004	157ml
3	93-660A-1~~4~~10	10,027	5ml

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#7

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~9~~ 8	10,010	150ml
2	93-660A-~~13~~ 7	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~9~~ 8 & 13	10,010&10,004	157ml
3	93-660A-~~14~~ 10	10,027	5ml

Test#8

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~20~~ 12	10,010	150ml
2	93-660A-~~13~~ 7	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~10~~ 12 & 13	10,010&10,004	157ml
3	93-660A-~~14~~ 10	10,027	5ml

Test#9

Sample Container	Sample #	MEF #	Volume
1	93-660A-11	10,010	150ml
2	93-660A-~~13~~ 7	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-11 & 13	10,010&10,004	157ml
3	93-660A-~~14~~ 10	10,027	5ml

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1A

Test#10

Sample Container	Sample #	MEF #	Volume
1	93-660A-~~12~~ 9	10,010	150ml
2	93-660A-~~13~~ 7	10,004	7ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660A-~~12~~ 9 & ~~13~~ 7	10,010&10,004	157ml
3	93-660A-~~14~~ 10	10,027	5ml

Summary of Commingled Waste Compatibility Test

Listed Combustibles 1A

Note: In the following summary when no reaction is indicated this means as the samples were mixed no mists, fumes, dusts, gases, precipitation, bubbling, foaming, solidification, spattering or increase viscosity occurred.

Test 1

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-5):	71°F
Initial Temperature 2 (sample# 93-660A-6):	69°F
Temperature after mixing:	70°F
Temperature difference was:	±1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-5,6):	70°F
Initial Temperature 3 (sample# 93-660A-14):	70°F
Temperature after mixing:	70°F
Temperature difference was:	0°F

Test 2

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-4):	71°F
Initial Temperature 2 (sample# 93-660A-6):	69°F
Temperature after mixing:	70°F
Temperature difference was:	±1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-4,6):	70°F
Initial Temperature 3 (sample# 93-660A-14):	69°F
Temperature after mixing:	69°F
Temperature difference was:	-1 to 0°F

Test 3

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-3):	71°F
Initial Temperature 2 (sample# 93-660A-6):	69°F
Temperature after mixing:	70°F
Temperature difference was:	±1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-3,6):	69.5°F
Initial Temperature 3 (sample# 93-660A-14):	69°F
Temperature after mixing:	69°F
Temperature difference was:	-.5 to 0°F

Summary of Commingled Waste Compatibility Test

Listed Combustibles 1A

Test 4

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-2):	71°F
Initial Temperature 2 (sample# 93-660A-6):	69°F
Temperature after mixing:	69°F
Temperature difference was:	0 to 2°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-2,6):	69°F
Initial Temperature 3 (sample# 93-660A-14):	69°F
Temperature after mixing:	68.5°F
Temperature difference was:	-.5°F

Test 5

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-2):	70°F
Initial Temperature 2 (sample# 93-660A-6):	69°F
Temperature after mixing:	70°F
Temperature difference was:	0 to 1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-2,6):	70°F
Initial Temperature 3 (sample# 93-660A-14):	69°F
Temperature after mixing:	70°F
Temperature difference was:	0 to 1°F

Test 6

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-13):	77°F
Initial Temperature 2 (sample# 93-660A-7):	76.5°F
Temperature after mixing:	76°F
Temperature difference was:	-1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-13,7):	76°F
Initial Temperature 3 (sample# 93-660A-10):	77°F
Temperature after mixing:	75.5°F
Temperature difference was:	-1.5°F

Summary of Commingled Waste Compatibility Test

Listed Combustibles 1A

7376

Test 7

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-8):	75.5°F
Initial Temperature 2 (sample# 93-660A-7):	77°F
Temperature after mixing:	74°F
Temperature difference was:	-3°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-8,7):	75°F
Initial Temperature 3 (sample# 93-660A-10):	77°F
Temperature after mixing:	75°F
Temperature difference was:	-2 to 0°F

Test 8

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-12):	76.5°F
Initial Temperature 2 (sample# 93-660A-7):	77°F
Temperature after mixing:	76°F
Temperature difference was:	-1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-12,7):	76°F
Initial Temperature 3 (sample# 93-660A-10):	77°F
Temperature after mixing:	76°F
Temperature difference was:	-1 to 0°F

Test 9

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-11):	76°F
Initial Temperature 2 (sample# 93-660A-7):	76°F
Temperature after mixing:	75°F
Temperature difference was:	-1°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-11,7):	76°F
Initial Temperature 3 (sample# 93-660A-10):	77.5°F
Temperature after mixing:	75°F
Temperature difference was:	-2.5°F

Summary of Commingled Waste Compatibility Test

Listed Combustibles 1A

7376

Test 10

Pretest: No reaction.

Primary Test I: No reaction.

Initial Temperature 1 (sample# 93-660A-9):	77°F
Initial Temperature 2 (sample# 93-660A-7):	76.5°F
Temperature after mixing:	76.5°F
Temperature difference was:	-.5 to 0°F

Primary Test II: No reaction.

Initial Temperature 1&2 (sample# 93-660A-9,7):	77°F
Initial Temperature 3 (sample# 93-660A-10):	78°F
Temperature after mixing:	76.5°F
Temperature difference was:	-1.5°F

LISTED IGNITABLES 1B

Attachment A

ASTM Method 5058

7376

Test Method A - Commingled Waste Compatibility

LISTED IGNITABLES 1B

Place the volume amount of "1" into the 500ml beaker. Then place the volume amount of "2" into the same 500ml beaker.

Test#1

Sample Container	Sample #	MEF #	Volume
1	93-660D-1	30,005	150ml
2	93-660D-2	60,057	108ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660D-1 & 2	30,005&60,057	150ml
3	93-660D-3	10,026	44ml

Sample Container	Sample #	MEF #	Volume
(1-3 above)	multi-samples	multi-MEFs	150ml
4	93-660D-4	1229	23ml

Sample Container	Sample #	MEF #	Volume
(1-4 above)	multi-samples	multi-MEFs	150ml
5	93-660D-5	60,056	17ml

Sample Container	Sample #	MEF #	Volume
(1-5 above)	multi-samples	multi-MEFs	150ml
6	93-660D-6	60,119	10ml

Sample Container	Sample #	MEF #	Volume
(1-6 above)	multi-samples	multi-MEFs	150ml
7	93-660D-7	10,003	8ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility
LISTED IGNITABLES 1B

Sample Container	Sample #	MEF #	Volume
(1-7 above)	multi-samples	multi-MEFs	150ml
8	93-660D-8	30,033	8ml

Sample Container	Sample #	MEF #	Volume
(1-8 above)	multi-samples	multi-MEFs	150ml
9	93-660D-9	60,058	5ml

Sample Container	Sample #	MEF #	Volume
(1-9 above)	multi-samples	multi-MEFs	150ml
10 (HB)	93-660D-10	1709	4ml

050 -CN -2047-
0371
#12

Sample Container	Sample #	MEF #	Volume
(1-10 above)	multi-samples	multi-MEFs	150ml
11	93-660D-11	418	2ml

Sample Container	Sample #	MEF #	Volume
(1-11 above)	multi-samples	multi-MEFs	150ml
12	93-660D-12	50,072	2ml

Sample Container	Sample #	MEF #	Volume
(1-12 above)	multi-samples	multi-MEFs	150ml
13	93-660D-13	514	1ml

Sample Container	Sample #	MEF #	Volume
(1-13 above)	multi-samples	multi-MEFs	150ml
14	93-660D-14	479	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility
LISTED IGNITABLES 1B

Sample Container	Sample #	MEF #	Volume
(1-14 above)	multi-samples	multi-MEFs	150ml
15	93-660D-15	60,039	1ml

Sample Container	Sample #	MEF #	Volume
(1-15 above)	multi-samples	multi-MEFs	150ml
~~16~~	~~93-660D-16~~	~~419~~	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-16 above)	multi-samples	multi-MEFs	150ml
17	93-660D-17	777	1ml

Sample Container	Sample #	MEF #	Volume
(1-17 above)	multi-samples	multi-MEFs	150ml
18	93-660D-18	60,059	1ml

Sample Container	Sample #	MEF #	Volume
(1-18 above)	multi-samples	multi-MEFs	150ml
~~19~~	~~93-660D-19~~	~~60,046~~	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-19 above)	multi-samples	multi-MEFs	150ml
20	93-660D-20	414	1ml

Sample Container	Sample #	MEF #	Volume
(1-20 above)	multi-samples	multi-MEFs	150ml
21	93-660D-21	1412	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility
LISTED IGNITABLES 1B

Sample Container	Sample #	MEF #	Volume
(1-21 above)	multi-samples	multi-MEFs	150ml
22	93-660D-22	50,096	1ml

Sample Container	Sample #	MEF #	Volume
(1-22 above)	multi-samples	multi-MEFs	150ml
23	93-660D-23	60,052	1ml

Sample Container	Sample #	MEF #	Volume
(1-23 above)	multi-samples	multi-MEFs	150ml
24	93-660D-24	60,041	1ml

Sample Container	Sample #	MEF #	Volume
(1-24 above)	multi-samples	multi-MEFs	150ml
25	93-660D-25	421	1ml

Sample Container	Sample #	MEF #	Volume
(1-25 above)	multi-samples	multi-MEFs	150ml
26	93-660D-26	10,009	1ml

Sample Container	Sample #	MEF #	Volume
(1-26 above)	multi-samples	multi-MEFs	150ml
27	93-660D-27	60,027	1ml

Sample Container	Sample #	MEF #	Volume
(1-27 above)	multi-samples	multi-MEFs	150ml
28	93-660D-28	60,045	1ml

ASTM Method 5058

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Test Method A - Commingled Waste Compatility
LISTED IGNITABLES 1B

Removed contained all Solids

Sample Container	Sample #	MEF #	Volume
(1-28 above)	~~multi-samples~~	multi-MEFs	150ml
~~29~~	~~93-660D-29~~	~~50,200~~	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-29 above)	multi-samples	multi-MEFs	150ml
30	93-660D-30	10,030	1ml

Sample Container	Sample #	MEF #	Volume
(1-30 above)	multi-samples	multi-MEFs	150ml
? 31	93-660D-31	1998	1ml

Removed all contained Solids

Sample Container	Sample #	MEF #	Volume
(1-31 above)	multi-samples	~~multi-MEFs~~	~~150ml~~
~~32~~	93-660D-32	~~50,002~~	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-32 above)	multi-samples	multi-MEFs	150ml
33	93-660D-33	60,053	1ml

Sample Container	Sample #	MEF #	Volume
(1-33 above)	multi-samples	multi-MEFs	150ml
34	93-660D-34	60,124	1ml

Sample Container	Sample #	MEF #	Volume
(1-34 above)	multi-samples	multi-MEFs	150ml
35	93-660D-35	50,022	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility 7376

LISTED IGNITABLES 1B

Sample Container	Sample #	MEF #	Volume
(1-35 above)	multi-samples	multi-MEFs	150ml
36	93-660D-36	10,034	1ml

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NON LISTED

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

NON-LISTED

Place the volume amount of "1" into the 500ml beaker. Then place the volume amount of "2" into the same 500ml beaker.

Test#1

Sample Container	Sample #	MEF #	Volume
1	93-660E-1	60,301	150ml
2	93-660E-2	~~768~~ 60331	45 ~~74~~ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660E-1 & 2	60,301&768	150ml
3	93-660E-3	~~60,331~~ 50355	32 ~~30~~ml

Sample Container	Sample #	MEF #	Volume
(1-3 above)	multi-samples	multi-MEFs	150ml
~~4~~	~~93-660E-4~~	~~50,355~~ 768	26 ~~23~~ml

Removed contained all solids

Sample Container	Sample #	MEF #	Volume
(1-4 above)	multi-samples	multi-MEFs	150ml
~~5~~	~~93-660E-5~~	~~60,304~~	16 ~~14~~ml

Removed all contained solids

Sample Container	Sample #	MEF #	Volume
(1-5 above)	multi-samples	multi-MEFs	150ml
6	93-660E-6	60,035	12 ~~22~~ml

18ml

Sample Container	Sample #	MEF #	Volume
(1-6 above)	multi-samples	multi-MEFs	150ml
7	93-660E-7	60,055	12 ~~13~~ml

15ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility

NON LISTED ~~IGNITABLES 1B~~

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Removed contained all solids

Sample Container	Sample #	MEF #	Volume
(1-7 above)	multi-samples	multi-MEFs	150ml
~~8~~	~~93-660E-8~~	633	~~6ml~~

Sample Container	Sample #	MEF #	Volume
(1-8 above)	multi-samples	multi-MEFs	150ml
9	93-660E-9	1725	~~5ml~~ 7ml

Sample Container	Sample #	MEF #	Volume
(1-9 above)	multi-samples	multi-MEFs	150ml
10	93-660E-10	584	~~4ml~~ 6ml

Sample Container	Sample #	MEF #	Volume
(1-10 above)	multi-samples	multi-MEFs	150ml
11	93-660E-11	1432	~~3ml~~ 4ml

Sample Container	Sample #	MEF #	Volume
(1-11 above)	multi-samples	multi-MEFs	150ml
12	93-660E-12	873	3 ml

Removed contained all solids

Sample Container	Sample #	MEF #	Volume
(1-12 above)	multi-samples	multi-MEFs	150ml
~~13~~	~~93-660E-13~~	~~60,013~~	~~2ml~~

Sample Container	Sample #	MEF #	Volume
(1-13 above)	multi-samples	multi-MEFs	150ml
14	93-660E-14	30,045	2ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility

NON - LISTED ~~IGNITABLES~~

Sample Container	Sample #	MEF #	Volume
(1-14 above)	multi-samples	multi-MEFs	150ml
15	93-660E-15	425	1ml

Sample Container	Sample #	MEF #	Volume
(1-15 above)	multi-samples	multi-MEFs	150ml
16	93-660E-16	60,022	1ml

Sample Container	Sample #	MEF #	Volume
(1-16 above)	multi-samples	multi-MEFs	150ml
17	93-660E-17	393	1ml

Sample Container	Sample #	MEF #	Volume
(1-17 above)	multi-samples	multi-MEFs	150ml
18	93-660E-18	1729	1ml

Sample Container	Sample #	MEF #	Volume
(1-18 above)	multi-samples	multi-MEFs	150ml
19	93-660E-19	1728	1ml

Sample Container	Sample #	MEF #	Volume
(1-19 above)	multi-samples	multi-MEFs	150ml
20	93-660E-20	448	1ml

Sample Container	Sample #	MEF #	Volume
(1-20 above)	multi-samples	multi-MEFs	150ml
21	93-660E-21	50,346	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility

Non - LISTED ~~IGNITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-21 above)	multi-samples	multi-MEFs	150ml
22	93-660E-22	457	1ml

Sample Container	Sample #	MEF #	Volume
(1-22 above)	multi-samples	multi-MEFs	150ml
23	93-660E-23	508	1ml

Sample Container	Sample #	MEF #	Volume
(1-23 above)	multi-samples	multi-MEFs	150ml
24	93-660E-24	447	1ml

Sample Container	Sample #	MEF #	Volume
(1-24 above)	multi-samples	multi-MEFs	150ml
25	93-660E-25	459	1ml

Sample Container	Sample #	MEF #	Volume
(1-25 above)	multi-samples	multi-MEFs	150ml
26	93-660E-26	50,347	1ml

Sample Container	Sample #	MEF #	Volume
(1-26 above)	multi-samples	multi-MEFs	150ml
27	93-660E-27	2006	1ml

Sample Container	Sample #	MEF #	Volume
(1-27 above)	multi-samples	multi-MEFs	150ml
28	93-660E-28	1337	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility 7376

NON- LISTED ~~IGNITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-28 above)	multi-samples	multi-MEFs	150ml
29	93-660E-29	50,204	1ml

Removed contained all solids. ONLY

Sample Container	Sample #	MEF #	Volume
(1-29 above)	multi-samples	multi-MEFs	150ml
30	93-660E-30	1692	1ml

Sample Container	Sample #	MEF #	Volume
(1-30 above)	multi-samples	multi-MEFs	150ml
31	93-660E-31	60,060	1ml

Sample Container	Sample #	MEF #	Volume
(1-31 above)	multi-samples	multi-MEFs	150ml
32	93-660E-32	638	1ml

Removed contained all solids. ONLY

Sample Container	Sample #	MEF #	Volume
(1-32 above)	multi-samples	multi-MEFs	150ml
33	93-660E-33	533	1ml

Sample Container	Sample #	MEF #	Volume
(1-33 above)	multi-samples	multi-MEFs	150ml
34	93-660E-34	587	1ml

Sample Container	Sample #	MEF #	Volume
(1-34 above)	multi-samples	multi-MEFs	150ml
35	93-660E-35	507	1ml

ASTM Method 5058

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Test Method A - Commingled Waste Compatility
NON - LISTED ~~TCRITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-35 above)	multi-samples	multi-MEFs	150ml
36	93-660E-36	455	1ml

Sample Container	Sample #	MEF #	Volume
(1-36 above)	multi-samples	multi-MEFs	150ml
37	93-660E-37	637	1ml

Sample Container	Sample #	MEF #	Volume
(1-37 above)	multi-samples	multi-MEFs	150ml
38	93-660E-38	485	1ml

Sample Container	Sample #	MEF #	Volume
(1-38 above)	multi-samples	multi-MEFs	150ml
39	93-660E-39	870	1ml

Sample Container	Sample #	MEF #	Volume
(1-39 above)	multi-samples	multi-MEFs	150ml
40	93-660E-40	50,202	1ml

Removed contained all solids. ene

Sample Container	Sample #	MEF #	Volume
(1-40 above)	multi-samples	multi-MEFs	150ml
~~41~~	~~93-660E-41~~	50,095	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-41 above)	multi-samples	multi-MEFs	150ml
42	93-660E-42	658	1ml

ASTM Method 5058

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Test Method A - Commingled Waste Compatility

NON LISTED ~~TGNTTABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-42 above)	multi-samples	multi-MEFs	150ml
~~43~~	~~93-660E-43~~	~~30.051~~	~~1ml~~

removed contained all solids, cont

Sample Container	Sample #	MEF #	Volume
(1-43 above)	multi-samples	multi-MEFs	150ml
~~44~~	~~93-660E-44~~	493	1ml

removed all contained solids. cont

45 93-660E-45 1ml

Summary of Commingled Waste Compatibility Test

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LISTED IGNITABLES 1B

Note: In the following summary when no physical reaction is indicated this means as samples were mixed no mists, fumes, dusts, gases, spattering, bubbling, foaming, solidification, precipitation, or increase in viscosity occurred.

Test #1

Pretest: No reaction
Primary Test: No reaction, 1 phase
Initial Temperature (93-660D-01): 72°F
Initial Temperature (93-660D-02): 72°F
Temperature after mixing: 71°F
Temperature difference was: -1°.

*150mL of this mixture was kept and used in the next test.

Test #2

Pretest: No reaction.
Primary Test: No physical reaction, 1 phase.
Initial Temperature (93-660D-1,2): 68.5°F
Initial Temperature (93-660D-03): 69.5°F
Temperature after mixing: 71°F
Temperature difference was: +1.5°F to +2.5°F, slight increase in temp.

*150mL of this mixture was kept and used in the next test.

Test #3

Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (93-660D-1,2&3): 70°F
Initial Temperature (93-660D-04): 69.5°F
Temperature after mixing: 70°F
Temperature difference was: 0°F to +.5°F.

*150mL of this mixture was kept and used in the next test.

Test #4

Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (93-660D-1,2,3,&4): 69°F
Initial Temperature (93-660D-05): 69°F
Temperature after mixing: 69°F
Temperature difference was: 0°F

*150mL of this mixture was kept and used in the next test.

Test #5

Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (93-660D-1,2,3,4,&5): 69°F
Initial Temperature (93-660D-06): 70°F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test. This mixture will be referred to as (multiple sample #) in the following tests.

Test #6

Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (93-660D-multiple sample #): 69°F
Initial Temperature (93-660D-07): 69.5F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #7

Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (93-660D-multiple sample #): 69°F
Initial Temperature (93-660D-08): 69.5F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #8

Pretest: No reaction.
Primary Test: Slight increase in temperature, 1 phase.
Initial Temperature (93-660D-multiple sample #): 69.5°F
Initial Temperature (93-660D-09): 68.5F
Temperature after mixing: 70°F
Temperature difference was: +.5°F to +1.5°F.

*150mL of this mixture was kept and used in the next test.

Test #9

Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (93-660D-multiple sample #): 66.5°F
Initial Temperature (93-660D-10): 67°F
Temperature after mixing: 66°F
Temperature difference was: -.5°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #10

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	65°F
Initial Temperature (93-660D-11):	65°F
Temperature after mixing:	64.5°F

Temperature difference was: -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #11

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64.5°F
Initial Temperature (93-660D-12):	64.5°F
Temperature after mixing:	64.5°F

Temperature difference was: 0°F.

*150mL of this mixture was kept and used in the next test.

Test #12

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64.5°F
Initial Temperature (93-660D-13):	64.5°F
Temperature after mixing:	64.5°F

Temperature difference was: 0°F.

*150mL of this mixture was kept and used in the next test.

Test #13

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64.5°F
Initial Temperature (93-660D-14):	64.5°F
Temperature after mixing:	64.5°F

Temperature difference was: 0°F.

*150mL of this mixture was kept and used in the next test.

Test #14

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	63.5°F
Initial Temperature (93-660D-15):	64.5°F
Temperature after mixing:	63.5°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #15

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64°F
Initial Temperature (93-660D-17):	65°F
Temperature after mixing:	63.5°F

Temperature difference was: -.5°F to -1.5°F.

*150mL of this mixture was kept and used in the next test.

Test #16

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64°F
Initial Temperature (93-660D-18):	65°F
Temperature after mixing:	64°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #17

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64°F
Initial Temperature (93-660D-20):	64.5°F
Temperature after mixing:	63.5°F

Temperature difference was: .5°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #18

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64°F
Initial Temperature (93-660D-21):	65°F
Temperature after mixing:	64°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #19

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	64°F
Initial Temperature (93-660D-22):	65°F
Temperature after mixing:	63.5°F

Temperature difference was: -.5°F to -1.5°F.

*150mL of this mixture was kept and used in the next test.

Test #20

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 64°F

Initial Temperature (93-660D-23): 65°F

Temperature after mixing: 64°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #21

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 64°F

Initial Temperature (93-660D-24): 65°F

Temperature after mixing: 64°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #22

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 66°F

Initial Temperature (93-660D-25): 67°F

Temperature after mixing: 66°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #23

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 66°F

Initial Temperature (93-660D-26): 67°F

Temperature after mixing: 65.5°F

Temperature difference was: .5°F to -1.5°F.

*150mL of this mixture was kept and used in the next test.

Test #24

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 66°F

Initial Temperature (93-660D-27): 67°F

Temperature after mixing: 66°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #25

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 66.5°F

Initial Temperature (93-660D-28): 67°F

Temperature after mixing: 66°F

Temperature difference was: .5°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #26

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 67°F

Initial Temperature (93-660D-30): 68°F

Temperature after mixing: 67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #27

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 67°F

Initial Temperature (93-660D-33): 68°F

Temperature after mixing: 67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #28

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 67.5°F

Initial Temperature (93-660D-34): 68.5°F

Temperature after mixing: 67°F

Temperature difference was: -.5°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #29

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #): 67.5°F

Initial Temperature (93-660D-31): 67°F

Temperature after mixing: 67.5°F

Temperature difference was: 0°F to +.5°F.

*150mL of this mixture was kept and used in the next test.

Test #30

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	67.5°F
Initial Temperature (93-660D-35):	68.5°F
Temperature after mixing:	67°F

Temperature difference was: -.5°F to -1.5°F.

*150mL of this mixture was kept and used in the next test.

Test #31

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660D-multiple sample #):	68°F
Initial Temperature (93-660D-35):	69°F
Temperature after mixing:	67.5°F

Temperature difference was: -.5°F to -1.5°F.

*150mL of this mixture was kept and used in the next test.

Comments: In Test #2 a slight increase in temperature occurred. No other reaction was noted.

The following samples were not collected and used in the Listed Ignitables 1B tests, because the drums contained only solid material:

93-660D-16
93-660D-19
93-660D-29
93-660D-32

LISTED COMBUSTIBLES 1B

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED COMBUSTIBLES 1B

Place the volume amount of "1" into the 500ml beaker. Then place the volume amount of "2" into the same 500ml beaker.

Test#1

Sample Container	Sample #	MEF #	Volume
~~1~~	~~93-660C-1~~	~~30,034~~	~~150ml~~
2	93-660C-2	60,085	94ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660C-1 & 2	30,034&60,085	150ml
3	93-660C-3	60,070	55ml

Sample Container	Sample #	MEF #	Volume
(1-3 above)	multi-samples	multi-MEFs	150ml
4	93-660C-4	60,084	30ml

Sample Container	Sample #	MEF #	Volume
(1-4 above)	multi-samples	multi-MEFs	150ml
5	93-660C-5	388	24ml

Sample Container	Sample #	MEF #	Volume
(1-5 above)	multi-samples	multi-MEFs	150ml
6	93-660C-~~6~~ 67	60,080	16ml

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Test Method A - Commingled Waste Compatility 7376

LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-6 above)	multi-samples	multi-MEFs	150ml
7	93-660C-7	60,328	14ml

Sample Container	Sample #	MEF #	Volume
(1-7 above)	multi-samples	multi-MEFs	150ml
8 ~~5~~	8 93-660C-~~8~~5	60,078	10ml

Sample Container	Sample #	MEF #	Volume
(1-8 above)	multi-samples	multi-MEFs	150ml
~~9~~ 5	93-660C-~~9~~5	60,051	9ml

Sample Container	Sample #	MEF #	Volume
(1-9 above)	multi-samples	multi-MEFs	150ml
10	93-660C-10	20,021	8ml

Sample Container	Sample #	MEF #	Volume
(1-10 above)	multi-samples	multi-MEFs	150ml
11	93-660C-11	60,342	6ml

Sample Container	Sample #	MEF #	Volume
(1-11 above)	multi-samples	multi-MEFs	150ml
12	93-660C-12	60,087	5ml

Sample Container	Sample #	MEF #	Volume
(1-12 above)	multi-samples	multi-MEFs	150ml
13	93-660C-13	60,069	5ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility
LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-13 above)	multi-samples	multi-MEFs	150ml
14	93-660C-14	10,028	4ml

Sample Container	Sample #	MEF #	Volume
(1-14 above)	multi-samples	multi-MEFs	150ml
15	93-660C-15	10,029	3ml

Sample Container	Sample #	MEF #	Volume
(1-15 above)	multi-samples	multi-MEFs	150ml
16	93-660C-16	60,115	3ml

Sample Container	Sample #	MEF #	Volume
(1-16 above)	multi-samples	multi-MEFs	150ml
17	93-660C-17	60,079	3ml

Sample Container	Sample #	MEF #	Volume
(1-17 above)	multi-samples	multi-MEFs	150ml
18	93-660C-18	20,031	3ml

Sample Container	Sample #	MEF #	Volume
(1-18 above)	multi-samples	multi-MEFs	150ml
19	93-660C-19	20,028	3ml

Sample Container	Sample #	MEF #	Volume
(1-19 above)	multi-samples	multi-MEFs	150ml
20	93-660C-20	480	3ml

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Test Method A - Commingled Waste Compatility 7376

LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-20 above)	multi-samples	multi-MEFs	150ml
21	93-660C-21	60,062	2ml

Sample Container	Sample #	MEF #	Volume
(1-21 above)	multi-samples	multi-MEFs	150ml
22	93-660C-22	60,063	2ml

Sample Container	Sample #	MEF #	Volume
(1-22 above)	~~multi-samples~~	~~multi-MEFs~~	150ml
~~23~~	~~93-660C-23~~	~~60,072~~	~~1ml~~

Filtered all contained solids ewi

Sample Container	Sample #	MEF #	Volume
(1-23 above)	multi-samples	multi-MEFs	150ml
24	93-660C-24	60,081	1ml

Sample Container	Sample #	MEF #	Volume
(1-24 above)	multi-samples	multi-MEFs	150ml
25	93-660C-25	742	1ml

Sample Container	Sample #	MEF #	Volume
(1-25 above)	multi-samples	multi-MEFs	150ml
26	93-660C-26	390	1ml

Sample Container	Sample #	MEF #	Volume
(1-26 above)	multi-samples	multi-MEFs	150ml
27	93-660C-27	60,116	1ml

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LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-27 above)	multi-samples	multi-MEFs	150ml
28	93-660C-28	60,068	1ml

Sample Container	Sample #	MEF #	Volume
(1-28 above)	multi-samples	multi-MEFs	150ml
29	93-660C-29	10,007	1ml

Sample Container	Sample #	MEF #	Volume
(1-29 above)	multi-samples	multi-MEFs	150ml
30	93-660C-30	60,049	1ml

Sample Container	Sample #	MEF #	Volume
(1-30 above)	multi-samples	multi-MEFs	150ml
31	93-660C-31	60,074	1ml

Sample Container	Sample #	MEF #	Volume
(1-31 above)	multi-samples	multi-MEFs	150ml
32	93-660C-32	402	1ml

Sample Container	Sample #	MEF #	Volume
(1-32 above)	multi-samples	multi-MEFs	150ml
33	93-660C-33	60,075	1ml

Sample Container	Sample #	MEF #	Volume
(1-33 above)	multi-samples	multi-MEFs	150ml
34	93-660C-34	106	1ml

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Test Method A - Commingled Waste Compatility
LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-34 above)	multi-samples	multi-MEFs	150ml
35	93-660C-35	60,083	1ml

Sample Container	Sample #	MEF #	Volume
(1-35 above)	multi-samples	multi-MEFs	150ml
36	93-660C-36	10,021	1ml

Sample Container	Sample #	MEF #	Volume
(1-36 above)	multi-samples	multi-MEFs	150ml
37	93-660C-37	20,038	1ml

Sample Container	Sample #	MEF #	Volume
(1&37 above)	multi-samples	multi-MEFs	150ml
38	93-660C-38	10,032	1ml

Sample Container	Sample #	MEF #	Volume
(1-38 above)	multi-samples	multi-MEFs	150ml
39	93-660C-39	60,117	1ml

Sample Container	Sample #	MEF #	Volume
(1-39 above)	multi-samples	multi-MEFs	150ml
40	93-660C-40	60,044	1ml

Sample Container	Sample #	MEF #	Volume
(1-40 above)	multi-samples	multi-MEFs	150ml
41	93-660C-41	60,112	1ml

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LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-41 above)	multi-samples	multi-MEFs	150ml
42	93-660C-42	20,055	1ml

Sample Container	Sample #	MEF #	Volume
(1-42 above)	multi-samples	multi-MEFs	150ml
43	93-660C-43	60,065	1ml

Sample Container	Sample #	MEF #	Volume
(1-43 above)	multi-samples	multi-MEFs	150ml
44	93-660C-44	148	1ml

Sample Container	Sample #	MEF #	Volume
(1-44 above)	multi-samples	multi-MEFs	150ml
45	93-660C-45	438	1ml

Sample Container	Sample #	MEF #	Volume
(1-45 above)	multi-samples	multi-MEFs	150ml
46	93-660C-46	20,054	1ml

Sample Container	Sample #	MEF #	Volume
(1-46 above)	multi-samples	multi-MEFs	150ml
47	93-660C-47	60,064	1ml

Sample Container	Sample #	MEF #	Volume
(1-47 above)	multi-samples	multi-MEFs	150ml
48	93-660C-48	60,067	1ml

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Test Method A - Commingled Waste Compatility
LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-48 above)	multi-samples	multi-MEFs	150ml
49	93-660C-49	60,110	1ml

Sample Container	Sample #	MEF #	Volume
(1-49 above)	multi-samples	multi-MEFs	150ml
50	93-660C-50	60,086	1ml

Sample Container	Sample #	MEF #	Volume
(1-50 above)	multi-samples	multi-MEFs	150ml
51	93-660C-51	10,006	1ml

Sample Container	Sample #	MEF #	Volume
(1-51 above)	multi-samples	multi-MEFs	150ml
52	93-660C-52	23	1ml

Sample Container	Sample #	MEF #	Volume
(1-52 above)	multi-samples	multi-MEFs	150ml
53	93-660C-53	385	1ml

Sample Container	Sample #	MEF #	Volume
(1-53 above)	multi-samples	multi-MEFs	150ml
54	93-660C-54	400	1ml

Sample Container	Sample #	MEF #	Volume
(1-54 above)	multi-samples	multi-MEFs	150ml
55	93-660C-55	397	1ml

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Test Method A - Commingled Waste Compatility
LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-55 above)	multi-samples	multi-MEFs	150ml
56	93-660C-56	60,073	1ml

Sample Container	Sample #	MEF #	Volume
(1-56 above)	multi-samples	multi-MEFs	150ml
57	93-660C-57	379	1ml

Sample Container	Sample #	MEF #	Volume
(1-57 above)	multi-samples	multi-MEFs	150ml
58	93-660C-58	60,066	1ml

Sample Container	Sample #	MEF #	Volume
(1-58 above)	multi-samples	multi-MEFs	150ml
59	93-660C-59	20,045	1ml

Sample Container	Sample #	MEF #	Volume
(1-59 above)	multi-samples	multi-MEFs	150ml
60	93-660C-60	60,111	1ml

Sample Container	Sample #	MEF #	Volume
(1-60 above)	multi-samples	multi-MEFs	150ml
61	93-660C-61	10,035	1ml

Sample Container	Sample #	MEF #	Volume
(1-61 above)	multi-samples	multi-MEFs	150ml
62	93-660C-62	422	1ml

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LISTED COMBUSTIBLES 1B

Sample Container	Sample #	MEF #	Volume
(1-62 above)	multi-samples	multi-MEFs	150ml
63	93-660C-63	60,113	1ml

Sample Container	Sample #	MEF #	Volume
(1-63 above)	multi-samples	multi-MEFs	150ml
64	93-660C-64	60,076	1ml

Summary of Commingled Waste Compatibility Test

LISTED COMBUSTILBES 1B

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Note: In the following summary when no physical reaction is indicated this means as samples were mixed no mists, fumes, dusts, gases, precipitation, bubbling, foaming, solidification, spattering, or increases in viscosity occurred.

Test #1

Pretest: No reaction.
Primary Test: No physical reaction was observed, 2 layers formed.
Initial Temperature (93-660C-2): 75°F
Initial Temperature (93-660C-3): 75°F
Temperature after mixing: 75°F
Temperature difference was: 0°F

*150mL of this mixture was kept and used in the next test.

Test #2

Pretest: No reaction.
Primary Test: No reaction was observed, 3 layers formed.
Initial Temperature (93-660C-2,3): 74°F
Initial Temperature (93-660C-4): 75°F
Temperature after mixing: 74°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #3

Pretest: No reaction.
Primary Test: No reaction was observed, 2 layers formed.
Initial Temperature (93-660C-2-4): 74°F
Initial Temperature (93-660C-5): 74°F
Temperature after mixing: 74°F
Temperature difference was: 0°F

*150mL of this mixture was kept and used in the next test.

Test #4

Prestest: No reaction.
Primary Test: No reaction was observed, 1 phase of liquid.
Initial Temperature (93-660C-2-5): 74°F
Initial Temperature (933-660C-67): 75°F
Temperature after mixing: 74°F
Temperature difference was: 0°F to -1F

*150mL of this mixture was kept and used in the next test.

Test #5

Pretest: No reaction.

Primary Test: No reaction wa observed, 2 layers formed.

Initial Temperature (93-660C-2-5,67): 74°F

Initial Temperature (93-660C-7): 75°F

Temperature after mixing: 74°F

Temperature difference was: 0°F to -1°F

*150mL of this mixture was kept and used in the next test.

Test #6

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (93-660C-2-5,67,7): 74°F

Initial Temperature (93-660C-8): 75°F

Temperature after mixing: 74°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #7

Pretest: No reaction.

Primary Test: No reaction, 1 phase formed.

Initial Temperature (93-660C-2-5,67,7,8): 74°F

Initial Temperature (93-660C-65): 75°F

Temperature after mixing: 74°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #8

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660C-2-5,67,7,8,65): 74°F

Initial Temperature (93-660C-10): 75°F

Temperature after mixing: 74°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test, in the following tests this mixture that is used in the next test will be referred to as (multiple sample #).

Test#9

Pretest: No reaction.

Primary Test: No reaction, 2 layers formed.

Initial Temperature (multiple sample #): 67°F

Initial Temperature (93-660C-11): 68°F

Temperature after mixing: 67°F

Temperature difference was: 0°F to -1°F

*150mL of this mixture was kept and used in the next test.

Test #10

Pretest: No reaction.

Primary Test: No reaction, 1 phase of liquid.

Initial Temperature (multiple sample #): 67°F

Initail Temperature (93-660C-12): 68°F

Temperature after mixing: 66°F

Temperature difference was: -1°F to -2°F.

*150mL of this mixture was kept and used in the next test.

Test #11

Pretest: No reaaction.

Primary Test: No reaction, 1 phase of liquid.

Initial Temperature (multiple sample #): 66°F

Initial Temperature (93-660C-13): 67°F

Temperature after mixing: 66°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #12

Pretest: No Reaction.

Primary Test: No reaction, 2 layers formed.

Initial Temperature (multiple sample #): 67°F

Initial Temperature (93-660C-14): 68°F

Temperature after mixing: 67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #13

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 67°F

Initial Temperature (93-660C-15): 68°F

Temperature after mixing: 67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #14

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 67°F

Initial Temperature (93-660C-16): 68°F

Temperature after mixing: 67°F

Tempereature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #15

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 67°F
Initial Temperature (93-660C-17): 68°F
Temperature after mixing: 67°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #16

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 67°F
Initial Temperature (93-660C-18): 68°F
Temperature after mixing: 67°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #17

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 67°F
Initial Temperature (93-660C-19): 68°F
Temperature after mixing: 67°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #18

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 69°F
Initial Temperature (93-660C-20): 69.5°F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -.5 °F

* 150mL of this mixture was kept and used in the next test.

Test #19

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 69°F
Initial Temperature (93-660C-21): 70°F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #20

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-22): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #21

Pretest: No reactiion.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-24): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #22

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-25): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #23

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-26): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #24

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-27): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #25

Pretest: No reaction.

Primary Test: No reaction, 3 layers formed.

Initial Temperature (multiple sample #): 70°F

Initial Temperature (93-660C-28): 71°F

Temperature after mixing: 70°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #26

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #): 70°F

Initial Temperature (93-660C-29): 71°F

Temperature after mixing: 70°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #27

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #): 70°F

Initial Temperature (93-660C-30): 71°F

Temperature after mixing: 70°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #28

Pretest: No reaction.

Primary Test: No reaction, 1st and 2nd layers not as distinguishable.

Initial Temperature (multiple sample #): 70°F

Initial Temperature (93-660C-31): 71°F

Temperature after mixing: 70°F

Temperature difference was:)°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #29

Pretest: No reaction.

Primary Test: No rection, 2 layers.

Initial Temperature (multiple sample #): 70°F

Initial Temperature (930660V-35): 71°F

Temperature after mixing: 70°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #30
Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 70°F
Initial Temperature (93-660C-32): 71°F
Temperature after mixing: 70°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #31
Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 70°F
Initial Temperature (93-660C-33): 71°F
Temperature after mixing: 70°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #32
Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (multiple sample #): 71°F
Initial Temperature (93-660C-34): 72°F
Temperature after mixing: 71°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #33
Pretest: No reaction.
Primary Test: No reaction, 1 phase.
Initial Temperature (multiple sample #): 69°F
Initial Temperature (93-660C-36): 70°F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #34
Pretest: No reaction.
Primary Test: No reaction,1 phase.
Initial Temperature (multiple sample #): 69°F
Initial Temperature (93-660C-37): 70°F
Temperature after mixing: 69°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #35

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-38): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #36

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-68): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #37

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-42): 69°F

Temperature after mixing: 69°F

Temperature difference was: 0°F.

*150mL of this mixture was kept and used in the next test.

Test #38

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (multiple sample #): 68°F

Initial Temperature (93-660C-43): 69°F

Temperature after mixing: 68°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #39

Pretest: No reaction.

Primary Test: No reaction, 2 layers formed.

Initial Temperature (multiple sample #): 68°F

Initial Temperature (93-660C-44): 69°F

Temperature after mixing: 68°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #40

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 69°F

Initial Temperature (93-660C-45): 70°F

Temperature after mixing: 69°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

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Test #41

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 70°F

Initial Temperature (93-660C-46): 71°F

Temperature after mixing: 70°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #42

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

initial Temperature (multiple sample #): 71°F

Initial Temperature (93-660C-47): 71°F

Temperature after mixing: 71°F

Temperature difference was: 0°F.

*150mL of this mixture was kept and used in the next test.

Test #43

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 71°F

Initial Temperature (93-660C-48): 72°F

Temperature after mixing: 71°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #44

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 71°F

Initial Temperature (93-660C-49): 72°F

Temperature after mixing: 71°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #45

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 71.5°F
Initial Temperature (93-660C-50): 72°F
Temperature after mixing: 71.5°F
Temperature difference was: 0°F to .5°F.

*150mL of this mixture was kept and used in the next test.

Test #46

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 71.5°F
Initial Temperature (93-660C-51): 72°F
Temperature after mixing: 71.5°F
Temperature difference was: 0°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #47

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 72°F
Initial Temperature (93-660C-52): 73°F
Temperature after mixing: 72°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #48

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 72°F
Initial Temperature (93-660C-53): 73°F
Temperature after mixing: 72°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #49

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 72°F
Initial Temperature (93-660C-54): 73°F
Temperature after mixing: 72°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #50

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 72°F

Initial Temperature (93-660C-55): 73°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #51

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 72°F

Initial Temperature (93-660C-56): 73°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1°.

*150mL of this mixture was kept and used in the next test.

Test #52

Pretest: No reraction.

Primary Test: No reaction,2 layers.

Initial Temperature (multiple sample #): 72°F

Initial Temperature (93-660C-57): 73°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #53

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 72°F

Initial Temperature (93-660C-58): 73°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #54

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 72°F

Initial Temperature (93-660C-59): 73°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #55

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 72°F

Initial Temperature (93-660C-66): 73°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #56

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660C-60): 74°F

Temperature after mixing: 73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #57

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660C-61): 74°F

Temperature after mixing: 73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #58

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660C-62): 73°F

Temperature after mixing: 73°F

Temperature difference was: 0°F.

Comments: Sample containers 93-660C-1 and 93-660C-23 were not used, they were in a solid grease form.
No physical reactions were noted, no increased in temperature were recorded.

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NON LISTED

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

NON-LISTED

Place the volume amount of "1" into the 500ml beaker. Then place the volume amount of "2" into the same 500ml beaker.

Test#1

Sample Container	Sample #	MEF #	Volume
1	93-660E-1	60,301	150ml
2	93-660E-2	~~768~~ 60331	45 ~~74~~ml

Sample Container	Sample #	MEF #	Volume
(1&2 above)	93-660E-1 & 2	60,301&768	150ml
3	93-660E-3	~~60,331~~ 60355	32 ~~30~~ml

Sample Container	Sample #	MEF #	Volume
(1-3 above)	multi-samples	multi-MEFs	150ml
~~4~~	~~93-660E-4~~	~~50,355~~ 768	~~23~~ml

Removed contained all solids

Sample Container	Sample #	MEF #	Volume
(1-4 above)	multi-samples	multi-MEFs	150ml
~~5~~	~~93-660E-5~~	~~60,304~~	~~14~~ml

Removed all contained solids

Sample Container	Sample #	MEF #	Volume
(1-5 above)	multi-samples	multi-MEFs	150ml
6	93-660E-6	60,035	~~22~~ml

18ml

Sample Container	Sample #	MEF #	Volume
(1-6 above)	multi-samples	multi-MEFs	150ml
7	93-660E-7	60,055	~~17~~ml

15ml

ASTM Method 5058

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Test Method A - Commingled Waste Compatility

NON LISTED ~~IGNITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-7 above)	multi-samples	multi-MEFs	150ml
~~8~~	~~93-660E-8~~	633	~~6ml~~

Removed contained all solids now

Sample Container	Sample #	MEF #	Volume
(1-8 above)	multi-samples	multi-MEFs	150ml
9	93-660E-9	1725	~~5ml~~ 7ml

Sample Container	Sample #	MEF #	Volume
(1-9 above)	multi-samples	multi-MEFs	150ml
10	93-660E-10	584	~~4~~ 6ml

Sample Container	Sample #	MEF #	Volume
(1-10 above)	multi-samples	multi-MEFs	150ml
11	93-660E-11	1432	~~3ml~~ 4ml

Sample Container	Sample #	MEF #	Volume
(1-11 above)	multi-samples	multi-MEFs	150ml
12	93-660E-12	873	3 ml

Sample Container	Sample #	MEF #	Volume
(1-12 above)	multi-samples	multi-MEFs	150ml
~~13~~	~~93-660E-13~~	~~60,013~~	~~2ml~~

Removed contained all solids now

Sample Container	Sample #	MEF #	Volume
(1-13 above)	multi-samples	multi-MEFs	150ml
14	93-660E-14	30,045	2ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility 7376

NON - LISTED ~~IGNITABLES~~

Sample Container	Sample #	MEF #	Volume
(1-14 above)	multi-samples	multi-MEFs	150ml
15	93-660E-15	425	1ml

Sample Container	Sample #	MEF #	Volume
(1-15 above)	multi-samples	multi-MEFs	150ml
16	93-660E-16	60,022	1ml

Sample Container	Sample #	MEF #	Volume
(1-16 above)	multi-samples	multi-MEFs	150ml
17	93-660E-17	393	1ml

Sample Container	Sample #	MEF #	Volume
(1-17 above)	multi-samples	multi-MEFs	150ml
18	93-660E-18	1729	1ml

Sample Container	Sample #	MEF #	Volume
(1-18 above)	multi-samples	multi-MEFs	150ml
19	93-660E-19	1728	1ml

Sample Container	Sample #	MEF #	Volume
(1-19 above)	multi-samples	multi-MEFs	150ml
20	93-660E-20	448	1ml

Sample Container	Sample #	MEF #	Volume
(1-20 above)	multi-samples	multi-MEFs	150ml
21	93-660E-21	50,346	1ml

ASTM Method 5058

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Test Method A - Commingled Waste Compatility

now - LISTED ~~IGNITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-21 above)	multi-samples	multi-MEFs	150ml
22	93-660E-22	457	1ml

Sample Container	Sample #	MEF #	Volume
(1-22 above)	multi-samples	multi-MEFs	150ml
23	93-660E-23	508	1ml

Sample Container	Sample #	MEF #	Volume
(1-23 above)	multi-samples	multi-MEFs	150ml
24	93-660E-24	447	1ml

Sample Container	Sample #	MEF #	Volume
(1-24 above)	multi-samples	multi-MEFs	150ml
25	93-660E-25	459	1ml

Sample Container	Sample #	MEF #	Volume
(1-25 above)	multi-samples	multi-MEFs	150ml
26	93-660E-26	50,347	1ml

Sample Container	Sample #	MEF #	Volume
(1-26 above)	multi-samples	multi-MEFs	150ml
27	93-660E-27	2006	1ml

Sample Container	Sample #	MEF #	Volume
(1-27 above)	multi-samples	multi-MEFs	150ml
28	93-660E-28	1337	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility

NON- LISTED ~~IGNITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-28 above)	multi-samples	multi-MEFs	150ml
29	93-660E-29	50,204	1ml

Removed contained all solids. one

Sample Container	Sample #	MEF #	Volume
~~(1-29 above)~~	multi-samples	multi-MEFs	150ml
~~30~~	~~93-660E-30~~	~~1692~~	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-30 above)	multi-samples	multi-MEFs	150ml
31	93-660E-31	60,060	1ml

Sample Container	Sample #	MEF #	Volume
(1-31 above)	multi-samples	multi-MEFs	150ml
32	93-660E-32	638	1ml

Removed contained all solids. one

Sample Container	Sample #	MEF #	Volume
(1-32 above)	multi-samples	multi-MEFs	150ml
~~33~~	~~93-660E-33~~	533	1ml

Sample Container	Sample #	MEF #	Volume
(1-33 above)	multi-samples	multi-MEFs	150ml
34	93-660E-34	587	1ml

Sample Container	Sample #	MEF #	Volume
(1-34 above)	multi-samples	multi-MEFs	150ml
35	93-660E-35	507	1ml

ASTM Method 5058

Test Method A - Commingled Waste Compatility
NON - LISTED ~~IGNITABLES ID~~

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Sample Container	Sample #	MEF #	Volume
(1-35 above)	multi-samples	multi-MEFs	150ml
36	93-660E-36	455	1ml

Sample Container	Sample #	MEF #	Volume
(1-36 above)	multi-samples	multi-MEFs	150ml
37	93-660E-37	637	1ml

Sample Container	Sample #	MEF #	Volume
(1-37 above)	multi-samples	multi-MEFs	150ml
38	93-660E-38	485	1ml

Sample Container	Sample #	MEF #	Volume
(1-38 above)	multi-samples	multi-MEFs	150ml
39	93-660E-39	870	1ml

Sample Container	Sample #	MEF #	Volume
(1-39 above)	multi-samples	multi-MEFs	150ml
40	93-660E-40	50,202	1ml

Removed contained all solids enc

Sample Container	Sample #	MEF #	Volume
(1-40 above)	multi-samples	multi-MEFs	150ml
~~41~~	~~93-660E-41~~	50,095	~~1ml~~

Sample Container	Sample #	MEF #	Volume
(1-41 above)	multi-samples	multi-MEFs	150ml
42	93-660E-42	658	1ml

ASTM Method 5058

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Test Method A - Commingled Waste Compatility

NON LISTED ~~TONITABLES 1B~~

Sample Container	Sample #	MEF #	Volume
(1-42 above)	multi-samples	multi-MEFs	150ml
~~43~~	~~93-660E-43~~	~~30.051~~	~~1ml~~

removed contained all solids, cm

Sample Container	Sample #	MEF #	Volume
(1-43 above)	multi-samples	multi-MEFs	150ml
~~44~~	~~93-660E-44~~	493	1ml

removed all contained solids. cm

45 93-660E-45 1ml

Summary of Commingled Waste Compatibility Test

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NON-LISTED WASTE

Note: In the following summary when no physical reaction is indicated this means as samples were mixed no mists, fumes, dusts, gases, spattering, foaming, solidification, precipitation, bubbling, or increases in viscosity occurred.

Test #1

Pretest: No reaction.

Primary Test: No reaction, 1 phase.

Initial Temperature (93-660E-1): 77°F

Initial Temperature (93-660E-2): 77°F

Temperature after mixing: 76°F

Temperature difference was: -1°F.

*150mL of this mixture was kept and used in the next test.

Test #2

Pretest: No reaction.

Primary Test: No reaction, 2 layers, thin black ring on top.

Initial Temperature (93-660E-1,2): 75°F

Initial Temperature (93-660E-3): 74°F

Temperature after mixing: 74°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #3

Pretest: No reaction.

Primary Test: No reaction, 2 layers, thin black ring on top.

Initial Temperature (93-660E-1,2,3): 74°F

Initial Temperature (93-660E-6): 75°F

Temperature after mixing: 74°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #4

Pretest: No reaction.

Primary Test: No reaction, 2 layers formed, dark brown on top of light brown.

Initial Temperature (93-660E-1-3,6): 74°F

Initial Temperature (93-660E-7): 74°F

Temperature after mixing: 74°F

Temperature difference was: 0°F.

*150mL of this mixture was kept and used in the next test.

Test #5

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (93-660E-1-3,6,7): 72°F

Initial Temperature (93-660E-9): 73.5°F

Temperature after mixing: 72°F

Temperature difference was: 0°F to -1.5°F.

*150mL of this mixture was kept and used in the next test.

Test #6

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (93-660E-1-3,6,7,9): 73.5°F

Initial Temperature (93-660E-10): 72°F

Temperature after mixing: 73°F

Temperature difference was: +1°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #7

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (93-660E-1-3,6,7,9,10): 72.5°F

Initial Temperature (93-660E-11): 73.5°F

Temperature after mixing: 72.5°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #8

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (93-660E-1-3,6,7,9,10,11): 72.5°F
Initial Temperature (93-660E-12): 73°F
Temperature after mixing: 73°F
Temperature difference was: 0°F to +.5°F.

*150mL of this mixture was kept and used in the next test.

Test #9

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (93-660E-1-3,6,7,9-12): 72.5°F
Initial Temperature (93-660E-14): 73°F
Temperature after mixing: 73°F
Temperature difference was: 0°F to +.5°F.

*150mL of this mixture was kept and used in the next test. This mixture will be referred to as (multiple sample#) in the following tests.

Test #10

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 72.5°F
Initial Temperature (93-660E-15): 72.5°F
Temperature after mixing: 73°F
Temperature difference was: +.5°F.

*150mL of this mixture was kept and used in the next test.

Test #11

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 73°F
Initial Temperature (93-660E-16): 74°F
Temperature after mixing: 73°F
Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #12

Pretest: No reaction.
Primary Test: No reaction, 2 layers.
Initial Temperature (multiple sample #): 73°F
Initial Temperature (93-660E-17): 73.5°F
Temperature after mixing: 73°F
Temperature difference was: 0°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #13

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73°F
Initial Temperature (93-660E-18):	74°F
Temperature after mixing:	73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #14

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73°F
Initial Temperature (93-660E-45):	74°F
Temperature after mixing:	73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #15

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73°F
Initial Temperature (93-660E-20):	74°F
Temperature after mixing:	73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #16

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73°F
Initial Temperature (93-660E-21):	74°F
Temperature after mixing:	73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #17

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73°F
Initial Temperature (93-660E-22):	74°F
Temperature after mixing:	73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #18

Pretest: No reaction.

Primary Test: No reaction, 3 layers formed

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660E-23): 74°F

Temperature after mixing: 73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #19

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660E-24): 74°F

Temperature after mixing: 73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #20

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660E-25): 74°F

Temperature after mixing: 73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #21

Pretest: No reaction.

Primary Test: No reaction, 2 layers formed.

Initial Temperature (multiple sample #): 73°F

Initial Temperature (93-660E-26): 73.5°F

Temperature after mixing: 73°F

Temperature difference was: 0°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #22

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #): 73.5°F

Initial Temperature (93-660E-27): 74.5°F

Temperature after mixing: 73.5°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #23

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73.5°F
Initial Temperature (93-660E-28):	74°F
Temperature after mixing:	73.5°F

Temperature difference was: 0°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #24

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	75°F
Initial Temperature (93-660E-29):	74°F
Temperature after mixing:	74.5°F

Temperature difference was: +.5°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #25

Pretest: No reaction.

Primary Test: No reaction, 2 layers.

Initial Temperature (multiple sample #):	73°F
Initial Temperature (93-660E-31):	74°F
Temperature after mixing:	73°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #26

Pretest: No reaction.

Primary Test: No reaction, 3 layers formed.

Initial Temperature (multiple sample #):	68°F
Initial Temperature (93-660E-32):	66°F
Temperature after mixing:	67.5°F

Temperature difference was: +.5°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #27

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67.5°F
Initial Temperature (93-660E-34):	68°F
Temperature after mixing:	68°F

Temperature difference was: 0°F to +.5°F.

*150mL of this mixture was kept and used in the next test.

Test #28

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67.5°F
Initial Temperature (93-660E-35):	68°F
Temperature after mixing:	68°F

Temperature difference was: +.5°F to -.5°F.

*150mL of this mixture was kept and used in the next test.

Test #29

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67.5°F
Initial Temperature (93-660E-36):	67°F
Temperature after mixing:	67.5°F

Temperature difference was: 0°F to +.5°F.

*150mL of this mixture was kept and used in the next test.

Test #30

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67°F
Initial Temperature (93-660E-37):	68°F
Temperature after mixing:	67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #31

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67°F
Initial Temperature (93-660E-38):	68°F
Temperature after mixing:	67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #32

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67°F
Initial Temperature (93-660E-39):	68°F
Temperature after mixing:	67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #33

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67°F
Initial Temperature (93-660E-40):	68°F
Temperature after mixing:	67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Test #34

Pretest: No reaction.

Primary Test: No reaction, 3 layers.

Initial Temperature (multiple sample #):	67°F
Initial Temperature (93-660E-42):	68°F
Temperature after mixing:	67°F

Temperature difference was: 0°F to -1°F.

*150mL of this mixture was kept and used in the next test.

Comments: No physical reactions were noted or significant increases in temperature occurred in any of tests for the non-listed wastes.

The following samples were not collected due to solids in the drums:

93-660E-4	93-660E-30	93-660E-44
93-660E-5	93-660E-33	
93-660E-8	93-660E-41	
93-660E-13	93-660E-43	

LISTED IGNITABLES 1A

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED IGNITABLES 1A

Place the volume amount of "1" into the 500ml beaker. Then place the volume amount of "2" into the same 500ml beaker.

Test#1

Sample Container	Sample #	MEF #	Volume
1	93-660B-1	20,003	150ml
2	93-660B-11	426	6ml

Test#2

Sample Container	Sample #	MEF #	Volume
1	93-660B-2	20,003	150ml
2	93-660B-12	426	6ml

Test#3

Sample Container	Sample #	MEF #	Volume
1	93-660B-3	20,003	150ml
2	93-660B-13	426	6ml

Test#4

Sample Container	Sample #	MEF #	Volume
1	93-660B-4	20,003	150ml
2	93-660B-14	426	6ml

Test#5

Sample Container	Sample #	MEF #	Volume
1	93-660B-5	20,003	150ml
2	93-660B-15	426	6ml

Attachment A

ASTM Method 5058

Test Method A - Commingled Waste Compatibility

LISTED IGNITABLES 1A

Test#6

Sample Container	Sample #	MEF #	Volume
1	93-660B-6	20,003	150ml
2	93-660B-16	426	6ml

Test#7

Sample Container	Sample #	MEF #	Volume
1	93-660B-7	20,003	150ml
2	93-660B-17	426	6ml

Test#8

Sample Container	Sample #	MEF #	Volume
1	93-660B-8	20,003	150ml
2	93-660B-18	426	6ml

Test#9

Sample Container	Sample #	MEF #	Volume
1	93-660B-9	20,003	150ml
2	93-660B-19	426	6ml

Test#10

Sample Container	Sample #	MEF #	Volume
1	93-660B-10	20,003	150ml
2	93-660B-20	426	6ml

Summary of Commingled Waste Compatibility Test

Listed Ignitables 1A

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Note: In the following summary when no physical reaction is indicated this means as samples were mixed no mists, fumes, dusts, gases, precipitation, bubbling, foaming, solidification, spattering, or increase viscosity occurred.

Test 1

Pretest: No reaction.
Primary Test: No physical reaction was observed.

Initial Temperature 1 (sample# 93-660B-1):	68°F
Initial Temperature 2 (sample# 93-660B-11):	69.5°F
Temperature after mixing:	63°F

Temperature difference was -5°F to -6°F.

Test 2

Pretest: No reaction.
Primary Test: No physical reaction was observed.

Initial Temperature 1 (sample# 93-660B-2):	68°F
Initial Temperature 2 (sample# 93-660B-12):	69°F
Temperature after mixing:	62°F

Temperature difference was -6°F to -7°F.

Test 3

Pretest: No reaction, two layers formed.
Primary Test: No physical reaction was observed.

Initial Temperature 1 (sample# 93-660B-3):	68°F
Initial Temperature 2 (sample# 93-660B-13):	70°F
Temperature after mixing:	66°F

Temperature difference was -2°F to -4°F.

Tests 1-3 showed significant decreases in temperature. A "Follow-Up" test was performed. Sample container 1 (sample# 93-660B-3), a quantity of 100mL was placed into a beaker. An initial temperature of 68.5°F was measured, no other sample was added to the beaker. The contents of the beaker were stirred, a temperature after stirring of 65°F was measured, a decrease of 3.5°F.

Test 4

Pretest: No rection.
Primary Test: No reaction was observed.

Initial Temperature 1 (sample# 93-660B-4):	68°F
Initial Temperature 2 (sample# 93-660B-14):	68°F
Temperature after mixing:	63°F

Temperature difference was -5°F.

Test 5

Pretest: No reaction.
Primary Test: No physical reaction was observed.

Initial Temperature 1 (sample# 93-660B-5):	66°F
Initial Temperature 2 (sample# 93-660B-15):	68°F
Temperature after mixing:	62°F

Temperature difference was -4°F to -6°F.

Test 6

Pretest: No reaction.

Primary Test: No physical reaction was observed.

Initial Temperature 1 (sample# 93-660B-6):	66°F
Initial Temperature 2 (sample# 93-660B-16):	69°F
Temperature after mixing:	60°F

Temperature difference was -6°F to -9°F.

Test 7

Pretest: After the addition from sample container 2 (sample# 93-660B-17) fine particles collected at the bottom of the beaker. No reaction was observed.

Primary Test: No reaction was observed.

Initial Temperature 1 (sample# 93-660B-7) before placed in beaker:	69°F
Temperature (1) after transferred to beaker:	66°F
Initial Temperature 2 (sample# 93-660B-17):	69°F
Temperature after mixing:	64°F

Temperature difference was -2°F to -5°F.

Test 8

Pretest: After the addition from sample container 2 (sample# 93-660B-18), fine particles collected at the bottom of the beaker. No reaction was observed.

Primary Test: Thin layer of sample 2 formed on top.

Initial Temperature 1 (sample# 93-660B-8) before placed in beaker:	70°F
Temperature (1) after transferred to beaker:	66°F
Initial Temperature 2 (sample# 93-660B-18):	69°F
Temperature after mixing:	62°F

Temperature difference was -4°F to -7°F.

Test 9

Pretest: Unusual color change, a bright pink/orange clear liquid formed. No reaction noted.

Primary Test: Bright pink/orange liquid formed, a pink resisdue was left on the stirring rod.

Initial Temperature 1 (sample# 93-660B-9) before placed in beaker:	69°F
Temperature (1) after transferred to beaker:	69°F
Initial Temperature 2 (sample# 93-660B-19):	69°F
Temperature after mixing:	69°F

Temperature difference was 0°F.

Test 10

Pretest: No reaction.

Primary Test: A thin separation formed after two samples were combined.

Initial Temperature 1 (sample# 93-660B-10) before placed in beaker:	70°F
Temperature (1) after transferred to beaker:	66°F
Initial Temperature 2 (sample# 93-660B-20):	68°F
Temperature after mixing:	61°F

Temperature difference was -5°F to -7°F.

7376

ATTACHMENT G

APPENDIX G

Title: Combustible and Ignitable RCRA Liquid Containment
Prepared by: RA Purcell
Date: November 3, 1994

Note This Containment Storage Procedure is organized along the following nomenclature (X.Y.Z).

X refers to the Type of RCRA liquids contained. When X is 1 the RCRA liquid is an ignitable liquid. When X is 2 the RCRA liquid is combustible.

Y refers to a container storage process. Y as 0 refers to pre-preparation of the container. Y as 1 refers to the initial inerting of the empty container as necessary for ignitable liquids only. Y as 2 refers to operations required when dealing with partially filled containers. Y as 3 refers to action necessary during emptying the containers. Finally, Y as 4 refers to requirements for actions necessary for empty containers that have been used to store RCRA liquids.

Z refers to the process operation. For combustible liquid tanks this step is universally "no action necessary". For ignitable liquid tanks, the process operation is specified in the procedure.

APPENDIX G
Liquid Mixed Waste Project
Storage of Ignitable and Combustible Liquids

(X.0) PRE-INERTING CONTAINMENT PREPARATION

1.0 Preparation of Containment for Ignitable Liquids

1.0.1 Remanufacture containment tank overflow cap such that it is fitted with a tap that can be connected to a gas (nitrogen) cylinder pressure/flow regulator.

2.0 Preparation of Containment for Combustible Liquids

2.0.1 No Action necessary

(X.1) EMPTY CONTAINMENT INERTING

Note: Do not inert a ignitable RCRA liquid containment until it becomes necessary for that containment to store ignitable liquids.

1.1 Empty Ignitable Liquid Containment

1.1.1 Pump inerting gas (nitrogen) into the modified top containment overflow cap

1.1.2 An IH Technician shall measure the concentration of oxygen at the containment vent discharge to assure that it is less than 7% molar.

Basis Once this is accomplished any ignitable liquid regardless of its vapor pressure can be safely placed into the containment. (all listed ignitable gasses cannot burn in oxygen concentrations below 9% molar).

2.1 Empty Combustible Liquid Containment

2.1.1 No Action Necessary

Basis Combustible liquids present no explosive hazard.

(X.2) FILLING CONTAINMENTS WITH RCRA COMBUSTIBLE AND IGNITABLE LIQUIDS

1.2 Partially Filled Ignitable Liquid Containment

1.2.1 Inventory of Ignitable Containment less than 14000 gallons

1.2.1.1 225 SCF of nitrogen (contents of one standard high pressure gas bottle) shall be introduced daily into containments containing less than 14000 gallons of ignitable liquids.

Basis Until the inventory of ignitable liquids is above 14000 gallons (7000 gallons head space) the containments must be maintained such that the oxygen concentration in the head space is less than 9% molar.

The containments are maintained atmospheric pressure through a free flowing vent. Therefore, daily loss of the nitrogen from the containments will be due to the daily pumping of gasses due to temperature variations. Assuming, that the containments are at a nominal temperature (60°F) and are empty (21000 gal gas volume), a daily 20°F temperature variation shall require about 162.5 Standard Cubic Feet (SCF) of nitrogen to maintain a 7% molar oxygen concentration in the containment. The contents of one standard high pressure nitrogen bottle (225 SCF) per day is 40% greater than the calculated requisite for an empty tank at a 20°F variation.

1.2.2 Partially Filled Ignitable Liquid Containment (inventory more than 14000 gallons)

1.2.2.1 No Action Necessary

Basis The Explosive energy of ignition of the ignitable vapors in a volume of less then 7000 gallons has no effect on adjacent facilities.

2.2 Containments partially filled with combustible liquids

2.2.1 No Action Necessary

Basis Combustible liquids present no explosive hazard.

(X.3) EMPTYING CONTAINMENTS OF RCRA COMBUSTIBLE AND IGNITABLE LIQUIDS

1.3 Ignitable Liquid Containment

1.3.1 Nitrogen shall be introduced into the containments of ignitable liquids while emptying at a rate 40% greater then the volumetric drainage rate.

Basis Ignitable liquids must be maintained such that the oxygen concentration in the head space is less than 9% molar.

2.3 Containments partially filled with combustible liquids

2.3.1 No Action Necessary

Basis Combustible liquids present no explosive hazard.

(X.4) STORAGE OF EMPTY CONTAINMENT OF RCRA COMBUSTIBLE AND IGNITABLE LIQUIDS

1.4 Ignitable Liquid Containment

1.4.1 225 SCF of nitrogen shall be introduced daily into the empty containment formerly holding ignitable liquids until the empty containment manhole covers are removed and the containment ventilated.

Basis After the ignitable liquid containment is emptied of ignitable liquids it is necessary to assure that the ignitable liquid vapors are maintained below the Lower Explosive Limit (LEL). To assure that ignitable vapor concentrations are below the LEL the empty containment manhole covers shall be removed to ventilate the containment.

2.4 Combustible Liquid Containments

2.4.1 No Action Necessary

Basis Combustible liquids present no explosive hazard.

ATTACHMENT H

FERMCO 7376

FEMP EMERGENCY RESPONSE

EMERGENCY RESPONSE TEAM FIRE/SPILL PREPLAN IGNITIBLE/COMBUSTIBLE LIQUID TRANSFER PROJECT

APPROVED
FIRE PROTECTION ENGINEERING
DEC 19 1994
REVIEWED BY: GR

000323

Project Description:

This project involves the transfer of ignitible and combustible liquid waste stream material stored in various RCRA warehouses to a transfer facility between Buildings 79 and Building 77. The transfer facility consist of Six (6) mobile storage vessels designed to haul such material.

Two (2) waste stream materials presently stored on site are ignitible and combustible liquid waste. Ignitible liquid waste has a flash point below 140°F, carry EPA I.D. number D001 and are assigned the reactivity group code "K". These mixtures include chlorinated and halogenated spent solvents and hydrocarbon derivatives containing low concentrations of radionuclides. The ignitible liquids are currently stored at the KC-2 Warehouse. Combustible liquid waste have a flash point of 140°F and greater. This category does not carry the D001 code and are assigned the reactivity group code "B". These mixtures are made up primarily of waste oils and spent solvents. The combustible liquid waste is stored in various RCRA warehouses on site. Both waste streams contain listed RCRA hazardous waste.

The ignitible and combustible liquid waste will be pumped into bulk storage vessels for consolidation and sampling prior to shipping. Six (6) mobile storage vessels, each having capacity of approximately 21,000 gallons, are located south of 4A Warehouse (Building 77). On top of each storage vessel, approximately 11 feet above grade is a sampling portal. Access to the top of the vessel is via a stairway and walkway on the west side of the vessel.

Pumping will be accomplished by using an Air-Operated Diaphragm pump with Stainless Steel wetted areas and Teflon diaphragms. This type of pump will be used for both ignitible and combustible liquid waste.

The Liquid waste transfer project consist of 5 different phases of work.

1. Testing to verify acceptability of wastes before mixing.

2. Transferring ignitable and combustible liquid wastes currently stored in drums to bulk liquid storage vessels.

3. Sampling storage vessels contents for analysis according to the sampling plan supporting the K-25 TSCA Incinerator Waste Acceptance Criteria.

5. Shipment of the liquid waste from the FEMP to the K-25 TSCA Incinerator located in Oak Ridge Tennessee.

Ignitible Liquid Vessels.

The Ignitible liquids will be transferred into two (2) designated storage vessels. The vessels, numbered 239430 and 239428 will be made inert prior to pumping liquids into the vessels. Industrial Hygiene will be responsible for assuring an inert atmosphere.

Response Guidelines

Responding Vehicles;	Rescue 301 Engine 312 Haz-Mat 328 and support trailer Ambulance 331 or 332 Mobile Air unit (if required) "NOTE": Engine 312 is the preferred Engine due to it's foam capability
Primary Response Route;	East on 1st street to north on "E" street to the High Pressure hydrant south of Building 79 (RCRA Warehouse). Prepare to lay a supply line to the scene. Prepare to start foam operations.
Secondary Response Route;	West on 1st street to north on "C" street to east on 2nd street to the High Pressure hydrant south of Plant 9. Prepare to lay a supply line to the scene. Prepare to start foam operations.

On activation of the ERT pagers for a response to the Ignitible/Combustible liquid transfer project the EC must obtain the current wind speed and direction to enable him to respond upwind of the incident scene. This information must be passed on to the other responding units.

Once on the scene the EC must conduct a size-up and notify the Communication Center of the situation as it exists. The EC must make a conscious effort to avoid entering a dangerous situation and his approach should be from a upwind side. It may be necessary during the size-up to take immediate action to save lives or to isolate the area, but this must be done with full awareness of the possible hazards to ERT personnel. Personal protective equipment

An Incident Command structure shall be initiated and information relevant to the incident shall be relayed to the other responding units.

The EC shall contact the supervisor in-charge of the operation to identify the nature and severity of the problem and to gather information to formulate a plan of action. Several questions need to be answered by the supervisor before any entry is made into a hazard zone;

1. What is currently happening?

   Are there people in danger?
   Is there a possible but not leaking vessel in danger?
   Is there a fire?
   Is there a release of liquid?
   Has there been an explosion?

2. What is the nature of the accident?

   What is the liquid involved?
   Is there a radiation hazard?

3. What is the condition of the vessel/piping or equipment?

   Is it under stress from heat or fire?
   Is it under stress from mechanical damage?

Once information has been gathered and a plan of action is made the EC must establish zones to maintain a safe perimeter around the incident scene and to keep NON-ESSENTIAL personnel away from danger. Some of these non-essential personnel could be ERT members, Medical or RAD Safety personnel, that are not trained or equipped to enter an exclusion zone.

The EC shall start to assign Sector Officer's to carry out the tactical objectives of the plan of action. These Sector Officer's shall be briefed on the overall strategy and tactical objectives of their respective assignments. The AEDO (Incident Commander) shall also be briefed on the response plan and tactical objectives.

<u>Potential Hazards</u>

Fire or Explosion;

Flammable/combustible material;may ignite by heat, sparks, or flames.

Vapors may travel to a source of ignition and flash back.

Containers may explode in heat of fire.

Run-off to sewer may create fire or explosion hazard.

Health Hazards;

Vapors may cause dizziness or suffocation.

Contact may irritate or burn skin and eyes.

Fire may produce irritating gases.

Run-off from fire control or dilution water may cause pollution.

Emergency Action;

Keep unnecessary personnel away; isolate hazard area and deny entry.

Stay up wind; keep out of low laying areas.

SCBA and structural firefighters protective clothing will provide limited protection.

Fire;

Small fires - Dry Chemical, CO2, water spray, or foam (AFFF).

Large fires - Water spray foam (AFFF) is recommended.

Cool containers that are exposed to flames with water from the side until well after the fire is out.

For massive fire in a cargo area, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from the area and let the fire burn out.

Withdraw immediately in case of rising sound from venting safety device or and discoloration of the vessel due to fire.

Spill or leak;

Shut off ignition sources; no flares, smoking, or flames in the area.

Stop leak if you can do so without risk.

Water spray may reduce vapors, but it may not prevent ignition

[illegible]

Small Spills - Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills - Dike far ahead of liquid spill for later disposal.

First Aid:

Move victim to fresh air and call emergency medical care; if not breathing, give artificial respiration; if breathing is difficult give oxygen.

In case of eye contact with material, immediately flush eyes with running water for at least 15 minutes.

Wash skin with soap and water.

Remove and isolate contaminated clothing and shoes at the site.

Safety & Fire Information:

The following information should be used for emergency response;

Minimum protective clothing shall consist of full turnout bunker gear with SCBA.

Stop the source of the leak or spill if not already done.

The area shall be barricaded with banner tape and personnel redirected by response personnel

Reporting requirements will be directed by the AEDO or Environmental Compliance.

If necessary, a foam (AFFF) blanket shall be applied to prevent vapor spread.

Low laying and surrounding area shall be checked with an explosive gas monitor to identify and/or locate areas where vapors may have accumulated. If necessary, all electrical supply circuits shall be shut off, including emergency power circuits to prevent a possible source of ignition. The disconnect means must be in a safe area so that shutting off circuits in itself will not create a source of ignition.

[illegible] activities.

If the product can be pumped, explosion proof pumps shall be used to transfer the product to approved flammable liquid containers. Combustible/flammable liquids shall not be washed into sumps or storm sewers. All containers and transfer units must be properly grounded and bonded. Standby fire attack crews shall be in position during all such operations. Beryllium alloy non-sparking tools shall be used for any repairs or mechanical processes within the spill area.

Removal of barricade tape and access to the area shall be permitted only after spilled product has been removed, area surveyed, and with the approval of the AEDO.

Any member of the ERT that is suspect of an accidental; exposure or actual contamination shall report to Medical for treatment. This shall be documented by the Emergency Chief or person in charge.

Foam System Operation

Engine 312 is the preferred Engine to response due to it's foam capabilities. The Engine is equipped with an around the pump foam proportioner. It has a 50 gallon foam tank located above the pump. The foam tank contains AFFF foam. To operate the foam system the pump must be in operation. The foam system may then be operated in the following manner;

1. Pull FOAM handle to open the foam tank.

2. Pull EDUCTOR handle.

3. Set metering valve according to the desired percentage.

4. The Intake (vacuum gage) MUST be maintained at 10 to 15psi at all times in order for the foam system to operate.

5. Apply foam.

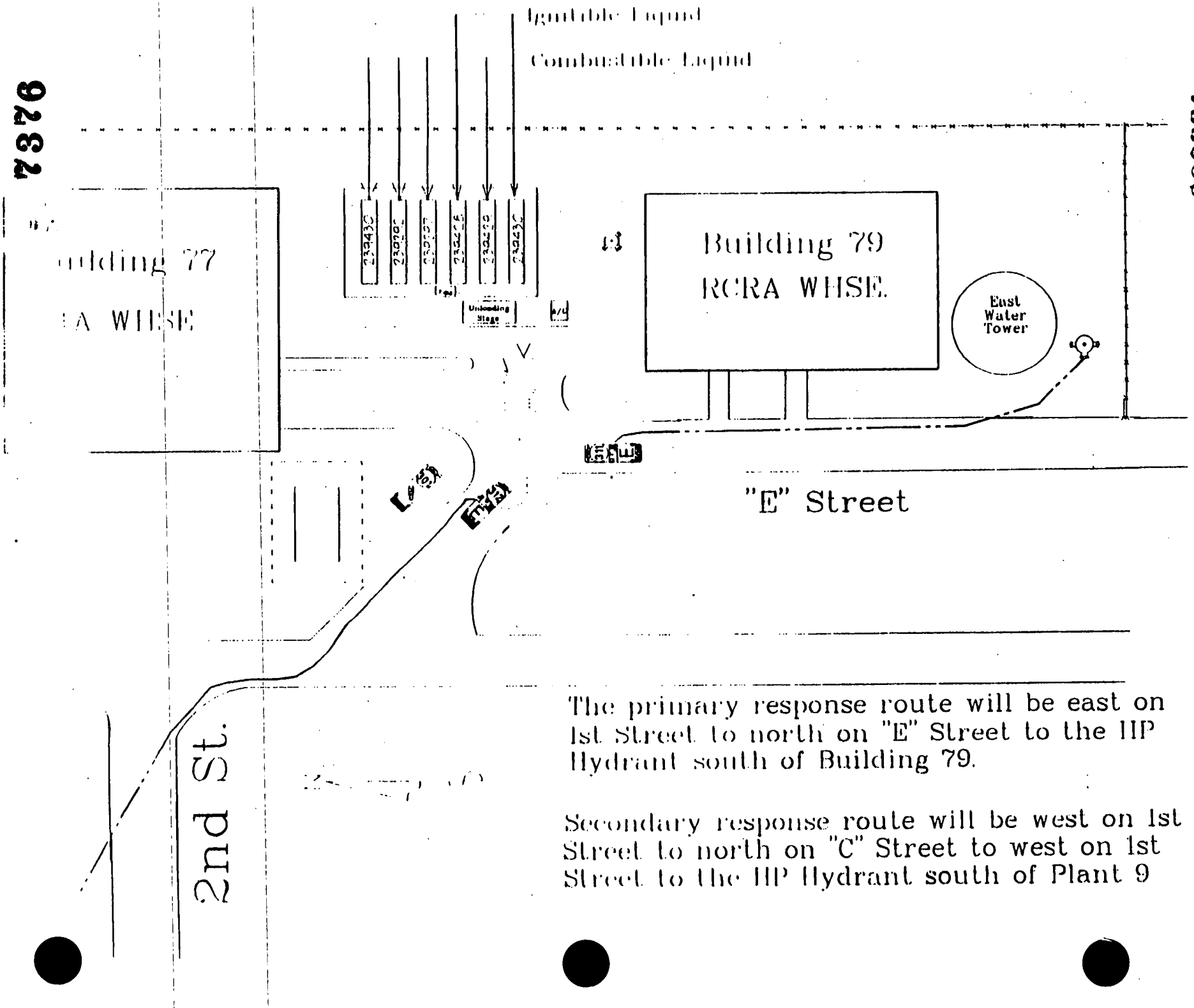
6. At any time during the operation the recirculating valve should not be turned on. This will allow for the foam solution to enter the booster tank, which will required to back flush the pump.

7. To shut down, close the FOAM valve and pull the FLUSH

References;

ERT Manual Section 7.3 - Response Guideline for Combustible/Flammable Liquid Spills or Fires

Waterous Pump Operations manual



The primary response route will be east on 1st Street to north on "E" Street to the HP Hydrant south of Building 79.

Secondary response route will be west on 1st Street to north on "C" Street to west on 1st Street to the HP Hydrant south of Plant 9

ATTACHMENT J

Drums Identified Which Exceed 0.01% Uranium

Lot Code (1st 4 digits)	Material Description: (including % uranium and lot marking information)
S095	"Oily oxidation sludges with high free metals", "oily sludge", "Solvent Contaminated Oil", 0.50 to 10.00 % U. 29 drums identified, with lot markings: 200-O-015-0297, 800-O-041-0293 & 0309, 800-O-039-0321, 800-O-015-0300-000001 through 3.
D690	"Oily sludge, Waste Inventory", "Contaminated Insoluble Oil", "Used Oil", "Oily Sludges", (0.50 - 40.00 % U) 39 drums identified with lot markings: 200-V-015-0340-000001 through 4, 731-D-009-0337, 655-D-041-0333, 530-D-015-0317,0319, and 0325, 620-D-015-0318, 655-D-015-0318-000001 & 2, 655-D-039-6319-000001 through 4
R071	"Oily Sludge for Oxidation", 50.00 % U 1 drum, labelled 920-1-041-0305-000001
X888	"Oily sludge for oxidation" and "U-Contaminated Oil, Insoluble in Water", 0.5 to 10.00 % U 8 drums identified, with numbers 015 or 041 within their lot marking codes.
X095	"Oily Sludge for Oxidation, 1.60 % U 79 drums identified
R020	"U-contaminated solvent, paint thinner", "Contaminated Oil, Insoluble", "Oil". 20 drums, 0.20 - 0.50 % U, with numbers "013-0328", "013-0330", "P-015-7331, 0339, 7326, 0330, 0331", within their lot marking codes.

Lot Code (1st 4 digits)	Material Description: (including % uranium and lot marking information)
R050	"Used oil from equipment in Lab", "U-Contaminated Oil, Not Water Soluble", and "Used Oil".
	14 drums, (0.500 - 1.00 % U), identified by the numbers "015-7326, 0329 - 0332" within their lot marking codes.
X500	"Oily Sludge" and "U-Contaminated Oil, Insoluble in Water".
	4 drums (0.5 to 1.60 % U) identified, 3 in 85 gallon overpacks and 1 in a 55 gallon drum. The 85 gallon overpacks have numbers "039-0309" within their lot marking codes and labelled as "drum numbers 000001 through 000003". The 55 gallon drum has the number "015-0309" within its lot marking code and is labelled as "drum number 000001".
H082	"Oily Sludge"
	1 drum (1.60 % U) identified, in an 85 gallon overpack. The 85 gallon overpacks has numbers "039-0279" within its lot marking code and is labelled as "drum number 000001".
H093	"Hydraulic Oil", "Contaminated Solvents -- Trichlor, Perchl", "Contaminated Insoluble Oil".
	89 drums (0.50 - 1.60 % U). Drum Sizes: Various (55s, 85 OPs, 55 OPs, 110 OPs, etc.). The drums have numbers "013" and "015" within their lot marking codes.
X948	"Hydraulic Oil",
	1 drum (0.50 % U), within a 55 gallon drum. The drum number is -137-D-015-0294-000001.
S020	"Hydraulic Oil"
	4 drums (0.50 % U), all in 55s. The drum numbers are -137-D-015-0323-000001 - 3 and -137-D-015-0303-000001.

Lot Code (1st 4 digits)	Material Description: (including % uranium and lot marking information)
R099	"Quench Oil", "Contaminated Insoluble Oil"
	19 drums (0.50 % U). The drums have the numbers -351-V-015-0299 and -201-V-015-0331 within their lot marking codes
R095	"Oil"
	1 drum (0.50 % U). The drum has the number -300-V-015-7326-000001.
W095	"Waste Inventory", 3 drums ("0.50 % U"). The drums are labelled "-200-V-015-0332-000001 - 3"
W099	"Waste Inventory", 4 drums ("0.50 % U"). The drums are labelled "-200-V-015-0340-000001 - 4".
R125	"Contaminated Insoluble Oil", 1 drum ("0.50 % U"). The drum is labelled "-201-V-015-0325-000002".

Total number of drums which will be affected: ~317 within the listed inventory.

ATTACHMENT K

In order to demonstrate compliance with OAC 3745-55-75 (B) (3) and (4), the following dimensions and calculations of the secondary containment are provided. The calculations demonstrate the containment system has sufficient capacity to contain 10% of the volume of the containers or the volume of the largest container, whichever is greater, plus the precipitation from a twenty-five year, twenty-four hour rainfall event.

All six tanks in the secondary containment are 21,000 gallons. For this reason the volume of any one tank is more than 10% of the capacity of the entire contained tank farm. A non-pressurized vessel of liquid will drain until the level of the contained liquid and the surrounding liquid are equal. For example, if the bottom of a tank is punctured, the tank will leak only until the secondary containment is filled to the level remaining in the tank. The liquid remaining in the tank erases the footprint displaced by the tank. The containment calculations provided are based upon the footprints of five tanks displacing liquid.

The calculation is as follows:

Containment Capacity:

The secondary containment vessel is 90' x 60' x 1.5' in depth.

90' x 60' x 1.5' = 8100 cubic feet (cf)

Capacity of Largest Tank:

21,000 gal ÷ 7.4 gal/cu.ft = 2838 cf

Volume of 25 Year/24 Hour Rain Event:

5.4" = .45'

.45' x 60' x 90' = 2430 cf

Volume Displaced by 5 Non-Leaking Tanks:

Volume occupied by five 40' x 8' rectangular tanks in the 1.5' deep secondary containment vessel:

5 x 8' x 40' x 1.5' = 2400 cf

Containment Summary:

8100 cf - 2838 cf - 2430 cf - 2400 cf = 432 Cubic Feet

The volume of the largest of six tanks plus the volume of a 25 year/ 24 hour rain event is less than the capacity of the secondary containment vessel by 432 cubic feet. Applying this volume over the 90' x 60' containment area less the five 8' x 40' tanks:

$$432 \text{ cf} \div (90' \times 60' - 5 \times 8' \times 40') = .114' = 1.34''$$

This idealized calculation provides less free board than discussed in the project documentation. The tanks are not planned to contain more than 20,000 gallons, the calculation is based upon the tank capacity of 21,000 gallons. This calculation also assumes the tanks to be flat bottomed rectangles. They are in fact, built on semi-trailer frames approximately 12" in depth. While structural members of frame would be submerged, the frame is not solid and would not displace the entire volume. For these reasons, the free board calculated is extremely conservative.

In the event a leak occurs, waste from the leaking tank and waste captured by the secondary containment would be pumped into the sixth tank. The inventory for this project has been grouped into five batches. Six tanks were procured to allow an extra tank for emergency use.

ATTACHMENT M

FEMP
MIXED AND HAZARDOUS WASTE DISPOSAL
MULTIPLE TANK/CONTAINER INSPECTION FORM

7376

ECT NAME: IGNITABLE LIQUID MIXED WASTE PROJECT

PROJECT ENGINEER: ROBERT F. SCHULTEN, HAZARDOUS & MIXED WASTE DISPOSAL PLANNING

Item	Item Description	Acceptable	Unacceptable	N/A	Observations/Corrective Actions To Be Completed	Date Action Completed
TEMPORARY TANK STORAGE: List Tank No.'s and Location(s):						
1	Overfill/Spill control equipment:					
2	Corrosion or release of waste:					
3	Monitoring equipment In place (Content level):					
4	Surrounding area & unit integrity:					
5	Secondary containment condition:					
6	Manway/fillpipe seals unbroken:					
7	Sump pump switch position -should be on "off" setting:					
8	Tank has "Hazardous Waste" marking (label) affixed					
DRUM STORAGE AREA(S): Attach list of inventory No.'s and staging area location(s):						
1	Drums have "Hazardous Waste" marking (label) affixed					
2	Corrosion, holes, dents, bulges, or leaks:					
3	All drums closed except when adding or removing waste:					
4	Spill control equipment:					
5	Secondary containment condition:					

000337

Item	Item Description	Acceptable	Unacceptable	N/A	Observations/Corrective Actions To Be Completed	Date Action Completed
TANKER TRUCK AND TRAILER: List location:						7376
1	Labeled with "Hazardous Waste" marking					
2	Corrosion, holes, dents, bulges, or leaks:					
3	Lid/manway closed except when adding or removing waste:					
4	Spill control equipment:					
5	Secondary containment condition:					

NOTE: INDOOR DRUMS AND STAGING AREAS MUST BE INSPECTED WEEKLY
TEMPORARY STORAGE TANKS MUST BE INSPECTED DAILY
TANKER TRUCK MUST BE INSPECTED DAILY

Comments:

Inspector's Signature/Badge No.:	Date:
Supervisor's Signature/Badge No.:	Date:
Waste Compliance Signature:	Date:

ATTACHMENT N

MARTIN MARIETTA

TIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2003
OAK RIDGE, TENNESSEE 37831

7376

August 12, 1994

Distribution

Draft TSCA Incinerator Burn Plan for Fiscal Year (FY) 1995

Please review the enclosed information supporting the TSCA Incinerator burn plan for incinerable liquid waste for FY 1995. Your review should include concurrence and approval of the burn capacity allocations for your site and completion of the site issues for implementation of the burn plan. The list of issues is presented in Attachment 5.

I would like to issue the final burn plan and configuration management requirements by September 1, 1994. Thereafter, the burn plan will be maintained current using configuration management. To meet this schedule please submit your comments via fax to me at (615) 576-6222, or Brenda Snyder at (615) 576-5380 no later than August 19, 1994.

If you have any questions, please contact me at (615) 576-6797.

Sincerely,

Angel L. Rivera

Angel L. Rivera, K-1037, MS-7357
Energy Systems Waste Management Organization

ALR:tmh - ESWMO(OI):94-035

Enclosures

c/enc: V. Adams
P. A. Flowers
C. E. Frye
L. J. Mezga
F. Perez
W. K. Simon
B. S. Snyder
S. T. Wright
File - ALR

AUG 22 9 25 AM '94
FERMCO

-7376

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M. E. Saunders

RMI Company Extrusion Plant

M. L. Johnson
D. Kniss

TSCA INCINERATOR FISCAL YEAR (FY) 1995 BURN PLAN FOR INCINERABLE LIQUID WASTE

7376

On July 28, 1994, a meeting was held at the Garden Plaza Hotel in Oak Ridge, Tennessee to develop the TSCA Incinerator burn plan for incinerable liquid waste for FY 1995. The following sites representatives participated in this planning activity:

K-25 Site, Mark Saunders
Y-12 Plant, Chuck Eblen
Oak Ridge National Laboratory (ORNL), Jeff Gilpin
Paducah Gaseous Diffusion Plant (PAD), Richard Kuehn
FERMCO, Kevin Crossen, Robert F. Schulten
RMI, M. Lyn Johnson
TSCA Incinerator, Brenda Snyder
Angel L. Rivera, Energy Systems Waste Management Organization Central
Kevin Rarsh, ORNL Computing Applications Division

Table 1 presents the TSCA Incinerator burn targets for liquid waste for FY 1995.

Table 1
Liquid Waste Burn Plan for FY 1995

Site	Burn Target (lb)	Percent Allocation
K-25	1,475,000	36.9
Y-12	800,000	20.0
ORNL	132,000	3.3
Portsmouth Gaseous Diffusion Plant (PORTS)	500,000	12.5
PGDP	400,000	10.0
FERMCO	693,000	17.3
RMI	0	0
Grand Total	4,000,000	100
Total Oak Ridge Reservation (ORR)	2,407,000	60.2
Total Off-ORR	1,592,000	39.8

Additional information supporting the development and implementation of the FY 1995 Burn Plan is presented in the following attachments for your review and comment.

- Attachment 1 provides a summary of the incinerable liquid waste inventories at your site as of October 1994. A total liquid waste inventory of 5,872,032 pounds (lbs) was used as basis for the FY 1995 Burn Plan.

- Attachment 2 provides estimates of the projected generation rates for FY 1995 and FY 1996. These generation rates will be used in updating the Long-Range Burn Plan.

- Attachment 3 presents the burn targets by month for FY 1995. These targets are to be used as guidance for burn scheduling. Burn scheduling include waste selection, sampling, analysis, issue the requests for incineration, shipment, incineration, and certification.

- Attachment 4 presents the burn targets by fiscal quarter. These targets will be used to report progress to the Department of Energy (DOE) Oak Ridge Operations Office (ORO) in the implementation for the burn plan.

- Attachment 5 presents a list of issues that each site identified as significant in the implementation of the burn plan. Please review this issues as applicable to your site. Action plans will be developed for the resolution of these issues.

Information on notification requirements for corrosive (D002) waste treated at non-wastewater treatment facilities and ignitable (D001) waste with less than 10 percent total organic carbon will be distributed at a later date. If you found any reference containing this information please let me know.

I would like to propose the following implementation progress tracking and reporting requirements for this plan:

(1) Monthly progress reports to the sites on the progress and status of the following elements of the burn schedule to be maintained by Brenda Snyder.

- site requests for changes to the original burn targets
- revised burn targets (TSCA Incinerator)
- revised burn targets (sites)
- waste characterization
- requests for incineration
- waste acceptance
- shipment schedules
- waste received
- waste treated
- certificate of destruction

(2) Quarterly progress reports to DOE/ORO on revised burn targets, actual burn, and variances.

The proposed schedule in support of implementation of the FY 1995 burn plan is listed in Table 2.

Table 2
Propose Schedule in Support of FY 1995 Burn Plan

Activity	Target Date
Receive comments on the Draft FY 1995 Burn Plan	August 19, 1994
Resolve issues and issue Final FY 1995 Burn Plan for Configuration Management	September 1, 1994
Monthly Status and Implementation Progress Reports to the Sites on the FY 1995 Burn Plan	October 15, 1994 November 15, 1994 December 15, 1994 January 15, 1995 February 15, 1995 March 15, 1995 April 15, 1995 May 15, 1995 June 15, 1995 July 15, 1995 August 15, 1995 September 15, 1995
Quarterly Progress Reports to DOE/ORO on Implementation of the FY 1995 Burn Plan	January 31, 1995 April 31, 1995 July 31, 1995 October 31, 1995

Total Incinerable Waste Inventory

Site	Waste Group	Most Recent Inventory	Prior Inventory	Inventory Date
K-25	K001	1,894,656		10/1994
	SITE TOTAL	1,894,656		
Y-12	Y001	552,000		10/1994
	SITE TOTAL	552,000		
ORNL	X001	132,000		10/1994
	SITE TOTAL	132,000		
PORTS	C005	947,000		10/1994
	SITE TOTAL	947,000		
PGDP	P001	370,000		10/1994
	P003	363,796		10/1994
	P005	663,190		10/1994
	SITE TOTAL	1,396,986		
FERMCO	F005	872,000		10/1994
	SITE TOTAL	872,000		
RMI	R005	77,390		10/1994
	SITE TOTAL	77,390		
	GRAND TOTAL	5,872,032		

Total Incinerable Waste Generation Projections

Burn Period	Site	Projected Generation
FY1995	K-25	25,000
	Y-12	300,000
	ORNL	42,000
	PORTS	362,909
	PGDP	150,000
	FERMCO	50,000
	RMI	7,200
	TOTAL	937,109
FY1996	K-25	25,000
	Y-12	200,000
	ORNL	42,000
	PORTS	306,000
	PGDP	150,000
	FERMCO	100,000
	TOTAL	823,000

Attachment 3

Monthly Burn Allocation Matrix for FY1995

Waste Group	Site	October	November	December	January	February	March	April	May	June	July	August	September	Total
K001	K-25	0	0	0	173,000	236,250	213,250	139,000	0	172,500	96,500	196,500	248,000	1,475,000
SITE TOTAL		0	0	0	173,000	236,250	213,250	139,000	0	172,500	96,500	196,500	248,000	1,475,000
Y001	Y-12	0	0	0	160,000	86,250	13,250	0	0	150,500	130,000	130,000	130,000	800,000
SITE TOTAL		0	0	0	160,000	86,250	13,250	0	0	150,500	130,000	130,000	130,000	800,000
X001	ORNL	0	0	0	67,000	0	0	0	14,000	28,000	0	0	23,000	132,000
SITE TOTAL		0	0	0	67,000	0	0	0	14,000	28,000	0	0	23,000	132,000
C005	PORTS	0	0	0	100,000	150,000	100,000	0	0	50,000	100,000	0	0	500,000
SITE TOTAL		0	0	0	100,000	150,000	100,000	0	0	50,000	100,000	0	0	500,000
P001	PGDP	0	0	0	0	0	0	74,500	74,500	0	0	0	0	149,000
P003	PGDP	0	0	0	0	27,500	0	0	0	0	0	0	0	27,500
P005	PGDP	0	0	0	0	0	74,500	0	0	0	74,500	74,500	0	223,500
SITE TOTAL		0	0	0	0	27,500	74,500	74,500	74,500	0	74,500	74,500	0	400,000
F005	FERMCO	0	0	0	0	0	99,000	99,000	99,000	99,000	99,000	99,000	99,000	693,000
SITE TOTAL		0	0	0	0	0	99,000	99,000	99,000	99,000	99,000	99,000	99,000	693,000
R005	RMI	0	0	0	0	0	0	0	0	0	0	0	0	0
SITE TOTAL		0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL		0	0	0	500,000	500,000	500,000	312,500	187,500	500,000	500,000	500,000	500,000	4,000,000

Attachment 4

Quarterly Burn Allocation Matrix for FY1995

Waste Group	Description	Site	Oct - Dec	Jan - Mar	Apr - Jun	Jul - Sep	Total
K001	RCRA LDR FFCA APPENDIX A	K-25	0	622,500	311,500	541,000	1,475,000
SITE TOTAL			0	622,500	311,500	541,000	1,475,000
Y001	RCRA LDR FFCA APPENDIX A	Y-12	0	259,500	150,500	390,000	800,000
SITE TOTAL			0	259,500	150,500	390,000	800,000
X001	RCRA LDR FFCA APPENDIX A	ORNL	0	67,000	42,000	23,000	132,000
SITE TOTAL			0	67,000	42,000	23,000	132,000
C005	NON FFCA	PORTS	0	350,000	50,000	100,000	500,000
SITE TOTAL			0	350,000	50,000	100,000	500,000
P001	RCRA LDR FFCA APPENDIX A	PGDP	0	0	149,000	0	149,000
P003	TSCA PCB FFCA	PGDP	0	27,500	0	0	27,500
P005	NON FFCA	PGDP	0	74,500	0	149,000	223,500
SITE TOTAL			0	102,000	149,000	149,000	400,000
F005	NON FFCA	FERMCO	0	99,000	297,000	297,000	693,000
SITE TOTAL			0	99,000	297,000	297,000	693,000
R005	NON FFCA	RMI	0	0	0	0	0
SITE TOTAL			0	0	0	0	0
GRAND TOTAL			0	1,500,000	1,000,000	1,500,000	4,000,000

In earlier information exchanges, a concern identified was the term non-FFCA waste appearing in the TSCA Burn Schedule. The clarification offered is repeated here for reference.

Define "non-FFCA waste" as seen in the TSCA Burn Schedule. We need to insure that we do not appear to be circumventing the FFCA process.

The Oak Ridge K-25, Y-12, and ORNL facilities, and the Paducah Gaseous Diffusion Plant, have in place, Federal Facilities Compliance Agreements (FFCA), for timely treatment and disposal of LDR and PCB wastes. Disposition of affected waste streams at each site is time critical (compliance schedules), with all affected wastes scheduled for treatment at the TSCA Incinerator. Due to limited waste treatment capacities at the TSCA Incinerator, FFCA wastes get first priority in the burn plan, so that these facilities can meet their compliance schedules. FEMP liquid mixed wastes are not part of an FFCA for LDR, and are therefore, categorized as NON-FFCA wastes on the TSCA Incinerator burn schedule.

Attachment 5

TSCA Incinerator FY 1995 Burn Plan Implementation Issues

K-25 Site

(1) There is a potential for a reduction of blending capability of tanks K-1202.

Y-12 Plant

(1) About 40,000 gallons of liquid waste containing the F039 Environmental Protection Agency waste code is being stored at the Y-12 Plant. The TSCA Incinerator does not have this code in the Resource Conservation and Recovery Act Permit.

(2) There is a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) issue with burning waste stored in OD-9.

ORNL

(1) Acceptance of Sr-90 and Cs-137 containing liquid waste at the TSCA Incinerator.

PORTS

(1) A maximum shipment of 500,000 lbs of liquid incinerable waste per year was identified as the PORTS limit.

PAD

(1) PAD does not have bulking capabilities at this time. The tank used in the past for blending is down for repairs. Support from the TSCA Incinerator will be needed during FY 1995 to meet the burn targets.

(2) All the waste is in drums. There is lack of storage space for waste selection and sampling.

(3) Manpower is limited for handling, sampling, and bulking.

(4) Funding constraints.

FERMCO

(1) All the waste is stored in drums. A bulking program is being implemented to support the burn plan for FY 1995.

(2) Acceptance of the TSCA Incinerator of liquid incinerable waste generated during CERCLA activities.

RMI

(1) Sampling is in progress. There is a need to request approval from the State of Tennessee for shipping and incineration of RMI liquid waste.

ATTACHMENT P

POLY-FLEX, INC.
2000 W. Marshall Drive Grand Prairie, Texas 75051 USA
800-527-3322 214-647-4374 FAX 214-988-8331

CHEMICAL COMPATIBILITY ANALYSIS

The attached list of chemicals will fall into one of the three categories listed below. Only those with an "X" are considered compatible. Even though a chemical may not be considered compatible with the liner, the liner will maintain its continuity against all chemicals at the concentrations indicated below for 24 hours. Some minor contamination could occur due to permeation.

1. Chemicals of this group and at this concentration will cause irreversible degradation due to cross linking of the polymer over an extended period of time (greater than 30 days). Cross linking can lead to brittle failure. Less than 24 hours of contact with the chemical will not cause any measurable change or lead to failure of the liner.

2. Chemicals of this group and at this concentration will cause the liner to experience a weight gain of 5-15%, swelling up to 10%, and a loss of tensile strength of 5-20%. If the chemicals are removed within 30 days, this reaction is reversible; and if no stress has been placed on the liner, the liner will retain nearly all its original properties and shape. However, vapor permeation of the chemical through the liner may occur soon after contact, and will continue until the chemical is removed.

"X". Chemicals of this group and concentration have negligible effect on the physical properties of the liner, and will cause only minor contamination due to permeation.

Jim Nobert, Laboratory Manager

CHEMICAL COMPATIBILITY ANALYSIS

Note: X's indicate minor contamination due to permeation. However, based on 24 hr. exposure, the liner will maintain its continuity against all the chemicals listed at the indicated concentrations.

REFERENCE	CHEMICAL	(ppm) CONC	HDPE	VLDPE
60331	URANIUM	1	X	X
	ACETONE	1	X	X
	BENZENE	13	X	X
	ETHYLBENZENE	1	X	X
	TOLUENE	14	X	X
	XYLENE	9	X	X
	ARSENIC	<1	X	X
	LEAD	1	X	X
60301	LEAD	182	X	X
	URANIUM	66	X	X
60055	LEAD	666	X	X
	BENZENE	13,000	X	2
	URANIUM	6	X	X
425	NITRIC ACID	50,000	X	1
	CYCLOHEXANE	950,000	2	2
60056	TETRACHLOROETHYLENE	400,000	2	2
	TRICHLOROETHANE	200,000	2	2
	CHROMIUM	70	X	X
	LEAD	50	X	X
	MERCURY	<1	X	X
	URANIUM	180	X	X
30005	URANIUM	9200	X	X
	ETHYLBENZENE	51	X	X
	TETRACHLOROETHYLENE	600	X	X
	TOLUENE	130	X	X
	TRICHLOROETHANE	35,000	2	2
	TRICHLOROETHANE	30	X	X
	TRICHLOROETHYLENE	70	X	X
	XYLENES	230	X	X
	ACETONE	120	X	X
	MEK	80	X	X
	CARBON TETRACHLORIDE	60	X	X

	BARIUM	3	X	X
	LEAD	4	X	X
	ARSENIC	1	X	X
	CADMIUM	<1	X	X
	SILVER	<1	X	X
	MERCURY	<1	X	X
	CHROMIUM	1	X	X
10026	ACETONE	9600	X	2
	METHYLENE CHLORIDE	840	X	X
	TRICHLOROETHANE	21,400	2	2
	TRICHLOROETHYLENE	830	X	X
	MIBK	840	X	X
	TOLUENE	790	X	X
	TRICHLOROFLUOROMETHANE	4400	X	2
	CARBON TETRACHLORIDE	1700	X	X
	PCB	500	X	2
	URANIUM	1	X	2
1411	ACETONE	57,000	X	2
	CARBON TETRACHLORIDE	6300	X	2
	ETHYL BENZENE	41,400	X	2
	TOLUENE	6300	X	X
	TRICHLOROETHANE	1,000,000	2	2
	XYLENE	100,000	2	2
	BARIUM	6500	X	X
	CHROMIUM	2300	X	X
	LEAD	14,500	X	X
	MERCURY	33	X	X
	SELENIUM	480	X	X
1229	URANIUM	66	X	X
	THORIUM	1000	X	X
	LEAD	11	X	X
	MERCURY	<1	X	X
	ACETONE	14	X	X
	TRICHLOROETHANE	40	X	X
	TETRACHLOROETHYLENE	40	X	X
	XYLENE	7	X	X
418	ACETONE	??	2	2
390	URANIUM	521	X	X
	ARSENIC	2	X	X
	BARIUM	261	X	X
	CADMIUM	1	X	X
	CHROMIUM	4	X	X
	LEAD	143	X	X
	ACETONE	220	X	X

	ETHYLBENZENE	110	X	X
	TRICHLOROETHANE	3920	X	X
	TOLUENE	110	X	X
	XYLENES	110	X	X
60085	TRICHLOROETHANE	109,000	2	2
	ACETONE	7200	X	X
	CYCLOHEXANONE	43,000	X	2
	ETHYL BENZENE	1350	X	X
	METHYLENE CHLORIDE	5500	X	X
	TOLUENE	1350	X	X
	XYLENES	1400	X	X
	BARIUM	289	X	X
	CADMIUM	52	X	X
	CHROMIUM	888	X	X
	LEAD	7885	X	X
	SELENIUM	22	X	X
	URANIUM	95	X	X
60084	URANIUM	10,200	X	X
	TRICHLOROETHANE	1000	X	X
	TETRACHLOROETHYLENE	1000	X	X
	METHYLENE CHLORIDE	1000	X	X
	TRICHLOROETHENE	29	X	X
	XYLENES	3	X	X
	LEAD	??	X	X
	SELENIUM	??	X	X
60080	ACETONE	2200	X	X
	CARBON TETRACHLORIDE	12,500	2	2
	ETHYLBENZENE	1050	X	X
	TRICHLOROETHYLENE	1100	X	X
	TRICHLOROETHANE	103,000	2	2
	TOLUENE	1100	X	X
	XYLENES	1060	X	X
	TRICHLOROFLUOROMETHANE	1080	X	X
	LEAD	2000	X	X
	CHROMIUM	??	X	X
	URANIUM	45	X	X
60078	URANIUM	16	X	X
	BENZENE	2100	X	X
	ETHYLBENZENE	2100	X	X
	TOLUENE	5400	X	X
	XYLENE	18,200	X	X
	MEK	4400	X	X
	TETRACHLOROETHYLENE	2100	X	X
	TRICHLOROETHANE	2700	X	X

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	TRICHLOROFLUOROMETHANE	2100	X	2
	ARSENIC	<1	X	X
	BARIUM	<1	X	X
	CADMIUM	2	X	X
	CHROMIUM	2	X	X
	LEAD	64	X	X
	MERCURY	<1	X	X
	SELENIUM	<1	X	X
	SILVER	<1	X	X
60070	ACETONE	32	X	X
	BENZENE	15	X	X
	ETHYL BENZENE	14	X	X
	TRICHLOROETHANE	14	X	X
	TETRACHLOROETHANE	15	X	X
	TOLUENE	15	X	X
	TRICHLOROFLUORMETHANE	16	X	X
	XYLENE	15	X	X
	BARIUM	<1	X	X
	CADMIUM	??	X	X
	CHROMIUM	3	X	X
	LEAD	1	X	X
	SELENIUM	<1	X	X
	URANIUM	29	X	X
60051	URANIUM	5460	X	X
	ACETONE	15,500	X	2
	TETRACHLOROETHYLENE	102,600	2	2
	TRICHLOROETHANE	7400	X	2
	TOLUENE	6200	X	X
	XYLENE	3700	X	X
	METHYL ISOBUTYL KETONE	6200	X	X
	ARSENIC	<1	X	X
	BARIUM	<1	X	X
	CADMIUM	<1	X	X
	CHROMIUM	<1	X	X
	LEAD	1	X	X
	MERCURY	??	X	X
30034	BENZENE	??	2	2
	TRICHLOROETHANE	??	2	2
	URANIUM	74	X	X
426	METHANOL	800,000	X	X
	CYCLOHEXANE	200,000	2	2
20003	URANIUM	38	X	X
	TRICHLOROETHANE	610,000	2	2
	TETRACHLOROETHYLENE	900	X	X

ATTACHMENT Q

V.E. ENTERPRISES, INC.

7376

DATE: FEBRUARY 10, 1995

TO: KATHY MORRIS/OFFICE MANAGER—RAIN FOR RENT

FROM: STEVE BROWN/V.E. ENTERPRISES

SUBJECT: TANK TESTS & STANDARDS

KATHY,

THIS IS THE INFORMATION YOU REQUESTED ON TANKS NUMBERED AS FOLLOWS:

TANK NUMBER	WATER TEST DATE
238282-3271	4-08-94
239297-3274	4-15-94
239428-3449	8-10-94
239429-3450	8-17-94
239430-3451	8-23-94
239340-3192	6-06-94

THE WATER TEST PERFORMED ON THESE TANKS IS AS FOLLOWS:

1. TANK IS FILLED WITH WATER
2. TANK SETS APPROXIMATELY 2 TO 3 HOURS
3. LEAKS ARE FOUND AND REPAIRED UNTIL NO LEAKS ARE PRESENT
4. TANK IS EMPTIED

THESE TANKS WERE SAND OR SHOT BLASTED TO A COMMERCIAL OR NEAR WHITE CONDITION. AN EPOXY PRIMER (DUPONT E90RP3) WAS APPLIED 1-2 MILS THICK. A FINISH TOP COAT OF DUPONT CENTARI ACRYLIC ENAMEL WITH ACTIVATOR (DUPONT 793) WAS APPLIED 4-5 MILS THICK. THESE FINISHES WERE APPLIED WITH AN AIRLESS SPRAY SYSTEM.

IF I CAN BE OF FURTHER ASSISTANCE PLEASE CALL.

THANK YOU,

STEVE BROWN

P.O. Box 369 • Springer, OK 73458-0369 • (405) 653-2171 • 1-800-234-2329 • Fax (405) 653-2773

ATTACHMENT R

Department of Energy
Fernald Environmental Management Project
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 648-3155

7376

OCT 13 1995
DOE-0034-96

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Blvd.
Chicago, IL 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, OH 45402-2911

Dear Mr. Saric and Mr. Schneider:

REMOVAL ACTION NO. 9 LIQUID MIXED WASTE PROJECT, AMENDMENT

The purpose of this letter is to transmit for approval the Department of Energy, Fernald Area Office (DOE-FN) Removal Action No. 9 Work Plan Amendment for the Liquid Mixed Waste Project. This Amendment consists of the Tank Decontamination Plan which includes information describing how the bulk containers and secondary containment structure will be decontaminated, in a manner consistent with appropriate regulations.

This Work Plan Amendment will resolve the Ohio Environmental Protection Agency (OEPA) comments on the Liquid Mixed Waste Project. Also, with the approval of this amendment, DOE-FN will have met the requirements for final approval of the Liquid Mixed Waste Project which was required by the OEPA letter, dated May 1, 1995.

If you have any questions regarding the enclosed document, please contact Robert Danner at (513) 648-3167.

Sincerely,

for Susan M Stuntman
Johnny Reising
Fernald Remedial Action
Project Manager

FN:Danner

Enclosure: As Stated

Recycled and Recyclable

7376

cc w/enc:

K. Chaney, EM-423, GTN
B. Skokan, EM-423, GTN
G. Jablonowski, USEPA-V, 5HRE-8J
Manager, TSPP/DERR, OEPA-Columbus
P. Pardi, OEPA-Dayton
F. Bell, ATSDR
D. S. Ward, GeoTrans
R. Vandergrift, ODOH
S. McClellan, PRC
R. D. George, FERMCO/52-2
T. Hagen, FERMCO/65-2
AR Coordinator, FERMCO

cc w/o enc:

C. Little, FERMCO
M. West, FERMCO
M. Yates, FERMCO

7376

LIQUID MIXED WASTE PROJECT

STORAGE CONTAINER

DECONTAMINATION PLAN

Document # HWM-95004
Rev. 0

Prepared By:

Hazardous and Mixed Waste Disposition Projects

Waste Programs Management

Fernald Environmental Restoration Management Corporation

Cincinnati, Ohio

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1.0 INTRODUCTION

The Liquid Mixed Waste Project (LMWP) has been designed to consolidate and transport ignitable and combustible liquid mixed waste presently stored at the Fernald Environmental Management Project (FEMP) to the Department of Energy's (DOE) K-1435 Toxic Substances Control Act (TSCA) Incinerator located in Oak Ridge, Tennessee. After waste consolidation and shipping activities are completed, leased equipment associated with the project will need to be decontaminated and returned to the supplier. Leased equipment associated with the LMWP consists of six portable bulk liquids storage containers (See Figure 1). This plan will be implemented as a amendment to the CERCLA work plan for the Liquid Mixed Waste Disposal Project, titled Work Plan for FEMP Liquid Mixed Waste, dated April 11, 1995, document no. HMWM-001-95, Rev 0.

2.0 SCOPE

This plan specifies the steps required to accomplish the decontamination of leased equipment, and characterization, management, and disposition of secondary wastes generated during the decontamination process. It also addresses steps required to mitigate and clean-up releases, in the event a release should occur.

3.0 OBJECTIVE

The objectives of this plan are to: 1) successfully decontaminate leased equipment associated with the project so it can be returned to the supplier in accordance with the rental agreement entered into for the project. 2) manage secondary waste streams in accordance with applicable site procedure and regulatory requirements.

4.0 DEFINITIONS

4.1 *Resource Conservation and Recovery Act (RCRA)* - The Congressional act which establishes safe and environmentally acceptable management practices for specific waste including hazardous waste. RCRA requires the strict "cradle to grave" control and management of hazardous waste.

4.2 *RCRA Hazardous Waste* - A material which satisfies the United States Environmental Protection Agency's definition of a RCRA hazardous waste as stated in Part 261 Code of Federal Regulations, Title 40 (40 CFR § 261) also stated in the Ohio EPA Administrative Code (section 3745-51). A waste can be one that is listed by waste stream or chemical substance, or one that exhibits any of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity by exceeding Toxic Characteristic Leaching Protocol (TCLP) concentration limits which have been set for specific chemicals. These are termed RCRA Listed wastes and RCRA Characteristic wastes respectively.

4.3 *Low-Level Radioactive Waste* - Radioactive waste material that is not high-level radioactive waste, spent nuclear fuel, transuranic waste or byproduct material as defined in Section IIe(2) of the Atomic Energy Act (10 CFR § 62).

4.4 *Mixed Waste* - (1) Radioactive waste (as defined by the Atomic Energy Act) that contains material listed as hazardous waste in Subpart C of 40 CFR 261 (3745-51 of Ohio Administrative Code) or that exhibits any of the hazardous waste characteristics identified in subpart C of 40 CFR 261 (3745-51 OAC). (2) Waste that contains both radioactive and hazardous components, as defined by the Atomic Energy Act (AEA), the Resource Conservation and Recovery Act (RCRA). The term "radioactive component" refers only to the radionuclides dispersed or suspended in the waste substance.

4.5 *Contact Waste* - Any waste material generated or disposed during the decontamination process or material contaminated by spillage or leakage during handling of the waste material.

4.6 *Exclusion Zone* - An area established around the work area perimeter that controls access of personnel. The exclusion zone shall be established by erecting a barrier.

4.0 DEFINITIONS CONT.

4.7 *Assistant Emergency Duty Officer (AEDO)* - The on-site management authority for all shifts and for all abnormal events.

4.8 *Event* - Any significant deviation from planned or expected behavior or course of events that could endanger or adversely affect people, property, or the environment.

4.9 *RCRA "Empty Container"* - For the purpose of defining an empty container relative to this plan, the following passages can be found in 40 CFR 261.7: {also stated in the Ohio EPA Administrative Code sections 3745-51-07 (B)(1); (B)(1)(a); and (B)(1)(c)(ii).}

(b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is compressed gas or that is identified as an acute hazardous waste listed in §§261.31, 261.32, or 261.33(e) of this chapter is empty if:

(i) all wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g.,pouring, pumping, and aspirating, and

(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 110 gallons in size.

5.0 REFERENCES

5.1 Site Plans & Manuals

5.1.1 "FMPC Emergency Plan" (PL-3020)
5.1.2 "Flammable and Combustible Liquids code" (NFPA-30)
5.1.3 "Flammable and Combustible liquids" (OSHA 29 CFR 1910.106)
5.1.4 "FMPC Industrial Hygiene & Safety Manual" (CEOSHP ESH-1-1000)
5.1.5 "FMPC Spill Prevention Control & Countermeasure Plan" (PL-2194)
5.1.6 "FMPC Radiation Control Manual" (RM-0009)
5.1.7 "FMPC Respiratory Protection Program" (RM-0007)
5.1.8 "FERMCO Quality Assurance Program Plan" (RM-0012)
5.1.9 "Control of Permits for Accomplishing Hazardous Work" (FMPC-0516)
5.1.10 "The On-site Transportation of Radioactive and Nonradioactive Hazardous Materials" (SSOP-0003)
5.1.11 "FEMP Lot Marking and Color Coding System" (RM-0005)
5.1.12 "Personnel Accountability" (OM-FMPC-0002)
5.1.13 "FMPC Site Health & Safety Plan, June 1990"
5.1.14 FEMP RCRA Contingency Plan

5.2 Site Standard Operating Procedures and Standard Operating Procedures

5.2.1 "Spill Incident Reporting and Clean up" (SSOP-0067)
5.2.2 "Emptying liquid hazardous waste storage containers" (SOP 20-C-613)
5.2.3 "Processing the site wide analysis request/ custody record for sample control" (SSOP-0018)
5.2.4 "Respiratory Protection Program RM 0007"
5.2.5 "Hazardous Waste Spill Cleanup" (SOP 20-C-606)
5.2.6 "High Pressure Washer Operation in D&D Bldg."
5.2.7 "Movement of Hazardous Waste" (SOP 20-C-017)
5.2.8 "Storage of Hazardous Waste" (SOP 20-C-630)
5.2.9 "Completing the Material Evaluation Form" SSOP-0002, revised.
5.2.10 "Environmental On-Site Media Sampling" (EM-2-013)
5.2.11 "Environmental Media Sampling Extraction Methodology for Obtaining Samples of Liquid Materials Using a Disposable Glass Coliwasa" (EM-EXM-90-007 Rev. 03/06/1991)
5.2.12 "Inspection and Performance Testing of Portable Radiation Survey Instruments" (SP-P-35-028)

6.0 DECONTAMINATION SEQUENCE

Decontamination and final release of the storage containers will be performed using existing site plans and procedures and by implementing the following activities:

6.1 After liquids have been pumped from the container(s), open manways and hatches to ventilate and allow remaining organic vapors to be removed.

6.2 Confirm the storage containers meet the definition of empty under RCRA for both federal and state regulations by completing a visual inspection (No more than 0.3 percent by weight of the total capacity of the container remains in the container). This method of confirmation will be most effective for the following reasons:

- the invert position of the containers fill/drain pipe is located at containers bottom most elevation,
- the containers bottom is pitched in the form of a "V" toward the fill/drain pipe opening,
- the pump used to transfer the waste is a diaphragm type pump and is very effective at removing heavy solids and viscus materials from the bottom of the containers, and
- the liquid waste is filtered through a 1/16 inch screen before it enters the container to remove heavy sediment and/or sludge.
- approximately 63 gallons of liquid waste equates to 0.3% by weight of the total capacity of the tank. The shape of the invert of the tank, the position of the tank drain valve and the pumping equipment utilized in this project removes liquid in the tank to a level which is well below 63 gallons based upon visual inspection.

NOTE: **Container residues will be managed in accordance with the approved MEF for the batch they were derived from.**

NOTE: **Personnel who enter the containers shall be trained in accordance will the project specific health and safety plan, project specific work plan, and applicable site plans and procedures.**

6.3 Manually remove any remaining solid phase material and residues from the container(s) and place into waste drums.

6.0 DECONTAMINATION SEQUENCE CONT.

6.4 Decontaminate the interior surfaces of the container(s) in the following manner.

NOTE: **Prior to entry into the containers all required health & safety permits will be secured.**

NOTE: **Wastewaters generated as a result of the decontamination process will be collected and managed in accordance with section 7.0 of this plan.**

6.4.1 Wet the interior surfaces of the containers with an emulsifying detergent and allowed to soak.

6.4.2 Rinse wetted surfaces using a portable high pressure water spray system.

6.4.3 Drain the rinse water from the container into a White Metal Box (WMB) or bulk container for eventual processing through the wastewater treatment system.

NOTE: **The FEMP "RADIOLOGICAL CONTROL REQUIREMENTS MANUAL" Document Number RM-0020, Revision Number 1, references radiological survey procedures and FEMP free release criteria to be used during the radiological survey/free release process.**

6.5 Monitor the interior and exterior surfaces of the containers to verify that free release criteria for radiological contamination has been met.

6.6 If a container requires further cleaning to meet free release requirements, affected areas will be cleaned again prior to re-evaluation by Radiological Control . If further cleaning of the interior surfaces is required, repeat steps 6.4.1 through 6.5 until free release criteria are met.

6.7 After the container(s) have been adequately decontaminated in accordance with the steps above, secure container(s) in a controlled staging area to await supplier retrieval.

7.0 SECONDARY WASTE MANAGEMENT

Wastes generated during decontamination activities will be dispositioned in accordance with this plan and approved site procedures. RCRA determinations will be completed on all wastes generated through the FEMP material evaluation process. Treatment and/or disposal of wastes will be based on the results of the MEF process and completed utilizing waste treatment, and disposal options available at the FEMP, (i.e., Plant 8 VOC, General Sump, NTS, HMWM Projects) and in compliance with NPDES permit requirements.

Two waste streams will be generated during container decontamination. The first waste stream will consist of contact wastes. The contact waste stream will include; coveralls, gloves, respirator cartridges, absorbent pads and wipes, plastic bags and visqueen, and radiological survey swipes and/or maslin cloth. The second waste stream will consist of liquid wastes. The liquid waste stream will include contaminated water and detergent mixtures for processing through the WWTS. The estimated volume of secondary waste generation for each individual container is listed in the waste stream summary table below:

Waste Stream Summary Table

Waste Stream	Waste Stream Description	Waste Stream Volume
Contact Wastes	PPE, Respirator Cartridges, Absorbent Pads, swipes and maslin.	15.0 Ft^3 per storage container.
Liquid Wastes	Wastewater and detergent mixture.	720 gallons per storage container.

8.0 SECONDARY CONTAINMENT INSPECTION AND MANAGEMENT

The secondary containment structure shall remain on-site and continue to be utilized in support of hazardous and mixed waste projects until such time as it is no longer needed. When the secondary containment structure is no longer needed, a waste determination will be made by FERMCO in accordance with the FEMP material evaluation process. The secondary containment unit will be managed and disposed of in accordance with the waste determination.

A rinsing of the secondary containment structure will not be required based on the following controls being in place while the secondary containment is in use: RCRA inspections of the storage containers and secondary containment are documented daily. The inspection includes looking for evidence of leaks from the waste storage container and evidence of releases in the secondary containment unit. If a release is detected, the supervisor is notified immediately, and in turn the AEDO is called to evaluated the release. Releases are documented on the daily inspection form, in the supervisors log book, and in the AEDO log book.

All releases associated with the LMWP shall be reported, controlled, and cleaned-up in accordance with SOP 20-C-606, "Hazardous Material Spill Cleanup", rev. 0, issue date 01-27-95.

9.0 IMPLEMENTATION TIMETABLE

Containers will either be decontaminated or used for waste storage as part of the Chemical Treatment Project within 90 days after wastes from the LMWP have been removed. Containers which have been decontaminated as part of the LMWP will not be removed from the secondary containment structure until all of the containers from the LMWP (containers that are not part of the CTP) are emptied and decontaminated. Containers which are designated for use in the CTP shall remain in the secondary containment structure until the CTP is completed. Prior to new wastes being placed inside of containers which contained waste from the LMWP, a compatibility evaluation will be completed to ensure incompatible wastes are not commingled in the same container. Upon completion of the CTP the remaining containers will be decontaminated in accordance with section 6.0 of this plan and returned to the supplier.

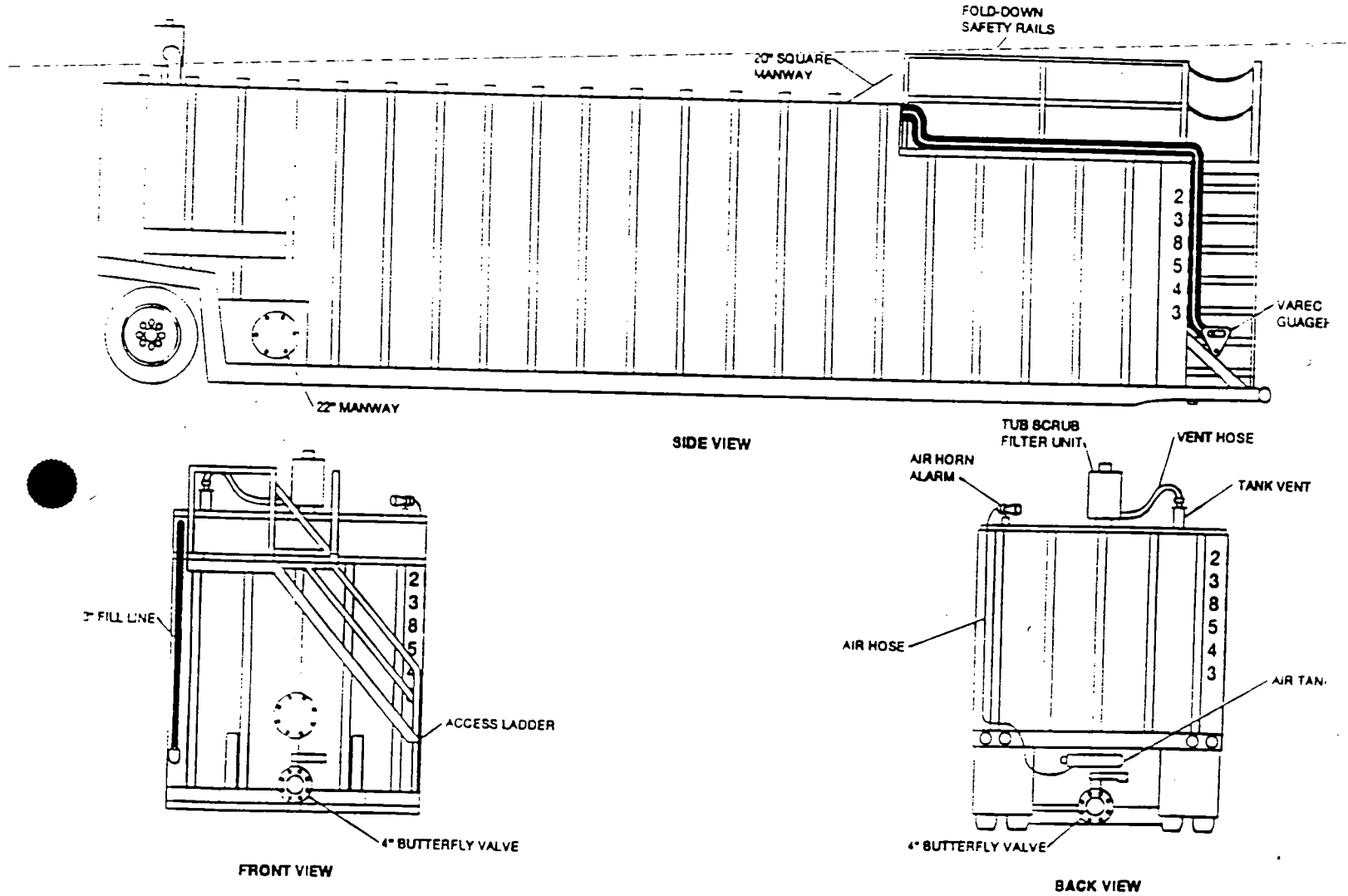

Figure 1 Storage Container

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December 22, 1994

Generators

Good News!

As you will see in the attached letter from the EPA, the K-1435 TSCA Incinerator has been added to the list of incinerators that can treat CERCLA waste. Kevin Crosson from Fernald Environmental Restoration Management Corp. played an important role in us receiving this letter. Please let me know if you have any questions or need any additional information.

Thanks and have a happy holiday.

Brenda Snyder

Brenda Snyder
(615) 576-4976

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

Walk

DEC 13 1994

4WD-RCRA

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Joe LaGrone
U.S. Department of Energy
Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831-8541

VINCE

Mr. Gordon G. Fee, President
Martin Marietta Energy Systems
Post Office Box X 2003
Oak Ridge, Tennessee 37831

FAX TRANSMITTAL
To: Joy Kopsker
Dept: K-25
Phone: 4-4724
Date: 8-5-33
From: Doug Underwood
Dept: 6-0728
Phone:
Date:
Subject: Fax Transmittal Cover Sheet
Office Of The Manager
12/14/94

SUBJ: CERCLA Off-Site Rule: Affirmative Determination of Acceptability for K-25 Incinerator, Oak Ridge, Tennessee

Dear Messrs. LaGrone and Fee:

This letter serves to inform you that the U.S. Environmental Protection Agency (EPA) has made an affirmative determination of acceptability for the receipt of off-site waste at the U.S. Department of Energy K-25 Incinerator (K-25), Oak Ridge, Tennessee, EPA I.D. No. TN0 890 090 004. Pursuant to 40 C.F.R. Section 300.440(a)(4), EPA has completed an initial assessment of K-25, and finds the facility acceptable for the receipt of off-site waste. Such off-site wastes are defined as those wastes generated as a result of activities authorized or funded by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). On September 22, 1993, EPA amended the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, by adding Section 300.440, now known as the Off-site Rule. The rule implements and codifies the requirements contained in CERCLA Section 121(d)(3), and incorporates many provisions of the November 13, 1987 OSWER Directive (No. 9834.11), known as the Off-site Policy. The Off-site Rule establishes the criteria and procedures for determining if facilities are acceptable for the off-site receipt of CERCLA waste, and outlines the actions affected by the standard. The Off-site Rule requires that prior to a facility's initial receipt of CERCLA waste, EPA shall determine if there are relevant releases or relevant violations at the facility.

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On September 12, 1994, the Tennessee Department of Environment and Conservation (TDEC) conducted a Compliance Evaluation Inspection (CEI) of K-25, to determine K-25's compliance with Resource Conservation and Recovery Act (RCRA) and other applicable environmental standards. The results from the September 12, 1994, CEI, indicate that K-25 is currently in compliance with RCRA, and other applicable environmental standards. Therefore, effective upon receipt of this letter K-25 is acceptable to receive CERCLA off-site waste at the facility described above. Should any new information affecting this determination develop, the Agency reserves the right to revisit this decision. By issuing this notice, EPA is in no way authorizing K-25 to undertake any waste management practice at the facility for which K-25 has not been previously authorized by TDEC or EPA.

If you have any questions concerning this matter, please contact Edmond J. Burks, Regional Off-Site Contact, Region 4, at (404) 347-7603.

Sincerely yours,

James S. Kutzman for

Joseph R. Franzmathes
Director
Waste Management Division

Enclosure
Off-Site Rule

cc: Tom Tiesler, Director,
Division of Solid Waste Management, TDEC
Robert Nakomoto, Division of Solid Waste Management, TDEC
Mike Mobley, Radiological Health Program, TDEC
Jim Reaves, Division of Air Pollution Control, TDEC
Mike Travaglini, K-25
Robert Sleeman, K-25

cc w/o enclosure:
David Eberly, Office of Solid Waste, EPA-HQ (5303W)
Region 1-10, Off-site Coordinators

ATTACHMENT S

ACTIVITY SUMMARY

Waste Water Treatment Project

This Technical Specific Work Plan is being developed to complete the "Work Plan for FEMP Liquid Mixed Wastes". The Liquid Mixed Waste Project was designed to manage two treatment technologies: 1) consolidation and transport of ignitable and combustible liquid waste mixtures to be treated at the TSCA Incinerator, and 2) treatment of liquid mixed wastes in the FEMP Waste Water Treatment System. The Work Plan for FEMP Liquid Mixed Wastes to be treated at the TSCA Incinerator was submitted to the OEPA and USEPA in April 1995 and was conditionally approved by OEPA in May 1995, and approved by USEPA in June 1995. Final approval of the Work Plan for FEMP Liquid Mixed Wastes was received from OEPA in October 1995. This attachment is an addendum to the Work Plan for FEMP Liquid Mixed Wastes which completes the submittal of management plans for liquid mixed wastes at the FEMP.

The FEMP is planning to implement treatment of liquid mixed low level waste in the FEMP Waste Water Treatment System. The regulations promulgated USEPA as a result of the Resource Conservation and Recovery Act, provide a Waste Water Treatment Unit Exclusion, for systems treating hazardous waste in a Clean Water Act System. The OEPA has adopted the Waste Water Treatment Unit Exclusion in their regulations. The FEMP has a NPDES permitted Clean Water Act System, the facilities, equipment and procedures in place to effectively treat certain liquid characteristic hazardous waste. The FEMP Waste Water Treatment System includes a land based unit. Currently, listed waste streams are not being considered for treatment under this plan.

This Technical Specific Work Plan describes the FEMP treatment capabilities and the steps necessary to manage and treat these wastes, using existing FEMP Standard Operating Procedures, maintaining compliance with current regulations. Applicable or Relevant and Appropriate Regulatory Requirements (ARARs) are addressed in this Technical Specific Work Plan.

WASTE WATER TREATMENT PROJECT
OHIO EPA RCRA PART B PERMIT
SUBSTANTIVE COMPLIANCE DEMONSTRATION

ITEM	CROSS REFERENCE INDEX
Hazardous Waste Determinations (OAC 3745-52-11) & (40 CFR 262.11)	Section 2.0
Interim Status: Treatment Storage, and Disposal General Facility Standards (OAC 37445-65-13 through 16) (40 CFR 265.13 through 265.16)	Section 2.0, 4.1, 6.0, 6.1, 6.3
Interim Status: Treatment Storage, and Disposal Facility Preparedness and Prevention (OAC 3745-65-31 through 35 and OAC 3745-65-37) (40 CFR 265.31 through 265.35, 256.37)	Section 3.0, 6.0, 6.1, 6.2, & 6.3
Interim Status: Treatment Storage and Disposal Facility Contingency Plan and Emergency Procedures (OAC 3745-65-51 through 56) (40 CFR 265.51 through 265.56)	Section 6.2
Container Storage (OAC 3745-52-34, 3745-66-70 through 77) 40 CFR 262.34, 265.170 through 267.177)	Section 4.1, 6.1
Residue Of Hazardous Waste In Empty Containers (OAC 3745-51-07) (40 CFR 261.7)	Section 4.1
Land Disposal Restrictions (OAC 3745-59) (40 CFR 268)	Section 1.2 & 2.0
Waste Water Treatment Unit Exclusion (OAC 3745-65-01(c)(8)) (40 CFR 265.1(c)(10))	Section 1.0
Decontamination of Reusable Equipment (OEPA Closure Plan Review Guidance for RCRA Facilities)	Section 4.1

NOTE: Compliance with the applicable or relevant and appropriate requirements (ARARs) is discussed in Section 5.0 and in Table 5-1 of the attached Technical Specific Work Plan, which is being submitted as an addendum to the FEMP Liquid Mixed Waste Technical Specific Work Plan that was submitted to U.S. and Ohio EPAs in April, 1995.

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1.0 INTRODUCTION

This attachment to the Liquid Mixed Wastes work plan describes the objectives and scope of work for the treatment of certain FEMP liquid mixed wastes utilizing the on-site Waste Water Treatment System (WWTS) and existing standard operating procedures. Treatment is being initiated under Removal Action (RA) No. 9 - "Removal of Waste Inventories".

RA No. 9 was identified in the Amended Consent Agreement (ACA) (September, 1991) to address the removal of low level radioactive (LLRW) waste inventories. The ACA requires DOE-FN to submit an annual compendium of existing procedures and documentation for the site's LLRW Management Program, in lieu of Removal Action Work Plans. Additionally, DOE-FN committed to submitting project work plans for certain projects in addendum No. 1 to the RA No. 9 Work Plan, including the Liquid Mixed Waste Project. The Liquid Mixed Waste Project was developed to manage FEMP liquid mixed wastes in two subprojects: 1) the consolidation and transport of ignitable and combustible liquid mixed waste mixtures to the TSCA Incinerator for treatment, and 2) treatment of liquid mixed wastes that are contaminated with low concentrations of hazardous constituents using the FEMP Waste Water Treatment System.

Waste water treatment is being implemented as part of the Liquid Mixed Waste Project as described in the FEMP Site Treatment Plan (STP). Further, the FEMP Site Treatment Plan identified the WWTS as a Preferred Option for treatment of certain FEMP liquid mixed waste streams. This attachment to the work plan is intended to provide the technical specific information required to amend RA No.9 and to meet the commitments of the Director's Finding and Orders issued October 1995 for treatment of liquid mixed waste using the FEMP WWTS.

The systems that will be used to treat mixed low level radioactive wastes (LLRWs) under the Waste Water Treatment Technical Specific Plan meet the regulatory definition of a waste water treatment unit established in OAC 3745-50-10(A)(129) (40 CFR 260.10) and are part of the existing FEMP NPDES permitted waste water treatment system (OEPA Permit No. 1IO00004*ED). As such, treatment of mixed LLRWs through these waste water treatment units meets the requirements of the regulatory exclusion promulgated in OAC 3745-65-01(C)(8) (40 CFR 265.1, 270.70), which allows certain characteristically hazardous wastes to be treated through NPDES permitted waste water treatment systems.

Waste streams will be added to the system in batches and either commingled with waste waters in the CWA system, or segregated for treatment. The decision for segregation will be made based on the constituents in the waste streams awaiting treatment. Once commingled with other waste streams or waste waters, dilution will occur. Dilution, as specified in OAC 3745-59-03(B) (40 CFR 268.3), will deactivate the waste removing the characteristic. The constituents which cause a waste to be characteristic for ignitability will be adsorbed during carbon filtration at Plant 8 VOC.

In addition, treatment of project wastes through these waste water treatment units will render these wastes non-hazardous prior to discharge to the Bio-Surge Lagoon, thereby meeting RCRA based Land Disposal Restrictions (LDRs) promulgated in OAC 3745-59 (40 CFR 268).

1.1 OBJECTIVE

The objective of the Waste Water Treatment Project is to safely move containerized mixed waste from RCRA warehouse storage and treat the hazardous characteristics discharging the treated water consistent with the FEMP NPDES Permit No. 1IO00004*ED.

1.2 Land Disposal Restrictions

The FEMP is aware that the United States Environmental Protection Agency (USEPA) is working on changes to the LDR treatment standards for certain characteristic hazardous wastes. This work plan was developed to comply with current regulations as specified in 40 CFR 268 and Ohio Administrative Code (OAC) 3745-59. When the USEPA or the Ohio Environmental Protection Agency (Ohio EPA) promulgates further regulations affecting LDR standards, this work plan will be revised in accordance with those regulations.

2.0 WASTE DESCRIPTION

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Hazardous waste regulations found in OAC 3745-65-01(c)(8)(40 CFR 265.1, 270.70) allows certain hazardous wastes to be treated in a Clean Water Act permitted WWTS. The FEMP mixed waste streams identified for treatment in the WWTS are liquid mixed waste streams which are characteristically hazardous. The characteristic liquid mixed waste streams to be treated in the WWTS are evaluated to ensure that the addition to the WWTS does not interfere with normal operations and that they do not contain prohibited waste streams. The prohibited waste streams are: D003 Cyanide, TC Pesticides, D001 waste streams that are high Total Organic Compound (equal to or greater than 10 percent TOC). A decision chart for evaluating waste streams to be treated in the FEMP WWTS is provided as Figure 7.0

The mixed waste streams to be treated were generated as a result of process and response actions. These mixed waste streams are stored in RCRA warehouses primarily in 55 gallon containers. Additional liquid mixed waste streams of the same description will be generated as a result of future remediation activities. FEMP waste streams identified in the Site Treatment Plan for treatment in the WWTS are shown on Table 1.0 in this section.

The mixed waste streams to be treated in this project has been characterized using process knowledge and sampling and analysis results in accordance with site procedure EW-0001, "Initializing Waste Characterization Activities Using the Material Evaluation Form," the Waste Characterization Manual, and the FEMP Waste Analysis Plan. The waste characterization methodologies specified by EW-0001 are consistent with USEPA and Ohio EPA hazardous waste regulations. Although the drums of mixed waste have been characterized under EW-0001, it is possible that some waste containers may contain waste materials or anomalies that differ from the MEF characterization. Real Time Radiography (RTR) results will be employed to aid in screening containers to identify these materials.

The primary document for completing waste characterization is the three page MEF which is part of EW-0001. The first page of the MEF is the Generator's Section which summarizes information provided by the FEMP (internal) waste generator. This section is similar to the waste profile sheets used by commercial treatment, storage, and disposal facilities (TSDFs) allowing for documentation of information regarding: generator and waste stream identification; generation information; gross material characteristics; material composition; and health and safety precautions.

The second and third pages of the MEF are the Evaluation Section which summarizes the results of the waste characterization with respect to evaluation criteria, and pertinent information from the evaluation process including: material regulatory status; material management requirements; and health and safety precautions.

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The MEF evaluation process relies on a combination of process knowledge and sampling and analysis to complete the waste characterization. Process knowledge includes the sum of all information that can be collected on a material, including information from operating procedures, manufacturing specifications, material safety data sheets (MSDS), spill reporting logs, visual inspections, and personnel interviews. All process knowledge contributing to waste characterization is documented in the waste characterization files.

Sampling and analysis conducted in support of the MEF process is performed in accordance with USEPA SW-846, *Test Methods for Evaluating Solid Waste.* Protocols required by other regulatory programs are used when applicable. All data required to support waste characterization by sampling and analysis are included in the MEF waste characterization files. This includes the request for analysis, sampling plan, field sample log book, analytical data report, QA/QC report, chain-of-custody forms, and statistical treatment of analytical data once the sampling and analysis is completed.

Table 1.0

FEMP WASTE STREAMS IDENTIFIED IN THE AMENDED PROPOSED SITE TREATMENT PLAN FOR TREATMENT IN THE WWTS

MEF#	EPA CODES	CONSTITUENT	WASTE DESCRIPTION	LDR TREATMENT STANDARD (s)	VOLUME IN m^3
358	D002 D019	Carbon Tetrachloride	Caustic Solution (NaOH) from Plant 8 Raffinate Processing	DEACTIVATION	0.8
383	D011	Silver	X-Ray Fixer & Developer, Clear Liquid Moderate Acidic Solution	CONCENTRATION BASED	0.2
1178	D007	Chromium	Groundwater from Well #2649	CONCENTRATION BASED	1.2
1229	D008 D009	Lead Mercury	Contaminated Sump Water	CONCENTRATION BASED	6.6
1462	D002		Contaminated Water from Chemical Pit #2 Surface Cap	DEACTIVATION	1.0
1773	D011	Silver	Concentrate Fixer	CONCENTRATION BASED	0.2
1938	D007 D008 D010	Chromium Lead Selenium	Contaminated water from Paint Booth Sump	CONCENTRATION BASED	0.2
2210	D001	Hydrogen Peroxide	Hydrogen Peroxide Solution	DEACTIVATION	0.8
2257	D002		TCLP Extracts Lab Generated Waste	DEACTIVATION	0.2
2362	D002 D007 D008 D018 D035 D039 D040	Chromium Lead Benzene Methyl ethyl ketone Tetrachloroethylene Trichloroethylene	Radioactive Acidic Lab Waste from the Analysis of Samples	DEACTIVATION CONCENTRATION BASED	9.4
2363	D001 D002 D006 D008 D009 D018 D035 D038 D039 D040	Cadmium Lead Mercury Benzene Methyl ethyl ketone Pyridine Tetrachloroethylene Trichloroethylene	Radioactive Caustic Lab Waste from the Analysis of Samples	DEACTIVATION CONCENTRATION BASED	1.6
2554	D002		Acid Waste	DEACTIVATION	8.2
2606	D002 D004 D038	Arsenic Pyridine	Acid Digest-Arsenic	DEACTIVATION CONCENTRATION BASED	0.2

Table 1.0 (cont.)

MEF#	EPA CODES	CONSTITUENT	WASTE DESCRIPTION	LDR TREATMENT STANDARD (s)	VOLUME IN m^3
2607	D002 D008 D038	Lead Pyridine	Acid Digest-No Mercury	DEACTIVATION CONCENTRATION BASED	0.2
2687	D002 D008	Lead	Acid (EXT) waste with Lead	DEACTIVATION CONCENTRATION BASED	0.6
10014	D039	Tetrachloroethylene	U-Contaminated Water	TREATMENT STANDARD EFFECTIVE 9/19/96	2.8
10015	D039	Tetrachloroethylene	U-Contaminated Water	TREATMENT STANDARD EFFECTIVE 9/19/96	2.0

3.0 WWTS TREATMENT CAPABILITIES

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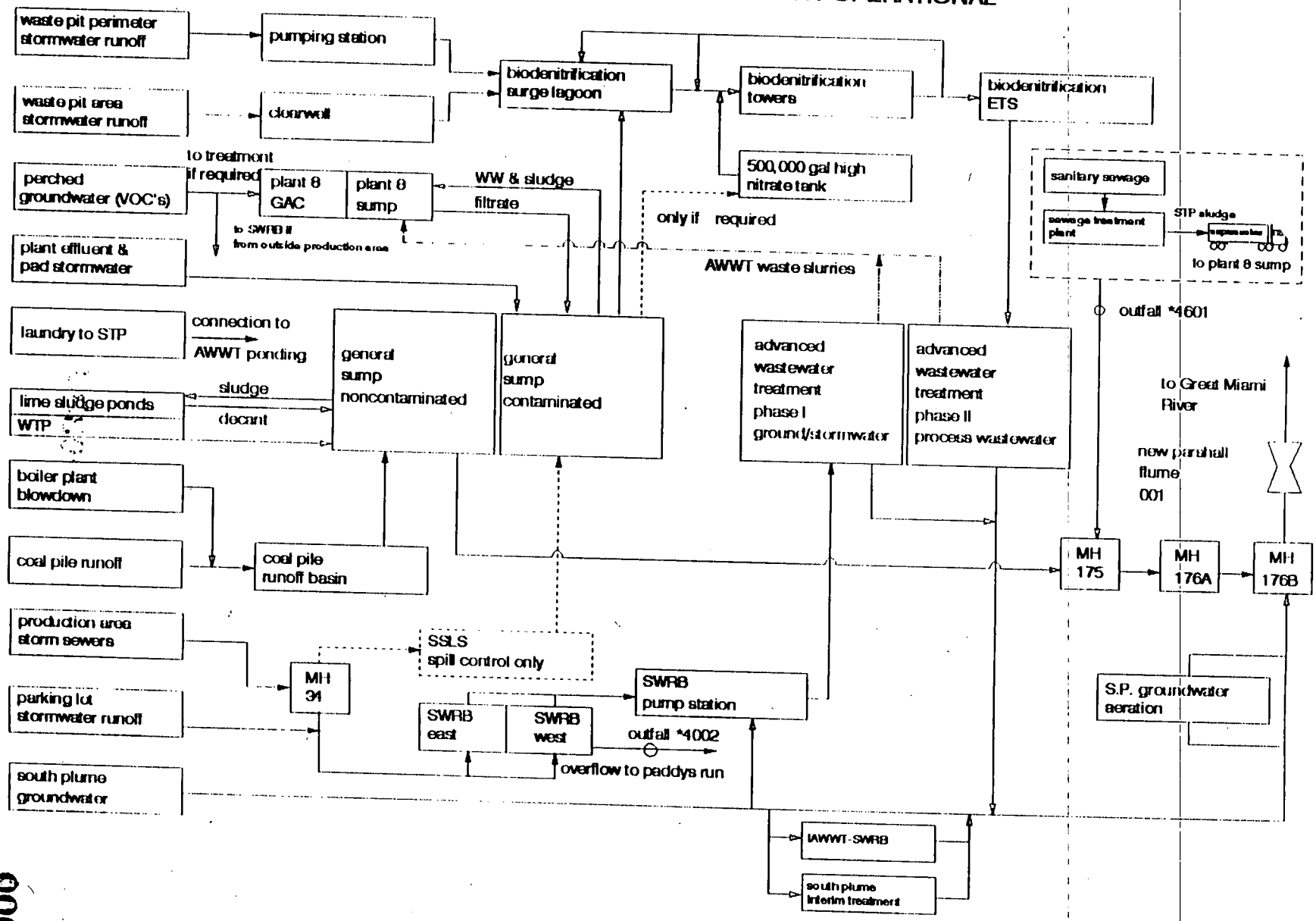
The FEMP WWTS is a NPDES CWA permitted system currently configured such that it is capable of treating certain characteristically hazardous liquid waste streams. The WWTS is able to provide treatment of mixed waste as it is capable of removing volatile organic compounds, heavy metals and uranium through precipitation, filtration, ion exchange, activated carbon adsorption, deactivation of ignitables, corrosives, reactives, and neutralization by acid/base additions.

There are three components of the FEMP WWTS that will be utilized for treatment of liquid mixed waste. These three components are the Plant 8 Volatile Organic Compound (VOC) Removal System, the Plant 8 Sump Vacuum Filtration System, and the Advanced Waste Water Treatment System (AWWT). The three components are presented in the order in which waste streams with multiple contaminant types will be processed in the system for treatment. For example, a waste stream contaminated with VOCs, Heavy Metals, and Uranium will begin treatment at Plant 8 VOC and continue through all components to complete treatment. However, the waste stream will be rendered non-hazardous when it exits Plant 8, prior to entering the Bio-Surge Lagoon. The specific capabilities of each treatment component are described in Sections 3.1, 3.2 and 3.3.

An FEMP Waste Water Treatment Flow Diagram is provided as Figure 3.0.

Figure 3.0

WASTEWATER FLOW DIAGRAM - AWWT OPERATIONAL



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3.1 Plant 8 VOC Treatment System

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The Plant 8 VOC System is located inside Building 8A, an annex at the northwest corner of Plant 8. The system is installed in a concrete spill containment dike. A diagram of the Plant 8 VOC Treatment System is provided as Figure 3.1.

The Plant 8 VOC Treatment System removes volatile organic compounds utilizing a carbon adsorption method. This adsorption technology utilizes granular activated carbon in order to preferentially adsorb contaminants from waste streams. It is a proven technology for removing volatile organic contaminants from liquids. In adsorption, contaminants adhere on the surface of the carbon particles thereby reducing the concentration of the organic contaminant in the liquid. As a waste stream flows through the granular activated carbon, contaminants adsorb onto the solid particles and a clean stream is produced.

3.1.1 General Operation

Liquids can be added to the Plant 8 VOC System via portable tanker, or containers may be emptied directly into a 6000 gallon holding tank. The holding tank has direct piping to the granulated activated carbon filters.

Waste streams will be added to the system in batches and either commingled with waste waters in the CWA system, or segregated for treatment. The decision for segregation will be made based on the constituents in the waste streams awaiting treatment. Once commingled with other waste streams or waste waters, dilution will occur. Dilution, as specified in OAC 3745-59-03(B) (40 CFR 268.3), will deactivate the waste removing the characteristic. The constituents which cause a waste to be characteristic for ignitability will be adsorbed during carbon filtration at Plant 8 VOC.

The water is pumped from the holding tank to a bag filter and cartridge filter to remove suspended solids. The water is pumped from the bag and cartridge filters to four activated carbon filter barrels which perform the removal of VOCs from water processed through the system. The system is operated with two filter drums parallel with two other carbon filters in series. Valved sample ports are provided on the discharge line of each filter drum.

The system is sampled weekly to verify removal of volatile organic compounds. The sample points are located between the lead and lag filter drums as shown on Figure 3.1. The list of VOCs currently sampled is provided as Figure 3.1.1. If a VOC, which is not currently sampled, is detected in a mixed waste stream that can be treated in the Plant 8 VOC Treatment System, the compound will then be added to the sampling plan prior to treating the waste in this system. The data quality objectives, including discharge verification practices for Plant 8, are provided as Reference S-2.

Treated water from the VOC Treatment System is pumped to the Plant 8 Sump for uranium and heavy metals removal.

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Figure 3.1

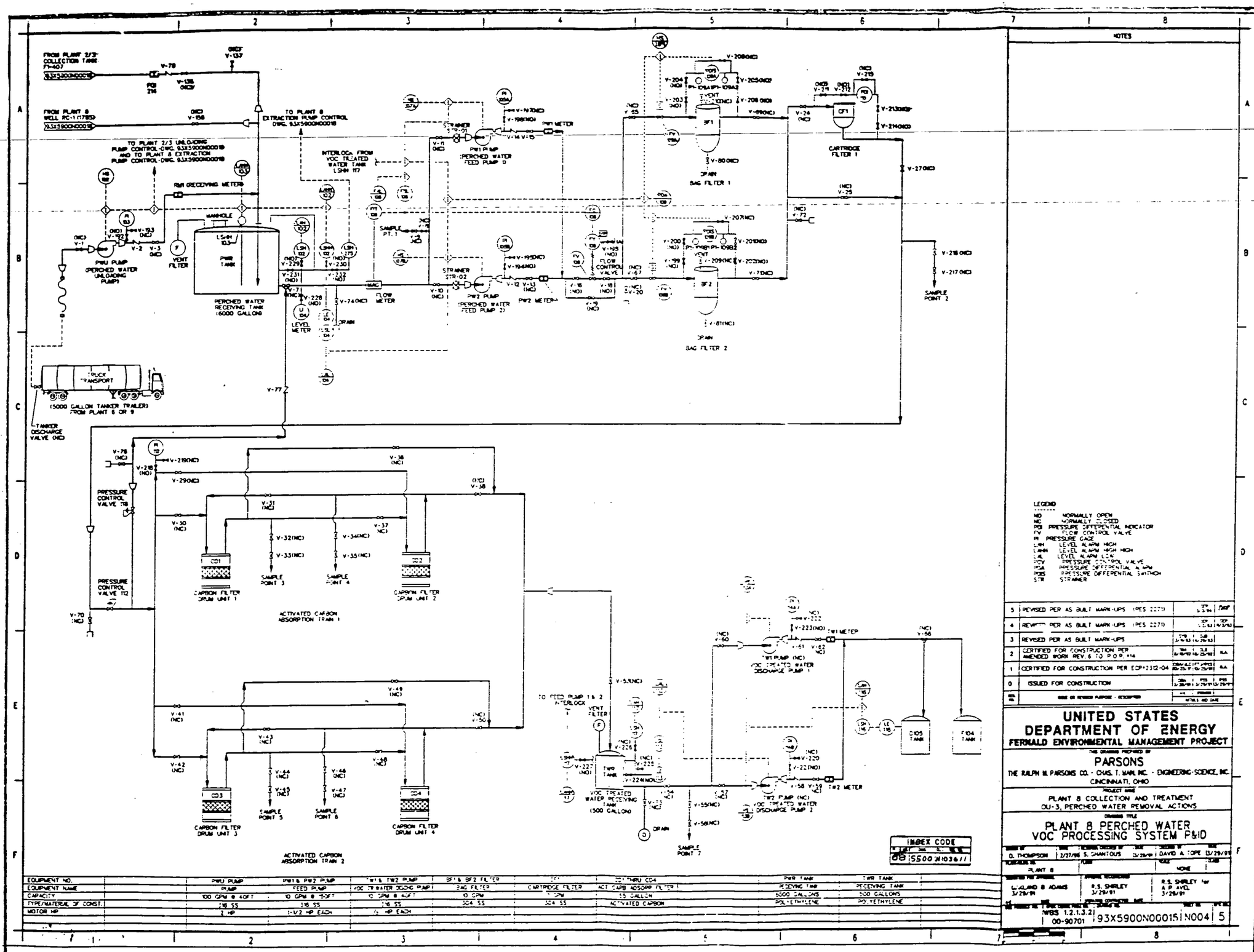

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Figure 3.1.1

VOC Carbon Filter Sample List

1,1,1,2-Tetrachloroethane	Acetone	N-Butylbenzene
1,1,1-Trichloroethane	Benzene	N-Propylbenzene
1,1,2,2-Tetrachloroethane	Bromobenzene	Naphthalene
1,1,2-Trichloroethane	Bromochloromethane	P-Isopropyltoluene
1,1-Dichloroethane	Bromodichloromethane	SEC-Butylbenzene
1,2,3-Trichloropropane	Bromoform	Styrene
1,2,4-Trimethyl	Bromomethane	SURR1 (Dibromofl)
1,2-Dibromo-3-chloropropane	Carbon Disulfide	SURR2 (Toluene-D)
	Carbon Tetrachloride	SURR3 (Bromofluo)
1,2-Dibromomethane	Chlorobenzene	Tert-Butylbenzene
1,2-Dichlorobenzene	Chlorobromomethane	Toluene
1,2-Dichloroethane	Chloroethane	trans-1, 2-Dichloroethylene
1,2-Dichloropropane	Chloromethane (Methyl chloride)	trans-1, 3-Dichloropropylene
1,3,5-Trimethyl	cis-1, 2-Dichloroethane	Trichloroethene
1,4-Dichlorobenzene	cis-1, 3-Dichloropropylene	Trichlorofluoromethane
2,2-Dichloropropionic acid	Dibromomethane	Vinyl Acetate
2-Butanone	Dichlorodifluoromethane	Vinyl Chloride
2-Chlorotoluene	Ethyl benzene	Xylenes-M, P
2-Hexanone	Hexachlorobutadiene	Xylenes-O
4-Chlorotoluene	Isopropyl benzene	1,1-Dichloropropane
4-Methyl 2-Pentanone	Methylene chloride	1,3-Dichlorobenzene

3.2 Plant 8 Sump, Vacuum Filtration System

The Plant 8 Sump is located inside Building 8. A diagram of the Plant 8 Sump and the Vacuum Filtration System is provided as Figure 3.2.

The Plant 8 Sump will be used for pH adjustment, removal of heavy metals by precipitation, neutralization by the addition of acid/base solutions, and removal of uranium.

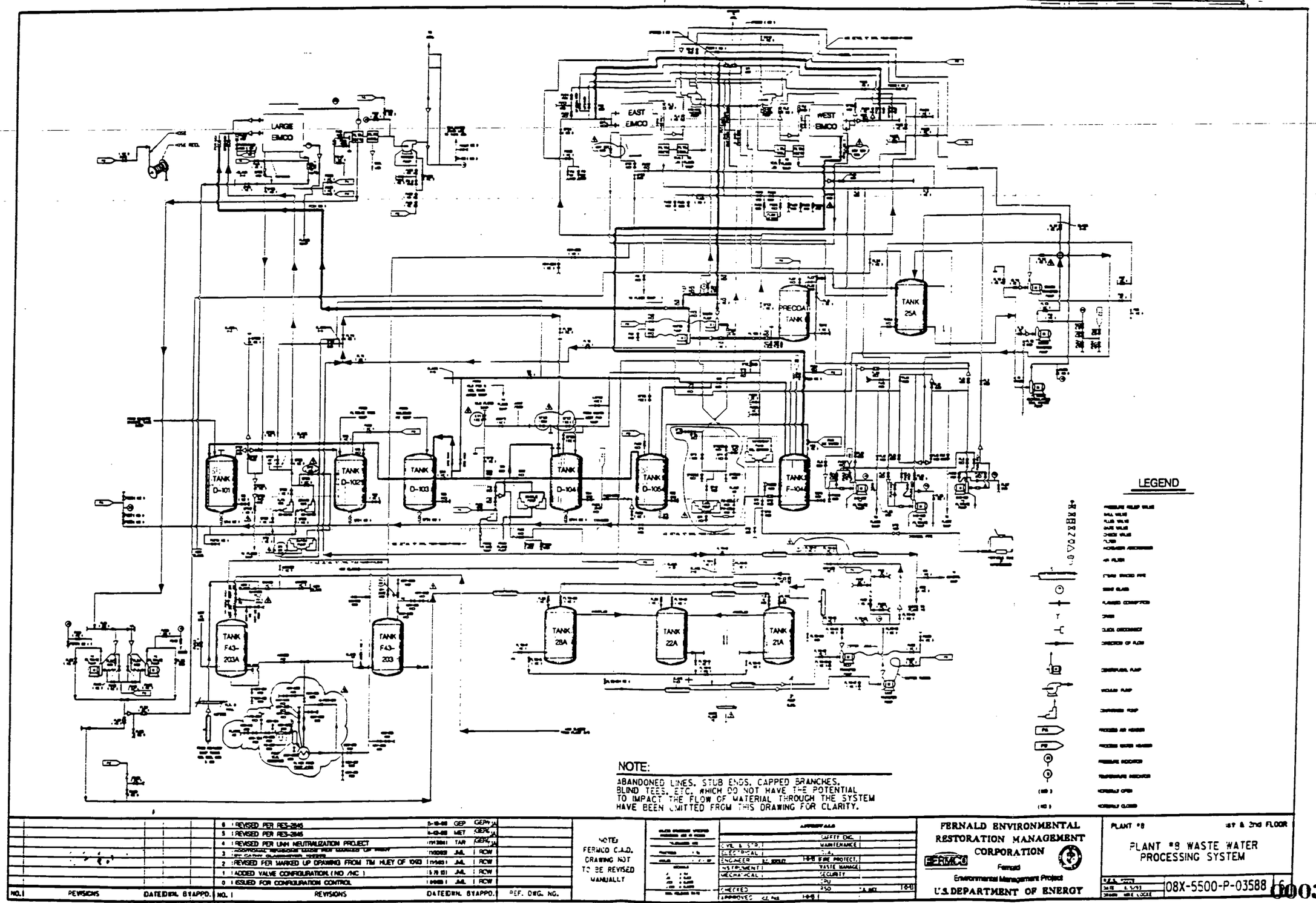
Precipitation is a separation process that removes soluble contaminants from water. Application of this technology is used for removal of dissolved toxic metals and radionuclides. Reducing contaminant solubility is accomplished by the addition of a chemical precipitant that reacts with the contaminant to form an insoluble compound. Filtration is the second step to heavy metals removal. The second step removes the precipitate using a solid/liquid separation process. Chemical Precipitation is used widely for the removal of heavy metals and fluoride in waste water treatment. Precipitation using lime is a low-cost, Best Available Technology.

3.2.1 General Operation

The FEMP uses lime for neutralization, heavy metals precipitation and removal of fluoride in the WWTS at the Plant 8 Sump. The lime is added to the waste water in 6,000 gallon tanks. The amount of lime to be added is determined through a jar test to obtain a pH of 7.0. Filtration of the effluent is completed in the rotary vacuum filter. Diatomaceous Earth is precoated on the filter. The filtrate is pumped to a filtrate receiving tank. The tanks used in the treatment process are acid brick-lined; one is rubber-lined, and one filtrate tank is stainless steel.

Treatment of the waste at Plant 8 Sump will generate two waste streams--the filtrate waste water and filter cake. The filter cake generated from treatment of characteristic hazardous mixed waste will be placed into 55 gallon drums. Samples will be extracted from the filter cake waste streams and the following analyses will be performed: TCLP Metals and Paint Filter Liquid Test (PFLT) in accordance with SW-846, % Moisture, Total U, U-235, and Alpha-Beta. A copy of the draft Sampling Plan is provided as Reference S-1. This Technical Specific Sampling and Analysis Plan will be invoked each time a batch of characteristic hazardous mixed waste is treated at the Plant 8 Sump. The data quality objectives, including discharge verification practices for Plant 8, are provided as Reference S-2.

Figure 3.2


LARGE EMCO
EAST EMCO
WEST EMCO
PRECOAT TANK
TANK 25A
TANK D-101
TANK D-102
TANK D-103
TANK D-104
TANK D-105
TANK F-104
TANK F43-203A
TANK F43-203
TANK 28A
TANK 22A
TANK 21A
LEGEND
NOTE:
ABANDONED LINES, STUB ENDS, CAPPED BRANCHES, BLIND TEES, ETC. WHICH DO NOT HAVE THE POTENTIAL TO IMPACT THE FLOW OF MATERIAL THROUGH THE SYSTEM HAVE BEEN OMITTED FROM THIS DRAWING FOR CLARITY.
NOTE: FERMCO C.A.D. DRAWING NOT TO BE REVISED MANUALLY
FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT CORPORATION
FERMCO
Fernald Environmental Management Project
U.S. DEPARTMENT OF ENERGY
PLANT #8
1st & 2nd FLOOR
PLANT #8 WASTE WATER PROCESSING SYSTEM
08X-5500-P-03588
6
REVISED PER RES-2845
REVISED PER RES-2845
REVISED PER UNH NEUTRALIZATION PROJECT
REVISED PER MARKED UP DRAWING FROM TIM HUEY OF 1043
ADDED VALVE CONFIGURATION. (NO /NC)
ISSUED FOR CONFIGURATION CONTROL
NO. REVISIONS DATE BY APPD.
REF. DWG. NO.
FILE NAME: RES/PES2228/08X-03588.DGN

3.3 Advanced Waste Water Treatment System (AWWT)

Ion-exchange is a proven separations process whereby ionic species, primarily inorganics, are concentrated into a secondary waste stream. Ion-exchange resins act as insoluble acids or bases, having functional groups which take on a positive or negative charge in solution. This technology is applicable to all inorganic contaminants present as ions in a liquid phase. The ion-exchange system at AWWT removes only uranium ions. The resin used at the FEMP is ion-specific for uranium removal.

3.3.1 General Operation

The ion-exchange units and chemical precipitation systems of the AWWT are located at Building 51.

The AWWT treats uranium contaminated waste water to reduce the amount of uranium discharged to the Great Miami River. The initial treatment step is coagulation/gravity separation in clarifiers. The treatment is then a series of multitube filters followed by ion-exchange units. Waste waters go through a chemical precipitation and clarification process to remove suspended solids. The waste water then moves through an ion-exchange system where ions are exchanged with uranium complex ions, with the uranium ions collecting on resin. The treated water is discharged from AWWT to the Great Miami River.

3.3.2 Future Operation

Activated carbon filters used to adsorb volatile organic contaminants from waste streams and a Slurry Dewatering System are expected to be operational at the AWWT in the summer of 1996. When these technologies becomes available at the AWWT, Plant 8 will be decommissioned.

Once the planned Systems at the AWWT are operational, the FEMP will evaluate the technologies of these Systems as a treatment option for characteristic and listed mixed waste streams. The FEMP will provide additional information on the AWWT Systems if these Systems are evaluated to be a viable treatment option for liquid waste streams.

4.0 TREATMENT PROCESS ACTIVITIES

4.1 Movement and Emptying of Containerized Liquid Mixed Waste

The WWTS Project involves moving containerized liquid mixed waste from RCRA permitted storage facilities to Plant 8 for treatment. The containers will be moved in accordance with site procedures developed for the movement of hazardous waste ensuring all precautions are taken to avoid damaging the container or causing a spill.

Prior to moving the waste, temporary secondary containment will be established. The secondary containment will be established on a concrete pad outside, adjacent to Plant 8A near a large roll-up door. The roll-up door will be opened to allow placement of the secondary containment so that it will be continuous around the hazardous waste and the equipment used to transfer the waste from its storage container to the CWA tank. The secondary containment will be constructed using herculite and the perimeter raised to contain waste if spilled. The secondary containment will be sized to hold the contents of all containers temporarily stored within its boundaries. In the event of a spill or leak during temporary storage, the waste can be recovered and added to the Plant 8 VOC System. The FEMP site spill procedure as referenced in Section 6.0 of this plan, will be evoked to ensure any spilled hazardous waste is handled in compliance with regulations, site procedures and this plan. The waste will be placed inside the secondary containment before containers are opened for the transfer activities.

Containers will be moved to the Plant 8A secondary containment area only if they can be added to the treatment system by the end of business hours. In the event the waste cannot be added to the treatment system that day, the remaining containers will be returned to the RCRA Warehouse for overnight storage.

A container of liquid mixed waste will only be opened at Plant 8 when it is ready to be added to the treatment system. The waste is transferred from its storage container to the treatment system tank using suction tubing and a double diaphragm pump. The storage container will be pumped until no more liquid can be removed. The container will then be examined to determine if all contents were removed leaving it "RCRA empty", or if there is remaining residue. Containers that are determined to be "RCRA empty" will be sent to the drum crusher and prepared for final disposition. Containers that are determined to have residue remaining will be closed and returned to the RCRA Warehouse pending further characterization and assignment to a different mixed waste treatment project. Reusable equipment such as hoses and pumps will be triple rinsed after completion of waste transfer operations in accordance with the requirements of OEPA's Closure Plan Review Guidance for RCRA Facilities. Clean water will be supplied for triple rinsing reusable equipment. Rinseate water from triple rinsing reusable equipment will be pumped through the equipment and discharged directly into the CWA system 6000 gallon tank.

No decontamination rinse waters will be containerized from this activity. Personal protective clothing and contact waste generated as a result of this project will be containerized and characterized as described in Section 2.0 of this plan.

4.2 Treatment Process

The liquid mixed waste streams will be treated to remove the hazardous characteristic in the Plant 8 VOC and the Plant 8 Sump (see Figure 4). Both of these systems, as described in the preceding section, Treatment Capabilities, provide treatment of volatile organic compounds, utilizing activated carbon adsorption, heavy metals, and uranium through precipitation and filtration, deactivation of ignitables, corrosives and reactives, and neutralization by acid/base additions. The discharged water from the Plant 8 Sump will be non-hazardous.

All waste streams that are added to the WWTS as part of this project will be administratively reviewed prior to discharge to the waste water treatment system. This administrative review will be conducted to ensure that the volume and character of treated waste streams does not cause a violation of the FEMP NPDES permit or exceedance of RCRA based LDRs prior to discharging treating effluent to the Bio-Surge Lagoon. A detailed discussion of this administrative review process is included in Section 7.0.

Given the low concentrations of hazardous constituents present within the project wastes and the fact that these constituents can be effectively removed by treating these wastes through the existing waste water treatment system, treating the wastes to render it non-hazardous prior to discharging it to the Bio-Surge Lagoon is not anticipated to be a problem. Sampling and analyses for verification of the treatment and compliance with the FEMP NPDES Permit are incorporated in this plan.

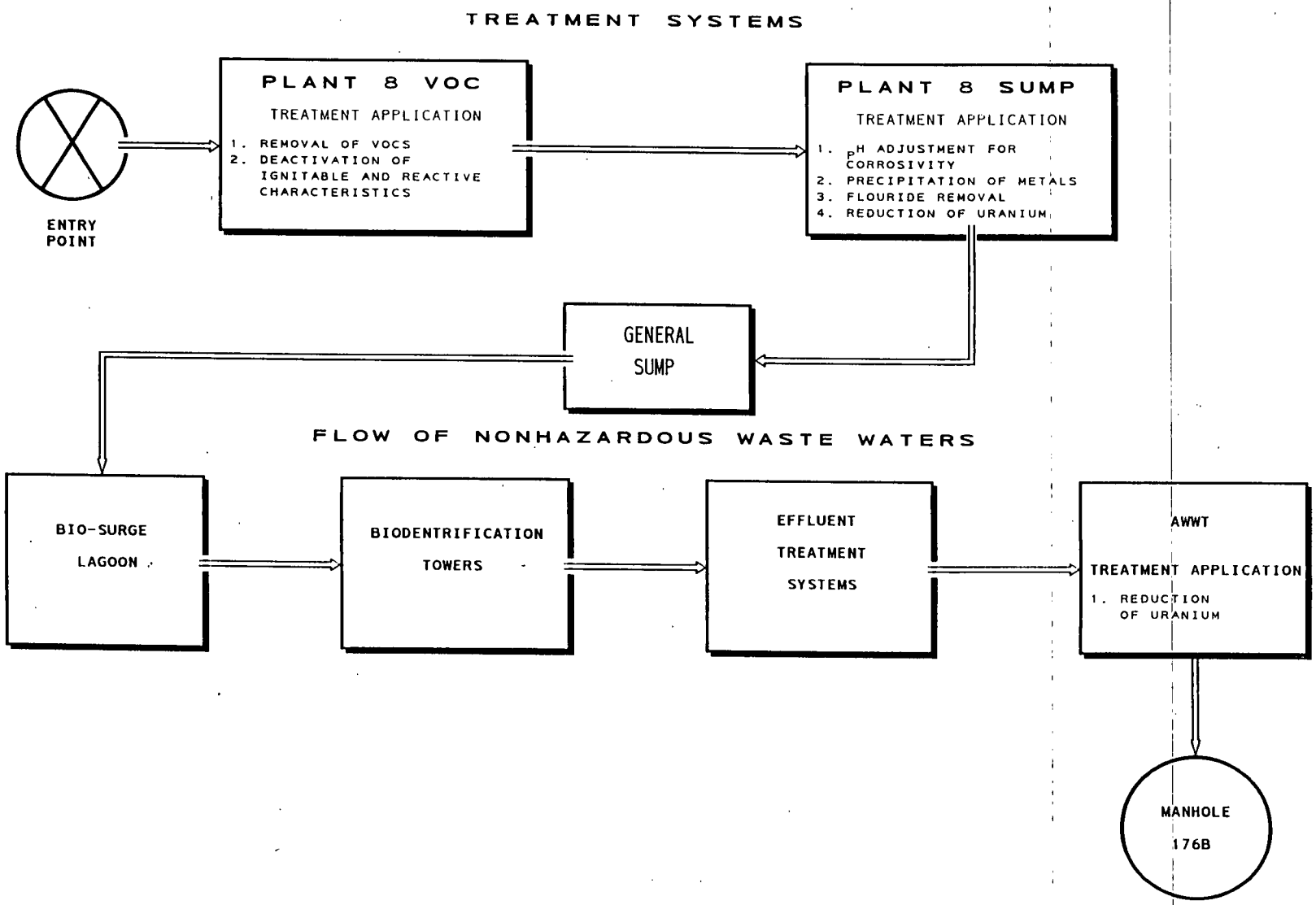
The non-hazardous waste water is discharged from the Plant 8 to the Bio-Surge Lagoon. The Bio-Surge Lagoon is a land based unit used in the waste water treatment system for hydraulic equalization of waste water prior to transfer to the Biodenitrification Towers. Currently, all waste water is processed through the biodenitrification towers for the removal of nitrates. The waste water is then transferred to the Biodenitrification Effluent Treatment System (BETS) for reduction of Biological Oxygen Demand (BOD).

The flow of waste waters to the Biodenitrification Towers and the Effluent Treatment System is temporary. Future waste waters will be directed from the Bio-Surge Lagoon to the AWWT.

The water then moves to the AWWT for additional removal of uranium. Waste water discharges from the AWWT to manhole 176B. Manhole 176B discharges to outfall 11000004001, where the water discharges to the Great Miami River. The final effluent limitations and monitoring requirements for outfall 11000004001 are specified in the FEMP NPDES Permit and are provided as Figure 4.1 in this section.

Figure 4.0

TREATMENT TRAIN FOR LIQUID MIXED WASTES IN THE FEMP WWTS



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Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 1IO00004001. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

EFFLUENT CHARACTERISTIC			DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
			Concentration Specified Units		Loading* kg/day			
Reporting Code	Units	Parameter	30 day	Daily	30 day	Daily	Meas. Freq.	Sample Type
00010	°C	Water Temperature	-	-	-	-	Daily	Grab
00300	mg/l	Dissolved Oxygen	-	5.0min.	-	-	1/Week	Grab
00530	mg/l	Total Suspended Solids	30	45	315	473	Daily	24-Hour Composite
00550	mg/l	Oil and Grease, Total	10	10	105	105	1/Week	Grab
00610	mg/l	Nitrogen, Ammonia (NH_3)	-	-	-	-	1/Week	24-Hour Composite
00630	mg/l	Nitrogen, Nitrite + Nitrate	-	-	-	-	1/Week	24-Hour Composite
00951	mg/l	Fluoride, Total (F)	-	-	-	-	1/Week	24-Hour Composite
01119	µg/l	Copper, Total Recoverable	-	-	-	-	1/Week	24-Hour Composite
01220	µg/l	Chromium, Dissolved Hexavalent	-	-	-	-	1/Week	Grab
50050	MGD	Flow Rate	-	-	-	-	Daily	24-Hour Total
80082	mg/l	$CBOD_5$	20	30	210	315	1/Week	24-Hour Composite
61425	TUa	Acute Toxicity, *Ceriodaphnia dubia*	-	-	-	-	See Part II, Item H	
61427	TUa	Acute Toxicity, *Pimephales promelas*	-	-	-	-	See Part II, Item H	

* Loadings are based on 2.775 MGD

2. The pH (Reporting Code 00402 (minimum) and 00401 (maximum)) shall not be less than 6.5 S.U. nor greater than 9.0 S.U. and shall be monitored continuously and the critical values reported. See Part II, Item C.

3. Samples taken in compliance with monitoring requirements specified above shall be taken at sampling stations described in Part II, OTHER REQUIREMENTS.

5.0 ENVIRONMENTAL COMPLIANCE AND SPILL RESPONSE

The project involves treating liquid low level mixed wastes to remove the hazardous characteristic.

5.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Table 5-1 of this section identifies the Applicable or Relevant and Appropriate Requirements (ARARs) for the project. As part of RA No. 9, the project is exempt from the requirement to obtain administrative permit approval under Section 121(e) of CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), as promulgated in 40 CFR 300.400(e).

Although on-site removal actions are exempt from the requirement to obtain administrative permit approval, Paragraph XIII.B of the ACA requires DOE to supply specific information regarding the permits that would have been required in absence of the CERCLA permitting exemption described above. To satisfy this ACA requirement, the following three pieces of information have also been included in Table 5-1.

- Identification of permits that would be required in absence of the CERCLA Section 121(e) exemption.
- Identification of the standards, requirements, criteria, or limitations (ARARs) that would have to be met to obtain the permits.
- An explanation of how the response action will meet the standards, requirements, criteria, or limitations identified above.

TABLE 5-1

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

PERMIT THAT WOULD BE REQUIRED	PERMIT REQUIREMENTS (ARARs)	COMPLIANCE PLAN
National Emission Standards for Hazardous Air Pollutants - (NESHAP) - 40 CFR Part 61, Subpart H - Emissions of Radionuclides Other Than Radon From DOE Facilities	40 CFR 61.92: Radiological emissions (except radon-222 and radon-220) to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive in an effective dose equivalent of 10 mrem in any one year. 40 CFR 61.07 and 61.96(b): An application for approval does not have to be filed for radionuclide sources if the effective dose equivalent caused by all emissions from the new construction or modification is less than 0.1 mrem per year. 40 CFR 61.93(b): Continuous emission monitoring is required for stacks and vents that have the potential, under normal operating condition, but without emission control devices, to release radionuclides in sufficient quantities to cause any member of the general public to receive an effective dose equivalent of 0.1 mrem/year or greater.	The dose from Plant 8 activities is currently included in the annual FEMP NESHAP Part H Report. Any dose from this proposed project will be included in the dose reported in the annual Plant 8 calculations. Emissions from the project will not result in exceedance of the annual standard. Radionuclide emissions from the project are not expected to cause any member of the general public to receive an effective dose equivalent of 0.1 mrem/year or greater.

Table 5.1 (cont.)

PERMIT THAT WOULD BE REQUIRED	PERMIT REQUIREMENTS (ARARS)	COMPLIANCE PLAN
National Pollutant Discharge Elimination System (NPDES) Permit - OEPA NPDES Permit No. 1IO00004*ED (OAC 3745-33-05)	Waste water discharges must not cause a violation of effluent limitations or loading rates at NPDES permitted outfalls. Discharges must be conducted in accordance with applicable terms and conditions of the permit. These include compliance with the notification requirements promulgated in 40 CFR 122.42, and OEPA water quality standards established under OAC 3745-1.	Discharges associated with the project will comply with the current NPDES Permit.
Occupational Radiation Protection (10 CFR 835)	All FEMP activities are to be performed under an approved occupational radiation protection program (RPP) (in addition to other requirements).	All activities associated with the project will be performed in accordance with the DOE approved FEMP Regulatory Protection Plan. Project activities will be reviewed by Radiological Control to ensure occupational radiation exposures are ALARA and ensure application of appropriate personal protective equipment.
Safe Drinking Water Act (42 U.S.C. 300G; PL 93-523)	National Primary Drinking Water Regulations (40 CFR 141). National Revised Primary Drinking Water Regulations (40 CFR 141.60 through 141.63)	Compliance will be demonstrated by site-wide environmental monitoring, including air, soil, and groundwater. Reports summarizing the site-wide monitoring results will be submitted to EPA. Surface water discharges will be conducted in accordance with the site NPDES permit and are not expected to impact groundwater quality.

Table 5.1 (cont.)

PERMIT THAT WOULD BE REQUIRED	PERMIT REQUIREMENTS (ARARS)	COMPLIANCE PLAN
Radiation Exposure to the Public	Radiation Dose Limit (40 CFR 192.02(b)) (To be considered)--Radiation Dose Limit (Drinking Water Pathway) (10 CFR 834)	The project will be designed and operated to minimize the releases of radionuclides. Compliance will be demonstrated by site-wide environmental monitoring, including air, soil, and groundwater. Reports summarizing the site-wide monitoring results will be submitted to the EPA.
Resource Conservation and Recovery Act (U.S.C. 6901 et. seq.)	Hazardous Waste Determinations (OAC 3745-52-11) (40 CFR 262.11)	Project wastes have been characterized to determine their EPA waste codes and appropriate LDR treatment standards. Wastes generated from this project will be characterized in accordance with site procedures and the FEMP Waste Analysis Plan.
	Interim Status: Treatment, Storage, and Disposal General Facility Standards (OAC 3745-65-13 through 16) (40 CFR 265.13 through 265.16)	The project will operate in accordance with RCRA regulations. Existing site security measures will be utilized. Inspections of container storage areas are conducted in accordance with the FEMP's RCRA Part B Permit Application. Personnel will be trained in accordance with FEMP requirements.
	Interim Status: Treatment, Storage, and Disposal Facility Preparedness and Prevention (OAC 3745-65-31 through 35, 3745-65-37) (40 CFR 265.31 through 265.35, 265.37)	Preparedness and prevention equipment, as specified in regulations, will be on-site, available, and in operating condition throughout the duration of the project. The existing FEMP site-wide internal communications/alarm systems will be used. Portable fire extinguishers and spill control equipment will be placed in accessible locations to assist in emergency response.

Table 5.1 (cont.)

PERMIT THAT WOULD BE REQUIRED	PERMIT REQUIREMENTS (ARARs)	COMPLIANCE PLAN
Resource Conservation and Recovery Act (U.S.C. 6901 et. seq.)	Interim Status: Treatment, Storage and Disposal Facility Contingency Plan and Emergency Procedures (OAC 3745-65-51 through 56) (40 CFR 265.51 through 265.56)	The existing RCRA FEMP Contingency Plan and Emergency Procedures will be followed for any hazardous waste emergency associated with the project.
	Container Storage (OAC 3745-52-34, 3745-66-70 through 77) (40 CFR 262.34, 265.170 through 265.177)	Containers of hazardous waste are stored and managed in RCRA-permitted storage areas and are inspected in accordance with regulatory requirements. Containers will be handled in a manner to prevent rupture, leakage, or spillage, and will remain closed during storage.
	Residue of Hazardous Waste in Empty Containers (OAC 3745-51-07) (40 CFR 261.7)	Containers used for the project will be considered empty in accordance with the requirements of this rule.
	Land Disposal Restrictions (OAC 3745-59) (40 CFR 268)	Wastes will be treated to meet LDR requirements applicable to treatment in a CWA System. A "One-Time Notice to the RCRA Operating Record will be made for each waste stream treated in the WWTS.
	Waste Water Treatment Unit Exclusion (OAC 3745-65-01)(c)(8) (40 CFR 265.1 (c) (10)	The equipment used for treatment is part of the FEMP's NPDES-permitted WWTS and is subject to this exclusion.
	Decontamination of Reusable Equipment (OEPA Closure Plan Review Guidance for RCRA Facilities)	Decontamination of Reusable Equipment is discussed in Section 4.1 of this Work Plan. Reusable equipment contacting waste will be triple rinsed in accordance with OEPA Closure Plan Review Guidance for RCRA Facilities.

Table 5.1 (cont.)

PERMIT THAT WOULD BE REQUIRED	PERMIT REQUIREMENTS (ARARS)	COMPLIANCE PLAN
Occupational Worker Protection & Training (29 CFR 1904 & 1910)	All facility personnel will be trained. Employers will develop and implement a written safety and health program for employees involved in hazardous waste operations.	This removal action will be conducted in accordance with the provisions of the Technical Specific Health and Safety Plan.
National Environmental Policy Act (NEPA) (10 CFR 1021)	Ensure that all federal agencies (including DOE) consider environmental impacts in the planning and decision-making phases of their projects.	On June 13, 1994, DOE issued a revised policy regarding compliance with the National Environmental Policy Act (NEPA). This revised policy called for a streamlined approach for addressing NEPA requirements, particularly with respect to documentation for CERCLA response actions. As a result, substantive NEPA values for CERCLA response actions are to be addressed directly in technical specific plans. This project constitutes the equivalent of a categorical exclusion, pursuant to 10 CFR 1021, Subpart D, Appendix B6.1. As such, the project meets the conditions for categorical exclusions stipulated in 10 CFR 1021, Subpart D, Appendix B(1-4).
DOE Orders	To be considered.	All project design activities shall be implemented according to the DOE-FN procedures.

Representatives from DOE-FN and FERMCO will conduct inspections during the performance of this response action to ensure that the actions are conducted consistently with the discussions in the PSP.

Personnel involved in this subproject will have training according to their responsibilities, and an appropriate level of training in the site documents as listed in Section 7.0 of the general work plan. All activities performed for this subproject will be consistent with the FERMCO Safety Requirements Performance Manual (RM-0021), and the FERMCO Radiological Control Requirements Manual (RM-0020).

The WWTS Project will primarily use the following procedures:

6.1 Site Standard Operating Procedure

6.1.1 "Controlling Aqueous Waste Water Discharges into the Waste Water Treatment System", (EP-0005)

6.1.2 "Movement of Hazardous Waste", (SOP 20-C-017)

6.1.3 "Storage of Hazardous Waste", (SOP 20-C-630)

6.1.4 "Emptying Liquid Hazardous Waste Storage Containers" (SOP 20-C-613)

6.2 Emergency Response Team Fire Spill/Preplan

The FEMP Emergency Response Team Fire/Spill Preplan is included as Attachment H. At this time, the waste water treatment subproject is not planning to bulk or aggregate liquids prior to treatment. The liquid mixed wastes are primarily contained in 55 gallon drums and will be added to the WWTS from the existing containers to avoid excessive handling. The WWTS project personnel will be trained according to:

6.2.1 "Hazardous Waste Spill Clean-Up", (SOP 20-C-606)

6.3 Plant 8 Operations

Treatment will be completed in Plant 8 using the following procedures:

6.3.1 "Plant 8 Process Control Testing Procedure" (SOP 08-C-618)

6.3.2 "Plant 8 Waste Water Receiving System" (SOP 08-C-611)

6.3.3 "Plant 8 Perched Groundwater Volatile Organic Compound (VOC) Treatment System" (SOP 08-C-200)

6.3.4 "Large EIMCO Filter Operation - Plant 8 Waste Water Processing System" (SOP 08-C-602)

6.4 Future Generated Waste

In the future, some secondary waste may be bulked or aggregated. The evaluation to aggregate will be made as more information is available on secondary waste generation rates and the specific mixed waste project needs. These secondary wastes will be generated during response actions, closure activities, and other mixed waste treatment projects. In the event liquid mixed wastes destined for treatment in the WWTS are aggregated prior to treatment, the Health and Safety Plans, included as Attachment D, will be followed.

7.0 PROJECT MANAGEMENT AND REPORTING

The following management steps will be implemented to ensure treatment of the liquid mixed waste in the FEMP WWTS does not interfere with the normal operations of the WWTS and treatment is appropriately documented.

7.1 Waste Programs Management (WPM) - Hazardous and Mixed Waste Management (HMWM)

The HMWM Project Manager will identify a candidate list of liquid mixed wastes from the characterized inventory for possible treatment in the FEMP WWTS and initiate a Waste Water Discharge Request. The HMWM Project Manager will use Figure 7.0 to ensure that the WWTS is capable of treating the hazardous characteristic in the candidate waste stream. HMWM personnel will document the request to treat the waste stream in the WWTS by completing Section I of the Waste Water Discharge Request Form (see Figure 7.1) and forward the request to Environmental Compliance for further evaluation.

7.2 Environmental Compliance (EC)

Environmental Compliance evaluates the discharge request and documents the evaluation in Section II of the Waste Water Discharge Request Form (see Figure 7.1). Environmental Compliance ensures discharges are in compliance with the NPDES permit and consistent with the NPDES Application on which the NPDES Permit is based. Environmental Compliance will determine if the candidate waste streams can be treated in the FEMP WWTS. Environmental Compliance will forward the Waste Water Discharge Request to the Aquifer Restoration Project (ARP) Operations Manager for review and signatures if the discharge is approved.

7.3 Aquifer Restoration Project (ARP)

The ARP Operations Manager will review the Waste Water Discharge Request Form and sign in Section II if the discharge is approved. The ARP Operations Manager will forward the Waste Water Discharge Request to the HMWM Project Manager for further action.

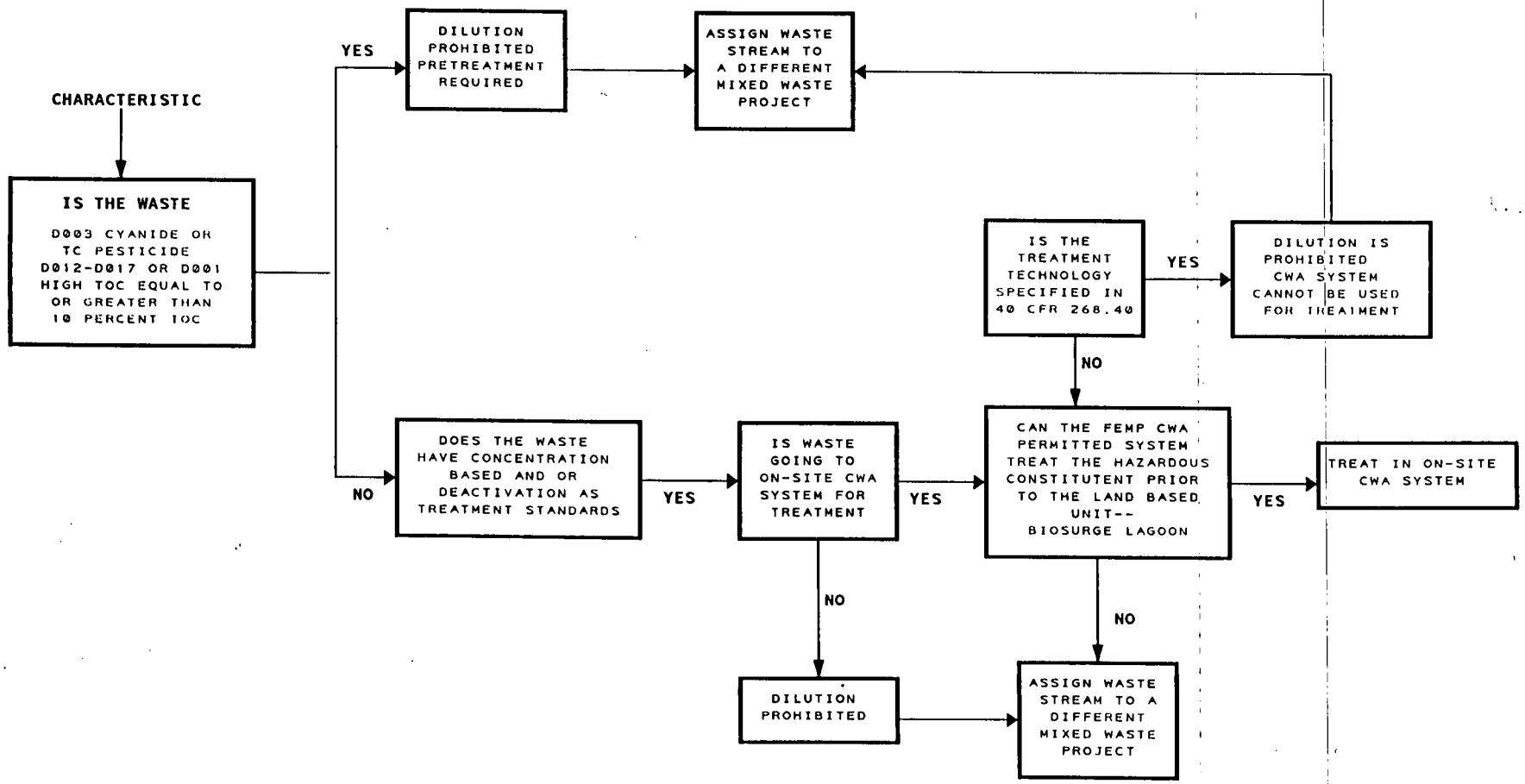
7.4 WPM - Hazardous and Mixed Waste Management

The HMWM Project Manager will evaluate waste streams that are determined unacceptable by Environmental Compliance for transfer to a more appropriate mixed waste treatment project.

Liquid Mixed Waste Streams which are approved for treatment in the FEMP WWTS will be referred to Waste Operations to implement treatment.

Figure 7.0

TREATMENT OF LIQUID MIXED LOW LEVEL WASTE STREAMS IN THE FEMP WWTS



THIS DECISION CHART WAS DEVELOPED FOR USE AT THE FEMP. THE FEMP WWTS IS CURRENTLY CONFIGURED SUCH THAT WASTE WATERS FLOW THROUGH A LAND-BASED UNIT, THE BIOSURGE LAGOON. THEREFORE, THE FEMP IS NOT PLANNING TREATMENT OF LISTED WASTE.

000403

7.5 WPM - Waste Operations

Waste Operations will initiate and implement the internal steps necessary to safely transfer the waste to the appropriate entry point of the WWTS for treatment as designated on Section II of the Waste Water Discharge Request Form. FEMP personnel will open each container prior to discharging to the WWTS to identify if the waste contains a heavy oily layer, sludge or heavy sediment. If these conditions are observed, the contents of the container will not be added. The container will be returned to the RCRA Warehouse pending further evaluation.

7.6 Remedial Support Operations (RSO)

RSO will manage the addition of the liquid mixed waste to the WWTS. RSO will document the discharge using Section III of the Waste Water Discharge Request Form (see Figure 7.1) and send the completed form to the HMWM Project Manager.

7.7 Materials Control and Accountability (MC&A)

MC&A will record the consumption of the liquid mixed waste and generate the documentation to update the mixed waste inventory.

7.8 WPM - Hazardous and Mixed Waste Management

The HMWM Project Manager will make the "One Time Notice" (OAC 3745-59-07 (A)(5)) and (40 CFR 268.7 (a) (6) to the RCRA Operating Record and forward the completed Waste Water Discharge Request Form to the RCRA Operating Record for documentation.

7.9 Environmental Compliance

Environmental Compliance will maintain completed Waste Water Discharge Request Forms in the RCRA Operating Record.

Figure 7.1

7376

WASTE WATER DISCHARGE REQUEST FORM

SECTION I: WASTE WATER INFORMATION

Waste Water Source Description: _____

Waste Stream Identification (MEF #, Lot #, Well #, etc.): _____

Most Recent Analytical Data Attached: ☐ YES ☐ NO

Total volume and/or flow rate of proposed discharge: _____

Requested Discharge Date: _____

Requestor:	Telephone Number:	Date:

SECTION II: ACCEPTABILITY EVALUATION

Discharge Allowed? ☐ YES ☐ NO

If yes, describe basis of decision and required point of entry into WWTS: _____

If no, describe basis for denial: _____

Evaluated by: _____	Date: _____
Approved by: _____	Date: _____

SECTION III: DISCHARGE VERIFICATION

In order for any waste water to be discharged, Section II must be checked "Y" and the point of entry into the WWTS must be defined. If there are any questions or concerns about the proposed discharge, contact EC at 648-5294 or 648-5287.

Date of Discharge: _____

Volume of Discharge: _____

Facility Owner: _____

The above signature of the facility owner certifies the discharge was accomplished as directed by EC in Section II.

FS-F-4045 (11/08/94)

8.0 QUALITY ASSURANCE

Quality Assurance for this project will be implemented to ensure the requirements for quality assurance are consistent with the FERMCO Quality Assurance Program Description (RM-0012). This project uses on-site existing equipment and treatment will be implemented using established procedures and practices. Quality Assurance will be provided, consistent with the requirements, for activities specified in the Standard Operating Procedures and used to implement treatment.

REFERENCE S-1

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Number: 95-1163
Date: 11-22-95

A. Identifying Information

1) **Project Name:** Waste Water Treatment Characterization
2) **Plan No.:** 95-1163
3) **Material Description/Matrix Code(s):** filter cake/S
4) **Number of Drums in Sub-Waste Stream:** unknown
5) **Material Type:** unknown
6) **Source Code:** unknown
7) **Material Evaluation Form #:** not determined
8) **Sampling Location for Drums:** Plant 6
9) **Process Knowledge:** filter cake from Plant 8.

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B. Sampling Information

1) **General:** Samples taken will be contained in glass or polyethylene jars with teflon lined lids.
2) **Preservation Method:** See Analytical Requirements in Section C.
3) **Holding Times:** See Preservative and Holding Time Guidelines in Section G. Holding times and sample volume/container requirements for media-specific analyses not listed in the SCQ are provided by the FEMP laboratory facility.
4) **Sample Technique:** Pipe/Auger
5) **Number of Drums to be Sampled and Analyzed:** unknown. see page 2.
6) **Composite Samples:** No
7) **Visual Inspection Performed (# of visuals)?:** No
8) **Field Contact:** Camila Wehrfritz. ext. 5676
9) **Send Results to:** Christa M. Walls. ext. 5673. MS 65-3
10) **Charge No./Project Manager:** 8ADD4/Tim Arnold. ext. 5774
11) **Required QA/QC Samples:**

Field QC	Yes	No	Notes
Trip Blank	X		volatile organic samples
Field Blank		X	1 per 20 samples or 1 per sampling event
Equipment Rinsate		*	1 per 20 samples or 1 per sampling event
Duplicate	X		1 per 20 samples or 1 per sampling event
Container Blank		X	analytical data supplied by supplier
Preserv. Blank		X	assay data supplied by supplier

Laboratory QC

Laboratory QC sample type and frequency requirements are provided in Appendix G of the SCQ.

Drummed Waste Material
Project-Specific Sampling and Analysis Plan

Sampling Information

Start with Sample Number 95-1163-1 for the first drum sample, then number consecutively until sampling is completed. The drum that is to be sampled in duplicate will be indicated with an asterisk (*). The duplicate samples will be given different sample numbers.

Sample Number	Sample Matrix	Inv. Number	Lot Number	Drum Number
95-1163-1		DRUMS TO BE SAMPLED HAVE NOT BEEN GENERATED. UPON GENERATION, THIS SAMPLE PLAN WILL BE UPDATED WITH THE SPECIFIC DRUMS THAT WILL BE SAMPLED.		
95-1163				
95-1163				
95-1163				

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Note: If the material in the drum does not match the material code, do not sample. Perform a visual inspection of the contents of the drum. The visual inspection form will be given to Waste Characterization.

If there is not enough material to meet the volume requirements, do not sample the drum. Perform a visual inspection of the contents of the drum.

Refer to page 1, Section B-7, for requested visuals. These will be performed regardless of the contents of the drum.

C. Analytical Requirements

Analysis Requested ASL B	Solid Matrix Samples Container and Preservative/Units		Liquid Waste Samples Container and Preservative/Units		Quality Control Samples Container and Preservative/Units	
Total VOA Table 5 (off-site)	-----	---	(3) x 40 mL GTS	Cool 4°C/ mg/L	(3) x 40 mL GTS	Cool 4°C & HCl to pH < 2/ mg/L
TCLP VOA Table 4 (off-site)	200 g GTL	Cool 4°C/ mg/L	---	---	---	---
Total SVOA Table 8 (off-site)	-----	---	(3) x 1 L AGTL	Cool 4°C/ mg/L	(3) x 1 L AGTL	Cool 4°C/ mg/L
TCLP SVOA Table 7 (off-site)	200 g AGTL	Cool 4°C/ mg/L	---	---	---	---
Total Metal Table 3 (off-site)	-----	---	(1) x 1 L GTL	Cool 4°C/ mg/L	(1) x 1 L jar, P	Cool 4°C & HNO_3 to pH < 2/ mg/L
TCLP Metal Table 2 (off-site)	250 g G or P	Cool 4°C/ mg/L	-----	---	-----	---
Total U (on-site)	350 g G or P	None/ ppm	(1) x 120 mL G or P	None/ ppm	(1) x 250 mL G or P	HNO_3 to pH < 2/ mg/L
pH (on-site)		---		None/ pH units		---
Quantitative PFLT (on-site)$		None/ present/ absent		---		---
Percent Moisture (on-site)		None/ Wt%		---		---
U-235 (on-site)	250 g G or P	None/ Wt%	(1) x 250 mL G or P	None/ Wt%	(1) x 250 mL G or P	HNO_3 to pH < 2/ mg/L
Alpha-Beta (on-site)		None/ pCi/g		None/ pCi/L		---
Description of material (Color, appearance, consistency, etc.)						

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If there is not enough material to meet volume requirements do not sample drum. perform visual inspection on the drum.

$ - PERFORM pH, CORROSIVITY, AND FLASHPOINT IF THE PFLT FAILS.

ATTACH A COPY OF THIS PAGE TO THE CHAIN-OF-CUSTODY.

D. Sub-Waste Stream Description

The sub-waste stream consists of unknown drums in unknown lots. The material type of "unknown" and the source code of "unknown" indicate that this material is filter cake from Plant 8. The unknowns will be determined when the containers are generated.

E. Safety Concerns

See SOP 20C-806, Sections 7.0 to 7.16 for Health and Safety requirements. Due to their unknown nature, liquid waste samples will not be acidified.

F. Representative Sampling Procedure

The drums to be sampled are listed on page 2 of this form. If visual inspection indicates that the material has free liquid or is completely dry, then a P.F.L.T and Percent Moisture is not necessary. Record pertinent information in the Field Log Book for each drum sampled as specified in SOP 20C-806, Sections 7.2, 8.1.12 and 8.1.13.

G. Preservative and Holding Time Guidelines

See Tables 6.1 and 6.2 of the "Prototype Sampling and Analysis Plan for Containerized Waste at the FEMP" and/or Table 6-1 "Sample Container and Preservation Requirements." of the Sitewide CERCLA Quality Assurance Project Plan (SCQ). Sample container, preservative, and holding time requirements for analytical parameters not provided in these tables have been obtained from federal or state of generation policies/directives, or from the FEMP or FEMP-contracted laboratory facility; and incorporated into this PSAP as permitted in Section 3.3.2 of the SCQ.

H. Variances

Drums specified on page 2 of this PSAP, may be replaced due to the following: matrix can't be sampled, matrix does not match Material Type, or there is inadequate volume to meet the specified volume requirements. A formal variance is not required, logbook entries will record the specific variance.

This form must be dated and signed by an authorized individual.

If this Sub-Waste Stream is sampled and analyzed according to the information on this form, the results generated will be in agreement with the sampling and analysis requirements of PL-3048 (Rev. 2), NVO-325 (Rev. 1), Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements; and the Fernald Environmental Management Project (FEMP) Sitewide CERCLA Quality Assurance Project Plan (SCQ).

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Authorized Signature/Date Approved/Date

Fernald Environmental Management Project

Data Quality Objectives

Title: Plant 8 Filtration Operations

Number: TS-019

Revision: 1

Effective Date: 5/15/95 UNCONTROLLED COPY

Contact Name: Tim Arnold

Approval: Richard L. Fiske *Date:* 5/15/95
DQO Coordinator

Rev #	0	1			
Date	1/26/95	5/15/95			

Data Quality Objectives
Plant 8 Filtration Operations

1. State the problem or the situation to be resolved

In order to comply with NPDES permitting, the Plant 8 Treatment system receives slurry materials from various FEMP projects and processes. The Plant 8 Treatment System then processes the slurry materials through a Wastewater Treatment System to remove heavy metals. A second treatment system is also used at Plant 8 prior to introduction to the Plant 8 Treatment System to treat those materials with suspected Volatile Organic Compound (VOC) contamination. This determination is based on generator analysis or process knowledge. Attachment 1 includes a flow diagram of the Plant 8 Treatment System.

Sampling/field screening must take place to accomplish three important tasks:

- ensure that the materials can be received by Plant 8;
- demonstrate that the process is operating correctly; and
- ensure that final discharge limits are met.

2. Identify the decisions to be made that affect the situation

There are four distinct sampling points that are essential to assure the proper operation of the Plant 8 Treatment System. Each of these sampling points reflects a decision that indicates whether each of the discrete units of the Plant 8 Treatment System are operating correctly and that the overall process is functioning as required. The four sampling points are as follows:

Plant Receipt - All treatment materials arriving at Plant 8 must be analyzed for pH to ensure that the slurry materials are not extremely acidic or basic. The Plant 8 Treatment System cannot tolerate extremes in pH, so materials received for treatment must be well within the specified treatment system tolerance of ≥ 2 or < 12.5.

VOC Cartridge Confirmation - Samples will be taken behind the first of the VOC cartridges to verify that they are working correctly.

pH Neutralization Verification - pH samples must be taken after the Neutralization phase to ensure that the pH of the neutralized batch does not exceed the filtration criteria set up in the Filter Standard Operating Procedure. Since the Wastewater Treatment System consists of both a Neutralization phase and a Filtration phase, it is imperative that samples be taken to confirm through field screening analysis that the Neutralization phase has been effective prior to Filtration.

Plant 8 Discharge Verification - In order to assure that discharge limits are met, additional pH analyses must occur to verify that the concentrations of analytes of concern exhibited in Section 5 are within allowable limits prior to discharge into the general sump.

3. Identify inputs that affect the decision

Plant Receipt - At receipt, any material received by Plant 8 for treatment will be analyzed for pH per SOP 08-C-613. One sample per receiving batch will be taken.

VOC Cartridge Confirmation - On a weekly basis, one sample will be taken behind the first of the VOC cartridges, which are used in series, and analyzed for VOC's. The sample will be taken during the first two hours of operation every week.

pH Neutralization Verification - One pH sample will be analyzed for each neutralization batch.

Plant 8 Discharge Verification - When 80% of the discharge volume has been processed, one sample will be taken and analyzed for pH (SOP 08-C-613 and SW-846 Method 9040A) and Total U (per SOP 08-C-613) at a minimum, or sampled per project requirements. Additional analytes may need to be added based upon specific need and/or constituents in project specific treatment batches. Additional analytes of interest and methods of analyses will be identified in Project Specific Plans.

4. Define the boundary of the situation

Spatial Boundaries: The spatial boundaries encompassing this DQO is the Plant 8 complex. The material received for treatment at Plant 8 may result from decontamination, decomissioning or procesing activities onsite. These may consist of wastewater materials from other treatment processes, such as the treatment and neutralization of HF, UNH, Nitric Acid or Thorium Nitrate. The different slurry materials may be segregated into separate processing batches. As a result, the size of a receiving batch will vary. Additionally, how the quantity of material is received will also define the batch size (i.e. 20,000 gallons of material are to be received in two 10,000 gallon groupings - two pH measurements will be required for plant receipt).

Temporal Boundaries: The screening of each of the batches will occur when each of the four steps identified in Section 3 are completed.

5. Develop a logic statement that applies to the decision

Plant Receipt - The following logic statements will be used to receive materials into Plant 8:

IF...	THEN...
pH ≤ 2.0	Notify Assistant Emergency Duty Officer (AEDO).
pH > 2.0 but < 5.0	Notify Plant 8 Facility Owner or Plant 8 Process Engineer for permission to receive material into Plant 8.
pH ≥ 5.0 and < 12.5	Receive material into Plant 8.
pH ≥ 12.5	Notify AEDO.

VOC Cartridge Confirmation - Since there is a zero discharge limit set on the VOC Treatment System, if there are two successive increases in the VOC analysis, then the carbon drum train will be altered or a carbon drum change-out will occur.

pH Neutralization Verification - The pH of neutralized slurry for the waste water treatment system.

prior to filtration, must meet the specified pH levels per the appropriate filtration procedures: SOP 08-C-602, SOP 08-C-608, or SOP 08-C-609. If the pH fails to fall within the allowable limits, then the applicable steps within these procedures will be followed to further neutralize or treat the material.

Plant 8 Discharge Verification - The final processed materials must, at a minimum, meet the following discharge limits prior to discharge from the plant:

1. pH > 7.0
2. Uranium ≤ 48.0 g/L

If any of these discharge limits are not met, then the batch material will be recycled back into the process system.

5. Establish validation constraints on the uncertainty of the decision

A false positive error for pH ≤ 2.0 or pH ≥ 12.5 would result in the material not being received in Plant 8 and the AEDO being notified when they do not need to be notified. Further analytical results may be required to verify the initial measurement causing a significant increase in project cost. A false negative error for pH ≤ 2.0 or pH ≥ 12.5 would result in the material being received in Plant 8 when it should not be received. If this error is discovered later in the process, it would result in additional neutralizing agents being used and unnecessary degradation of equipment. Error such as this would only occur when both the screening instruments used by the generator and at Plant 8 are both calibrated incorrectly. This type of error can be prevented simply by following the approved procedures for calibration of the screening instruments.

A series of two false positive errors discovered in the VOC Cartridge Confirmation phase would result in the changing of flow into the carbon drums or the replacement of the carbon drums prior to full utilization. Two false negative errors would result in the processing of material through overloaded carbon drums. This would result in a release of VOC contaminated water to the General Sump and eventually, to the Advanced Waste Water Treatment (AWWT) Plant.

A false positive error for pH less than or equal to the specified amount per the pH Neutralization Verification procedure for the neutralized slurry would cause material to be filtered before the proper pH is reached, causing uranium to pass through the filters. A false negative error for pH greater than or equal to the specified amount per the filtration procedure for the neutralized slurry would result in additional neutralizing agents being used. If the required pH is not reached, the discharge limits required may not be achieved in the Discharge Verification step.

A false positive error for Plant 8 discharge limits would indicate that the filtrate must be recycled through Plant 8. This would mean additional processing time, increasing project cost. A false negative means that the filtrate would be discharged to the general sump erroneously. This also would result in a release of acidic/basic or uranium-contaminated water to the General Sump and eventually to the AWWT.

7. Optimize a design for obtaining quality data

The pH analysis performed on the received material are verifications of the supplied pH analysis results from the generator. One sample is tested to serve as a confirmation of the previous measurement and provides evidence that no additional harmful material has been added to the waste stream prior to treatment. This verification of pH is completed in Plant 8 at ASL level A. Calibration of the pH screening instruments will follow approved procedures.

The pH measurement taken for the pH Neutralization Verification ensures that the resulting filtrate will achieve the discharge limits on a "first pass" basis. This pH measurement is also completed in Plant 8 at ASL A.

The VOC process check samples are tested at ASL B to ensure accuracy.

The Plant 8 Discharge Verification sample is analyzed in the plant at ASL A for pH and Total Uranium concentration.

DQO Summary Form

Revision: 1
Effective Date: 5/15/95

1.A. Task/Description: CRU #: N/A
Process screening for Plant 8 operations.

1.B. Project Phase: (Put an X in the appropriate selection.)

RI ☐ FS ☐ RD ☐ RA ☐ R/A ☐ OTHER ☒ Specify: Plant 8 process control sampling.

1.C. DQO No.: TS-019 Rev. 1 DQO Reference No.: _____

---

2. Media Characterization: (Put an X in the appropriate selection.)

Air ☐ Biological ☐ Groundwater ☒ Sediment ☐ Soil ☐

Waste ☐ Wastewater ☒ Surface water ☐ Other (specify) Treatment slurry, decon water, etc.

---

3. Data Use with Analytical Support Level (A-E): (Put an X in the appropriate Analytical Support Level selection(s) beside each applicable Data Use.)

Site Characterization
A ☐ B ☐ C ☐ D ☐ E ☐

Risk Assessment
A ☐ B ☐ C ☐ D ☐ E ☐

Evaluation of Alternatives
A ☐ B ☐ C ☐ D ☐ E ☐

Engineering Design
A ☐ B ☐ C ☐ D ☐ E ☐

Monitoring during remediation activities
A ☐ B ☐ C ☐ D ☐ E ☐

Other (Explain) Plant 8 process control
A ☒ B ☒ C ☐ D ☐ E ☐

4.A. Drivers: RA#1 - Removal of Groundwater Under Existing FEMP Buildings; RA#20 - Neutralization of UNH Inventories; HWMU 38 - HF Tank Car; NPDES permits.

4.B. Objective: This sampling ensures that water and slurry materials received into the Plant 8 systems is suitable for treatment by Plant 8. It also ensures that the processes performed in Plant 8 are operating properly and that the discharge limits for Plant 8 are not being violated.

---

5. Site Information (Description): Plant 8 is located north of the Lab building in the process area, south of Plant 2/3. Both the VOC Treatment System and the Waste Water Treatment System are located at Plant 8. The VOC system discharges into the Waste water treatment system and the Waste water treatment system discharges to the AWWT.

DQO Summary Form

Revision: 1
Effective Date: 5/15/95

DQO Number: TS-019 Rev. 1

6.A. Data Types with appropriate Analytical Support Level Equipment Selection and SCQ Reference: (Place an "X" to the right of the appropriate box or boxes selecting the type of analysis or analyses required. Then select the type of equipment to perform the analysis if appropriate. Please include a reference to the SCQ Section.)

1. pH	X	2. Uranium	X	3. BTX	☐
Temperature	☐	Full Radiologic	☐	TPH	☐
Specific Conductance	☐	Metals	☐	Oil/Grease	☐
Dissolved Oxygen	☐	Cyanide	☐		
		Silica	☐		

4. Cations	☐	5. VOA	X	6. Other (specify)
Anions	☐	ABN	☐	Analytes on a Project Specific Basis
TOC	☐	Pesticides	☐	
TCLP	☐	PCB	☐	
CEC	☐			
COD	☐			

*Fluorides will be analyzed to support HF Neutralization

6.B. Equipment Selection and SCQ Reference:

Equipment Selection		Refer to SCQ Section
ASL A	pH, dimple check	SCQ Section: N/A
ASL B	GCMS for VOC	SCQ Section: Appendix G
ASL C		SCQ Section:
ASL D		SCQ Section:
ASL E		SCQ Section:

7.A. Sampling Methods: (Put an X in the appropriate selection.)

Biased ☐ Composite ☐ Environmental ☐ Grab X Grid ☐
Intrusive ☐ Non-Intrusive ☐ Phased ☐ Source ☐
Other (specify): _____

DQO Summary Form

Revision: 1
Effective Date: 5/15/95

DQO Number: TS-019 Rev. 1

7.B. Sample Work Plan Reference: (List the samples required. Reference the work plan or sampling plan guiding the sampling activity, as appropriate.)

Background samples: N/A

7.C. Sample Collection Reference: (Please provide a specific reference to the SCQ Section and subsection guiding sampling collection procedures.)

Sample Collection Reference: SCQ Appendix K

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8. Quality Control Samples: (Place an "X" in the appropriate selection box.)

8.A. Field Quality Control Samples:

Trip Blanks	☐	Container Blanks	☐
Field Blanks	☐	Duplicate Samples	☐
Equipment Rinsate Samples	☐	Split Samples	☐
Preservative Blanks	☐	Performance Evaluation Samples	☐

Other (specify) N/A

8.B. Laboratory Quality Control Samples:

Method Blank	☐	Matrix Duplicate/Replicate	☐
Matrix Spike	☐	Surrogate Spikes	☐

Other (specify) As required.

9. Other: Please provide any other germane information that may impact the data quality or gathering of this particular objective, task or data use.

The results of these samples will determine whether material will be received, processed, and/or released by either of the two Plant 8 treatment systems: the Waste water treatment or the Volatile Organic Compound treatment system.

All samples and screening techniques are guided by procedures. The VOC procedure 08-C-200 specifies the sampling procedure for the VOC system. The waste water system samples are guided by the specific filter procedures 08-C-602, 08-C-608, or 08-C-609. Project specific sampling will follow project specific requirements and methods.