US EPA RECORDS CENTER REGION 5
1000493

Clean Harbors Services, Inc.
11800 S. Stony Island Ave.
Chicago, IL 60617

EPA ID No. ILD000608471

RCRA Part B License
Request for Permit
April 19, 2003

Volume 1: Text/Tables/Figures
Sections A through D

CleanHarbors
ENVIRONMENTAL SERVICES, INC.

11800 South Stony Island Avenue
Chicago, IL 60617
773.646.6202
Fax 773.646.6381

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PERMIT SECTION

Via Overnight Delivery

May 7, 2003

Ms. Joyce L. Munie, P.E.
Illinois Environmental Protection Agency
Bureau of Land – Permit Section
1021 North Grand Avenue East
Springfield, IL 62794-9276

Re: Clean Harbors Services, Inc.
Application for RCRA Part B Permit

Dear Ms. Munie:

Clean Harbors Services, Inc. (CHSI) has a RCRA Part B Permit for hazardous waste management which will expire November 4, 2003. CHSI is reapplying for the RCRA Part B Permit with this submittal. A notice has been sent to the facility mailing list announcing this submission. A copy of the notice and the facility mailing list (paper and diskette) are enclosed.

CHSI notes that the facility at 11800 S. Stony Island Avenue is located within the corporate limits of the City of Chicago which has a population of over 1,000,000. This exempts the CHSI facility from the requirements of 39.2 of the Illinois Environmental Protection Act.

If you have any questions concerning this Part B Permit submittal, please contact me at (773) 646-6202, x233.

Sincerely,

James R. Laubsted
Facility Compliance Manager

TABLE OF CONTENTS

SECTION A - - RCRA PART A APPLICATION
[EPA FORM 8700-23 (01 – 90)]

SECTION B -- FACILITY DESCRIPTION

B-1 General Description B-1
B-1a Nature of Business B-1
B-1a (1) Activities Exempt From RCRA Permitting B-1
(a) Clean Water Act Wastewater Treatment System B-1
(b) Polychlorinated Biphenyl's B-3
(c) Storage and Transfer of Non-Hazardous Waste B-4
(d) Transportation Units/Activities Exempt From RCRA B-4
(e) Hazardous Waste Generator Activities B-5
B-1a (2) Hazardous Waste Activities Regulated Under RCRA B-7
B-1a (3) Detailed Description of RCRA Hazardous Waste Activities B-8
(a) Storage/Transfer in Containers B-8
(b) Storage/Transfer/Treatment in Tanks B-11
(c) Storage and Blending of Hazardous Waste Fuels B-13
(d) Stabilization and Fixation Prior to Offsite Disposal B-13
(e) Listed Waste Treatment System B-14
(f) Treatment of D002 Corrosive Liquid/Solid Mixtures in Containers B-14
(g) Treatment of D002 Corrosive Liquids in Tanks and Containers B-14
(h) Storage and Compaction of Hazardous Wastes in Containers B-15
(i) Treatment of Acid Cyanide Wastes in Containers B-15
(j) Treatment of Organic Peroxides in Containers B-16
(k) Treatment of Hazardous Waste in Tanks through Phase Separation B-16
(l) Storage and Shredding of Hazardous Waste in Cotnainers Including Metalwashing of Residual Metal B-16
(m) Consolidation of Paint and Paint-Related Materials in Containers Using a Compactor B-16
(n) Storage and Treatment of Black Powder Hazardous Waste in Containers B-17
(o) Storage and Treatment of Hazardous Waste in Containers by the Addition of Dry Ice B-17
(p) Storage and Venting of Hazardous Waste Oxygen to the Atmosphere B-17

ABLE OF CONTENTS (continued)

(q) Storage and Disposal of Hazardous Waste in Surface Impoundment's. B-17
B-1b Types of Industry Served B-18
B-2 Topographic Map..... B-18
B-2a General Map Requirements B-18
B-2b Additional Map Requirements for Land Disposal Facilities..... B-19
B-3 Location Requirements B-20
B-3a Seismic Standard B-20
B-3b Floodplain Standard B-20
B-3b (1) Demonstration of Compliance..... B-20
(a) Floodproofing and Flood Protection Measures B-20
(b) Flood Plan B-20
B-3b (2) Waiver for Land Storage and Disposal Facilities B-20
B-3b (3) Plan for Future Compliance with Floodplain Standard B-20
B-3c Other Location Requirements B-20
B-4 Traffic Information B-20
B-4a Onsite Traffic B-20
B-4b Offsite Traffic B-22
B-5 Operating Record B-22
B-6 Solid Waste Management Units.....B-23

SECTION C - WASTE CHARACTERISTICS

-1 Chemical and Physical Analysis C-1
C-1 (i) Activities Exempt From RCRA..... C-1
A. Clean Water Act Wastewater Treatment System C-1
1. Primary Physical and Chemical Treatment C-2
2. Specialized Pretreatment Prior to Primary Treatment C-3
B. Polychlorinated Biphenyls C-4
C. Hazardous Waste Generator Activities..... C-4
C-1(ii) Hazardous Waste Activities Regulated Under RCRA C-6
C-1(iii) Detailed Description of RCRA Hazardous Waste Activities C-8
A. Storage and Treatment of Listed Hazardous Wastes C-8
B. Stabilization and/or Fixation Prior to Offsite Disposal C-8
C. Storage and Transfer of Hazardous Wastes Using Tanks and Containers C-9
D. Storage and Blending of Hazardous Waste Fuels C-9
E. Compacting of Hazardous Waste..... C-9
F. Treatment of D002 Liquid/Solid Mixtures C-10
G. Treatment of D002 Liquids in Tanks and Containers C-10
H. Treatment of Acid-Cyanide Wastes in Containers C-11
I. Treatment of Organic Peroxides in Containers C-11
J. Treatment of Hazardous Waste in Tanks and Containers Using Phase Separation..... C-11
K. Storage and Shredding of Hazardous Wastes/Metalwashing..... C-12

BLE OF CONTENTS (continued)

L. Storage and Treatment of Black Powder in Containers C-12

M. Storage and Treatment of Hazardous Waste in Containers by the Addition of Dry Ice C-13

N. Storage and Venting of RCRA Regulated Oxygen to the Atmosphere C-13

C-1a Containerized Waste C-13
C-1b Waste in Tank Systems C-13
C-1d Landfilled Waste C-14
C-1e Wastes Incinerated and Used in Performance Tests C-14
C-1f Wastes to be Land Treated C-14
C-2 Waste Analysis Plan C-14
C-2A Parameters and Rationale C-15
C-2a(1) Waste Prequalification Procedures C-16
C-2a(2) Conformance Testing C-21
C-2a(3) Process Operation and Compatibility Testing C-22
C-2b Test Methods C-23
C-2c Sampling Methods C-23
C-2d Frequency of Analysis C-24
C-2e Additional Requirements for Wastes Generated Offsite C-24
C-2e(1) Bulk Transport Receiving Procedures C-24
C-2e(2) Container Receiving Procedures C-25
C-2e(3) Lab Pack Waste Receiving Procedures C-25
C-2e(4) General Waste Acceptance Criteria C-26
C-2e(5) Nonconformance C-26
C-2e(6) Rejected Loads C-28
C-2f Additional Requirements for Ignitable, Reactive or Incompatible Wastes C-28
C-2g Waste Analysis Requirements for Land Disposal Restrictions (LDR) C-29
C-2g(1) Waste Testing C-29
C-2g(2) LDR Documentation Requirements C-30
C-3 Quality Assurance C-32

SECTION D - PROCESS INFORMATION

Introduction D-1
D-1 Containers D-1
D-1(I) Drum Container Storage Activities D-1
A. Existing Container Storage Areas D-3
1. Drum Storage Area (Unit G1) D-3
2. Drum Storage Area (Unit R1) D-4
3. Drum Storage Area Expansion (Unit R2) D-4
4. Lab Pack Pour-off Station (Unit F1) D-4
5. Existing Container Management Building (Unit 25) D-5
6. Existing Ignitable Container Management Building (Unit 26) ... D-5
7. Existing Container Handling Dock (Unit 61) D-6
B. Approved/Not Yet Constructed Container Storage Areas D-6
1. Lab Pack Repack & Consolidation Area (Unit U) D-6
2. The Paint and Paint Related Processing Area (Unit 42) D-6
3. Shredder Process Building Area (Unit 24) D-7
4. Metal Wash Pad Area (Unit 68) D-7

TABLE OF CONTENTS (continued)

D-1 (ii) Bulk Solids (Rolloff) Container Management Activities D-7
A. Existing Bulk Solids Container Storage Areas D-8
1. Bulk Container Storage Area (Unit Q1) D-8
2. Bulk Solids Storage Pad (Unit B) D-8
B. Approved/Not Yet Constructed Bulk Solids Storage Areas D-8
D-1(iii) Hazardous Waste Transporter Staging/Storage D-9
A. Existing Area
1. Truck Unloading Area & Bulking Area (Unit Q)..... D-11
2. Truck Loading Dock (Unit V) D-11
3. Truck Staging Area (Unit C) D-11
4. Truck Staging Area (Unit 59) D-11
5. Truck Unloading Platform (Unit 15) D-12
6. Truck Pad (Unit 62) D-12
B. Approved/Not Yet Constructed D-12
1. Truck Loading/Unloading Pad (Unit X) D-12
2. Truck to Truck Transfer Dock (Unit W) D-13
3. Truck Loading/Unloading Pad (Unit 69) D-13
D-1(iv) Other RCRA-Regulated Container Management Activities D-14
A. Existing Activities D-14
1. Mobile Waste Compactor D-14
2. Treatment of D002 Liquid/Solid Mixtures D-14
3. Treatment of D002 Liquids D-15
4. Treatment of Acid Cyanide Wastes D-15
5. Treatment of Organic Peroxides Through Addition of Water..... D-15
6. Phase Separation..... D-16
7. Treatment of Black Powder Wastes..... D-16
8. Treatment of Hazardous Waste Through the Addition of Dry Ice..... D-16
9. Treatment of Oxygen through Venting..... D-16
D-1 (v) RCRA-Exempt Container Management Activities D-17
A. Existing Units D-18
1. CWA Wastewater Treatment System Loading/ Unloading Areas (Units J1, J2, F3 & G3)..... D-18
2. Nonhazardous Rolloff in Process Operation Areas.....D-19
3. Truck Sampling Pad (Unit D) D-19
4. Non-Hazardous Solids Bulking Area (Unit S) D-19
5. Non-Hazardous Roll-off in Process Operation Areas (Unit 60) ...D-19
6. Truck Scale (Unit 14) D-19
7. Hazardous Waste Transfer Facility..... D-19
8. Empty, Non-Hazardous, and On-Site Generated Vehicles.....D-20
B. Approved/Not Yet Constructed D-20
1. Drum Crushing & Compaction Area (Unit T) D-20
2. Nonhazardous Solids Bulking Area (Unit S) D-20
D-1a Containers With Free Liquids D-21
D-1a(1) Description of Containers D-21
D-1a(2) Container Management Practices D-23
D-1a(3) Secondary Containment System Design and Operation D-28
a. Requirement for the Base or Liner to Contain Liquids D-28
b. Containment Systems Drainage D-33
c. Containment System Capacity D-36
d. Control of Run-On D-37

BLE OF CONTENTS (continued)

e. Removal of Liquids from Containment System D-40

D-1b Containers Without Free Liquids D-40

D-1b(1) Test for Free Liquids D-41

D-1b(2) Description of Containers D-41

D-1b(3) Container Management Practices D-41

D-1b(4) Container Storage Area Drainage D-42

D-2 Tank Systems D-42

D-2 (I) RCRA-Regulated Tank Storage/Treatment Activities D-43

A. Existing Tank Systems

1. Fuels Blending Operation (Unit 43) D-45

2. Flammable Liquid Tank Farm (Unit 16) D-46

B. Approved/Not Yet Constructed Tank System D-47

1. Process Building No. 3 Listed Waste Treatment (Unit Z) D-47

2. Listed Waste STORAGE Tanks (Unit Y) D-47

3. Flammable Storage Tank Farm (Unit 22) D-48

D-2(ii) Other RCRA-Regulated Tank Treatment Activities D-49

1. Treatment of D002 Corrosive Liquids D-50

2. Treatment Using Phase Separation Techniques D-50

D-2(iii) Tank Management Systems Exempt from RCRA D-50

A. Existing RCRA-Exempt Tank systems D-50

1. Inorganic Wastewater Treatment System (Units F-N) D-51

2. Waste oil Storage/Treatment (Unit F2) D-55

3. Stormwater System (Unit 47) D-55

B. Authorized/Not Yet Constructed RCRA-Exempt Tank Units D-55

1. Sludge Conditioning Tank (Unit P) D-55

2. Pretreatment Reactors (Inside Unit F) D-56

D-2a Existing Tank Systems D-56

D-2a(1) Assessment of Existing Tank System's Integrity D-56

D-2a(2) External Corrosion Protection D-57

D-2b New Tank Systems D-57

D-2b(1) Assessment of New Tank System's Integrity D-57

D-2b(2) External Corrosion Protection D-57

D-2b(3) Description of Tank System Installation and Testing Plans and Procedures D-58

D-2c Dimensions and Capacity of Each Tank D-58

D-2d Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls D-58

D-2e Diagram of Piping, Instrumentation and Process Flow for Each Tank System D-62

D-2f Containment and Detection of Releases D-63

D-2f (1) Plans and Description of the Design, Construction and Operation of the Secondary Containment System for Each Tank System D-63

(a) Tank Age Determination D-63

(b) Requirements for Secondary Containment and Leak Detection D-64

(c) Requirements for External Liner, Vault, Double-Walled Tank or Equivalent Device D-65

(d) Secondary Containment and Leak Detection Requirements for Ancillary Equipment D-67

D-2f(2) Requirements for Tank systems Until Secondary Containment is Implemented D-68

TABLE OF CONTENTS (continued)

D-2f(3) Variance from Secondary Containment Requirements D-68
D-2g Controls and Practices to Prevent spills and Overflows D-68
D-3 Waste Piles D-71
D-4 Surface Impoundments D-71
D-4a Design D-72
D-4b History D-72
D-4c Site Geology and Hydrogeology D-72
D-4d Process Water Cooling Basins 1 and 2 ..... D-73
D-4e Solids Retention Basin (Northwest Impoundment) D-74
D-4f Stormwater Basin (Southwest Impoundment) D-74
D-4g Closure Notices D-74
D-4g(1) Closure Notification D-74
D-4g(2) Survey Plat D-75
D-4g(3) Post-Closure Notices D-75
D-5 Trail Burns D-76
D-6 Landfills D-76
D-7 Land Treatment D-76
D-10 Miscellaneous Units D-76

SECTION E – GROUNDWATER MONITORING

E-1 Exemption from Groundwater Protection Requirements E-1
E-1c No Migration E-1
E-1c(1) Active/Proposed Hazardous Waste Management Units E-1

SECTION F – PROCEDURES TO PREVENT HAZARDS

F-1 Security F-1
F-1a Security Procedures and Equipment F-1
F-1a(1) 24-hour Surveillance System F-1
F-1a(2) Barrier and Means to Control Entry F-1
F-1a(2) (a) Barrier F-1
F-1a(2) (b) Means to Control Entry F-2
F-1a(3) Warning Signs F-3
F-1b Waiver F-3
F-1b(1) Injury to Intruder F-3
F-1b(2) Violation Caused by Intruder F-3
F-2 Inspection Schedule F-4
F-2a General Inspection Requirements F-5
F-2a(1) Types of Problems F-5
F-2a(2) Frequency of Inspection F-6
F-2b Specific Process Inspection Requirements F-6
F-2b(1) Container Inspection F-6
F-2b(2) Tank System Inspections F-6
F-2b(2) (a) Tank Construction Materials F-7
F-2b(2) (b) Tank Surrounding Area F-7
F-2b(2) (c) Tank Overfilling Control Equipment F-8
F-2b (2) (d) Tank Monitoring Data F-8
F-2b(2) (e) Tank Level of Waste F-8
F-2b(2) (f) Tank Condition Assessment for Unretrofitted Tanks F-9
F-2b(3) Waste Pile Liner Inspection F-9

TABLE OF CONTENTS (continued)

F-2b(4) Waste Pile Inspection F-9
F-2b(5) Surface Impoundment Inspection F-9
F-2b(6) Incinerator Inspection F-9
F-2b(7) Landfill Inspection F-9
F-2b(8) Land treatment Facility Inspection F-9
F-3 Waiver or Documentation of Preparedness and Prevention Requirements F-9
F-3a Equipment Requirements F-9
F-3a(1) Internal Communications F-10
F-3a(2) External Communications F-10
F-3a(3) Emergency Equipment F-10
F-3a(4) Water for Fire Control F-10
F-3b Aisle Space Requirements F-12
F-4 Preventive Procedures, Structures and Equipment F-13
F-4a Unloading Operations F-13
F-4b Run-off F-13
F-4c Water Supplies F-14
F-4d Equipment and Power Failure F-14
F-4e Personnel Protection Equipment F-15
F-5 Prevention of Reaction of Ignitable, Reactive or Incompatible Wastes F-15
F-5a Precautions to Prevent Ignitable or Reaction of ignitable or Reactive Wastes F-15
F-5b General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste F-17
F-5c Management of Ignitable or Reactive Wastes in Containers F-17
F-5d Management of Incompatible Wastes in Containers F-22
F-5e Management of Ignitable or Reactive Wastes in Tank Systems F-23
F-5f Management of Incompatible Wastes in Tank Systems F-24
F-5g Management of Ignitable or Reactive Wastes Placed in Waste Piles F-28
F-5h Management of Incompatible Wastes Placed in Waste Piles F-28
F-51 Management of Ignitable or Reactive Wastes in Surface Impoundments F-28
F-5j Management of Incompatible Wastes Placed in Surface Impoundments F-28
F-5k Management of Ignitable or Reactive Wastes in Landfills F-28
F-5l Management of Incompatible Wastes Placed in Landfills F-28
F-5m Management of Ignitable or Reactive Wastes in Land Treatment Units F-28
F-5n Management of Incompatible Wastes Placed in Land Treatment Units F-28

SECTION G - CONTINGENCY PLAN

G-1 General Information G-1
G-2 Emergency Coordinators G-2
G-3 Implementation G-2
G-4 Emergency Response Procedures G-3

TABLE OF CONTENTS (continued)

G-4a Notification to Federal, State, and Local Officials G-3
G-4b Identification of Hazardous Materials G-6
G-4c Assessment G-6

G-4d Control Procedures G-7
G-4d(1) Fire and /or Explosion G-9
G-4d(2) Release to Air, soil, or Surface Water G-9
G-4d(3) Equipment Failure or Power Outages G-12
G-4e Prevention of Recurrence or Spread of Fires, Explosions or Releases G-12
G-4f Storage and Treatment of Released Material G-12
G-4g Incompatible Waste G-12
G-4h Post Emergency Equipment Maintenance G-13
G-41 Container Spills and Leaks G-13
G-4j Tank Systems Spills and Leaks G-14
G-4j(1) Tank System Spills and Leakage G-14
G-4j(2) Spills and Leaks from Tanks Containing Particular Chlorinated Dioxins, Dibenzofurans, and Phenols G-14
G-4k Waste Pile Spills and Leakage G-15
G-4l Surface Impoundment Spills and Leakage G-15
G-4m Incinerator spills and Leakage G-15
G-4n Landfill Leakage G-15
G-5 Emergency Equipment G-15
G-6 Coordination Agreement Requirements G-16
G-7 Evacuation Plan G-16
G-7a Evacuation Decision G-16
G-7b Evacuation Signal (s) G-16
G-7c Evacuation Routes G-16
G-8 Required Reports G-17

SECTION H - PERSONNEL TRAINING

H-1 Outline of the Training Program H-1
H-1a Job Title/Job Description H-1
H-1b Training Content, Frequency, and Techniques H-2
H-1c Training Director H-2
H-1d Relevence of Training to Job Position H-3
H-1e Training for Emergency Response H-3
H-2 Implementation of Training Program H-4

SECTION I - CLOSURE AND POST-CLOSURE REQUIREMENTS

I-1 Closure Plans I-1
I-1a Closure Performance Standard I-1
I-1b Partial Closure Activities I-1
I-1c Maximum Waste Inventory I-2
I-1d Inventory Removal, Disposal, or Decontamination of Equipment, Structures, and Soils I-2
I-1d(1) Closure of Containers I-3
I-1d(2) Closure of Tank Systems I-4
I-1d(2) (I) General Tank closure Procedures I-4

TABLE OF CONTENTS (continued)

I-1d(2) (ii) Containment Structure Closure Procedures I-5
I-d(3) Closure of Waste Piles I-5
I-d(4) Closure of Surface Impoundments I-5
I-d(5) Closure of Incinerators I-6
I-d(6) Closure of Land Treatment Facilities I-6
I-1e Closure of Disposal Units I-6
I-1f Schedule for Closure I-6
I-1g Extensions of Closure Time I-6
I-2 Post-Closure Plan I-7
I-2a Inspection Plan I-8
I-2a(1) Purpose I-8
I-2a(2) Inspection Routine I-8
I-2a(3) Inspection Activities I-9
I-2b Post-Closure Monitoring Plan I-13
I-2b(1) Post-Closure Groundwater Monitoring I-13
I-2b(2) Monitoring of the Leachate Collection and Removal System and Leak Detection System I-13
I-2c Post-Closure Maintenance Plan I-13
I-2c(1) General Maintenance Activities I-13
I-2c(2) Landfill Maintenance Guidelines I-14
I-2c(2)(a) Regular Maintenance I-14
I-2c(2)(b) Vegetative cover/Topsoil/Unclassified Soil Layer Repairs I-14
I-2c(2)(c) Geosynthetic Material Repairs I-16
I-2c(2)(d) Leachate Collection and Removal System/Leak Detection System I-17
I-2d Continued Land Treatment I-17
I-3 Notice in Deed and Certification I-17
Closure Cost Estimate I-18
Financial Assurance Mechanism for Closure I-18
I-5a Closure Trust Fund I-18
I-5b Surety Bond I-18
I-5c Closure Letter of Credit I-18
I-5d Closure Insurance I-18
I-5e Financial Test and Corporate Guarantee for Closure I-18
I-5f Use of Multiple Financial Mechanisms I-18
I-5g Use of Multiple Financial Mechanism for Multiple Facilities I-18
I-6 Post closure Cost Estimate I-18
I-7 Financial Assurance Mechanism for Post Closure I-18
I-8 Liability Requirements I-19
I-8a Coverage for Sudden Accidental Occurrences I-19
I-8b Coverage for Non-sudden Accidental Occurrence I-19
I-8c Request for Variance I-19
I-9a Use of State-Required Mechanism I-19
I-9b State Assumption of Responsibility I-19

SECTION J - OTHER FEDERAL LAWS

AA Air Emission Standards for Process Vents
AA.1 Identification of Units
AA.2 Exemptions

TABLE OF CONTENTS (continued)

Air Emissions Standards for Equipment Leaks
- BB.1 Determination of Applicability
- BB.2
- BB.3
- BB.4 Service
- BB.5 Compressors
- BB.6 in Gas-Vapor Service
- BB.7 Systems
- BB.8 Lines
- BB.9 Light Liquid Service
- BB.10 Pumps, Valves, Pressure Relief Devices and Other Connectors
- BB.11 Delay of Repair
- BB.12

CC Air Emission Standards for Tanks, Surface Impoundments and Containers
- CC.1 Exemptions from Subpart CC
- CC.2 Exemptions from 724.984 through 724.987
- CC.3 Standards for Tanks: 724.984
- CC.4 Standards for Surface Impoundments: 724.985
- CC.5 Standards for Containers: 724.986
- CC.6 Waste Transfer: 724.984(j), 724.985(e), 724.986(d)(2)
- CC.7 Repairs: 724.984(k), 724.985(f), 724.986(c)(4)(C), 724.986(d)(4)(C)
- CC.8 Standards for Closed-vent Systems and Control Devices: 724.987
- CC.9 Inspection and Monitoring Requirements: 724.988
- CC.10 Record Keeping Requirements: 724.989
- CC.11 Reporting Requirements: 724.990

SECTION K - PART B CERTIFICATION

K-1 Facility Certification K-1
K-2 Engineering Certification K-1
K-3 Prior Conduct Certification K-1

SECTION L - CONTINUING RELEASES AT PERMITTED FACILITIES

L-1 Solid Waste Management Units L-1
- L-1a Characterize the Solid Waste Management Units L-1
  - L-1a(a) Existing CHCI Property L-1
- L-1b No Solid Waste Management Units L-1

L-2 Releases
- L-2a(I) Characterize Releases L-2
- L-2a(ii) Characterize Releases – CWMCSI Portion of Facility L-2

SECTION M - RESEARCH, DEVELOPMENT, AND DEMONSTRATION PERMITS

SECTION N - RCRA PART B CERTIFICATION

TABLE OF CONTENTS (continued)

SECTION 0 - PRIOR CONDUCT CERTIFICATIONS AND FACILITY COMPLIANCE HISTORY

O-1 Ownership and Corporate Officers O-1
O-2 Prior Conduct Certification Forms O-1
O-3 Facility Compliance History O-1

LIST OF TABLES

	TITLE	TABLE OF PAGE
B.-1	Map Requirements	1
C-1	Primary Treatment Using Chemical Precipitation, Coagulation, and Filtration	1
C-1a.	Primary Treatment of Non-Hazardous Wastes using Chemical Precipitation, Coagulation, and Filtration	2
C-2.	Pretreatment Using Neutralization	3
C-2a.	Pretreatment of Non-Hazardous Wastes Using Neutralization	4
C-3.	Pretreatment Using Chemical Oxidation	5
C-3a.	Pretreatment of Non-Hazardous Wastes	6
C-4.	Pretreatment Using Chemical Reduction	7
C-4a.	Pretreatment of Non-Hazardous Wastes Using Chemical Reduction	8
C-5.	Pretreatment By Other Methods	9
C-5a.	Pretreatment of Non-Hazardous Wastes By Other Methods	12
C-6.	Pretreatment Using Oil Recovery	13
C-7.	Listed Waste Treatment Process	14
C-8.	Stabilization/Fixation Prior to Offsite Disposal	20
C-9.	Wastes for Storage and Transfer	23
C-10.	Hazardous Waste Fuel Blending	75
C-11.	Hazardous Characteristics of Wastes in Tank Systems	98
C-12.	Pre-acceptance and Conformance Testing Parameters	99
C-13.	List of Supplemental Analyses	103
C-14.	Analytical Methods	106
C-15.	Sampling Methods	115
C-16.	Hazardous Waste Shredding/Metal Washing	117
D-1.	Container Management Areas	1
D-2.	Tank Management Areas	6
D-3.	Physical Data for Existing Tanks	8
D-4.	Operating Data for Existing Tanks	11
D-5.	Physical Data for RCRA-Regulated Tanks	14
D-6.	Operating Data for Proposed Tanks	17
D-7.	General Container Information	21
D-8.	List of Reagents Used in Waste Treatment Processes	23
D-9.	Container Handling Activities and Equipment	24

[illegible]. Inspection Schedule. 29
F-2. Facility Inspection -- Key Inspection Elements 34
F-3. List of Vehicle Loading/Staging Areas. 36
F-4. Protective Equipment Guide 8

G-1. List of Emergency Coordinators. 1
G-2. Emergency Equipment Capabilities 2
G-3. List of Coordination Agreements 5

H-1. Training Program Outline 1
H-2. Training Topics 5

I-1. Closure Units/Maximum Capacity. 1
I-2. Closure Timeline 7
I-3. Frequency of Inspections and Other
Post-Closure Activities 8
I-4. Estimated Annual Soil Losses from Vegetated
Final Cap 9

LIST OF FIGURES

[illegible]. Daily Inspection Report. 1
[illegible]. Monthly Inspection Report. 5
F-3. Annual Inspection Report 6

I.2-1 Cap Construction Boundaries. 1
I.2-2 Cap Configuration 2

LIST OF APPENDICES

B-1. Legal Description and Survey, prepared by National Survey Services. Inc.
B-2. City of Chicago Zoning Ordinance, Page Nos. 227B, 228B, 234B and 235B.
Amended January 1, 1971.
B-3. Seismic Survey
B-4. Onsite Roadway Analysis
B-5. Vicinity/Access Maps
B-6 Stony Island Avenue Construction Upgrade
B-7. Stony Island Avenue Construction Details

LIST OF APPENDICES (continued)

C-1. Typical Waste Analyses
C-2. Treatability Study Data for Oxidation or Organic Compounds
C-3. Treatability of Organic Compounds Using Carbon Adsorption
C-4. Treatability Study Data for Stabilization/Fixation of Wastes
C-5. Generator Waste Material Profile Sheet (GWMPS Form)
C-6. Container Compatibility Procedures (Revised 09/17/93)
C-7 Laboratory Equipment
C-8. Land Disposal Restriction Forms (Clean Harbors Forms LDR-1 and GC-1)

D-1. Process Descriptions for Existing and Proposed Activities at Clean Harbors of Chicago, Inc.
D-2. Container Management Guidelines
D-3. Manufacturer's Literature for Mobile Waste Compactor
D-4. Standard Operating Procedures for Acid Cyanide Treatment
D-5. Standard Operating Procedures for Organic Peroxide Treatment
D-6. Sample Labels/Markings
D-7. Professional Engineer (PE) Certification of the Construction of the Existing and Approved/Not Yet Constructed Container Storage Areas
D-8. Professional Engineer (PE) Certification of the Construction of the Proposed/ Modified Container Storage Areas
D-9. Subsurface Investigation Report, O'Brien and Associates
D-10. Technical Specification for Coating Systems
D-11. Pegasus Fuel Blending System Operations Manual
D-12. Professional Engineer (PE) Assessment and Certification of the Design of Proposed/Modified Tank Storage System
D-13. Construction Details for Existing Waste Receiving Tanks
D-14. Construction Details for Existing Bulk Storage Tanks
D-15. Chem Clear Dwg. No. M-0012-E: Design Details, Existing Chemical Treatment Unit
D-16. Chem clear Dwg. No. M-0010-D: Design Details, Existing Clarifier Internal Assembly
D-17. Design Details, Existing Secondary Treatment Tanks, Sheet Nos. 1 through 4
D-18. R.A. Morley Co. Dwg. No. 4068-C: Design Details, Existing Sludge Sump
D-19. Chem Clear Dwg. No. 4068-C: Design Details, Existing Sludge Conditioning Tank

D-20. Clean Harbors Dwg. No. 2916-M-01: Existing Reactor Vessel Details
D-21. Chem Clear Dwg. No. 4062-C: Modification in Effluent Holding Tank
D-22. Design Details, Waste Storage Tank
D-23. Chem Clear Dwg. No. 4024-D: Tank Details Oily Waste Water Pretreatment
D-24. Professional Engineer (PE) Certification of Assessment of the Integrity of the Existing RCRA-Exempt Tank Systems
D-25. Professional Engineer (PE) Certification of Assessment of the Integrity of the Approved /Not Yet Constructed Tank Systems
D-26. Professional Engineer (PE) Certification of Assessment of the Integrity of the Proposed/Modified Tank Containment System
D-27. Professional Engineer (PE) Assessment and Certification of the Design of Pegasus Tank processing System

LIST OF APPENDICIES (continued)

D-31. Surface Impoundment Closure Certification
D-32. IEPA Closure Certification Approval
D-33. Survey Plat
D-34. Surface Impoundment Post-Closure Notice
D-35. Manufacturer's Literature; ENPAC Corporation "Poly-Spill pallet 3000" Self-Contained Pallets
D-36. Engineering Drawings and Design Specifications for Bulk Storage Tank Farm (Unit 16)
D-37 Engineering Certifications for Dock Extension (Unit Q) and Fire Suppression System (Unit Q1)
D-38 Compressed Gas SOPs for Venting and Downloading, Engineering Certifications
D-39 Engineering Certifications for Unit 61 Pumping Station
D-40 Unit 25 Lab Pack Pour-off Emission Calculations, Engineering Certifications
D-41 Building 42 Subpart BB/CC, Emission Calculations, Engineering Certification, Potential Pathways to Humans or Environmental Receptors
D-42 Shredding System Engineering Calculations (Units 22, 24, 68, 69)
D-43 Shredder/Hydropulpar Operations Manual
D-44 Shredding System Subpart BB/CC, Emission Calculations, Potential Pathways to Humans or Environmental Receptors
D-45 Engineering Certifications Units 16 and 25
D-46 Engineering Certifications Units B and C
D-47 Engineering Certification Unit 26
D-48 Engineering Certifications Units 43 and 60
D-49 Engineering Certifications Units 13, 15, 59, 61 and 62
D-50 Manufacturer Information Concerning Stacking of Non-Metallic Containers
D-51 Demonstration of Stacking Height and Pile Arrangement Meeting NFPA 30 Requirements
D-52 Compressed Gas Cylinder Program and Guidelines
D-53 Engineering Assessment for modified Building 25 and Truck Pad
D-54 Engineering Assessment for Unit F1, Unit Q, Unit V and Unit R2 (new portion)
D-55 Internal Tank Inspection Reports for Existing Tanks
D-56 Containment System Calculations for Unit Q and Unit X
D-57 Evaluation Data Sheets for Lab Pack Pour-off Hood Ventilation
D-58 Unit F-1 Drawing
D-59 Tank Thickness Testing and Corrosion Rates
D-60 Lamp Crushing Machine
D-61 SOP for the Addition of Dry Ice to Roll-offs/Intermodals
D-62 SOP for the Wetting of Black Powder

E-1. Borings Logs and Groundwater Monitoring Well Construction Summaries
E-2. Groundwater Assessment Program, Fourth Quarter 1991 Report
E-2A. Groundwater Elevation Data
E-3. Historical Data By Sampling Location
E-4. WMI Manual for Groundwater Sampling [Not Included]
E-5. Laboratory Explanation of Pesticide and Herbicide Detection in April 1987 Event
E-6. Groundwater Assessment Report, Golder and Associates, 1987 [Not Included]
E-7. Groundwater Monitoring Enhancements Work Plan Report

F-1. Confined Space Entry Procedures
F-2. 25-Year, 24-Hour Rainfall Chart, excerpted from the US Department of Commerce Frequency Atlas of the United States
F-3. Fire Control Analysis, prepared by Gage Babcock & Associates, Inc. for Clean Harbors of Chicago, Inc.
F-4. Professional Fire Protection Engineer Certification of Foam Fire Protection System Upgrade
F-5. Professional Engineer Assessment and Certification of the Design of Railcar Containment Basin

LIST OF APPENDICES (CONTINUED)

F-6. Secondary Containment Calculations for Loading/Unloading Areas
F-7. Personnel Protective Equipment Program
F-8. Equipment and Procedures for Transfer of Flammable Liquids
F-9. Ultrasonic Tank Testing Procedures and Qualifications
F-10 Remedial Work Order and Reinspection Report

G-1. Site Plan Existing, Approved, Modified, and Proposed Facilities & Operations, CHCI Dwg. No. 4204B, Sheets 1 through 3
G-2. Air Emission Study, prepared by Carlson Environmental, Inc. for Clean Harbors of Chicago, Inc.
G-3. Trigger Levels for Notification of Local Emergency Response Personnel
G-4. Anticipated Hazards at Clean Harbors Services, Inc.
G-5. Emergency & Safety Equipment Location Plan, CHCI Dwg. No. 4221, Sheets 1 through 3
G-6. Documentation of Emergency Coordination Agreements
G-7. Evacuation Plan, CHCI Dwg. No. 4220, Sheets 1 through 3
G-8 Products of Incomplete Combustion

H-1. Job Descriptions/Job Titles
H-2. Professional Resumes
H-3. CHSI Training Documentation Form
H-4. CHSI Personnel Training Summary, as of April 19, 2003

I-1. Survey Plat
I-2. Post-Closure Notice
I-3. Closure Cost Calculations
I-4. Closure Financial Assurance Mechanism
I-5. Post-Closure Cost Estimate
I-6. Post-Closure Financial Assurance Mechanism
I-7. Hazardous Waste Facility Certificate of Liability Insurance

J-1. Existing CHSI Air Pollution Control permits
J-2. Existing CHSI Waster Pollution Control Permits

K-1. Facility Certification
K-2. Certification by Professional Engineer

L-1. CHSI Operating Permit
L-2. Solid Waste Management Units and Past Releases at CWMCSI
L-3. CHSI Release Reports

O-1. Clean Harbors, Inc. SEC 10K Forms
O-2. Prior Conduct Certification Forms
O-3. Description of Violations of Federal, State or Local Laws, Regulations, or Ordinances

LIST OF APPENDICES (CONTINUED)

BB-1 Appendix A
BB-2 Appendix C
BB-3 Appendix D
BB-4 Appendix E
BB-5 Appendix F
BB-6 Table Nos. 1.1, 3.1, 5.1, 5.2

CC-1 Closed Vent and Carbon Adsorption Systems
CC-2 Tank Repairs
CC-3 Appendix B

LIST OF DRAWINGS

CHCI	Title	Issue
4200	Site Location & Surrounding Land Use	B
4201	Floodplain & Site Plan	E
4202	Site Plan & Topography – Entire Property	E
CHSI4203, 1 of 3	Site Plan Existing Facilities	A
4203, 3 of 3	Site Plan Existing Facilities	A
4204B, 1of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	B (Revision Note 0)
4204B, 2of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	D (Revision Note 1)
4204B, 3 of 3	Site Plan – Existing, Approved & Modified	A
4204C	Drainage and Containment Control	B
4205, 1 of 2	Process Flow, Piping and Instrumentation Diagram – Existing Operations	C
4205, 2 of 2	Process Flow, Piping and Instrumentation Diagram – Existing Operations	D
4206	Piping and Instrumentation Diagram – Air Pollution Control Systems for Existing Operations	C
4207, 1 of 5	Process Flow, Piping and Instrumentation Diagram – Approved Operations	C
4207, 2 of 5	Process Flow, Piping and Instrumentation Diagram – Approved Operations	D
4207, 3 of 5	Process Flow, Piping and Instrumentation Diagram – Modified Fuels Blending Operations	H (Revision Note 1)
4207, 4 of 5	Process Flow, Piping and Instrumentation Diagram – Modified Fuels Blending Operations	E (Revision Note 3)
4207, 5 of 5	Process Flow, Piping and Instrumentation Diagram – Tank Farm Operation	C (Revision Note 1)
4208	Equipment Layout Existing Facilities Activities	E
4209, 1 of 2	Existing Drum Storage Layout – Building 2,	B
4209, 2 of 2	Existing Drum Storage Layout – Building 2,	C
4210, 1 of 3	Existing, Approved and Proposed Container Management Area Layout & Details	D
4210, 2 of 3	Proposed Container Management Area Layout-Building 26	D (Revision Note 0)

LIST OF DRAWINGS (CONTINUED)

CHCI	Title	Issue
4211	Approved Lab Pack Repack and Consolidation Area Details	D
4212	Approved Drum Crushing and Compacting Operation Details	C
4213 1 of 3	Equipment Layout – Approved Operations	D
4213 2 of 3	Equipment Layout – Proposed Fuels Blending Operation	G (Revision Note 0)
4213 3 of 3	Equipment Layout – Approved Operations	B
4214	Existing Tank Farm Details	A
4215	Modified Ignitable Storage Tank Farm Details	F
4216	Approved Listed Waste Storage/Transfer Tank Farm Details	E
4217 1 of 3	Foundation Plan, Sections, & Details for Rail Car unloading Area	B (Revision Note 1)
4217 2 of 3	Superstructure for Rail Car Unloading Area - Plans and Sections	B (Revision Note 0)
4217 3 of 3	Superstructure for Rail Car Unloading Area - Sections	B
4218	Approved Bulk solids Storage Pad & Proposed Truck Staging Area Details	F (Revision Note 0)
4219	Proposed Sludge Conditioning Tank Details	D
4220 1 of 3	Emergency Evacuation Plan	D
4220 2 of 3	Emergency Evacuation Plan	B (Revision Note 2)
4220 3 of 3	Emergency Evacuation Plan	B
4220A 1 of 3	Emergency Evacuation Plan	A
4220A 2 of 3	Emergency Evacuation Plan	A
4220A 3 of 3	Emergency Evacuation Plan	A
4221 1 of 3	Emergency & Safety Equipment Location Plan	H
4221 2 of 3	Emergency & Safety Equipment Location Plan	H
4221 3 of 3	Emergency & Safety Equipment Location Plan	C
4222 1 of 3	Chemical Storage Plan	D
4222 2 of 3	Chemical Storage Plan	E
4222 3 of 3	Chemical Storage Plan	B
4223	Wind Rose	A
4228	Approved Lab pack Repack and Consolidation Area Elevations	C
4229	Process Building 3 Plan, Sections, Details	C
4230	Approved Process Building 3 Elevations	C
4231	Reactor Vessel Installation and Secondary Containment Plan and Details	C
4234	Truck Loading Dock & Truck Sampling Pad Details	E
4235	Control Panel Face layout Drum Processing	C
4236	Control Panel Face Layout Waste Processing	C
4237	Drum Processing System Schematic	C
4238	Enclosure Vacuum, Fire Prevention and Suppression	C
4239	Drum Movement Isometric	C
4240	Simplified Process Flow and Material Balance	C
4241	Waste Liquid Piping Schematic	C
4244	Proposed Truck to Truck Transfer Dock	C
4245	Proposed Container Handling Dock	C (Revision Note 2)

LIST OF DRAWINGS (CONTINUED)

CHCI	Title	Issue
4246	Proposed Truck Pad	D (Revision Note 0)
4247	Proposed Tank Truck Staging Area Details	B (Revision Note 0)
4248	Truck unloading Platform	2
4249 1 of 2	Site Traffic Plan	A (Revision Note 0)
4249 2 of 2	Site Traffic Plan	B (Revision Note 1)
4250	Tank Farm/Equipment Layout	C
4251	Proposed Railcar Unloading Area Details	B (Revision Note 0)
4252	Preliminary Piping Arrangement Flammable Storage Tank Farm	B
4252A	Ultrasonic Test Point Locations for Tank Farm Unit #16	A
4253	Equipment Pads and Pedestals Layout - Flammable Storage Tank Farm	A
4254 1 of 2	Site Plan – RCRA Waste Transporter Storage Areas	A
4254 2 of 2	Site Plan – RCRA Waste Transporter Storage Areas	A
4255 1 of 3	Pump House – Plan and Elevations	C (Revision Note 0)
4255 2 of 3	Pump House – Roof Framing Plan and Sections	C (Revision Note 0)
4255 3 of 3	Pump House – Fire Protection Plan and Section	A (Revision Note 0)
4257	Concrete Loading Dock – Container Mgt. Area	B
4258	Equipment and Piping Arrangement – Fuel BL. SYS.	0
4259	Process Flow, P & I – Fuels Blending System	2
4271	TF Nameplate & Legend Plate (5404-K-02)	1
4271	TF PLC Control Panel (5404-K-03)	0
4271	TF Annunciator Control Panel (5404-K-28)	0
4271	TF Annunciator Control Panel (5404-K-31)	0
4272	Drum Pumping Container Dock	A
4273	Process Piping – Between Building 43 and TF	0
4274	Roll-Off Storage Pad & Details	A
CHSI4280	Partial Site Plan Proposed Paint Container Crusher	B
CHSI4281	Equipment Layour Proposed Container Crusher	A
CHSI4282	Container Management Layout Building #25	A
CHSI4283	Truck Loading Dock Plan & Sections @ BLDG 25	A
CHSI4285	Block Flow Diagram for Shredding Process	B
CHSI4286	Proposed P&I Diagram for Shredding Process	D
CHSI4287	Shredding Process Equipment Layout	G
CHSI4288	Elevations of Shredding Process Building #1	B
CHSI4289	Shredding Process Area – Concrete Sections	A
CHSI4290	Proposed Metal Wash	A
CHSI4291	Proposed Tank Farm – Unit 22	A
CHSI4292	Tanker/Roll-Off Pad – Unit 69	0
CHSI4293	Process Piping Between Unit 22 & Unit 16	B
CHSI4294	Blended Liquid Storage Tanks T-415 & T-416	A
CHSI4296	Metal Wash Solvent Storage Tank T-418	A
CHSI4295	Diluent Waste Storage Tank T-417 – Vessel Layout	A
CHSI4297B	Metal Wash Tank 424 – Vessel Layout	A
CHSI4298B	Metal Wash Rinse Tank 427 – Vessel Layout	A
4306	FB5 Dumping Fire System	A
4630-S-05	Lab Pack Pour-Off Hood	A
6617-S-01	Canopy Roof over Existing Concrete Loading Dock	

LIST OF DRAWINGS (CONTINUED)

Direct Design	Title	Issue
A1	Containers Outdoor Storage Area Phase II - Foundation Detail	N/A
A2	Containers Outdoor Storage Area Phase I - Building Elevations	N/A
A3	Containers Outdoor Storage Area Phase I - Foundation/Floor Plan	N/A
A4	Containers Outdoor Storage Area Phase I - Foundation Details	N/A
A5	Containers Outdoor Storage Area Phase II - Foundation/Floor Plan	N/A
A6	Containers Outdoor Storage Area Phase II - Building Elevations	N/A

SSI SHREDDING SYSTEMS

99-214A-01	Preliminary Tower Foundation	B

Black Clawson

22375910-1	Assembly, Hydropulpar	3
22375910-2	Assembly, Hydropulpar	3
[illegible]11838	Assembly, Double Valve Junk Chamber	5

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For EPA Regional Use Only

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Month Year

EPA

United States Environmental Protection Agency

Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. Facility's EPA ID Number ***(Mark 'X' in the appropriate box)***

[ ] **A. First Part A Submission**

[X] **B. Revised Part A Submission (Amendment #** 2

C. Facility's EPA ID Number

ILD000608471

D. Secondary ID Number ***(If applicable)***

II. Name of Facility

CLEAN HARBORS SERVICES INC.

III. Facility Location ***(Physical address not P.O. Box or Route Number)***

A. Street

11800 SOUTH STONY ISLAND AVENUE

Street ***(Continued)***

City or Town

CHICAGO

State IL

Zip Code 60617-

County Code *(If known)*

County Name COOK

B. Land Type (Enter Code) S

C. Geographic Location

LATITUDE (Degrees, minutes, & seconds) 41 40 54

LONGITUDE (Degrees, minutes & seconds) 087 34 046

D. Facility Existence Date

Month Day Year 07 29 1980

IV. Facility Mailing Address

Street or P.O. Box

11800 SOUTH STONY ISLAND AVE

City or Town

CHICAGO

State IL

Zip Code 60617

V. Facility Contact ***(Person to be contacted regarding waste activities at facility)***

Name ***(last)*** LAUBSTED

(First) JAMES

Job Title COMPLIANCE MGR

Phone Number ***(Area Code and Number)*** 773-646 6202

VI. Facility Contact Address ***(See Instructions)***

A. Contact Address

Location [X] Mailing [X] Other [ ]

B. Street or P.O. Box

City or Town

State

Zip Code -

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EPA ID Number ***(Enter from page 1)*** I L D 0 0 0 6 0 8 4 7 1

Secondary ID Number ***(Enter from page 1)***

XII. Process Codes and Design

EXAMPLE FOR COMPLETING ITEM XII (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons

Line Number	Process Code	B. Process Design Capacity 1. Amount *(Specify)*	2. Unit of Measure *(Enter code)*	C. Process Total Number Of Units	For Official Use Only
x 1	S 0 2	5 3 3 . 7 8 8	G	0 0 1	
1	S 0 1	164,253 (2969x55-Gal Equivalent 2 X 64 cu.ft.)	G	2 9 7 1	
2	S 0 1	360 (12 x 30 Cubic yards equivalent)	Y	0 1 2	
3	S 0 1	268,800 (TRANSPORTATION VEHICLES)	U	0 3 1	
4	S 0 2	3 0 6 , 3 5 6	G	0 3 7	
5	D 8 3	2 , 0 0 0 , 0 0 0	G	0 0 4	
6	T 0 1	A 2 0 0, 0 0 0	U	0 0 1	
7		.			
8		.			
9		.			
10		.			
11		.			
12		.			
13		.			

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (I.e., D99, S99, T04 and X99) in item XIII.

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number *(Enter #s in seq w/XII)*	Process Code	B. PROCESS DESIGN CAPACITY 1. Amount *(Specify)*	2. Unit of Measure *(Enter code)*	C. Process Total Number Of Units	D. Description of Process
X 1	T 0 4	.			
0 7	T 0 4	1 2 0 0 0	U	0 0 1	T-04-A Treatment of D002 liquid/solid mixtures in containers by removal of liquid
0 8	T 0 4	3 0 0 0	U	0 0 1	T-04-B Compaction of hazardous waste solids in containers
0 9	T 0 4	5 5 0 0 0	U	0 0 1	T04-C Hazardous waste fuel blending
1 0	T 0 4	6 0 0	U	0 1 0	T-04-D Stabilization/fixation of hazardous waste in rolloff containers,

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EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
I L D 0 0 0 6 0 8 4 7 1	

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - ***Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.***

B. ESTIMATED ANNUAL QUANITITY - ***For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.***

C. UNIT OF MEASURE - ***For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:***

ENGLIS UNIT OF MEASURE	*CODE*	*METRIC UNIT OF MEASURE*	*CODE*
POUNDS	*P*	*KILOGRAMS*	*K*
TONS	*T*	*METRIC TONS*	*M*

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A. select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat and /or dispose of all the non-listed hazardous wasted that prossess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1 ***Enter the first two as described above.***
2 ***Enter "000" in the extreme right box of item XIV-D(1).***
3 ***Use additional sheet, enter line number from previous sheet, and enter additional code(s) in item XIV-E.***

2. PROCESS DESCRIPTION; If a code is not listed for a process that will be used, describe the process in the space provided on the form (D(2).

NOTE; HAZARDOUS WASTED DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous ***wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:***

1 ***Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.***

2 ***In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.***

3 ***Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.***

EXAMPLE FOR COMPLETING ITEM XIV (shown in line number X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
X 1	K 0 5 4	900	P	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

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I L D 0 0 0 6 0 8 4 7 1

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D001	15,000	T	S01 S02 T04	AB CE FG HI JK TO 1A X9 9A B
2	D002	5,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9B
3	D003	5,000	T	S01 S02 T04	AB CE FG HI J TO 1A X9 9B C
4	D004	5,000	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9A B
5	D005	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9A BC
6	D006	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9A BC
7	D007	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9A B
8	D008	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9A BC
9	D009	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9B C
10	D010	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9B
11	D011	250	T	S01 S02 T04	AB CD EF GH J TO 1A X9 9B
12	D012	250	T	S01 S02 T04	AB CE FG HJ X9 9B
13	D013	250	T	S01 S02 T04	AB CE FG HJ X9 9B
14	D014	250	T	S01 S02 T04	AB CE FG HJ X9 9B
15	D015	250	T	S01 S02 T04	AB CE FG HJ X9 9B
16	D016	250	T	S01 S02 T04	AB CE FG HJ X9 9B
17	D017	250	T	S01 S02 T04	AB CE FG HJ X9 9B
18	D018	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
19	D019	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
20	D020	15,000	T	S01 S02 T04	AB CE FG HJ X9 9A B
21	D021	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
22	D022	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
23	D023	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
24	D024	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
25	D025	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
26	D026	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
27	D027	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
28	D028	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
29	D029	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
30	D030	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
31	D031	15,000	T	S01 S02 T04	AB CE FG HJ X9 9A B
32	D032	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
33	D033	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
34	D034	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B
35	D035	15,000	T	S01 S02 T04	AB CE FG HJ TO 1A X9 9A B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)* | **Secondary ID Number** *(Enter from page 1)*

I	L	D	0	0	0	6	0	8	4	7	1

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number		A. EPA HAZARDOUS WASTE NO. (Enter Code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									(2) PROCESS DESCRIPTION (If a code is not entered in D(1))									
	1	D	0	3	6	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9A	B
	2	D	0	3	7	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9A	B
	3	D	0	3	8	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9A	B
	4	D	0	3	9	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9A	B
	5	D	0	4	0	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9A	B
	6	D	0	4	1	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
	7	D	0	4	2	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
	8	D	0	4	3	15,000	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9A	B
	9	F	0	0	1	7,500	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
1	0	F	0	0	2	7,500	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
1	1	F	0	0	3	7,500	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
1	2	F	0	0	4	7,500	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
1	3	F	0	0	5	7,500	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ		TO	1A	X9	9B	
1	4	F	0	0	6	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
1	5	F	0	0	7	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
1	6	F	0	0	8	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
1	7	F	0	0	9	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
1	8	F	0	1	0	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
1	9	F	0	1	1	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
2	0	F	0	1	2	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
2	1	F	0	1	9	1,000	T	S	0	1	S	0	2	T	0	4	AB	CD	EF	GH	J	TO	1A	X9	9B	
2	2	F	0	2	0	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
2	3	F	0	2	1	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
2	4	F	0	2	2	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
2	5	F	0	2	3	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
2	6	F	0	2	4	250	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J				X9	9B	
2	7	F	0	2	5	15,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J				X9	9B	
2	8	F	0	2	6	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
2	9	F	0	2	7	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
3	0	F	0	2	8	1,000	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J						
3	1	F	0	3	2	250	T	S	0	1	S	0	2	T	0	4	AB	EF	GH	J				X9	9B	
3	2	F	0	3	4	250	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ				X9	9B	
3	3	F	0	3	5	250	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ				X9	9B	
3	4	F	0	3	7	250	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ				X9	9B	
3	5	F	0	3	8	250	T	S	0	1	S	0	2	T	0	4	AB	CE	FG	HJ				X9	9B	

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
I L D 0 0 0 6 0 8 4 7 1	

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	K 0 9 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	K 0 9 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	K 0 9 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	K 0 9 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	K 0 9 8	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	K 0 9 9	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	K 1 0 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ TO 1A X9 9B
8	K 1 0 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	K 1 0 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	K 1 0 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	K 1 0 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	K 1 0 5	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	K 1 0 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	K 1 0 7	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	K 1 0 8	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	K 1 0 9	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	K 1 1 0	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	K 1 1 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	K 1 1 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	K 1 1 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	K 1 1 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	K 1 1 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	K 1 1 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	K 1 1 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	K 1 1 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	K 1 2 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	K 1 2 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	K 1 2 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	K 1 2 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	K 1 3 1	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	K 1 3 2	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	K 1 3 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	K 1 4 0	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	K 1 4 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	K 1 4 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)* I L D 0 0 0 6 0 8 4 7 1

Secondary ID Number *(Enter from page 1)*

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	K 1 4 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	K 1 4 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	K 1 4 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	K 1 4 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	K 1 4 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	K 1 4 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	K 1 5 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	K 1 5 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	K 1 5 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	K 1 5 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	K 1 5 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	K 1 5 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	K 1 6 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	K 1 6 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	K 1 6 9	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	K 1 7 0	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	K 1 7 1	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	K 1 7 2	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	K 1 7 4	15,000	T	S 0 1 S 0 2 T 0 4	AB EF GH J X9 9B
20	K 1 7 5	15,000	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	K 1 7 6	15,000	T	S O 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	K 1 7 7	15,000	T	S O 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	K 1 7 8	15,000	T	S O 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	P 0 0 1	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	P 0 0 2	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	P 0 0 3	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	P 0 0 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	P 0 0 5	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	P 0 0 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	P 0 0 7	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	P 0 0 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	P 0 0 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	P 0 1 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	P 0 1 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	P 0 1 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)* | **Secondary ID Number** *(Enter from page 1)*

I L D 0 0 0 6 0 8 4 7 1

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	P013	250	T	S01 S02 T04	AB CE FG HJ X9 9B
2	P014	250	T	S01 S02 T04	AB CE FG HJ X9 9B
3	P015	250	T	S01 S02 T04	AB CE FG HJ X9 9B
4	P016	250	T	S01 S02 T04	AB CE FG HJ X9 9B
5	P017	250	T	S01 S02 T01	AB CE FG HJ X9 9B
6	P018	250	T	S01 S02 T01	AB CE FG HJ X9 9B
7	P020	250	T	S01 S02 T04	AB CE FG HJ X9 9B
8	P021	250	T	S01 S02 T04	AB CE FG HJ X9 9B
9	P022	250	T	S01 S02 T04	AB CE FG HJ X9 9B
10	P023	250	T	S01 S02 T04	AB CE FG HJ X9 9B
11	P024	250	T	S01 S02 T04	AB CE FG HJ X9 9B
12	P026	250	T	S01 S02 T04	AB CE FG HJ X9 9B
13	P027	250	T	S01 S02 T04	AB CE FG HJ X9 9B
14	P028	250	T	S01 S02 T04	AB CE FG HJ X9 9B
15	P029	100	T	S01 S02 T04	AB CE FG HJ X9 9B
16	P030	100	T	S01 S02 T04	AB CE FG HJ X9 9B
17	P031	100	T	S01 S02 T04	AB CE FG HJ X9 9B
18	P033	100	T	S01 S02 T04	AB CE FG HJ X9 9B
19	P034	250	T	S01 S02 T04	AB CE FG HJ X9 9B
20	P036	100	T	S01 S02 T04	AB CE FG HJ X9 9B
21	P037	100	T	S01 S02 T04	AB CE FG HJ X9 9B
22	P038	100	T	S01 S02 T04	AB CE FG HJ X9 9B
23	P039	250	T	S01 S02 T04	AB CE FG HJ X9 9B
24	P040	250	T	S01 S02 T04	AB CE FG HJ X9 9B
25	P041	250	T	S01 S02 T04	AB CE FG HJ X9 9B
26	P042	250	T	S01 S02 T04	AB CE FG HJ X9 9B
27	P043	100	T	S01 S02 T04	AB CE FG HJ X9 9B
28	P044	250	T	S01 S02 T04	AB CE FG HJ X9 9B
29	P045	250	T	S01 S02 T04	AB CE FG HJ X9 9B
30	P046	250	T	S01 S02 T04	AB CE FG HJ X9 9B
31	P047	250	T	S01 S02 T04	AB CE FG HJ X9 9B
32	P048	250	T	S01 S02 T04	AB CE FG HJ X9 9B
33	P049	100	T	S01 S02 T04	AB CE FG HJ X9 9B
34	P050	100	T	S01 S02 T04	AB CE FG HJ X9 9B
35	P051	100	T	S01 S02 T04	AB CE FG HJ X9 9B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
I L D 0 0 0 6 0 8 4 7 1	

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	P 0 5 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	P 0 5 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	P 0 5 7	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	P 0 5 8	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	P 0 5 9	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	P 0 6 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	P 0 6 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	P 0 6 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	P 0 6 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	P 0 6 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	P 0 6 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	P 0 6 7	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	P 0 6 8	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	P 0 6 9	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	P 0 7 0	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	P 0 7 1	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	P 0 7 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	P 0 7 3	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	P 0 7 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	P 0 7 5	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	P 0 7 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	P 0 7 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	P 0 7 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	P 0 8 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	P 0 8 2	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	P 0 8 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	P 0 8 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	P 0 8 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	P 0 8 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	P 0 8 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	P 0 9 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	P 0 9 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	P 0 9 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	P 0 9 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	P 0 9 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
ILD000608471	

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	P097	250	T	S01 S02 T04	AB CE FG HJ X9 9B
2	P098	100	T	S01 S02 T04	AB CE FG HJ X9 9B
3	P099	100	T	S01 S02 T04	AB CE FG HJ X9 9B
4	P101	250	T	S01 S02 T04	AB CE FG HJ X9 9B
6	P102	150	T	S01 S02 T04	AB CE FG HJ X9 9B
7	P103	100	T	S01 S02 T04	AB CE FG HJ X9 9B
8	P104	100	T	S01 S02 T04	AB CE FG HJ X9 9B
9	P105	100	T	S01 S02 T04	AB CE FG HJ X9 9B
10	P106	100	T	S01 S02 T04	AB CE FG HJ X9 9B
11	P108	100	T	S01 S02 T04	AB CE FG HJ X9 9B
12	P109	100	T	S01 S02 T04	AB CE FG HJ X9 9B
13	P110	250	T	S01 S02 T04	AB CE FG HJ X9 9B
14	P111	250	T	S01 S02 T04	AB CE FG HJ X9 9B
15	P112	250	T	S01 S02 T04	AB CE FG HJ X9 9B
16	P113	250	T	S01 S02 T04	AB CE FG HJ X9 9B
17	P114	250	T	S01 S02 T04	AB CE FG HJ X9 9B
18	P115	250	T	S01 S02 T04	AB CE FG HJ X9 9B
19	P116	250	T	S01 S02 T04	AB CE FG HJ X9 9B
20	P118	250	T	S01 S02 T04	AB CE FG HJ X9 9B
21	P119	100	T	S01 S02 T04	AB CE FG HJ X9 9B
22	P120	250	T	S01 S02 T04	AB CE FG HJ X9 9B
23	P121	250	T	S01 S02 T04	AB CE FG HJ X9 9B
24	P122	250	T	S01 S02 T04	AB CE FG HJ X9 9B
25	P123	250	T	S01 S02 T04	AB CE FG HJ X9 9B
26	P127	250	T	S01 S02 T04	AB CE FG HJ X9 9B
27	P128	250	T	S01 S02 T04	AB CE FG HJ X9 9B
28	P185	250	T	S01 S02 T04	AB CE FG HJ X9 9B
29	P188	250	T	S01 S02 T04	AB CE FG HJ X9 9B
30	P189	250	T	S01 S02 T04	AB CE FG HJ X9 9B
31	P190	250	T	S01 S02 T04	AB CE FG HJ X9 9B
32	P191	250	T	S01 S02 T04	AB CE FG HJ X9 9B
33	P192	250	T	S01 S02 T04	AB CE FG HJ X9 9B
34	P194	250	T	S01 S02 T04	AB CE FG HJ X9 9B
35	P196	250	T	S01 S02 T04	AB CE FG HJ X9 9B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
I L D 0 0 0 6 0 8 4 7 1	

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	P 1 9 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	P 1 9 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	P 1 9 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	P 2 0 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	P 2 0 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	P 2 0 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	P 2 0 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	P 2 0 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	U 0 0 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	U 0 0 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	U 0 0 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	U 0 0 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	U 0 0 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	U 0 0 6	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	U 0 0 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	U 0 0 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	U 0 0 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	U 0 1 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	U 0 1 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	U 0 1 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	U 0 1 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	U 0 1 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	U 0 1 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	U 0 1 7	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	U 0 1 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	U 0 1 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	U 0 2 0	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	U 0 2 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	U 0 2 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	U 0 2 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	U 0 2 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	U 0 2 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	U 0 2 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	U 0 2 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	U 0 2 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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I	L	D	0	0	0	6	0	8	4	7	1

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	U 0 2 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	U 0 3 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	U 0 3 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	U 0 3 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	U 0 3 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	U 0 3 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	U 0 3 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	U 0 3 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	U 0 3 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	U 0 3 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	U 0 3 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	U 0 4 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	U 0 4 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	U 0 4 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	U 0 4 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	U 0 4 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	U 0 4 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	U 0 4 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	U 0 4 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	U 0 4 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	U 0 5 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	U 0 5 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	U 0 5 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	U 0 5 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	U 0 5 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	U 0 5 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	U 0 5 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	U 0 5 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	U 0 5 9	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	U 0 6 0	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	U 0 6 1	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	U 0 6 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	U 0 6 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	U 0 6 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	U 0 6 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)* I L D 0 0 0 6 0 8 4 7 1

Secondary ID Number *(Enter from page 1)*

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)									D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))								
1	U 0 6 7	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
2	U 0 6 8	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
3	U 0 6 9	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
4	U 0 7 0	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
5	U 0 7 1	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
6	U 0 7 2	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
7	U 0 7 3	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
8	U 0 7 4	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
9	U 0 7 5	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
10	U 0 7 6	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
11	U 0 7 7	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
12	U 0 7 8	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
13	U 0 7 9	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
14	U 0 8 0	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
15	U 0 8 1	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
16	U 0 8 2	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
17	U 0 8 3	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
18	U 0 8 4	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
19	U 0 8 5	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
20	U 0 8 6	100	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
21	U 0 8 7	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
22	U 0 8 8	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
23	U 0 8 9	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
24	U 0 9 0	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
25	U 0 9 1	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
26	U 0 9 2	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
27	U 0 9 3	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
28	U 0 9 4	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
29	U 0 9 5	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
30	U 0 9 6	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
31	U 0 9 7	100	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
32	U 0 9 8	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
33	U 0 9 9	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	
34	U 1 0 1	250	T	S 0 1	S 0 2	T 0 4							AB	CE	FG	HJ				X9 9B	

EPA ID Number *(Enter from page 1)* | **Secondary ID Number** *(Enter from page 1)*

I L D 0 0 0 6 0 8 4 7 1

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U 1 0 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	U 1 0 3	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	U 1 0 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	U 1 0 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	U 1 0 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	U 1 0 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	U 1 0 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	U 1 1 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	U 1 1 1	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	U 1 1 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	U 1 1 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	U 1 1 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	U 1 1 5	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	U 1 1 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	U 1 1 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	U 1 1 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	U 1 1 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	U 1 2 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	U 1 2 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	U 1 2 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	U 1 2 3	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	U 1 2 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	U 1 2 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	U 1 2 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	U 1 2 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	U 1 2 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	U 1 2 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	U 1 3 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	U 1 3 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	U 1 3 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	U 1 3 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	U 1 3 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	U 1 3 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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Form approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
I L D 0 0 0 6 0 8 4 7 1	

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	U 1 3 6	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	U 1 3 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	U 1 3 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	U 1 4 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	U 1 4 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	U 1 4 2	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	U 1 4 3	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	U 1 4 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	U 1 4 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	U 1 4 6	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	U 1 4 7	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	U 1 4 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	U 1 4 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	U 1 5 0	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	U 1 5 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	U 1 5 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	U 1 5 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	U 1 5 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	U 1 5 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	U 1 5 6	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	U 1 5 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	U 1 5 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	U 1 5 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	U 1 6 0	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	U 1 6 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	U 1 6 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	U 1 6 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	U 1 6 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	U 1 6 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	U 1 6 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	U 1 6 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	U 1 6 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	U 1 6 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
I L D 0 0 0 6 0 8 4 7 1	

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	U 1 7 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	U 1 7 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	U 1 7 2	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	U 1 7 3	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	U 1 7 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	U 1 7 6	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	U 1 7 7	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	U 1 7 8	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	U 1 7 9	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	U 1 8 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	U 1 8 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	U 1 8 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	U 1 8 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	U 1 8 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	U 1 8 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	U 1 8 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	U 1 8 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	U 1 8 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	U 1 8 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	U 1 9 0	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	U 1 9 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	U 1 9 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	U 1 9 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	U 1 9 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	U 1 9 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	U 1 9 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	U 2 0 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	U 2 0 1	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	U 2 0 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	U 2 0 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	U 2 0 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	U 2 0 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	U 2 0 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
34	U 2 0 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	U 2 0 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
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XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA HAZARDOUS WASTE NO. *(Enter Code)*	B. Estimated Annual Quantity of Waste	C. Unit of Measure *(Enter code)*	D. PROCESSES (1) PROCESS CODES *(Enter code)*	D. PROCESSES (2) PROCESS DESCRIPTION *(If a code is not entered in D(1))*
1	U 2 0 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	U 2 1 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	U 2 1 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
4	U 2 1 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
5	U 2 1 4	100	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
6	U 2 1 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
7	U 2 1 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
8	U 2 1 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
9	U 2 1 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
10	U 2 1 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
11	U 2 2 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
12	U 2 2 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
13	U 2 2 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
14	U 2 2 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
15	U 2 2 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
16	U 2 2 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
17	U 2 2 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
18	U 2 2 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
19	U 2 3 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
20	U 2 3 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
21	U 2 3 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
22	U 2 3 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
23	U 2 3 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
24	U 2 3 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
25	U 2 4 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
26	U 2 4 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
27	U 2 4 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
28	U 2 4 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
29	U 2 4 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
30	U 2 4 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
31	U 2 4 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
32	U 2 7 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
33	U 2 7 7	250	T	S 0 1 S 0 2 T 0 4	AB EF GH J X9 9B
34	U 2 7 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
35	U 2 7 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

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GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)* | **Secondary ID Number** *(Enter from page 1)*

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XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number		A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
	1	U 2 8 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	2	U 3 2 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	3	U 3 5 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	4	U 3 5 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	5	U 3 6 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	6	U 3 6 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	7	U 3 6 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	8	U 3 6 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
	9	U 3 7 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	0	U 3 7 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	1	U 3 7 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	2	U 3 7 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	3	U 3 7 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	4	U 3 7 8	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	5	U 3 7 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	6	U 3 8 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	7	U 3 8 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	8	U 3 8 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
1	9	U 3 8 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	0	U 3 8 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	1	U 3 8 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	2	U 3 8 7	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	3	U 3 8 9	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	4	U 3 9 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	5	U 3 9 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	6	U 3 9 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	7	U 3 9 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	8	U 3 9 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
2	9	U 3 9 5	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	0	U 3 9 6	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	1	U 4 0 0	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	2	U 4 0 1	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	3	U 4 0 2	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	4	U 4 0 3	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B
3	5	U 4 0 4	250	T	S 0 1 S 0 2 T 0 4	AB CE FG HJ X9 9B

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
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XV. Map

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (See instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature	Date Signed
Name and Official Title (Type or print) Anthony Ianello, Executive Director	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print) John E. Lancaster, VP-General Manager	
Operator Signature	Date Signed
Name and Official Title (Type or print)	

XIX. Comments

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

EPA ID Number *(Enter from page 1)* I L D 0 0 0 6 0 8 4 7 1

Secondary ID Number *(Enter from page 1)*

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number		A. EPA HAZARDOUS WASTE NO. (Enter Code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	U	407	250	T	S01 S02 T04	AB CE FG HJ X9 9B
2	U	408	15,000	T	S01 S02 T04	AB CE FG HJ X9 9B
3	U	409	250	T	S01 S02 T04	AB CE FG HJ X9 9B
4	U	410	250	T	S01 S02 T04	AB CE FG HJ X9 9B
5	U	411	250	T	S01 S02 T04	AB CE FG HJ X9 9B

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number (Enter #s in seq w/XII)	Code (From list above)	A. PROCESS DESIGN CAPACITY A. Amount (specify)	2. Unit of Measure (Enter code)	C. Process Total Number Of Units	D. Description of Process
X	T04	.			
11	T04	416,075.	U	001	TO4E:Treatment of D002 liquids in containers and tanks.
12	T04	5,000.	U	001	T04F: Treatment of organic peroxides in containers
13	T04	5,000.	U	001	T04G: Treatment of acid cyanides in containers
14	T04	416,075.	U	010	T04H: Treatment of hazardous waste in containers and tanks using phase separation.

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number (Enter #s in seq w/XII)	Code (From list above)	A. Process Design Capacity 1. Amount (Specify)	2. Unit of Measure (Enter code)	C. Process Total Number Of Units	D. Description of Process
X	T04	.			
15	TO4	5000	U	001	T0-4-I Treatment of Black Powder in containe
16	T04	2500	U	001	T0-4-J Treatment by the Addition of Dry Ice in containers
17	T04	1000	J	001	T0-4-K Venting of oxygen to the atmosphere

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number (Enter #s in seq w/XII)		A. Process Design Capacity: Code (From list above)			1. Amount (Specify)	2. Unit of Measure (Enter code)	C. Process Total Number Of Units	D. Description of Process
1	8	X	9	9A	7 0 0 0	U	0 0 1	X99-A Consolidated of pain/paint-related material using a compactor
X								
1	9	X	9	9B	4 8 , 0 0 0	J	0 0 1	X99-B Hazardous waste shredding system

X								
2	0	X	9	9C	2 3 0 0	J	0 0 1	X99-C Hazardous waste lamp crushing system

Clean Harbors Services, Inc.
EPA ID No. ILD000608471
Sheet 1 of 3

RCRA PART A FORM
ADDITIONAL INFORMATION

Section VIII. Facility Owner

A. Name of Facility's Legal Owner

CHSI is the owner/operator of the hazardous waste facility. The land on which the facility is located is owned by the Illinois International Port District, a government entity.

Section XII. Process Codes and Design Capacity

Line 05. Disposal in Surface Impoundments (D83)

CHSI notes that the four (4) surface impoundments identified by this entry have been certified as closed by the IL EPA. The impoundments no longer accept hazardous waste, and currently operate under an approved Post Closure management plan. A list of the waste codes which were disposed in the impoundments is included in Appendix D-30 of the approved RCRA Part B Application.

Section XIII Additonal Processes

Line 11. T04 E Treatment of D002 Liquids in Containers and Tanks

Treatment of D002 (Corrosive) liquid hazardous waste in containers and tanks by the commingling/mixing of compatible waste streams to adjust pH value. Process design capacity is 416,075 gallons per day in all tank or container systems at the facility.

Line 12. T04F Treatment of Organic Peroxides in Containers

Treatment of organic peroxide hazardous waste in containers through the additon of water. Process design capacity is 5,000 gallons per day in any container at the facility.

Line 13. T04G Treatment of Acid Cyanides in Containers

Treatment of acid cyanide hazardous waste in containers through pH adjustment using sodium hydroxide or other alkaline materials. Process design capacity is 5,000 gallons per day in any container at the facility.

Rev. March 15, 2004

Clean Harbors Serivces, Inc.
EPA ID No. ILD 000608471
Sheet 2 of 3

Line 14. T04H Treatment of Hazardous Waste in Containers and Tanks Using Phase Separation

Treatment of hazardous waste in containers and tanks by phase separation using physical (e.g., gravity separation, filtration) and chemical (e.g., addition of demusifiers) techniques. Process design capacity is 416,075 gallons per day in all tank or container systems at the facility.

Line 15. T04I Treatment of Black Powder in Containers

Treatment of black powder hazardous waste in containers through the addition of water. Process design capacity is 5,000 gallons per day in any container at the facility.

Line 16. T04J Treatment by the Addition of Dry Ice in Containers

Treatment of hazardous waste in containers by the additon of dry ice. Process design capacity is 25,000 gallons per day in any container at the facility.

Line 17. T04K Venting of oxygen to the atmosphere.

Process design capacity is 1,000 pounds per hour.

Line 18. X99A Consolidation of Hazardous Waste using a Compactor

Consolidation of hazardous waste paint and paint-related material contained in small metal and glass containers by processing through a can and glass compactor. Process design capacity of the unit is 7,000 pounds per day of cans of paint and paint-related material.

Line 19. X99B Hazardous waste shredding system

Shredding of hazardous waste in containers. Process design capacity is 48,000 pounds per hour.

Line 20. X99C Hazardous waste lamp crushing system

Crushing of hazardous waste lamps. Process design capacity is 2300 pounds per hour.

Rev. March 15, 2004

Clean Harbors Services, Inc.
EPA ID No. ILD 000608471
Sheet 3 of 3

Section XIV. Description of Hazardous Waste

CHSI notes that Process Code "T01A" in Column D (2) refers to the Listed Waste Treatment System identified on Line 06 in Section XII.

CHSI also notes that Process Codes "T0A" through "T04K" refers to the various container an/or tank treatment processes described in Lines 07 through 17 in Section XIII.

Rev. March 15, 2004

Attachment A
RCRA Part B Notice of Deficiency
Technical Issues

Clean Harbor Services Inc.
0316000051-Cook County

B **Facility Description**

To better understand your operations, please indicate if the following activities will be conducted in only the following areas:

- The mobile compactor will only be used in the staging area of unit R1;
- Fuming acids will only be treated under the operating fume hood in the outdoor staging area of unit R1;
- The treatment of cyanide wastes in containers will only be conducted under the fuming hood in the outdoor staging area of unit R1;
- The treatment of peroxides in containers will only be conducted under the fuming hood in the outdoor staging area of unit R1;
- The stabilization of wastes in roll-off boxes will only be conducted in Process Building No. 3 (unit Z);
- The consolidation of lab packs can only occur under operating fume hoods in the following areas:
  Building 25, Building 26, Unit U, Unit G1, and Unit R1
- The pouring-off of containers that were in a lab pack will only occur under operating fume hoods in the following areas:
  Building 26, Unit F1, and Building 25
- The removal of residues from non-RCRA empty tank trucks will only occur in the following transporter storage/staging areas:
  Unit Q, Unit V, Unit X, Unit C, Unit 59, Unit 15 and Unit 62.

For any activities hat is different than described above, provide justification for expanding these operations to other areas of your facility, demonstrate compliance with the applicable regulations and address past safety concerns raised by the Agency and incidents, which resulted from those activities.

Indicate the locations where D002 liquid/solid mixtures will be treated to separate/remove free liquids.

Indicate the location where D002 compatible liquids in containers and tanks will be mixed or consolidated. Explain in detail how compatible liquids will be determined and describe in detail theD002 treatment process.

Indicate the location where treatment of hazardous wastes using physical (e.g., gravity) and/or chemical (e.g., emulsifying agents) means will be conducted in tanks and containers to phase separate waste. Phase separation in containers is prohibited in your current RCRA Part B permit.

Response:

- Section B-1a(3)(h) states "Under the terms of the November 1993 Part B License, CHSI is authorized to compact hazardous waste in containers with a mobile waste compactor. This compactor is only used in the staging area of the Outdoor Storage Area (Unit R1)."

- Section B-1a(3)(i) (second paragraph): The words "This treatment is" replaced with "The treatment of cyanide wastes in containers is only" to the sentence: This treatment is conducted under the operating fume hood in the Outdoor Storage Area (Unit R1). "Fuming acids will only be treated under the operating fume hood in the outdoor staging area of Unit R1." Will also be added. Page B-15 has been modified to reflect these changes.

- Section B-1a(3)(j): The word "only" has been added to the sentence: The treatment of organic peroxides in containers is **only** conducted under the operating fume hood in the Outdoor Storage Area (Unit R1). Page B-15 has been modified to reflect this change.

- In Section B-1a(3)(d)(A) (second sentence) : "As part of the special license conditions imposed by IEPA, CHSI is only authorized to conduct stabilization/fixation operations inside process building #3, the approved/not yet constructed listed waste treatment building (Unit Z)." is replaced with "The stabilization of wastes in roll-off boxes will only be conducted in Process Building No. 3, the approved/not yet constructed listed waste treatment building (Unit Z)." Page B-13 has been modified to reflect this change.

- In Section B-1a(3)(a), the following sentences are added to the first paragraph:

  The consolidation of lab packs can only occur under operating fume hoods or in that bay by employees wearing full-face respirators in the following areas:
  Building 25, Building 26, Unit U, Unit G1, and Unit R1

  The pouring-off of containers that were in a lab pack will only occur under operating fume hoods in the following areas:
  Building 26, Unit F1, and Building 25

  The removal of residues from non-RCRA empty tank trucks will only occur in the following transporter storage/staging areas:
  Unit Q, Unit V, Unit X, Unit C, Unit 59, Unit 15, Unit 62 and Unit W. The removal of residues from trucks undergoing offloading into the RCRA-exempt Clean Water Act wastewater treatment system in Units J1 and J2 are not subject to this requirement.

  Pages B-8 and B-9 have been modified to reflect these changes.

CHSI notes Units W, J1 and J2 were not included in the Notice of Deficiency, but these Units were included in the existing Part B permit (Section I (J)(19)). Thus these are not an expansion of activities and have met compliance with applicable regulations. Unit W has not been built and Units J1 and J2 are exempt from RCRA requirements.

The use of full-face respirators for lab pack consolidation (closed container) activities in the same bay will have the same level of safety as using an operating fume hood.

D002 liquid/solid mixtures will be treated to separate/remove free liquids in Unit G1, Unit R1, Unit R2, Unit 25, Unit 26, and Unit 61. B-1a(3)(f) on Page B-14 has been modified to reflect this.

D002 compatible liquids will be mixed or consolidated in containers in Unit G1, Unit R1, Unit R2, Unit 25, Unit 26, and Unit 61, and in tanks in Unit 16 and Unit 22. A description of how compatible liquids will be determined and the D002 treatment process has been added to B-1a(3)(g). Page B-14 has been modified to reflect this.

CHSI will conduct treatment of hazardous wastes using physical (e.g., gravity) and/or chemical (e.g., demulsifying agents) in tanks to phase separate wastes. CHSI is not requesting to phase separate hazardous wastes through treatment in containers. The tanks where this treatment can occur are in Unit 16 and Unit 22. B-1a(3)(k) on Page B-16 has been modified to reflect this.

B.5 Operating Record

B.5.1 Contents of Operating Record

Revise your procedures to include the following records in your operating record:

- Monitoring, testing or analytical data associated with corrective action at the site
- Documentation of any refusals from a state or local authority to enter into an agreement to coordinate emergency services with the facility.

Response:

CHSI has modified procedures to include these items in the facility operating record. Page B-23 has been modified to reflect these changes.

C. Waste Characteristics

C.1.3 Land Disposal Restrictions

On pg C-31, item 2 you state: "the notification must also include a 'generator certification' statement whose wording is identical to 268.7(a)(2)(ii)." This section of 40 CFR is marked "reserved". Please revise this section.

For residues from treatment that meets the treatment standards, explain the procedure used to document compliance with the LDR standards to notify receiving facilities.

Response:

CHSI has modified item 2 on page C-31 with the correct CFR reference.

For residues from treatment which meet treatment standards, the procedure to document compliance with the LDR standards has been added to page C-32.

C.1.3.3 For Treatment Facilities

Identify the frequency that the treatment residues will be analyzed to determine compliance with the treatment standards in Part 728 (e.g., the treatment of cyanide wastes in containers to remove the characteristic of reactivity, the stabilization of wastes in roll-off to remove free liquids).

Response:

CHSI will analyze each batch of treatment residue to determine compliance with the treatment standards in Part 728. Pages C-29 and C-30 have been modified to reflect this.

C.2 Waste Analysis Plan

C.2.3.4 Multi-Phase Wastes

Indicate if each phase of a waste will be sampled separately.

Response:

Each phase of a multi-phase waste will be sampled separately. C-2c on page C-24 has been modified to reflect this change.

C.2.3.5 Safety

Indicate if the sampling personnel are ever required to wear respirators when sampling/pumping off drums of volatile organic wastes. If so, explain when they would be required to wear such equipment. The use of respirators appears to be standard procedure for lab pack pour–off activities. This is discussed in Attachment 1 of Appendix D-1. There is some contradictory information contained within the application.

Page 1 states full-face cartridge respirator or full–air respirator while page three states a full air respirator with supplied air is required. Please revise the application to explain when the different respirators will be used.

Response:

CHSI requires personnel to always wear full-face respirators during sampling or pumping of wastes from drums. Section C-2c on page C-23 has been modified to reflect this.

It is correct that the use of respirators is standard for lab pack operations. In Attachment 1 of Appendix D-1 (Acid/Base Lab Pack Pour-off Standard Operating Procedure, page 1 states both full-face cartridge and full-face air respirators are used during the operation. Page 2 explains full-face cartridge respirators are used for unpacking lab packs (when the individual lab pack containers are closed). On page 3 full-face air respirators are required for lab pack pour-off. Item 1 on page 3 states " All opening and pouring of unpacked materials is to be done under full air."

CHSI notes that the flammable lab pack pour-off operation allows either full-face cartridge respirators or full-face air respirators to be worn for both unpacking of lab packs and lab pack pour-off under the operating fume hood.

C.2.5 Additional Requirements for Wastes Generated Off-Site

Identify the criteria the laboratory manager may use to require a supplementary analysis (e.g., outside the boundary conditions in Table C-1 through C-8, outside a unit of the expected ph, etc.).

Response:

The laboratory manager will require supplementary analysis whenever treatment wastes are outside the boundary conditions in the appropriate Table C-1 through C-8. This is reflected in Section C-2a(2)(A) on page C-21.

D1 <u>Containers</u>

D.1.2.3 Arrangement

The following must be shown on a scale drawing of the storage unit:

The arrangement of containers when the storage is at maximum capacity;
The minimum aisle space that will be maintained;
The secondary containment system; and
The floor slope, if any, within the secondary containment system.

The information identified above was not provided for Unit F1.

Please provide the difference in elevation through out the secondary containment system for Unit 61.

Explain how Building 42 is designed to prevents a 4'x4' collection hopper from being in contact with a spilled liquid when a spill occurs from the drums?

The rate of slope for the Rail Car Unloading area could not be determined from Drawing No. 4217, 1 0f 3 as stated on Page D-25. Please provide this information.

Please indicate if Unit 25, Unit 42 and Unit 24 have a sloped floor and if applicable, the amount of slope and flow direction within the secondary containment area.

Provide secondary containment calculations for Unit 15.

Please indicate if waterstops are used in the concrete joints for Unit V.

The Illinois EPA was unable to determine the direction of flow, the amount of slope and the location of the sump from the drawings provided for Unit 68. Additionally, the text description for this unit stops in mid-sentence on page D-32. Please provide this information and complete the text on page D-32.

The secondary containment calculations on drawing no. 4287 conflict with the information on page D-39. The calculations used a height of 4 inches while the text on page D-39 states Unit 68 is surrounded by a 9-inch containment curb. Correct the application.

Response:

The drawing for Unit F-1 is included as Appendix D-58.

Additional elevation points have been added to CHSI Drawing No. 4245.

The 4'x4' collection hopper in Building 42 will be on a containment pallet elevating the hopper 6 inches above the floor level. This will keep the hopper from contact with spilled liquids. D-1a(3)(b)(B)(2) has been modified to reflect this.

CHCI Drawing No. 4217 (Sheet 1 of 3) has been modified to show the rate of slope.

Unit 25, Unit 42 and Unit 24 do not have sloped floors. This is indicated in D-1a(3)(b) in section A.5., B.2, and B.3 respectively.

Revised secondary containment calculations for Unit 15 are provided in Appendix D-49.

Waterstops are used in the concrete joints in Unit V. These are now shown in CHSI Drawing 4234.

The direction of flow and sump location for Unit 68 are now provided on CHSI Drawing No. 4287. Pages D-33 and D-39 have been modified to complete the text description for Unit 68 and correct the text. CHSI notes that Unit 68 is surrounded by a 6-inch curb on three sides and a 9-inch curb on the border with Unit 24. The floor of Unit 68 is raised yielding a smaller height inside the unit than outside the unit.

D.1.2.5.1 Ignitable, Reactive or Incompatible Wastes (Scale Drawing)

Drawing 4204B (2/3) would seem to indicate that the flammable storage in Building 25 is not at least 50 feet from the facility's property line. From the drawings available, it appears that the property line is coinciding with the fence line, which places flammable storage at 30 feet from the property line.

Please clearly identify the property line on Drawing 4204B (2/3) and explain how the storage complies with the 1987 version of NFPA 30, Flammable and Combustible liquids Code and 35 Ill. Adm. Code 724.276.

Response:

CHSI Drawing No. 4204B has been modified to show the correct property line in the vicinity of Building 25. The property line is fifty feet west of Building 25 so the storage complies with the 1987 version of NFPA 30, Flammable and Combustible liquids Code and 35 Ill. Adm. Code 724.276.

D1.2.5.4 Ignitable, Reactive or Incompatible Wastes

There is a typographical error on page F-23, top of page. The sentence reads as follows: "In order to provide proper segregation for potentially incompatible materials that shall specifically designed "self-contained" pallets in the event that a waste material, which is incompatible with materials already present on the dock, is encountered." Please correct the text in this sentence.

Response:

Page F-23 has been corrected.

D1.2.6 Lab Packs

Please indicate if the lab packs are opened, repackaged or their contents poured off under a fume hood. Provide documentation that the fume hood provides sufficient ventilation.

Response:

Page D-27 of Section D-1a(2) has been modified to better define this operation. Appendix D-57 has been added with evaluation data sheets for lab pack pour-off hood ventilation and an Industrial Hygenist certification.

D1.3.2 & D1.4.2 Base of Liner Design and Condition

Clarify that the February 13, 1992 engineering evaluation by Hoyer-Schlesinger-Turner, is only for Unit R, Unit U, Unit 61 and Unit Z1.

Verify that the assessments in Appendix D-7 & D-8 are for the following units: Buildings 25 and 26, Unit 61, Unit 59, Unit C, Unit W, Unit 13, Unit R, Unit U, Unit Z1 and Unit G1. Please provide assessments for Unit F1, Unit Q, Unit Q1, Unit V, Unit 15, Unit 62, Building 42, Unit 25 (loading pad), Unit 24, Unit 68, Unit X, and Unit 69.

Identify those units that have cold joints and no chemical resistant water stops and provide an explanation how liquids are prevented from migrating through the joints in these units.

Response:

The February 13, 1992 engineering evaluation by Hoyer-Schlesinger-Turner, is only for Unit R, Unit Q, Unit U and Unit Z. Unit Q was included with the Outdoor Container Storage Area, but was not coated.

The assessments in Appendix D-7 & D-8 are for the following units: Buildings 25 (old) and 26, Unit 61, Unit 59, Unit C, Unit W, Unit 13, Unit R, Unit Q (including Q1), Unit U, Unit Z (including Z1), Unit G1 and Unit 43. The assessment for modified Building 25 and loading pad are included as a new Appendix D-53. Building 42, Unit 24, Unit 68 and Unit 69 assessments are included in Appendix D-42. The Unit 15 and Unit 62 assessments are included in Appendix D-49. Unit F1, Unit Q (including Q1)(coating), Unit V, and Unit R2 (new portion) assessments are included as a new Appendix D-54.

There are no units with cold joints. All units have chemically resistant water stops.

D1.3.4 & D1.3.5 Containment System Capacity

Provide calculations which demonstrate that the containment system will have sufficient capacity to contain at least 10 percent of the volume of the containers or the volume of the largest container, whichever is greater and the volume from a 24-hour, 25-year storm event for the following units: Unit Q, Unit 25 (Truck Pad), Unit 15, and Unit X.

Response:

Unit Q, Unit X and Unit15 are covered by canopies and exempt from the 24-hour, 25-year storm event requirement. Unit 15 calculations are included in Appendix D-49. Unit 25 (Truck Pad) calculations are included in the new Appendix 53. Unit Q and Unit X calculations are included in the new Appendix 56.

D1.4.1 Container Storage Area Drainage Without Free Liquids

Provide calculations, which demonstrate that the containment system will have sufficient capacity to contain the volume from a 24-hour, 25-year storm event for the following units: Unit Q1 and Z1.

Response:

Unit Q1 is located under a canopy and Unit Z1 is located in Process Building 3. The containment capacities are the same as those for Unit Q and Unit Z respectively.

D2 <u>Tanks</u>

D2.1.1 Description of Tanks

Please provide the year the dispersion tank and overflow tank were installed.

Response:

The dispersion tank and overflow tank were installed in 1995. This information has been incorporated into D-2(i)(A)(1) on page D-45.

D2.1.5 Tank History

Condition II.H.6 required CHSI to conduct ultrasonic testing annually on each tank and a detailed visual inspection of the tank's interior at least every fifth year to ensure the tank's integrity.

D2.1.5.1 Please provide a copy of the most recent internal tank inspection report and any photographs taken during the inspection.

Response:

The most recent internal tank inspection reports for each existing tank are included in the new Appendix D-55.

D2.1.5.2 Please provide the results of the thickness testing and the corrosion rates for the tank top, shell, and bottom of each tank system. At a minimum, this information must include:

- The calculations used to determine the corrosion rates;
- The original thickness measurements;
- A copy of the last testing report;
- A summary table of all testing conducted on each tank since the tank system was constructed (the test locations must be shown on scale drawings). Include the dates of each test, the results all comments, and the conclusions/recommendations from each report; and
- The projected service life of the tank based on the estimated corrosion rate.

Response:

This information is included in new Appendix D-59.

D2.4 Installation of a New Tank System

Please provide a copy of the installation report for the dispersion tank and overflow tank.

Response:

The installation report for the dispersion tank and overflow tank is included in Appendix D-48.

D2.6.2 Design

Drawing 4213, 2/3, does not show Unit 43's secondary containment system slope for draining and removing liquids resulting from spills or leaks, or the location of the sump.

Drawing 4215, 1/4, does not show/indicate how Unit 16 secondary containment system is sloped to drain and remove liquids resulting from spills or leaks.

Drawings, 4286 & 4287, do not show/indicate for Unit 22, Unit 24 and Unit 68 how the secondary containment system is sloped to drain and remove liquids resulting from spills or leaks, or the location of the sump.

Response:

Drawing 4213, 2/3 has been modified to show Unit 43's secondary containment system slope for draining and removing liquids resulting from spills or leaks, and the location of the sump.

Drawing 4215, 1/4, has been modified to show/indicate how Unit 16 secondary containment system is sloped to drain and remove liquids resulting from spills or leaks.

Drawings 4287 has been modified to show/indicate for Unit 22, Unit 24 and Unit 68 how the secondary containment system is sloped to drain and remove liquids resulting from spills or leaks, or the location of the sump

D2.10.4 Documentation

Provide documentation that the treatment method, chemical oxidation, will effectively treat the constituents identified with the wastes codes currently included in the Part B permit in Attachment D, Section I, and that each constituent can be treated at the concentration stated.

Response:

This documentation is located in Appendix C-2. A table showing the constituents, permit limits, and raw and treated waste concentrations has been added.

F.3.4 Water for Fire Control

Provide a statement signed by an independent fire control professional, or the responsible fire department, certifying that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers or water sprays for Building 42.

Response:

CHSI has received a building permit from the City of Chicago for the hazardous waste shredding operation which includes Building 42. As part of the approval, the Chicago Fire Department had to give approval. CHSI will submit a statement as required above prior to operating approval of this operation. CHSI requests this be a special condition of the permit.

G. <u>Evaluation-Assessment of Potential Hazards & Contingency Plan</u>

G.1 Evaluation-Assessment of Potential Hazards Report

The information used in the modeling approved in your previous Part B permit is outdated. A cursory review of the input data for the level of concerns indicates that this parameter has changed for most of the constituents. Please reevaluate the off-site impacts a waste-related emergency may have on the surrounding area by providing the information in this section (except G.1.5.3.7) using up-to-date information and modeling.

Response:

Updated information is included in Appendix G-2.

G.2.1.6 Worst Case Scenario

Provide a copy of the executive summary from the Hazards Evaluation Report required in Section G.1 above. Provide a description of the worst-case scenario for both a spill and a fire at the facility that includes:

- The location(s) of the worst-case spill and fire at the facility
- The chemicals involved

Response:

Updated information is now included in Appendix G-3.

H Personnel Training

H.1.1 Training Director

Provide details of any additional training or educational courses that David Anderson has completed that would qualify him as Training Director.

Response:

This information is now included in Appendix H-2.

H.1.4.1 Training Content, Frequency and Techniques

Please certify that the training given to personnel meets the requirements of 29 CFR 1910.120 for personnel handling hazardous waste.

Response:

The CHSI RCRA training program is meant to familiarize employees with the properties and nature of hazardous waste stored and handled at the facility, with the procedures to operate and maintain the facility in a safe manner, and with the procedures and equipment to be used in the event of an emergency at the facility. Although the training would meet the annual refresher requirements of 29 CFR 1910.120 for employees in hazardous operations (employee group numbers 3.1 and 3.2), CHSI did not intend for RCRA training to cover those requirements. Employees in group numbers 3.1 and 3.2 receive separate training for the initial (24-hour) and annual refresher (8-hour) requirements of 29 CFR 1910.120. Section H-1b on page H-2 has been modified to reflect this.

H.1.4.2 Training for Emergency Response

Revise your training for emergency response to include procedures to coordinate with local officials to effectively evacuate local areas in the event of an emergency.

Response:

CHSI has modified H-1e on page H-3 to reflect this. The correct version is included with this revision.

I.1 **Closure Plan**

I.1.8 **Closure Schedule**

The dates for completion of activities contained in the verbal description of the closure schedule provided on page I-6 and the schedule in Table I-2 do not match. Please revise your application to correct this inconsistency.

Response:

Table I-2 has been corrected.

I.3 **Survey Plat**

I.3.2 **Note on Plat**

The plat submitted in Appendix I-1 does not appear to contain the required language:

(1) The land has been used to manage hazardous waste.

(2) Its use is restricted under 35 Ill. Adm. Code Subpart G so that disturbance of the unit is prevented.

Response:

This information is now included in Appendix I-1.

I.4 **Notice in Deed and Certification**

I.4.2 **Certification of Notification:** Submit a certification, signed by the owner of the property, that the notice in deed has been properly recorded in accordance with 35 Ill. Adm. Code 724.219(a). Submit a copy of the notice in deed filed with the County Recorder and/or any local zoning authority.

Response:

This information is now included in Appendix I-2.

Subpart BB **Air Emission Standards for Equipment Leaks**

Page BB-1 references Appendix A. The Illinois EPA was unable to find the referenced section.

Please revise the application to describe the standards for diaphragm pumps on page BB-5 to "...no detectable emissions (less than 500 ppm above background)".

Response:

CHSI is submitting Appendix A and has corrected page BB-5.

ADDITIONAL COMMENTS:

1) Secondary containment calculations for Unit 15 have been redone and are included in Appendix D-49.
2) An Industrial Hygiene certification has been added to Appendix D-57 concerning the ventilation in lab pack pour-off hoods.
3) An additional engineering certification for structural stability has been added to Appendix D-56 for Unit X. A certification for Unit B is in Appendix D-46.
4) A certificate of repairs to T-106 is included as the last three pages of the Tank Inspection Report for T-106 in Appendix D-55.
5) The correct modified page H-3 has been added concerning employee training to help local officials to evacuate local areas.
6) The correct modified pages for Atmospheric Gas Venting procedures have been added to Appendix D-38.
7) The correct containment capacity for the Outbound Staging Area of Unit R2 is 2608 gallons. This containment calculation is on Drawing CHCI 4210.
8) The correct containment capacity for Unit 61 is 1149.41 cubic feet (8620 gallons). The calculation is shown on the top right-hand corner of Drawing CHSI 4245. The calculation near the center does not account for a two-inch lip.
9) The secondary containment calculation for Unit B accounting for van trailers with 80 55-gallon drums of liquids is shown on Drawing CHCI 4118 below Detail No. 2.
10) T-109 was taken out of service after the last ultrasonic thickness testing indicated the tank thickness had met its service life. This tank will be replaced with T-108 in the near future. Certification will be submitted before operation of the tank.
11) CHSI is adding a lamp crushing machine as a miscellaneous unit to the application. The revised pages are enclosed along with new Appendix D-60.

SECITON B
FACILITY DESCRIPTION

B-1 General Description 403.183 (a)

B-1 Nature of Business

Clean Harbors Services, Inc. (CHSI), a wholly owned subsidiary of Clean Harbors, Inc, owns and operates a hazardous waste storage and treatment facility located at 11800 South Stony Island Avenue in Chicago, IL. CHSI operates under a RCRA Part B license issued by the Illinois Environmental Protection Agency (IEPA) on November 4, 1993.

Under its current licenses and approvals, CHSI utilizes a variety of wastes handling operations to treat hazardous and non-hazardous waste onsite, and to store/transfer hazardous wastes, including treatment residuals, for approved offsite reuse, treatment and/or disposal. The specific waste handling operations at the facility are described in Section B-la (1) through B-1a (3) below. Wastes are typically received and shipped in bulk tankers, rolloffs, railcars, and containers (e.g., 55-gallon drums), and may be gaseous, liquid, semisolid, and/or solid in physical form.

B-1a (1) Activities Exempt From RCRA Permitting

B-1a (1) (a) Clean Water Act Wastewater Treatment System

CHSI operates a wastewater treatment system for treatment of aqueous based inorganic and organic contaminated wastewaters. The system is regulated under the Clean Water Act (CWA) through a discharge permit issued by the Metropolitan Water Reclamation District of Greater Chicago, a publicly owned treatment works (POTW). The CWA wastewater treatment system is exempt from RCRA hazardous waste regulations pursuant to 35 IAC 724.10 (f) (6). Information regarding the CWA wastewater treatment system is included in this Application for informational purposes only. The CWA Waste water treatment system is shown as units F through N on CHCI drawing No. 4204A, Sheet 1 of 3

CHSI's CWA wastewater treatment activities include the following:

1. Storage and primary physical and chemical treatment of aqueous-based, inorganic hazardous and non-hazardous industrial wastes streams using chemical precipitation, coagulation, clarification, filtration, carbon adsorption and stabilization/fixation;

2. Storage and specialized liquid waste pretreatment prior to primary treatment. Pretreatment methods include:

a. Neutralization;
b. Chemical oxidation;
c. Chemical reduction;
d. Other methods including ammonia stripping, Chelation-breaking, and organic removal; and
e. Oil Recovery.

Waste streams undergoing pretreatment may be accepted in bulk tanker, container (e.g. 55-gallon drum), or lab pack form. To the extent possible, CHSI utilizes waste streams to treat other waste streams. A detailed description of these wastewater treatment operations is provided below.

A. Primary Physical and Chemical Treatment

Primary treatment consists of chemical precipitation, coagulation, clarification and filtration of inorganic-based, aqueous streams. The waste streams undergoing primary treatment typically exhibit one or more characteristics of a hazardous waste (i.e. D-codes) or are listed (i.e., F-, K-, U-, and P- code) hazardous wastes. Treatment residuals (i.e., sludge) generated from the CWA process is stabilized/fixated and shipped offsite for disposal. Treated effluent is discharged under permit to the publicly owned treatment works (POTW) operated by the Metropolitan Water Reclamation District of Greater Chicago.

The primary treatment process utilizes the chemical/physical treatment operations including;

1. Chemical precipitation – Addition of solution of sodium hydroxide, sodium, sulfide or similar chemicals to precipitate any heavy metals present in the waste.

2. Coagulation – Addition of ferric chloride, aluminum salt solutions, polymers, or other equivalent materials to affect the coagulation and flocculation of the precipitated heavy metals.

3. Clarification/Filtration – Physical separation of the solids from the liquids in the treated waste using clarifiers, sand filters and plate and frame filter presses.

4. Stabilization/Fixation – Addition of inert solids, lime, cement, pozzolans, or equivalent material to effect stabilization and fixation of appropriate waste streams with or without dewatering.

5. Carbon Adsorption – Adsorption of contaminants on carbon to meet discharge parameters.

Wastewater treatment wastes for primary treatment may be accepted in bulk tanker, container (e.g. 55-gallon drum), or lab pack form, To the extent possible, CHSI utilizes waste streams to treat other waste streams.

B. Specialized Pretreatment Prior to Primary Treatment

Certain incoming wastewater streams require pretreatment such as neutralization, oxidation, reduction, or oil precovery prior to performing primary treatment, Pretreatment operations include:

1. Neutralization – Addition of alkaline material to neutralize highly acidic material or addition of acid to neutralize highly alkaline materials.

2. Chemical Oxidation - Utilization of oxidizing agents such as hydrogen peroxide, potassium permanganate, or similar agents, to treat oxidizable materials in order to render them suitable for further treatment.

3. Chemical Reduction – Treatment of hexavalent chromium waste in an acidic medium with sodium bisulfate or other reducing agents to obtain the perceptible trivalent form.

4. Other Pretreatment Methods – Includes chelation breaking, and organic removal techniques such as sir stripping and carbon adsorption.

5. Oil Recovery – Separation of oil from the aqueous material in a waste through heat, demulsifying agents, and pH adjustment.

Wastewater treatment wastes for specialized pretreatment may be accepted in bulk tanker, container (e.g. 55-gallon drum), or lab pack form. To the extent possible, CHSI utilizes waste streams to treat other waste streams.

B-1a (1) (b) Polychlorinated Biphenyl's

CHSI operates as a commercial storer of polychlorinated biphenyls (PCBs). The amount of PCB waste stored at the facility, as generated by others, at no time exceeds the 500 gallon threshold in 40 CFR 761.3. Commercial storers of PCBs in quantities less than 500 gallons are not required to seek U.S. EPA's approval.

B-1a (1) (c) Storage and Transfer of Non-Hazardous Wastes

Under the terms of the November 1993 Part B License, CHSI is authorized to operate waste management activities involving the storage of non-hazardous wastes which are exempt from 35 IAC 700 requirements. The location of the authorized non-hazardous waste management units is shown on CHCI Drawing No. 4204B, sheet 1 of 3. The management activities include;

1) A non-hazardous bulking area (Unit S) which includes a 2500 gallon mixing tub and storage of one (1) 30-cubic yard rolloff container;

2) A drum crushing & compaction area (Unit T) which includes up to one (1) 30-Cubic yard rolloff container for accumulation of crushed containers which meet the RCRA definition of empty pursuant to 35 IAC 721;107

3) A waste oil treatment/storage system (Unit F3) consisting of four (4) 6,000 gallon tanks located in Process Building No. 2; and

4) Two (2) bulk solids rolloff /dump trailer located inside existing process building No. 2 (Unit G) and used for the accumulation of process residuals (i.e., sludge) generated by the CWA wastewater treatment system.

B-1a (1) (d) Transportation Units/Activities Exempt From RCRA

A. Hazardous Waste Transfer Facility

Under 35 IAC 723.112 and 35 IAC 724.101 (f) (9), a transporter storing manifested shipments of hazardous waste in containers for a period of ten days or less is exempt from hazardous waste facility management standards. CHSI is used as a transfer facility for in-transit vehicles hauling manifested loads of hazardous waste, which are not destined to be received at CHSI. In addition, CHSI conducts truck-to-truck transfers of containers between in-transit vehicles

Hazardous Waste Transfer Facility Activities Are Conducted in:

1. Any RCRA-Regulated highway transportation area identified in section B-1 (a) (3) (a) (B) [See Page B-8} Below; and

2. Any area onsite which meets the 35 IAC 702.110 definition of "Transfer Facility" that is, any transportation related facility including loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous waste and held during the normal course of transportation.

B. Other Non-RCRA Regulated Transportation Activities/Units

CHSI operates five (5) highway vehicle management areas, which are not regulated under RCRA, but are used to manage hazardous and non-hazardous waste shipments intended for acceptance at CHSI. These areas include:

1. Truck scale (Unit 14) – Used to weigh up to one (1) inbound or outbound bulk solid and bulk liquid highway vehicle at any one time;

2. Truck sampling pad (Unit D) – Used to samples the contents of up to one (1) inbound or outbound bulk solid and bulk liquid highway vehicle at any one time;

3. Bulk truck offloading area (Units J1 and J2) – Used for the active offloading of up to four (4) bulk liquid transport vehicles carrying hazardous and non-hazardous waste intended for treatment in the RCRA-Exempt CWA wastewater treatment system; and

4. The existing truck offloading area located inside process building 1 (Unit F3) which is used for the offloading of up to one (1) bulk liquid transport vehicle carrying waste intended for direct pumping into the CWA treatment reactors or the loading/offloading of the non-hazardous waste oil storage and treatment system.

5. The existing truck offloading area located inside process building 2 (Unit G3) which is used for the offloading of up to one (1) bulk liquid transport vehicle carrying waste intended for direct pumping into the CWA sludge conditioning tank.

B-1a (1) (e) Hazardous Waste Generator Activities

CHSI is considered a Large Quantity Generator (LQG) of hazardous waste. The waste is generated through numerous onsite activities including but are not limited to waste treatment process residuals, analytical laboratory operations waste spillage and cleanup, secondary containment system precipitation pumps out, and maintenance activities.

Hazardous waste, which is generated on site, is managed in portable containers in accordance with 35 IAC 722 "Standards Applicable to Generators". Onsite generated waste may be accumulated for up to 90 days in designated "generator" areas of the facility before being transferred to the permitted RCRA storage units at the facility. All generator activities are exempt from RCRA facility permitting requirements.

CHSI has prepared an LQG management plan to ensure that all onsite-generated wastes are managed in accordance with applicable generator regulations. The plan identifies several locations on-site in which hazardous wastes are generated/managed. The locations are designated as either "satellite" or "accumulation" areas which meet appropriate LQG management standards.

For example, all "accumulation" areas are clearly marked with a visible painted/tape line on the floor. In addition, all "accumulation" areas are posted with a sign which includes the words "HAZARDOUS WASTE' in capital letters at least one inch high. (e.g., the laboratory) are away from any floor drains or sinks; containers in other areas (e.g., loading dock) are staged on impermeable other areas (e.g., loading dock) are stage on impermeable concrete-lined and sealed surfaces. All "accumulation" and satellite" areas are managed such that incompatible waste is not mixed nor has the potential to come into contact. Signs warning of potential waste incompatibility are posted as necessary. All LQG containers and areas are inspected on a weekly basis. The inspections are incorporated into the facility's weekly TSD inspection protocol. All inspections are conducted on a unit-specific basis and documented in writing.

All LQG waste is held in non-leaking DOT-approved containers, typically 55-gallons or less in size. The containers shall be in suitable working condition and will be compatible with the waste being held. The container remains closed except while waste is being added or removed. The contents of "satellite" containers are typically transferred into an "accumulation" container on the same day that the "satellite" becomes full. In addition, all LQG containers are marked with labels /markings that meet 35 IAC 722 Subpart C requirements including the "date of accumulation" shall be noted on all drums designated as "accumulation" containers.

The official "transfer" of a container from "LQG"accumulation" to "TSD storage" is documented through the use of CHSI's computerized waste tracking system. When an "accumulation" container becomes full (or has reached the 90-day accumulation limit), CHSI affixes a unique waste tracking "bar code" label to the container, and moves the container into "storage". The movement of the container through the TSD portion of the facility is documented in the tracking system and becomes part of the facility's operating record.

B-1a (2) Hazardous Waste Management Activities Regulated under RCRA

CHSI accepts hazardous waste from offsite generators, and generates hazardous waste from onsite treatment processes, laboratory operations, and maintenance activities. The RCRA-regulated handling activities for hazardous waste include:

1. Storage and transfer of hazardous wastes, including lab packs, in containers. Storage/transfer activities may include a consolidation (i.e., bulking) of compatible waste prior to shipment;

2. Storage and transfer of hazardous wastes in tanks. Storage/transfer activities may include consolidation (i.e., bulking) of compatible waste prior to shipment;

3. Storage and blending of hazardous wastes intended for use as a supplemental fuel at authorized offsite hazardous waste fuel burners;

4. Storage and treatment of hazardous waste in containers (e.g., rolloffs) using stabilization and/or fixation technology. Wastes treated include offsite generated wastes and on site generated treatment residuals in preparation for offsite disposal:

5. Storage and treatment of listed (i.e., F-, K-, P-, U-code) hazardous waste in tanks using wastewater treatment technology and/or specialized pretreatment technologies such as carbon absorption;

6. Storage and onsite treatment of corrosive (i.e., D002) hazardous waste liquid in containers through removal of free liquid;

7. Storage and compaction of hazardous waste in containers;

8. Storage and treatment of organic peroxides and acid cyanides in containers;

9. Storage and treatment of hazardous waste in containers and tanks using phase separation techniques;

10. Storage and shredding of hazardous waste in containers including metalwashing of residual metal;

11. Storage and treatment of black powder hazardous waste in containers;

12. Storage and treatment of hazardous waste in containers by the addition of dry ice;

13. Storage and venting of hazardous waste oxygen to the atmosphere;

14. Onsite disposal of hazardous waste in surface impoundments. The surface impoundments are no longer in active use, and have been certified as closed in accordance with RCRA closure requirements. The surface impoundments remain a regulated hazardous waste disposal unit throughout the 30-year post-closure period, although no longer authorized to accept waste materials.

B-1a (3) Detailed Description of RCRA Hazardous Waste Activities

A complete description of the RCRA –regulated hazardous waste operations is presented in Sections B-1a (3) (a) through (q) below. The location of each existing, proposed, and modified hazardous waste management units is shown on the following drawings:

CHCI	Title	Issue
4200	Site Location & Surrounding Land Use	B
4201	Floodplain & Site Plan	D
4202	Site Plan & Topography – Entire Property	E
4203, 1 of 3	Site Plan Existing Facilities	E
4203, 2 of 3	Site Plan Existing Facilities	A
4203, 3 of 3	Site Plan Existing Facilities	A
4204B, 1 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	B
4204B, 2 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	D
4204B, 3 of 3	Site Plan – Existing, Approved & Modified	A

B-1a (3) (a) Storage/Transfer in Containers

CHSI accepts and stores containers of hazardous wastes, including lab packs that are generated offsite. The wastes are stored prior to onsite treatment, or for subsequent transfer to an offsite waste treatment or disposal facility. The wastes stored in containers are typically received in containers such as rolloffs, railcars, bulk tankers, box trucks, and non-bulk containers (e.g., 55-gallon drums, lab packs). Wastes in containers are treated on site or transferred to offsite treatment/disposal facilities in their original container or, whenever practicable, in consolidated (i.e., repackaged or bulked) form.

For the sake of clarity, CHSI notes that the container storage activities proposed under this license modification request represent a combination of units which are: 1) approved under CHSI's November 1993 Part B permit and currently in existence at CHSI; and 2) approved under CHSI's November 1993 Part B permit, but not yet constructed.

A summary of the container storage units and their licensed storage capacities is provided below. CHSI notes that each hazardous waste management unit that is located on the former CHCI portion of the property is assigned an identification letter (e.g., unit D), whereas each unit that is located on the former CWMCSI portion of the property is assigned a unit identification number (e.g., unit 25). The referenced drawings reflect those unit identification numbers/letters.

A. Approved CHSI Drum/Rolloff Storage Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to store up to 2,969 drums (55-gallon equivalent), (12) 30-cubic yard rolloffs and 31 transportation vehicles of hazardous waste. Drum storage is authorized for seven existing drum storage units and for four not-yet-constructed locations. Rolloff storage is authorized for two existing and one not –yet constructed locations. Transportation vehicle storage is authorized for seven existing and three not-yet constructed. These locations are as follows:

I. Existing CHSI Drum/Rolloff/Transportation Vehicle Storage Units

1. Drum Storage Area (Unit G1)

Staging	72	Drums
Alkaline	192	
Acidic-2	96	
Acidic-1	192	
	552	Drums (55-gallon equivalents)

2. Drum Storage Area (Unit R1)

Staging	160	Drums
Flammable-1	160	
Flammable-2	160	
Oxidizers	96	
Reactives	96	
Poisons	96	
	768	Drums (55-Gallon equivalents)

3. Drum Storage Area Expansion (Unit R2)

Oxidizers #2	96	Drums
Reactives #2	96	
Poisons #2	96	
Staging	80	
	368	Drums (55-Gallon equivalents)

4. Lab Pack Pouroff Station (Unit F1)

Pour-Off Area	8	Drums
	8	Drums (55-Gallon Equivalents)

5. Container Storage Building (Unit 25)

Alkaline/Poisons/PCBs	248	
Acids	136	
Flammable	184	
Truck Pad	88	
	656	Drums (55-gallon equivalents)

6. Ignitable Container Management Building (Unit 26)

Ignitable/PCB's	192	
	192	Drums (55-gallon equivalents)

7. Container Handling Dock (Unit 61)

Staging	160	
	160	Drums (55-Gallon equivalents)

8. Bulk Container Storage Area (Unit Q1)

Loading Pad	3	Rolloffs
	3	Rolloffs (30-CY equivalents)

9. Bulk Solids Storage Pad (Unit B)

8	
8	Rolloffs (30-CY equivalents)

10. Truck Unloading and Bulking Area (Unit Q) — Three (3) trucks (7200 gallons each)

11. Truck loading Dock (Unit V) — Three (3) trucks (7200 gallons each)

12. Truck Unloading Platform (Unit 15) — Two (2) trucks (7200 gallons each)

13. Truck staging area (Unit 59) — Three (3) trucks (7200 gallons each)

14. Truck Pad (Unit 62) — Four (4) trucks (7200 gallons each)

15. Truck staging area (Unit C) — Six (6) trucks (7200 gallons each)

16. Rail Car Unloading Area (Unit 13) — Two (2) rail cars (60,000 gallons)

II. Approved/Not Yet Constructed CHSI Drum/Rolloff/Transportation Vehicle Storage Units

1. Drum Storage Area Expansion (Unit R2)

Flammable-3	160	Drums
	160	Drums (55-gallon equivalents)

2. Lab Pack Repack & Consolidation Area (Unit U)

Acids	5	Drums
Alkaline	5	
Organic	5	
Oxidizers	5	
Pesticides	5	
Organic Pouroff	4	
Flammables	6	
	35	Drums (55-Gallon equivalents)

3. Paint and Paint Related Processing Area (Building 42)

Westside Pad	24	Drums
Building	28	
Hopper (405)	1 64 cu.ft. hopper	
	52	Drums (55-gallon equivalents)
	One 64 cu.ft. hopper	

4. Shredder Process Building (Unit 24)

Conveyor	16	Drums
Drum (412)	1	
Tote (407)	1 64 cu.ft. hopper	
	17	Drums (55-gallon equivalents)
	One 64 cu.ft. hopper	

5. Metalwash Pad (Unit 68)

Drum (434)	1	Drum
	1	Drum (55-gallon equivalent)

6. Bulk Solids Storage

Listed Waste Rolloff	(Unit Z1)	1 Rolloff
		1 Rolloff (30-CY Equiv.)

7. Truck Loading/Unloading Pad (Unit X) Two (2) trucks (7200 gallons each)

8. Truck to Truck Transfer Pad (Unit W) Four (4) trucks (7200 gallons each)

9. Truck Loading/UnloadingPad (Unit 69) Two (2) trucks (7200 gallons each)

C. Summary of RCRA Regulated Container Storage Activities

The total RCRA Part B License container storage capacity of the facility is: 163,295 gallons (2,969 55-gallon drums or equivalent) of hazardous waste liquids and solids in non-bulk containers; 360 cubic yards (12 30-CY rolloffs or equivalent) plus 128 cubic feet (2 hoppers) of hazardous waste solids in bulk containers; 60,000 gallons of hazardous waste liquids in railcars (2 30,000-gallon tankcars or equivalent); and 208,800 gallons (29 7,200-gallon bulk liquid transporters, or equivalent) of hazardous waste in highway transportation vehicles. There are no changes proposed to the approved container storage activities in this Permit request.

CHSI notes that while there are a total of 35 truck slots which are designated as RCRA-Regulated storage areas for highway transportation units, six (6) of the slots are located inside the existing bulk solids storage pad (unit B) which is already permitted as "Rolloff Container Storage Area". Under the approved Part B permit, Unit B is designated as a transportation vehicle storage area to allow vehicles other than rolloff to be stored inside the unit, but not be included in the calculation of the facility's permitted truck storage capacity so that waste which is already counted towards the permitted rolloff storage capacity of the facility is not "Double Counted". Therefore, the total number of highway vehicles for RCRA permitting purposes is (35 – 6) or 29.

B-1a (3) (b) Storage/Transfer/Treatment in Tanks

CHSI stores hazardous wastes in tanks prior to onsite treatment or subsequent transfer to an offsite waste treatment or disposal facility. The wastes are typically received in railcars, tank trucks, and non-bulk containers (e.g., 55-gallon drums, lab packs) and are treated on site or shipped in bulk form.

For the sake of clarity, CHSI notes that the tank storage activities proposed under this license request represent a combination of units which are: 1) approved under CHSI's November 1993 Part B permit and currently in existence at CHSI; or 2) approved under CHSI's November 1993 Part B Permit, but not yet constructed

A summary of the tank storage units and their licensed storage capacities is provided below.

A. Approved Tank Storage Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to store up to 306,356 gallons of hazardous waste in 37 tanks, as follows:

I. Existing CHSI Tank Storage Units

1. Fuels Blending Operation (Unit 43)
- 1 dispersion tank @ 1,225 gallons
- 1 overflow tank 275 gallons

Total capacity = 1,500 gallons

2. Flammable Storage Tank Farm (Unit 16)
- 9 @ 12,800 gallons
- 1 @ 19,800 gallons

Total capacity = 135,000 gallons

II. Approved/Not Yet Constructed CHSI Tank Storage Units

1. Flammable Storage Tank Farm (Unit 22)
- 1 @ 3490 gallons
- 2 @ 10,558 gallons
- 1 @ 15,547 gallons
- 1 @ 6136 gallons
- 1 @ 3730 gallons
- 1 @ 987 gallons

Total capacity = 51,006 gallons

3. Listed Waste Storage Tanks (Unit Y)
- 6 @ 11,025 gallons
- 2@ 11,025 gallons

Total capacity = 88,200 gallons

4. Process Building No. 3/Listed Wastewater Treatment System (Unit Z)
- 1 reactor @13,570 gallons
- 1 Lamella classifier @ 1,200 gallons
- 1 classifier collection tank @ 4,100 gallons
- 1 sludge conditioning tank @ 1,270 gallons
- 2 sand filters @ 750 gallons each
- 1 backwash collection tank @ 3,770 gallons
- 1 treated effluent tank @ 2,640 gallons
- 2 carbon adsorption units @ 1,300 gallons each

Total capacity = 30,650 Gallons

C. Summary of RCRA-Regulated Tank Storage Activities

The total RCRA part B permits tanks storage capacity of the facility is 306,356 gallons of hazardous waste in 37 tanks. There are no changes proposed to the approved tank storage activities in this Permit request.

B-1a (3) (c) Storage and Blending of Hazardous Waste Fuels

CHSI receives and processes hazardous wastes, which may be burned for energy recovery as a hazardous waste fuel. The types of wastes to be processed by the facility through this operation include non-halogenated organic; high BTU lean waters; non-halogenated oils; organic liquids with halogens; and halogenated multi-layered organic. The hazardous waste fuel process involves the receipt and mixing/blending of liquids, semisolids, and solids. The blended fuel may be shipped in containers or pumped directly onto to bulk transport vehicles pending transfer to reuse facilities (e.g., cement kilns).

A. Approved Fuel Blending Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to operate an existing automated hazardous waste fuel blending system designed by Pegasus Niagara, Inc. The Pegasus system is located in the Fuels Blending Operation Building (Unit 43). The drum feedstock for the unit is stored in the adjacent Ignitable Container Management Building (Unit 26) and fed to the Pegasus system in Building 43 by means of an enclosed conveyer system which is equipped with proper secondary containment features. There are no changes proposed to the approved fuel blending activities with this Permit request.

B-1a (3) (d) Stabilization and/or Fixation Prior to Offsite Disposal

Wastewater treatment residuals and certain characteristic (i.e., D-code) and listed (e.g., K062) hazardous wastes received from offsite generators may require stabilization and/or fixation prior to shipment to an offsite disposal facility.

Material accepted for stabilization/fixation shall be treated to meet applicable Land Disposal Restriction treatment standards (40 CFR Part 268) and the receiving facility's specific permit conditions. Treatability performance data documenting the success of stabilization/fixation activities shall be documented on a case-by-case basis and maintained onsite as part of the facility's operating record.

A. Approved Stabilization/Fixation Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to conduct stabilization/fixation of certain characteristic and listed hazardous waste in bulk solid containers e.g., rolloffs, mix box). As part of the special license conditions imposed by the IEPA, CHSI is only authorized to conduct stabilization/fixation operations inside process building #3, the approved/not yet constructed listed waste treatment building (Unit Z). However, CHSI is authorized to add additional enclosed structures as stabilization processing areas upon submittal of a Class 1* permit modification request. As of the date of this Application, CHSI has not designated any stabilization processing areas in any of the existing buildings at the facility. There are no changes proposed to the approved stabilization/fixation activities with this Permit request.

B-1a (3) (e) Listed Waste Treatment System

Storage and treatment of listed (i.e., F-, K-, P-, U-code) hazardous waste liquids and solids in tanks or containers using wastewater treatment technology and/or specialized pretreatment technologies such as carbon absorption.

A. Approved Listed Waste Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a new listed waste treatment system (Unit Z) in new building #3. Under the Permit request, no changes or other modifications are proposed for the approved listed waste treatment system.

B-1a (3) (f) Treatment of D002 Corrosive Liquid/Solid Mixtures in Containers

Storage and onsite treatment of corrosive (i.e., D002) hazardous waste in containers through removal of free liquid.

A. Approved D002 Waste Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to "treat" solid/liquid mixture of hazardous waste identified by EPA Waste D002 through the removal of the free liquid layer. Once all the free liquid is removed, the remaining solid no longer meets the definition of corrosive, and the D002 wasted code may be dropped. This "treatment " activity is licensed for all drum storage areas authorized for D002 waste storage. CHSI is not proposing any changes to this treatment activity.

B-1a (3) (g) Treatment of D002 Liquids in Tanks and Containers

A. Approved D002 Liquid Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License CHSI is authorized to conduct treatment of D002 corrosive liquid hazardous waste in tanks and containers. Treatment of D002 corrosive liquids includes bulking/mixing with other compatible waste streams, until they no longer exhibit the characteristic of corrosively, as defined at 35 IAC 721.121(1). The treatment operation is conducted in any container (or tank) in which compatible waste streams are mixed. The success of the treatment operation is confirmed though pH testing upon completion of the consolidation/missing activity. Treatment is deemed successful when the resultant consolidated/mixed waste stream has a pH value that does not meet the D002 corrosively identification criteria (i.e., has a pH value grater than 2.0 but below 12.5 Units). If treatment is successful, CHSI shall drop the D002 waste code from the final consolidated /mixed waste stream description accompanying outbound manifest. Without this treatment authorization, CHSI would be obligated to carry the D002 code, even in instances where the resultant waste stream has a pH value that does not meet the D002 corrosively identification criteria. Under the Permit request, no changes or modifications are proposed to the approved D002 liquid treatment activities.

B-1a (3) (h) Storage and Compaction of Hazardous Wastes in Containers

Approved Compaction Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to compact hazardous waste in containers with a mobile waste compactor. This compactor is only used in the staging area of the Outdoor Storage Area (Unit R1). Hazardous wastes are reduced in volume prior to off-site shipment to a licensed treatment or disposal facility. Under the permit request, no changes or modifications are proposed from the approved compaction treatment activities.

B-1a (3) (i) Treatment of Acid Cyanide Wastes in Containers

A. Approved Acid/Cyanide Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to conduct treatment of acid/cyanide hazardous waste in containers. Under US DOT shipping relations, such wastes cannot be transported. In the event that a non-bulk container of acid cyanide waste is identified during acceptance analysis, it is treated in the existing RCRA-exempt inorganic wastewater treatment system or directly in the original non-bulk or bulk container.

Treatment of acid cyanide waste in non-bulk containers is accomplished through the addition of sodium hydroxide or other suitable alkaline reagent. Sufficient alkaline would be added to raise the pH of the waste to the level where the waste is acceptable for transportation to an offsite treatment/disposal facility. This treatment is conducted under the operating fume hood in the Outdoor Storage Area (Unit R1). The exhaust from the fume hood is bubbled through a 55-gallon drum containing a caustic solution. Under the Permit request, no changes or modifications are proposed to the approved treatment of acid/cyanide wastes in containers.

B-1a (3) (j) Treatment of Organic Peroxides in Containers

A. Approved Organic Peroxide Treatment Activities (November 1993)

Under the terms of the November 1993 part B License, CHSI is authorized to conduct treatment of organic peroxide hazardous waste in containers. The treatment operation, the addition of water to the organic peroxide compound, is conducted in order to: 1) prepare the waste for disposal facility requirements; or 2) meet proper US DOT shipping requirements. Many hazardous waste incineration facilities will accept organic peroxides for treatment, but only at specified dilution levels. In other cases, the possibility exists in which an organic peroxide waste could arrive at CHSI and not meet dilution levels specified by US DOT shipping requirements. In either case water would be added to meet the required dilution level. The treatment of organic peroxides in containers is conducted under the operating fume hood in the Outdoor Storage Area (Unit R1). The exhaust from the fume hood is fed through a carbon adsorption unit. Under this Permit request, there are no changes or modifications to the approved treatment of organic peroxides in containers.

B-1a (3) (k) Treatment of Hazardous Waste in Tanks through Phase Separation

A. Approved Phase Separation Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to conduct treatment of hazardous waste in tanks through phase separation. The treatment operation involves the use of physical (e.g., filtration, gravity separation, and heat) and/or chemical (e.g., addition of demulsifiers) means to, for example, separate a solid layer from a liquid layer, or to separate two liquid layers. Phase separation may be conducted prior to onsite treatment (e.g., separation of an organic layer from a water stream) or prior to offsite shipment. Under this Permit request, there are no changes or modifications to the approved phase separation treatment activities.

B-1a (3) (l) Storage and Shredding of Hazardous Waste In Containers Including Metalwashing of Residual Metal

CHSI is authorized to receive and process hazardous wastes for shredding which may be blended into pumpable slurries or non-dispersable bulk solids. The primary types of wastes to be processed by the facility through this operation include organic liquid, semi-solid and solid materials. The system will also separate out and wash the resulting metal container fragments.

Approved Shredding and Metalwashing Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a hazardous waste shredding system. The Shredder is located in the Unit 24. The drum feedstock for the unit is stored in the adjacent Building (Unit) 42 and fed to the system in by means of a conveyer system, which is equipped with proper secondary containment features. After passing through the dual shredder, shredded metal from containers are captured using a rotary magnet. In dispersible operation, wastes are conveyed to a hydropulpar tank and blended with low viscosity liquids into a thick flowable liquid. In non-dispersible materials operation, shredded materials are conveyed to a covered hopper and eventually to a roll-off/intermodal for off-site shipment. Shredded metal fragments from the shredder are cleaned using solvents in Unit 68. The cleaned metal will be sent off-site for reclamation. There are no changes proposed to the approved shredding/metalwashing activities with this Permit request.

B-1a (3) (m) Consolidation of Paint and Paint-Related Materials In Containers Using a Compactor

Approved Consolidation of Paint and Paint-Related Materials Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a hazardous waste paint and paint-related materials consolidation system using a compactor. The compactor is located in the Building 42. The primary types of wastes to be processed by the facility through this operation include paints, coatings, sealants, turpentine, and mineral spirits used as paint thinner. The consolidated materials will be processed on-site as a hazardous waste fuel and/or sent off-site for disposal. There are no changes proposed to the approved shredding/metalwashing activities with this Permit request.

B-1a (3) (n) Storage and Treatment of Black Powder Hazardous Waste In Containers

Approved Black Powder Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to conduct treatment of black powder in containers through the addition of water (wetting). The treatment operation involves wetting the black powder with the amount of water equal to 20% by weight of black powder. Virgin ethylene glycol based antifreeze is added to the water when the temperature is expected to go below 32 degrees F. This operation is conducted in Unit R1 prior to offsite shipment. Under this Permit request, there are no changes or modifications to the approved phase separation treatment activities.

B-1a (3) (o) Storage and Treatment of Hazardous Waste in Containers by the Addition of Dry Ice

Approved Addition of Dry Ice Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to conduct treatment of hazardous waste in containers by the addition of dry ice. The treatment operation involves adding dry ice to roll-off/intermodal containers to lower temperatures (prevent spontaneous combustion) prior to offsite shipment. This treatment will be conducted on containers with waste identified by CHSI as FB5 in Units B and Q1. Dry ice is added when daytime temperatures exceed 90 degrees F, nighttime temperatures exceed 70 degrees and the dew point temperature exceeds 70 degrees F. Daily inspections of the containers check the amount of dry ice present and temperature in the container. Under this Permit request, there are no changes or modifications to the approved addition of dry ice treatment activities.

B-1a (3) (p) Storage and Venting of Hazardous Waste Oxygen to the Atmosphere

Approved Oxygen Venting Treatment Activities (November 1993)

Under the terms of the November 1993 Part B License, CHSI is authorized to conduct treatment of hazardous waste oxygen in containers (i.e., cylinders) by venting to the atmosphere from Building 25. During inert atmospheric gas venting CHSI monitors with an oxygen meter and ceases operation if the oxygen concentration drops below 19.5% or rises above 23.5%. Oxygen is not vented when flammable containers are open or in the process of being moved, consolidated or sampled. Under this Permit request, there are no changes or modifications to the approved oxygen venting treatment activities.

B-1a (3) (q) Storage and Disposal of Hazardous Waste in Surface Impoundment's

A. Approved Surface Impoundment Activities (November 1993)

B. Under the terms of the November 1993 Part B License, CHSI assumed operational control and post-closure care of the existing surface impoundment's which have been certified as closed in accordance with RCRA closure requirements in June 1993. Although the impoundment's no longer actively receive hazardous waste, they remain a regulated hazardous waste disposal unit throughout the 30-year post –closure period. Under the Permit request, there are no changes or modifications to the approved surface impoundment activities.

B-1b Types of Industry Served

CHSI accepts a broad range of hazardous and non-hazardous wastes for both its treatment and transfer operations. CHSI does not accept any wastes for treatment that contain pesticides, herbicides, PCB's or radioactive mixed wastes. A complete list of the hazardous wastes accepted at the facility is included in Section A - - RCRA Part A Form of this Application.

The types of industry from which CHSI receives hazardous and non-hazardous wastes include:

* Chemical Manufacturing
* Steel Manufacturing
* Metal Working and Finishing
* Paint and Pigment
* Tank Cleaning Operations
* Soil Redemption Projects
* Food Processors and Printing
* Emergency Response Operations
* Other Waste Management Facilities
* Chemical Formulating
* Plating
* Electronics
* Pharmaceutical
* Paper and Pulp
* Medical Facilities
* Landfill Leachate
* Plastics

No waste streams, hazardous or non-hazardous, are accepted with out completion of a stringent, detailed analysis to identify the hazardous nature of the waste stream and to ensure its compatibility with the acceptance procedures are discussed in Section C - - Waste Characteristics of this Application.

B-2 Topographic Map 703.183(s), 703.185(c), 703.185(d), 724.195, 724.197

B-2a General Map Requirements

CHSI is located between Slip Nos. 4 and 8 of Lake Calumet in Chicago, IL. The property, which is owned by the Illinois International Port Authority, is approximately 57 acres in size. The western side of the property, as well as three-quarters of the northern and southern sides of the property, are bounded by Lake Calumet. Access to the site is via an asphalt-paved access road leading from South Stony Island Avenue along the eastern side of the property.

Land use in the vicinity of the facility is heavy industrial. Across South Stony Island Avenue from CHSI to the east are the Land and Lakes, Inc. industrial residual landfill. To the south side on adjacent Pier No.3 is EmEsCo Inc a steel distribution center. Also on the south side is Steel Coil Processing, Inc. Pier No. 9 north of the facility is undeveloped but is zoned for industrial use. The Location of the facility and the topographic, land use, and cultural features of the site and surrounding area are shown on the following maps which are herein incorporated by reference:

CHCI Dwg No.	Title	Issue
4200	Site Location & Surrounding Land Use	B
4201	Floodplain & Site Plan	D
4202	Site Plan & Topography – Entire Property	E
4203, 1 of 3	Site Plan Existing Facilities	E
4203, 2 of 3	Site Plan Existing Facilities	A

4203, 3 of 3	Site Plan Existing Facilities	A
4204B, 1 of 3	Site Plan - Existing, Approved, Modified & Proposed Activities	B
4204B, 2 of 3	Site Plan - Existing, Approved, Modified & Proposed Activities	D
4204B, 3 of 3	Site Plan – Existing, Approved & Modified	A
4223	Wind Rose	A

These maps satisfy all the requirements for general and topographic maps specified in 703.183 (s) and elsewhere. A cross-reference between the general map information requirements and the location(s) of the information, which satisfies the requirement, is presented in Table B-1. A legal description for the property on which the facility is located is included in Appendix B-1. Excerpts from the City of Chicago Zoning Ordinance showing land use designations for the facility and nearby properties are presented in Appendix B-2

B-2b Additional Map Requirements for Land Disposal Facilities 703.184, 703.185(c), and (d) (1), 724.195, 424.197

CHCI Drawing No. 4202 shows the location of the surface impoundment's and disposal facilities, including the waste management boundaries. The proposed point of compliance for the surface impoundment's and the post-closure monitoring well location are also shown on CHCI DWG. No. 4202. The existing waste management units located on the CHSI facility are shown on CHCI DWG. No. 4203, Sheets 1 through 3. The location of the uppermost water bearing zone with the subsurface material's hydraulic conductivity's is shown in Figure 2-3 located in Section E, Subsection 2.3 (Site Hydrogeology) of this Request for Permit.

A written description of the site's hydrogeology, including groundwater flow direction and rate, is contained in Section E, Subsection 2.3. Preliminary data suggests the presence of an organic and inorganic plume at the facility. The organic plume appears to be in the northeast corner of the facility. A depiction of this plume location is shown as Figure 1-1B located in Section E. Subsection1.1 of this RCRA Permit Application. The inorganic plume appears to be adjacent to the northwest corner of the surface impoundments. A depiction of this plume location is shown in Figure 1-1A and 1-1A (continued), located in Section E, Subsection 1.1 of this RCRA Permit Application. A written description of both of these plumes is provided in Subsection1.1 of the Post-Closure Groundwater Monitoring Plan of this RCRA Permit Application. A more detailed description of the former solid waste management units is located in Section L of this RCRA Application.

Based on available information, this site is not located above any active or inactive shaft or tunneled mines. The facility is not within two miles of an active fault in the earth's crust. Figure 2-1 located in Section E, Subsection2.0 of this RCRA Permit Application shows the location of existing wells within 1,500 feet of the property boundary. The figure also shows that there are no corporate boundaries within 1.5 miles of the facility boundary since the facility is completely within the City of Chicago limits.

B-3 Location Requirements

B-3a Seismic Standard 724.118

As demonstrated In Appendix B-3, CHSI is not located within 200 feet of a fault, which has displacement during Holocene time. Therefore, the seismic standard requirements are not applicable.

B-3b Floodplain Standard 703.184(c), 721.118 (b)

As shown in CHCI Drawing No. 4201, no portion of the facility is located within a 100-year floodplain. The 100-year floodplain information was taken from the Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program Flood Insurance Rate Map (FIRM), City of Chicago, IL, Cook and Dupage Counties, Community Panel No. 170074 0120B, effective June 1, 1981.

B-3b (1) Demonstration of Compliance 703.184 (d), 724.118 (b)
B-3 (1) (a) Floodproofing and Flood Protection Measures 703.184 (d) (1) and (d) (2)
B-3b (1) (b) Flood Plan 703.184(d) (3) and 724.118 (b) (1) (A)
B-3b (2) Waiver for Land Storage and Disposal Facilities 724.118(b) (1) (B)
B-3b (3) Plan for Future compliance with Floodplain Standard 703.184 (e)

CHSI is not located within a 100-year floodplain. As such, the requirements for: additional floodproofing or flood protection measures; a flood plan; a waiver from floodplain standards; and demonstrating compliance (present and future) with flood prevention measures are not applicable.

B-3(c) Other Location Requirements Section 21 (1) of the Illinois Environmental Protection Act

CHSI is not a new disposal facility. Therefore, the requirement to demonstrate that the facility does not violate Section 21 (1) of the Act is not applicable

B-4 Traffic Information 703.183 (j)

G-4a Onsite Traffic

CHSI receives both bulk and containerized wastes. Waste is received in transport vehicles operated by Clean Harbors and other licensed transporters.

Liquids are received in vacuum trucks and bulk tankers with capacities of up to 7,200 gallons. Bulk solids are received in rolloff containers and dump trailers with capacity of up to 30 cubic yards. Containers will be transported in straight trucks and semi-trailer trucks having a maximum capacity of 88 55-gallons drums. The facility has a traffic loading capacity of 100 trucks per day (24 hours) with the maximum traffic rate being 20 trucks within a 2-hour period. Rail shipments will be in tankers. Rail movements will include up to six cars per 24 hours. The typical types and weights of over-the-road vehicles utilizing the facility may include:

Type	Weight – Empty (Lbs.)	Weight - Product (Lbs.) (1,2)
I. Tractor		
City Tractor	16,500	N/A
Road Tractor	18,000	N/A
II. Trailers		
Vacuum Trailers	16,500	47,000
Bulk Transporters	13,000	50,500
Dump Trailer	14,000	49,500
Rolloff Trailer	16,800	46,700
Drop Deck Trailer	12,000	51,500
Van Trailer	12,500	51,000
III. Straight Trucks		
Vacuum Truck	27,500	52,500
Rolloff Truck	27,500	52,500
Box Truck	20,500	59,500

Notes:

(1) The total weight of any waste transport vehicles may not exceed 80,000 pounds.

(2) The product weights noted for all trailer units assume that a city tractor is used. If a road tractor Is used, subtract 1,500 pounds to determine the maximum weight of product.

To better manage onsite traffic, all incoming loads must be scheduled for delivery with the Facility Manager or his designee prior to the actual shipment of any waste. Vehicle access to the facility is controlled through a single locked entrance gate across the driveway leading from South Stony Island Avenue. Onsite traffic patterns within the facility are shown CHCI Drawing No. 4249, Sheets 1 and 2.

The base roadway system at the existing CHCI portion of the facility consists of a crushed limestone bed underlain by a hard clay fill. A 1991 analysis of the load-bearing capacity of the roadway conducted by an independent professional engineer concluded that the roadway system has sufficient thickness and degree of compaction for the safe support of trucks weighing 80,000 pounds. In 1993, the roadway was paved with 6 inches of asphalt. The extent of the paving is shown on CHCI DWG. 4204B Sheet 1 of 3. A copy of the roadway analysis is presented in Appendix B-4.

Facility roadways on the CWMCSI portion of the facility are constructed of asphalt or gravel underlain by the same hard clay fill material as found on the CHCI portion of the facility.

Bulk liquids are received and shipped from the facility in rail cars. Rail shipments use the 103rd Street yard of the Norfolk and Southern Railroad. Rail cars are switched into the plant via the Illinois International Port Authority spur. Two railcars, each containing a maximum load of 30,000 gallons can be managed onsite at any one time.

B-4b Offsite Traffic

The facility is located on South Stony Island Avenue approximately three miles from US Interstate Highway I-94. There are two primary highway transportation routes leading form I-94 to the facility. The routes are:

From the North: I-94 South to 103rd Street exit: east on 103r Street to south Stony Island Avenue; south on Stony Island Avenue to facility

From the South: I-94 North to 130th Street: east on 130th street to Torrance Ave; north on Torrence to 122nd Street; west on 1222nd Street to Stony Island Avenue; north on Stony Island Avenue to facility.

Vicinity maps showing the major transportation routes from nearby access highways are shown in Appendix B-5. All of the noted roadways are improved streets maintained by the City of Chicago and or the State of Illinois.

Stony Island Avenue is an improved roadway maintained by the city of Chicago. According to the City of Chicago Department of Public Works, Stony Island Avenue is designed to handle 2,000 vehicles per day, up to 50% of which are multi-unit vehicles. The roadway is loading capacity is rated at a minimum of 18,000 pounds per axle. A drawing documenting the Stony Island Avenue upgrade project is included in Appendix B-6. Roadway structural design information is shown in Appendix B-7.

B-5 Operating Record

Pursuant to 35 IAC 724.173, CHSI will maintain the following written records on permanent file at the facility. These records, which are available for inspection and review by the Agency, constitute the facility's Operating Record.

1. Waste Analysis Records – All prospective waste streams are subject to the pre-acceptance procedures detailed in the Waste Analysis Plan (WAP) in Section C. Complete analytical records pertaining to streams stored or treated on site are maintained by and at CHSI. Information from the initial Generator Waste Material Profile Sheet (GWMPS), together with analytical data developed through waste testing procedures is recorded on the GWMPS computer data base maintained by Clean Harbors. Fingerprint analysis results, as required by the WAP, are recorded in CHSI laboratory logbooks and computer records.

2. Waste Tracking System - CHSI utilizes a data management system that records an up-to-date inventory of waste in the facility, the types of treatment that each waste has received, and destination when the waste (or residue) is system enters the receipt in terms of type of waste, quantity or number of containers, and location of waste storage. When the waste is removed from storage for treatment, this information is entered. Residues, including crushed drums and sludge's, are traceable back the original wastes.

CHSI does not produce or maintain an onsite written hard copy record of each waste movement, but this information is readily available on the Company's computer system. To ensure security, this information is archived onto tape daily.

All hazardous waste received at the facility is either treated onsite or shipped off-site to a properly licensed waste management facility within one year of receipt.

3. Manifests – The types and quantities of wastes received, treated and shipped off-site for disposal are recorded on manifests for hazardous and non-hazardous wastes. This information is summarized and submitted sent to IEPA: 1) on a quarterly basis, for non-hazardous wastes; and 2) on an annual basis, for all hazardous wastes.

4. Land Disposal Restriction (LDR) Documentation – As a treatment/storage facility, CHSI retains copies of all generator LDR notifications and certifications accompanying inbound restricted wastes subject to LDR regulations. In addition, as the generator of all hazardous waste shipped from the facility, CHSI retains copies of all LDR notifications and certifications for outbound shipments of restricted wastes and for the non-hazardous treatment residues for the primary treatment process.

5. Plan and Implementation Records – An up-to-date copy of the facility's Contingency Plan will be maintained on file at the facility. If releases or potential releases cause the Contingency Plan to be implemented, a report will be prepared and submitted to the Agency. Copies of these reports will also be maintained at the facility. CHSI's Contingency Plan is included in Section G of this Application.

6. Inspection and maintenance Records – All facility inspections (daily, weekly, monthly, and other) described in Section F – Procedures to Prevent Hazards will be documented on preprinted report forms. These reports, as well as other maintenance, monitoring, testing and/or analytical results pertinent to specific hazardous waste management units, storage operation and structural integrity, and secondary containment leak detection requirements, will be maintained on permanent file at the facility. This includes written statements by persons required to certify tank system designs and supervision of tank system installation in accordance with 724.292 (b) through (f). It will also include the written certification required in 702.126(d).

7. Notice to Generators – following initial prequalification and acceptance of prospective waste streams in accordance with WAP procedures, CHSI will send a notice to the generator informing the generator the material is suitable for acceptance at CHSI. Copies of the notifications will be maintained on file at the facility or by Clean Harbors Analytical Services in Braintree, MA.

8. Closure Cost Estimate – A copy of the approve closure Plan and the most-recent closure cost estimate will be filed at the facility.

9. Waste Minimization – A copy of the waste minimization certification for the facility will be filed at the facility.

10. Hazardous Waste Fuels Authorization – Documentation of a receiver facility's authority under 40 CFR 266 Subpart H to accept hazardous waste fuel containing less than 5,000 BTU per pound will be filed at the facility.

B-6 Solid Waste Management Units

The following solid waste management units (SWMU's) were incorporated in the Part B issued in 1993. These SWMU's have been addressed in corrective action associated with the Part B.

SWMU #	Name

1 Process Sewer System

This unit is an 8" cast iron sewer line from the southwest corner of Building #1 to Stony Island Ave. where it connects to the common sewer system. It is used to discharge nonhazardous treated water. There is no know release from this unit.

2 Outside Drum Storage Area 1

This unit is located outside the north side of Process Building #1 and consisted of a gravel pad with no secondary containment. It was potentially used to store any waste permitted to be accepted. There is no know release from this unit.

3 Outside Drum Storage Area 2

This unit is located on the south side of Process Building #1. The unit consisted of a concrete pad with a 225-gallon sump. It was used to store 55-gallon drums potentially containing any waste permitted for acceptance. There is no know release from this unit.

4 Carbon Absorption System

This unit consists of a 360 ft2 building west of Process Building #1. The unit has a concrete floor with a collection sump. The unit contains carbon adsorption system for Tanks 1-4. There is no know release from this unit.

5 Process Building #1

This unit is the wastewater treatment building. It is approximately 13,400 ft2. Any waste amenable to waste water treatment potentially has been managed in this area. There is no know release from this unit.

6 Process Building #2

This unit is approximately 4580 ft2 with concrete floors. It is used primarily for storage of 55-gallon drums containing waste permitted for acceptance by the facility. There is no know release from this unit.

7 Chlorobenzene Contaminated Area

This unit is in the eastern portion of the site located between existing offices. The area is approximately 7000 ft2. The unit has detectable levels of chlorobenzene.

8 Auxiliary Basin #3

This unit is located southwest of Tanks 1-4. The unit was used by Hyon to store wastewater, storm water, incinerator scrubber water, partially neutralized pickle liquor and oil wastes. The area was backfilled between 1979 and 1981. There is no know release from this unit.

9 Landfill

This unit is located on the western portion of the site, west of Auxiliary Basin #3. This unit was used to dispose neutralized pickle liquor and demolition debris. It was filled in the late 1970's to 1980. There is no know release from this unit.

10 Former Temporary Pickle Liquor Basins

This unit was located near the center of the site east of Auxiliary Basin #3 and west of tanks 1-4. The unit consisted of two basins each with a capacity of 500,000 gallons. It was reportedly used to neutralize pickle liquor with lime. There is no know release from this unit.

11 Former Permanent Pickle Liquor Disposal Sites

This unit was located on the eastern portion of the site on the south side of the current employee parking lot. It consisted of an area approximately 350 ft by 275 ft used to neutralize pickle liquor. There is no know release from this unit.

12 Former Permanent Pickle Liquor Basins

This unit was located on the eastern portion of the property west of the Former Permanent Pickle Liquor Disposal sites. It consisted of an area approximately 150 ft by 30 ft and was used to neutralize pickle liquor. There is no know release from this unit.

13 Former Oil Basin

This unit was located near the center of the site. It consisted of an area approximately 250 ft by 250 ft, consisting of a lime liner and a two-foot berm on three sides. It was used to store an oil/ water mixture from a Mobil Oil spill in 1972. There is no know release from this unit.

14 Former Lime Basin

This unit was located on the eastern portion of the site, northeast of the Former Oil Basin. It was used to store lime on-site used to neutralize pickle liquor. There is no know release from this unit.

15 Oil Contaminated Soil Storage Area

This unit was located outside near the southeast portion of the site and consisted of a 50 ft by 20 ft gravel pad used for emergency storage of three 20 yard roll off boxes containing oil contaminated soil and clean up equipment for one month. There is no know release from this unit.

16 Tank 1-4

This unit is located outside on the west portion of Process Building #1 and consists of four closed top steel tanks with inner surface coatings. An earthen dike with a PVC liner surrounds the tanks. The dike area has a capacity of 465,000 gallons. Tank #1 (188,500 gallons) is used for nonhazardous process water prior to discharge. Tank #2 (212,000 gallon) is used for storage and settling of untreated wastes from 7000-gallon concrete receiving tank (SWMU #17). Tank #3 (212,000 gallon) is used for storage of treated waste from tank #2. Tank #4(424,000 gallon) is used for storage of untreated waste destined for wastewater treatment. There is no know release from this unit.

17 7000 Gallon Concrete Receiving Tanks

This unit is located outside the south side of Process Building #1 and consists of four 7000-gallon in-ground concrete tanks. The tanks were constructed in 1980 and have a vinyl ester liner. The unit has a 20-mil PVC liner. There is no know release from this unit.

18 Truck Unloading Pad

This unit is located on the south side of Process Building #1 and consists of a 48 ft by 36 ft concrete pad. Trucks park on this pad while unloading into the 7000-gallon concrete receiving tanks. There is no know release from this unit.

The following SWMU's are associated with the former CWM incinerator facility. These SWMU's have been addressed in corrective action associated with the Part B.

19 Biochemical Filter Beds

This unit was constructed by Hyon in the early 1970's and existed on the northeast corner of the property north of the incinerator area. Waste quantities are unknown but estimated at 30,000 yds3. Sludge was excavated from this area in 1981 and placed in the clay-lined vault in Wastewater Basin #1.

20 Activated Sludge Basins

This unit existed on the north side of the pier west of the Biochemical Filterbeds. Soil was excavated in 1987 to prepare for installation of aboveground tanks.

21 Drum Handling Area

This unit existed on the pier west of the Biochemical filterbeds. This warehouse was used to store containerized wastes. This area was to have been closed by SCA per the closure plan dated 12/15/1981. Documentation of closure could not be found.

22 High Solids Area

This unit existed on the pier west of the interim status surface impoundments. Waste quantities are unknown but estimated to be 30,000 yd3 based on the volume excavated from the Biochemical Filter Beds. In 1981, sludges were excavated and placed in Wastewater Basin #1. Waste was analyzed in 1980 and was verified not to be RCRA hazardous.

23 Wastewater Basin #1

This unit was constructed in the early 1970's and existed on the west end of the pier, west of the high solids area. It is approximately 17 ft deep and held 5.8 million gallons. Sludges were excavated in 1981 and placed back in the area in a clay-lined cell. Waste was analyzed in 1980 and was verified not to be RCRA hazardous.

24 Wastewater Basin #2

This unit existed at the end of the west pier, west of Wastewater Basin #1. It is approximately 17 ft deep and held 5.8 million gallons. Sludges were excavated in 1981 and placed back in

the area in a clay-lined cell. Waste was analyzed in 1980 and found to contain elevated levels of metals, semi-volatiles and total volatiles.

25 Process Water Underground Pipe System

This unit consists of an underground pipeline to transport incinerator scrubber water between the surface impoundments and the incinerator. It originates at the incinerator and ends at the northeast corner of the Interim Status Surface Impoundments. A break in an elbow near the northeast process pond in 1984 caused a spill of scrubber water.

26 Chemical Treatment Area

This unit was located on the east end of the property south of the former Biochemical Filterbeds. Written documentation of closure is not available.

27 Biochemical Treatment Area

This unit was located on the east end of the property south of the former Biochemical Filterbed. Written documentation of closure is not available.

28 Tank Farm

This unit was located at the southeast end of the property, south of the Biochemical Treatment area. This unit was included in SCA's closure plan dated 1981. Written documentation of closure is not available.

The following SWMU's are satellite/ accumulation areas. Satellite areas are used for a container up to 55 gallons. Accumulations areas may hold multiple containers. Each area is used for wastes permitted to be stored in that area as referenced in Section D. There are no know releases from these SWMU's.

29 Truck Loading/Unloading Pad

30 Tank Farm (near T208)

31 Tank Farm (near T214)

32 Process Building #3

33 Southdock North Bay #1

34 Southdock North Bay #2

35 Southdock East Bay #1

36 Southdock East Bay #2

37 Southdock near office

38 Southdock near ramp

39 Transport vehicle parking near Southdock East Bay

40 Container Handling Dock #1

41 Container Handling Dock #2

42 Bulk Solids Storage Pad #1

43 Bulk Solids Storage Pad #2

44 Bulk Solids Storage Pad #3

45 Bulk Solids Storage Pad #4

46 Bulk Solids Storage Pad #5

47 Bulk Solids Storage Pad #6

48 WWT Building Lab #1

49 WWT Building Lab #2

50 WWT Building Lab #3

51 WWT Building Lab #4

52 WWT Building Lab #5

53 WWT Building Lab #6

54 WWT Process Building #1 (sat #1)

55 WWT Process Building #1 (sat #2)

56 WWT Process Building #1 (sat #3)

57 WWT Process Building #1 (sat #4)

58 WWT Process Building #1 (sat #5)

59 WWT Process Building #1 (sat #6)

60 WWT Process Building #2 (sat #1)

61 WWT Process Building #2 (sat #2)

62 WWT Process Building #2 (sat #3)

63 WWT Building (near truck unloading pad)

64 TK-101 Containment

65 TK-102 Containment

66 TK-103 Containment

67 TK-104 Containment

68	TK-105 Containment
69	TK-106 Containment
70	TK-107 Containment
71	TK-109 Containment
72	TK-110 Containment
73	TK-112 Containment #1
74	TK-112 Containment #2
75	Pump Room #1
76	Pump Room #2
77	Rail Car Unloading #1
78	Rail Car Unloading #2
79	Rail Car Unloading #3
80	Rail Car Unloading #4
81	Rail Car Unloading #5
82	Rail Car Unloading #6
83	Tanker Truck Unloading #1
84	Tanker Truck Unloading #2
85	Truck Staging Area #1
86	Truck Staging Area #2
87	Fuels Blending Room #1
88	Fuels Blending Room #2
89	Fuels Blending Room #3
90	Fuels Blending Room #4
91	Fuels Blending Room #5
92	Fuels Blending Room #6
93	Rolloff Pad near Fuels Blending Room
94	Container Handling Dock

95	Fire Water Pumphouse
96	Sewer Pretreatment System
97	T308 through T311 area #1
98	T308 through T311 area #2
99	T308 through T311 area #3
100	T308 through T311 area #4
101	T308 through T311 area #5
102	T308 through T311 area #6

CHSI is also in the process of closing several SWMUs associated with the former CWM-CS incinerator process areas. These include the following units:

a. Hazardous Waste Incineration System (T03 unit):

    1. Rotary Kiln (Unit 19) and ancillary equipment;
    2. Secondary Combustion Chamber (Unit 20);
    3. Overhead Pipe Rack (Unit 18);
    4. Air Pollution Control System (Unit 21);
    5. Stack Monitoring Building (Unit 34); and
    6. Concrete/Asphalt Foundation and Structures Underlying the Incineration System;

b. Hazardous Waste Container Storage/Staging Areas (S01 units):

    1. Kiln Staging Areas (Unit 45);
    2. Truck Staging Area (Unit 48);
    3. Outdoor Container Storage Areas (Unit 49); and
    4. Ash Hopper Staging Area (Unit 54);

c. Underground Stormwater Collection System; and

d. Process Wastewater Treatment System:

    1. Neutralization Area (Unit 22);
    2. Effluent Treatment Building (Unit 23);
    3. Lamella Settlers (Unit 24); and
    4. Filter Building (Unit 42).

There are no known releases from these units. The wastes managed in these units are the same as those listed in Appendix D-30 for Hazardous Waste Codes Associated With CWM Chemical Services Surface Impoundment Closure. The closure plan was approved by IEPA letter dated January 25, 1996 as Log No. C-759.

Under the terms of the November 1993 Part B License, CHSI assumed operational control and post-closure care of the existing surface impoundment's which have been certified as closed in accordance with RCRA closure requirements in June 1994. Although the impoundment's no longer actively receive hazardous waste, they remain a regulated hazardous waste disposal unit throughout the 30-year post –closure period. The post-closure notice is included in Appendix D-34 and includes the wastes managed in these units (also in Appendix D-30). The closure certification letter submitted to IEPA December 30, 1993 is included in Appendix D-31. The IEPA closure certification approval (Log No. C-307) dated June 30, 1994 is included in Appendix D-32.

On November 1, 1994 CHSI commenced a partial RCRA closure and TSCA decontamination program for selected waste management units at the CWM Chemical Services facility. The activities were performed in accordance with CHSI's August 24, 1994 "Decontamination/Closure Plan" as approved by IEPA in a letter October 31, 1994 (Log No. C-742). On June 23, 1995 CHSI submitted an interim Closure Documentation Report for RCRA decontamination/closure of the following units:

a. Tanks T-108 and T-111

b. Building 26 Shredder and Conveyor Systems

c. Building 43 Shredder and Drum Crusher Units

d. Outdoor Storage Areas, including:

- Kiln Staging Area (Item 45), eastern-most portion only
- Container Storage Area (Item 49) at the southeast of CWM loading dock
- Area underneath the Building 26-43 Conveyor

e. TSCA/RCRA decontamination of the areas described in (a) through (d) above, plus Tanks T-101 through T-112, the tank farm secondary containment structure, Building 43 and the Ash Pad (Unit 38).

Additional closure activities were completed on October 6, 1995 including:

a. Container storage area on the west side of the tank farm (Unit 49); and

b. Container storage area on the northwest corner of the tank farm (Unit 49).

The closure certification letter was submitted to IEPA October 12, 1995.

REMEDIAL WORK/ORDER & REINSPECTION REPORT

REMEDIAL WORK ORDER DATE ___/___/___

Corrective Action Assigned to: _____/_____

Name Title

Unit Name:

Equipment Name:

Location:

Inspection Element/Type of Problem:

Date of Inspection: ___/___/___

Required Remedial Response: _____

_____

_____

_____

Work to be Completed by: ___/___/___

_____

Signature of General Manager

****

WORK COMPLETION REPORT

Completed On: ___/___/___ COMMENTS: _____

Date _____

_____

By: _____ _____

Initials

****

REINSPECTION REPORT

Observations:

COMMENTS: _____

Signature of Inspector

Table B-1: Map Requirements

Map Requirement Per 703.183(s)	Drawing No./Appendix	Comments
-- Map scale, date, and orientation	All	Map scale, date(s) of revisions, and orientation (north arrow) are identified on all sheets.
-- Topographic Map	CHCI Nos. 4200 & 4202	The facility and all land uses and primary business activities within a distance of 1,000 feet around the facility; map scale of 1 inch equal to 200 feet.
-- Contours to show pattern	CHCI Nos. 4202 & 4205	Show existing facility, proposed facility, existing 1 – foot contours and proposed 1- foot contours.
-- 100 – year floodplain area	CHCI No. 4201	Floodplain shown are taken from the Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program Flood Insurance Rate map (FIRM). As shown in CHCI no. 4201, the facility is not within the 100-year floodplain. See discussion in Section B-3b.
-- Surface water	CHCI No. 4201	The facility is on Pier No. 4 of Lake Calumet. There are no intermittent streams running through the property.
-- Surrounding land uses	CHCI No. 4200	The name and primary business activity for all companies within 1,000 feet of the facility is shown in the outlined portion of the map.

(continued)

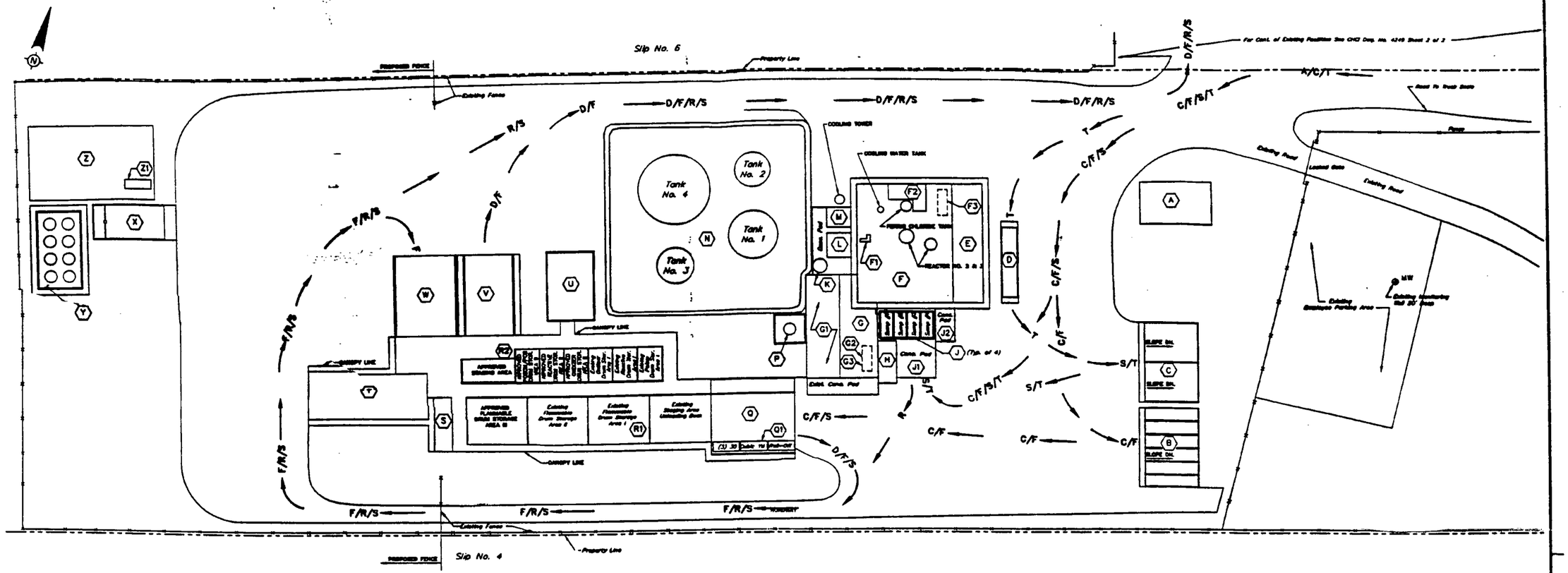
Table B-1: Map Requirements (Continued)

Map Requirement Per 703.183(s)	Drawing No./Appendix	Comments
-- Wind rose	CHCI No. 4223	Wind rose data for Midway Airport, in Chicago, IL which is approximately 13 miles from facility.
-- Legal boundaries	National Survey Service, Inc. Appendix B-1	Includes survey plat and written legal description prepared by National Survey Services. Note that all property lines shown on Dwg. 4202 (Site Map) are drawn to match the legal boundaries defined by the distances and bearing angles.
-- Zoning designations	City of Chicago Zoning Ordinance Maps, Amended 1971 Appendix B-2	The facility and the entire area within 1,000 feet of the facility is zoned M3-3, Heavy Manufacturing District.
-- Access controls, access	CHCI No. 4204	Chain link fence along perimeter of active portion of property with three locked gates leading from S. Stony Island Avenue; the others at the rear of the property and provides access to unused portions of property. Refer to Section F-1(a)(2) for a complete description of access control measures. Roadway and traffic information is provided in Section B-4.
Injection and withdrawal	CHCI No. 4201	CHCI operates two groundwater withdrawal wells for process water. CHCI does not operate any injection wells onsite. Based on a telephone survey of nearby land owners, there are no injection or withdrawal wells in operation within 1,000 feet of the facility.

(continued)

Table B-1: Map Requirements (Continued)

Map Requirement Per 703.183(s)	Drawing No./Appendix	Comments
-- Buildings; treatment/storage/ disposal operations/units;	(i) CHCI No. 4203	Site plan details all existing facility structures and process operations.
	(ii) CHCI No. 4204	Site plan detailing existing, approved (but not yet constructed) and proposed/modified facilities and process operations.
-- Storm, sanitary, and process sewage system(s)	CHCI No. 4203	As noted on the Plan.
-- Barriers for drainage or	CHCI No. 4204	The ground around the existing hazardous waste management area is sloped and contoured such that precipitation drains away from the units and their containment structures. The existing contours are shown by dashed lines, while the proposed contours are identified by solid lines. As part of the construction of the proposed facility, the topography of the site will be modified to match the proposed contours to prevent run on into the hazardous waste management units and ensure proper site drainage way from the units.
-- Runoff control system	CHCI No. 4204	All outdoor hazardous waste management units are constructed with secondary containment units designed to slope towards liquid collection sumps and away from non-contained areas. Moreover, each storage area is provided with containment capacity of greater than 50% of the total waste volume of the drums stored within the area.



LEGEND

A. *Existing Offices*
B. *Existing Bulk Solids Storage Pad (See Chci Dwg. No. 4218)*
C. *Existing Truck Staging Area (See Chci Dwg. No. 4218)*
D. *Existing Truck Sampling Pad (See CHCI Dwg. No. 4234)*
E. *Existing Laboratory (See CHCI Dwg. No. 4208)*
F. *Existing Process Building No. 1 (See CHCI Dwg. No. 4208)*
F1. *Existing Lab Pack Pour-Off Station (See CHCI Dwg. No. 4208)*
F2. *Existing Waste Oil Treatment/Storage System (See CHCI Dwg. No. 4208)*
F3. *Existing Offloading Area (See CHCI Dwg. No. 4208)*
G. *Existing Process Building No. 2 (See CHCI Dwg. No. 4209 Sheet 2 of 2)*
G1. *Existing Drum Storage Area (See CHCI Dwg. No. 4209 Sheet 2 of 2)*
G2. *Existing Filter Press Roll-Off Area (See CHCI Dwg. No. 4209 Sheet 2 of 2)*
G3. *Existing Offloading Area (See CHCI Dwg. No. 4209)*
H. *Existing Filter Press/Roll-Off Building*
J. *Existing Receiving Tanks (Sump #1 – #4)*
J1. *Existing Bulk Truck Unloading Area*
J2. *Existing Bulk Truck Unloading Area*
K. LIME SILO
L. *Compressor Shed*
M. *Carbon Absorption Shed*
N. *Existing Tank Farm (See CHCI Dwg. No. 4214)*
P. APPROVED SLUDGE CONDITIONING TANK (SEE CHCI DWG. NO. 4219)
Q. *Existing Truck Unloading Area & Bulking Area (See CHCI Dwg. No. 4210 Sheet 1 of 3)*
Q1. *Existing Bulk Container Storage Area (See CHCI Dwg. No. 4210 Sheet 1 of 3)*
R1. *Existing Drum Storage Area (See CHCI Dwg. No. 4210 Sheet 1 of 3)*
R2. APPROVED DRUM STORAGE AREA (SEE CHCI DWG. NO. 4210 SHEET 1 OF 3)
S. APPROVED NON-HAZARDOUS BULKING AREA (SEE CHCI DWG. NO. 4210 SHEET 1 OF 3)
T. APPROVED DRUM CRUSHING & COMPACTION AREA (SEE CHCI DWG. NO. 4212)
U. APPROVED LAB PACK REPACK & CONSOLIDATION AREA (SEE CHCI DWG. NO. 4211)
V. APPROVED TRUCK LOADING DOCK (SEE CHCI DWG. NO. 4234)
W. APPROVED TRUCK TO TRUCK TRANSFER DOCK (SEE CHCI DWG. NO. 4244)
X. APPROVED TRUCK LOADING/UNLOADING PAD (SEE CHCI DWG. NO. 4216)
Y. APPROVED LISTED WASTE STORAGE TANKS (SEE CHCI DWG. NO. 4216)
Z. APPROVED PROCESS BUILDING NO. 3 (SEE CHCI DWG. NO. 4213 SHEET 1 OF 3)
Z1. APPROVED ROLL-OFF CONTAINER FOR LISTED WASTES (SEE CHCI DWG. NO. 4213 SHEET 1 OF 3)

DIRECTION OF TRAFFIC FLOW
A – ALL INCOMING
C – INCOMING CONTAINER
T – INCOMING TANK TRUCKS
F – INTERNAL TRANSFER-CONTAINER
S – INTERNAL TRANSFER-TANK TRUCKS
D – EXITING CONTAINER TRUCKS
R – EXITING TANK TRUCKS
E – ALL EXITING
L – SECONDARY ROUTES

REV. #	REVISION NOTES
0	REVISED TRAFFIC FLOW PATTERNS AND LEGEND.

CHCI DWG. NO. 4249

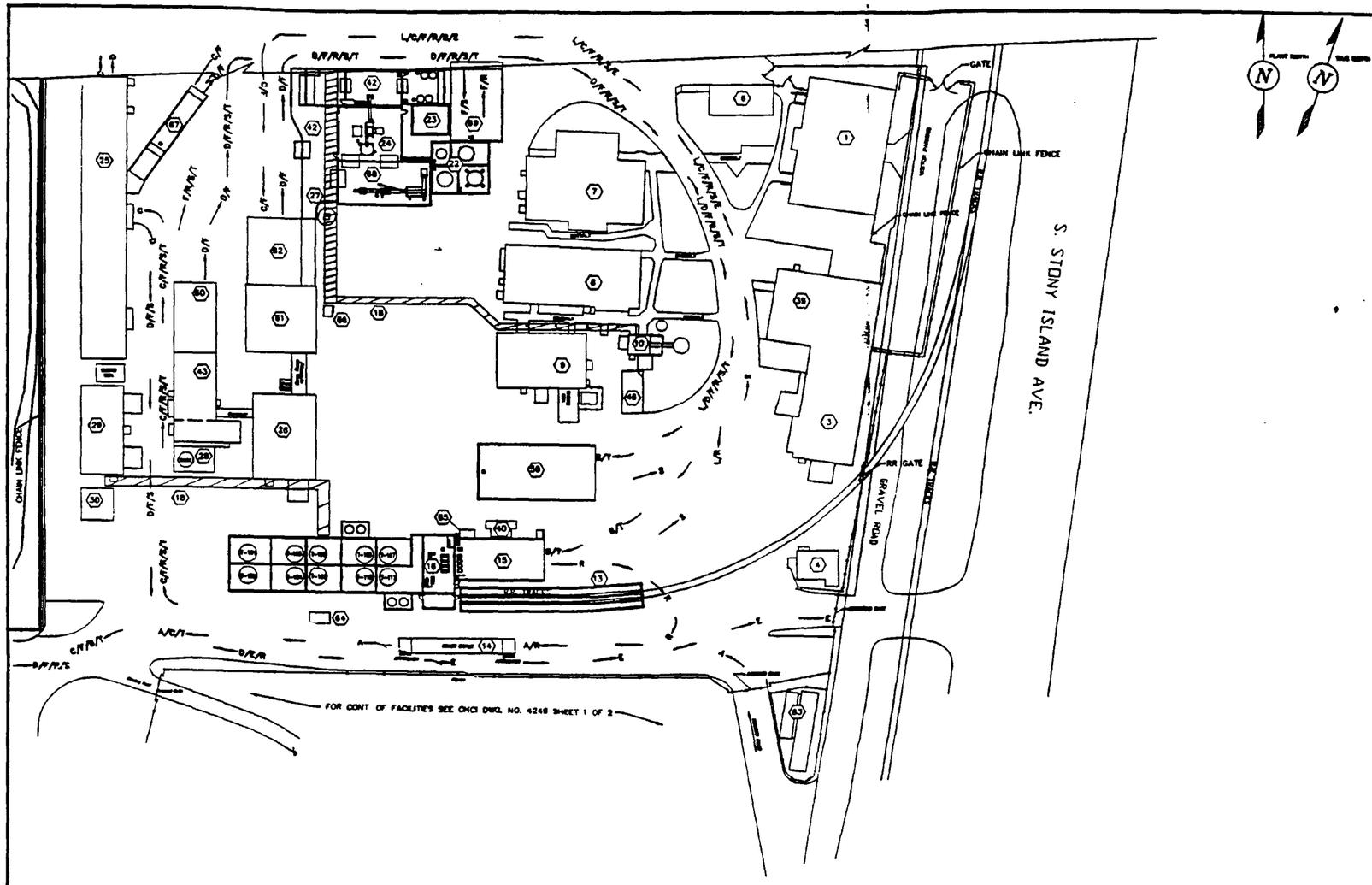
ISSUE	DESCRIPTION	DRWN.	CHKD.	APPD.	DATE
0	AS-BUILT SEE REVISION NOTE 0	K.M.C.	B.H.P.	B.H.P.	7/19/95
A	RCRA PART B MODIFICATION	K.M.C.	P.T.W.	P.T.W.	7/29/94

CleanHarbors
ENVIRONMENTAL SERVICES, INC.
325 Wood Road
Braintree, Massachusetts 02184
Telephone (617) 849-1200/1800

TITLE
CLEAN HARBORS OF CHICAGO, INC.
11800 S. STONY ISLAND AVENUE
CHICAGO, ILLINOIS 60617

SITE TRAFFIC PATTERN
SHEET 1 OF 2

PROJECT NO. GW-5404
SCALE 1" = 40'
DRAWING NO. 2916-C-23



BUILDING DESCRIPTION

1. OFFICE BUILDING
3. MAINTENANCE BUILDING
4. TRANSPORTATION/RECEIVING BUILDING
6. EAST PUMP HOUSE
7. PERSONNEL/TRAINING CENTER
8. LABORATORY BUILDING
9. CONTROL BUILDING
10. MWRDGC LIFT STATION
13. RAIL CAR UNLOADING AREA (SEE CHCI DWG. NO. 4217)
14. TRUCK SCALE
15. TRUCK UNLOADING PLATFORM (SEE CHCI DWG. NO. 4248)
16. FLAMMABLE STORAGE TANK FARM (SEE CHCI DWG. NO. 4215)
18. PIPE RACKS
22. FLAMMABLE TANK FARM SHREDDING SYSTEM (SEE CHSI DWG. NO. 4291)
23. SHREDDING PROCESSS CONTROL BUILDING
24. SHREDDING PROCESS BUILDING #1 (SEE CHSI DWG. NO. 4287 & 4288)
25. PROPOSED CONTAINER MANAGEMENT LAYOUT BUILDING #25 (SEE CHSI DWG. NO. 4282)
26. IGNITABLE CONTAINER MANAGEMENT BUILDING (SEE CHCI DWG. NO. 4210 SHEET 2 OF 3)
27. STORM WATER LIFT STATION
28. NITROGEN STORAGE AREA
29. UTILITY BUILDING
30. FUEL OIL STORAGE
39. MAINTENANCE BUILDING ADDITION
40. DECONTAMINATION BUILDING
42. SHREDDING PROCESS BUILIDING #2
43. FUELS BLENDING OPERATION (SEE CHCI DWG. NO. 4213 SHEET 2 OF 3)
46. FIRE EQUIPMENT BUILDING
59. TRUCK STAGING AREA (SEE CHCI DWG. NO. 4247)
60. ROLL-OFF PAD FOR FUELS BLENDING (SEE CHCI DWG. NO. 4213 SHEET 2 OF 3)
61. CONTAINER HANDLING DOCK (SEE CHCI DWG. NO. 4245)
62. TRUCK PAD (SEE CHCI DWG. NO. 4246)
63. OFFICE/DRIVERS FACILITIES
64. FOAM WATER VALVE HOUSE TANK FARM
65. FOAM WATER VALVE HOUSE UNLOADING AREA
66. FOAM WATER VALVE HOUSE CONTAINER AREA
67. PROPOSED TRUCK LOADING DOCK (SEE CHSI DWG. NO. 4283)
68. METAL WASH PROCESS (SEE CHSI DWG. NO. 4290)
69. TRUCK/ROLL-OFF PAD (SEE CHSI DWG. NO. 4292)
70. FORKLIFT ACCESS AREA

LEGEND

- DIRECTION OF TRAFFIC FLOW
- A – ALL INCOMING
- C – INCOMING CONTAINER
- T – INCOMING TANK TRUCKS
- F – INTERNAL TRANSFER-CONTAINER
- S – INTERNAL TRANSFER-TANK TRUCKS
- D – EXITING CONTAINER TRUCKS
- R – EXITING TANK TRUCKS
- E – ALL EXITING
- L – SECONDARY ROUTES

CHSI DWG. NO. 4249

REV. #	DESCRIPTION	DRWN.	CHKD.	APPR.	DATE
1	SEE REVISION NOTE 1	A.A.A.	A.M.L.	A.M.L.	1/26/00
0	AS-BUILT SEE REVISION NOTE 0	K.M.C.	B.H.P.	B.H.P.	9/19/95
B	SEE REVISION NOTE B	K.M.C.	B.H.P.	B.H.P.	1/17/95
A	RCRA PART B MODIFICATION	K.M.C.	P.T.W.	P.T.W.	7/29/94

REV. #	DESCRIPTION
1	REVISED TRAFFIC FLOW PATTERNS AND ADDED NEW SHREDDING PROCESS AREA
0	REVISED TRAFFIC FLOW PATTERNS AND ADDED NEW ROAD, GATES, RAILROAD CONTAINMENT.
B	REVISED TRAFFIC FLOW AT BUILDING 25 & 60 AND TITLE OF BUILDING 39.

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SITE TRAFFIC PATTERN
SHEET 2 OF 2

PROJECT NO. GW-5404
SCALE 1"=40'
DRAWING NO. 2916-C-24

SECTION C
WASTE CHARACTERISTICS

C-1 Chemical and Physical Analysis 703.183(b), 724.113(a)

Clean Harbors Services, Inc. (CHSI) operates a commerical hazardous waste storage, transfer, and treatment facility. CHSI utilizes a variety of waste handling operations to treat hazardous and nonhazardous wastes onsite, and to store/transfer hazardous wastes, including treatment residuals, for approved offsite reuse, treatment and/or disposal. Wastes are typically in bulk tanker, rolloff, and container (e.g., 55-gallon drum) form, and may be gaseous, liquid, semisolid, and/or solid in nature.

C-1 (i) Activities Exempt From RCRA

A. Clean Water Act Wastewater Treatment System

CHSI operates a wastewater treatment system for treatment of aqueous based inorganic and organic contaminated wastewaters. The system is regulated under the Clean Water Act (CWA) through a discharge permit issued by the Metropolitan Water Reclamation District of Greater Chicago (MWRD), a publicly owned treatment works (POTW). The CWA wastewater treatment system is exempt from RCRA hazardous waste regulations and the terms of this Waste Analysis Plan. Information regarding the CWA wastewater treatment system, including hazardous waste codes and boundary conditions, is included in this plan for informational purposes only.

CHSI's CWA wastewater treatment activities include the following:

1. Storage and primary physical and chemical treatment of aqueous-based, inorganic hazardous and nonhazardous industrial wastes streams using chemical precipitation, coagulation, clarification, filtration, carbon adsorption, stabilization, and/or fixation;

2. Storage and specialized liquid waste pretreatment prior to primary treatment. Pretreatment methods include:

    a. Neutralization;
    b. Chemical oxidation;
    c. Chemical reduction;
    d. Other methods including ammonia stripping, chelation-breaking, and organic removal; and
    e. Oil recovery.

A detailed description of these wastewater treatment operations is provided below.

1. Primary Physical and Chemical Treatment

Primary treatment consists of chemical precipitation, coagulation, clarification, and filtration of inorganic-based, aqueous streams. Carbon adsorption may be used for effluent polishing. The waste streams undergoing primary treatment typically exhibit one or more characteristics of a hazardous waste (i.e. D-codes). Treatment residuals (i.e., sludge) generated from the CWA process are stabilized/fixated and shipped offsite for disposal. Treated effluent is discharged under permit to the MRWD POTW system.

The primary treatment process utilizes the chemical/physical treatment operations including:

1. Chemical precipitation – Addition of solution of sodium hydroxide, sodium sulfide, or similar chemicals to precipitate any heavy metals present in the waste.

2. Coagulation – Addition of ferric chloride, aluminum salt solutions, polymers, or other equivalent materials to affect coagulation and flocculation of the precipitated heavy metals.

3. Clarification/Filtration – Physical separation of the solids from the liquids in the treated waste using clarifiers, sand filters and plate and frame filter presses.

4. Stabilization/fixation- Addition of inert solids, lime, cements, pozzolans, or equivalent materials to affect stabilization and fixation of appropriate waste streams with or without dewatering.

5. Carbon Adsorption – Adsorption of contaminants on carbon to meet discharge parameters.

The list of hazardous waste codes accepted for storage and primary treatment is presented in Table C-1. The list of non-hazardous waste codes accepted for storage and primary treatment is presented in the Table C-1a. These wastes may be accepted in bulk (e.g., tank truck, railcar) or non-bulk container (e.g., 55-gallon drums, lab pack) form. A typical sample analysis for hazardous waste undergoing primary treatment is provided in Appendix C-1, Data Sheet #1.

The boundary conditions for acceptance and treatment of each waste or waste group are noted on tables C-1 and C-1a. The boundary condition represents the maximum value of the waste characteristic which the facility can properly treat. The rationale for listing of this maximum value is based on: 1) analysis and treatability testing of several thousand waste samples submitted to Clean Harbors facilities by numerous generators; 2) volatile organic testing for various components of composite streams prior to and following normal treatment; 3) review of US EPA Treatability Manual published in 1980 (EPA 600/8-80-042a) – (EPA 600/8-80-042e); 4) review of "Chemical Treatability Summary", a reference on the treatability of 505 different chemical compounds published by Touhill, Shuckrow and Associates, Inc.; and/or 5) review of numerous technical articles and books related to aqueous waste treatment.

1. Specialized Pretreatment Prior to Primary Treatment

Certain incoming waste streams require pretreatment such as neutralization, oxidation reduction, or oil recovery prior to performing primary treatment. Pretreatment operations include:

a. Neutralization – Addition of Alkaline material of neutralize highly acidic materials or addition of acid to neutralize highly alkaline materials. The list of hazardous waste codes requiring pretreatment using neutralization is presented in Table C-2. The list of non-hazardous wastes requiring pretreatment using neutralization is presented in Table C-2a. Typical sample analyses for hazardous waste undergoing neutralization pretreatment are provided in Appendix C-1, Data Sheets 2 through 5.

b. Chemical oxidation – Utilization of oxidizing agents such as hydrogen peroxide, potassium permanganate, or similar agents, to treat oxidizable materials in order to render them suitable for further treatment. The list of hazardous waste codes requiring pretreatment using chemical oxidation is presented in Table C-3. The list of non-hazardous wastes requiring pretreatment using chemical oxidation is presented in Table C-3a. Typical sample analysis for hazardous waste undergoing chemical oxidation pretreatment are provided in Appendix C-1, data sheets 6 and 7. Treatability performance data documenting the removal of organic constituents by oxidation is included in Appendix C-2.

c. Chemical reduction – Treatment of hexavalent chromium or other reducible wastes in a acidic medium with sodium bisulfite to obtain a precipitable trivalent form. The list of hazardous waste codes requiring pretreatment using chemical reduction is presented in Table C-4. The list of non- hazardous wastes requiring pretreatment using chemical reduction is presented in Table C-4a. A typical sample analysis for hazardous waste undergoing chemical reduction pretreatment is provided in Appendix C-1, Data Sheet #8.

d. Other pretreatment methods – Includes ammonia stripping, chelation breaking, and organic removal techniques such as air stripping and carbon absorption. The list of hazardous waste codes requiring pretreatment using these pretreatment methods is presented in Table C-5. The list of non- hazardous wastes requiring pretreatment using these methods is presented in Table C-5a. Typical sample analysis for hazardous waste undergoing other pretreatment methods are provided in Appendix C-1 Data Sheets 9 through 13. Treatability performance data documenting the removal organic constituents by carbon adsorption is included in Appendix C-3.

e. Oil Recovery – Separation of oil from the aqueous material in a waste through heat, demulsifying agents, and pH adjustment to an acidic condition. The list of waste requiring Pretreatment using oil recovery techniques is presented in Table C-6. A typical sample analysis for non-hazardous waste, waste oil undergoing treatment is provided in Appendix C-1, Data Sheet #14.

Waste streams undergoing pretreatment may be accepted in bulk tanker, container (e.g., 55-gallon drum), or lab pack form. The waste stream boundary conditions listed in Tables C-2 through C-6 and Tables C-2a through C-5a represent the maximum value of the waste characteristic or constituent which the facility can properly treat. The rationale for listing of this maximum value is based on: 1) analysis and treatability testing of several thousand waste samples submitted to Clean Harbors facilities by numerous generators; 2) volatile organic testing for various components of composite streams prior to and following normal treatment; 3) review of US EPA Treatability Manual published in 1980 (EPA 600/8-80-042a) – (EPA 600/8-80-042e); 4) review of "Chemical Treatability Summary", a reference on the treatability of 505 different chemical compounds published by Touhill, Shuckrow and Associates, Inc.; and/or 5) review of numerous technical articles and books related to aqueous waste treatment. To the extent possible, CHSI utilizes waste streams to treat other waste streams.

B. Polychlorinated Biphenyls

CHSI operates as a commercial storer of polychlorinated biphenyls (PCBs). The amount of PCB waste stored at the facility, as generated by others, at no time exceeds the 500 gallon threshold in 40 CFR 761.3. Commercial storers of PCBs in quantities less than 500 gallons are not required to seek U.S. EPA's approval.

C. Hazardous Waste Generator Activities

CHSI is considered a large quantity generator (LQG) of hazardous waste. The waste is generated through numerous onsite activities including, but not limited to, waste treatment process residuals, analytical laboratory operations, spent carbon, waste spillage and cleanup, secondary containment system precipitation pumpouts, and maintenance activities.

Hazardous waste which is generated onsite is managed in portable containers in accordance with 35 IAC 722 "Standards Applicable to Generators." Onsite generated waste may be accumulated for up to 90 days in designated "generator" areas of the facility before being transferred to the permitted RCRA storage units at the facility. All generator activities are exempt from RCRA facility permitting requirements.

CHSI has prepared an LQG management plan to ensure that all the onsite generated wastes are managed in accordance with applicable generator regulations. The plan identifies several locations on-site in which hazardous wastes are generated/managed. The locations are designated as either "satellite" or "accumulation" areas which meet appropriate LQG management standards. For example, all "Accumulation" areas are clearly marked with a visible painted/tape line on the floor. In addition, all "Accumulation" areas are posted with a sign which includes the words "HAZARDOUS WASTE" in capital letters at least one inch high. All satellite and accumulation areas that are indoors (e.g., the laboratory) are away from any floor drains or sinks; containers in other areas (e.g., loading dock) are staged on impermeable concrete-lined and sealed surfaces. All "Accumulation" and "Satellite" areas are managed such that incompatible waste is not mixed or has the potential to come into contact. Signs warning of potential waste incompatibility are posted as necessary. All LQG containers and areas are inspected on a weekly basis. The inspections are incorporated into the facility's weekly TSD inspection protocol. All inspections are conducted on a unit-specific basis and documented in writing.

All LQG waste is held in non-leaking DOT-approved containers, typically 55-gallons or less in size. The containers shall be in suitable working condition and will be compatible with the waste being held. The container remains closed except while waste is being added or removed. The contents of "Satellite" containers are typically transferred into an "Accumulation" container on the same day that the "Satellite" becomes full, but no more than three days after the "Satellite" becomes full. In addition, all LQG containers are marked with labels/markings that meet 35 IAC 722 subpart C requirements including the "date of accumulation" shall be noted on all drums designated as "Accumulation" containers.

The official "transfer" of a container from"LQG Accumulation" to "TSD Storage" is documented through the use of CHSI's computerized waste tracking system. When an "Accumulation" container becomes full (or has reached the 90- day accumulation limit), CHSI affixes a unique waste tracking "bar code" label to the container, and moves the container into "storage". The movement of the container through the TSD portion of the facilitiy is documented in the tracking system and becomes part of the facility's operating record.

In accordance with 35 IAC generator standards, CHSI shall utilize knowledge and/or testing to appropriately characterize onsite-generated waste materials as "hazardous waste." For example, residuals from the cleanup of a spill of a known hazardous waste shall be identified as a "hazardous waste" based on CHSI's knowledge of the material that was spilled. Information which could be used to form the basis for knowledge may include material safety data sheets (MSDS'S), information on the label of a leaking drum or generator profile information if the spill material was accepted from an offsite source. In cases where knowledge may not be available or sufficient, CHSI shall undertake sampling testing using the procedures and methods outlined in this waste analysis plan. For example, a composite sample of rainwater collected from inside secondary containment systems shall be submitted for analysis that consists of Group I parameters (see Table C-12), RCRA metals, PCB's and F001-F005 scan.

Upon review of the data generated by the analysis a waste characterization and determination regarding the disposition of this waste is made by the laboratory manager.

C-1 (ii) Hazardous Waste Activities Regulated Under RCRA

CHSI accepts hazardous waste from offsite generators, and generates hazardous waste from onsite treatment activities. The RCRA regulated management activities for hazardous waste include:

1. Storage and treatment of listed and characteristic hazardous wastes, including F-coded waste, in tanks using wastewater treatment technology and/or specialized pretreatment technologies such as carbon adsorption;

2. Storage and stabilization and/or fixation of wastes and treatment residuals in preparation for offsite disposal;

3. Storage and transfer of hazardous wastes, including lab packs, using tanks and containers. Storage/transfer activities may include consolidation (i.e., bulking) of compatible waste prior to shipment;

4. Storage and blending of hazardous waste intended for use as a supplemental fuel at authorized offsite hazardous waste fuel burners;

5. Compaction of hazardous wastes prior to shipment to offsite disposal facilities (e.g. landfills);

6. Treatment of D002 liquid/solid mixtures in containers by separation/removal of free liquids from solid materials;

7. Treatment of D002 liquids in containers and tanks through the consolidation/mixing of compatible waste streams;

8. Treatment of organic peroxides in containers through the addition of water;

9. Treatment of acidic cyanide mixtures in containers through addition of sodium hydroxide or other suitable alkaline materials;

10. Treatment of hazardous waste in tanks and containers by phase separation using physical (e.g., gravity) and/or chemical (e.g., demulsifying agents) means;

11. Storage, shredding and metal washing of hazardous wastes intended for use as a supplemental fuel or incineration at offsite facilities;

12. Storage and treatment of black powder by addition of water in containers;

13. Storage and treatment of hazardous waste in containers by the addition of dry ice;

14. Storage and venting of hazardous waste oxygen to the atmosphere,

15. Storage and crushing of hazardous waste lamps for volume reduction and preparation for recycling.

A complete description of the RCRA-regulated hazardous waste operations is presented in section C-1 (iii) below.

Typical waste categories and EPA waste codes which are accepted for hazardous waste storage, consolidation, and/or treatment include, but are not limited to, the following:

1. Acids – D002, D004-D011, F006, F019, K002-K008, K031, K048-K052, K061, K062, K069, K084, K086, K100-K120, K106, P011, P012, U144-U146, and U246.

2. Alkalines - D002, D004-D011, F006, F019, K002-K008, K031, K048-K052, K061, K062, K069, K084, K086, K100-K120, K106, P011, P012, U144-U146, and U246.

3. Flammables/organics – wastes which exhibit a flash point of less than 140°F, halogenated and non-halogenated solvents, pure organics, and/or aqueous wastes containing organic materials. Includes waste codes D001, D012-D043, F001-F005, F020-F024, F026-F028, K001, K009-K030, K032-K043, K060, K073, K083, K085, K086, K051, K052, K093-K099, K103-K105, P004, P005, p022, P037, P048, P050, P051, P059, and most U-codes.

4. Oxidizers – D001

5. Poisons/Pesticides – Waste poisons, pesticides (D012-D017), and acute toxics (F020-F023, F026, F027, and P-codes).

6. Reactives –D003, F006, F007-F022, F012, F019, P013, P021, P029, P030, P063, P074, P098, P099, P104, P106, P006, P009, P042, P065, P112, P081, P122, U006, U223, U020, U023, U160, U033, U096, U133, u189, u205, U223, and U234.

C-1 (iii) Detailed Description of RCRA Hazardous Waste Activities

A. Storage and Treatment of Listed Hazardous Wastes

Certain listed hazardous wastes (F- and K-coded wastes) are amenable to the general treatment methods performed as part of the primary (and pretreatment) process described above, but may need specialized treatment schemes to meet reuse or disposal requirements. CHSI processes these hazardous wastes in a separate treatment system because the residuals generated from the system are considered hazardous wastes unless and until the residues are formally delisted in accordance with US EPA regulations. All residuals from the listed treatment process are shipped offsite for reuse, treatment, or disposal.

The list of hazardous waste codes accepted for the listed waste treatment process, including possible treatment schemes, is presented in Table C-7. These codes may be accepted in bulk tanker, container (e.g., rolloffs, 55-gallon drums), or lab pack form. Typical sample analysis for hazardous waste undergoing listed waste treatment are provided in Appendix C-1, Data sheets 15 through 31.

No specific boundary conditions for acceptance are noted in Table C-7, CHSI's acceptance of these wastes are limited only by the acceptance of these wastes are limited only by the acceptance criteria of the receiving treatment or disposal facility. In most cases, materials accepted for listed waste treatment are being prepared for reuse, or for offsite treatment/disposal in accordance with the Land Disposal Restrictions (40 CFR Part 268) and the receiving facility's specific permit conditions.

B. Stabilization and/or Fixation Prior to Offsite

Wastewater treatment residuals, and certain hazardous wastes (e.g., characteristic and K062) received from offsite generators, may require stabilization and/or fixation prior to shipment to an offsite disposal facility.

The list of hazardous waste codes accepted for storage and stabilization/fixation is presented in Table C-8. These codes may be accepted in bulk tanker, container (e.g., rolloffs, 55-gallon drums), or lab pack form. Typical sample analysis for hazardous waste undergoing stabilization/fixation are provided in Appendix C-1. Data sheets 32 through 37, Treatability performance data for stabilization/fixation of wastes is included in Appendix C-4.

Materials accepted for stabilization/fixation shall be treated to meet applicable Land Disposal Restriction Treatment standards (40 CFR Part 268) and the receiving facility's specific permit conditions. Treatability performance data documenting the success of stabilization/fixation activities shall be documented on a case-by-case basis and maintained onsite as a part of the facility's operating record.

C. Storage and Transfer of Hazardous Wastes using Tanks and Containers.

CHSI accepts hazardous waste codes which are not amenable to any of the onsite treatment processes. Such wastes are accepted for storage and subsequent transfer to an offsite treatment or disposal facility. The wastes are typically received in either bulk tanker, rolloff, and containers (e.g., 55-gallon drums, lab packs) and are shipped in either their original container or, whenever practicable, in consolidated (i.e., repackaged or bulked) form.

The list of hazardous waste codes accepted for storage, consolidation and transfer is presented in Table C-9. These codes may be accepted in bulk tanker, drum, rolloff, or lab pack form. Water-reactive solids shall not be accepted in rolloff container form, but may be accepted in drum and lab pack form. Water-reactive solids are designated by an asterisk on Table C-9. Typical sample analyses for hazardous waste storage/transfer are provided in Appendix C-1, Data Sheets 38 through 69.

D. Storage and Blending of Hazardous Wastes using Tanks and Containers

CHSI receives and processes hazardous wastes which may be burned for energy recovery as a hazardous waste fuel. The types of wastes to be processed by the facility through this operation include: non-halogenated organics; high BTU lean waters; non-halogenated oils; organic liquids with halogens; and halogenated multilayered organics. The hazardous waste fuel process involves the receipt and mixing/blending of liquids, semisolids and solids. The blended fuel may be shipped in containers or pumped directly onto bulk transport vehicles pending transfer to reuse facilities (e.g., cement kilns).

The list of hazardous waste codes accepted for hazardous waste fuel blending is presented in Table C-10. These codes may be accepted in bulk tanker, container (e.g. 55-gallon drum), or lab pack form. A typical sample analysis for hazardous waste storage/transfer are provided in Appendix C-1, Data Sheet #66.

E. Compacting of Hazardous Wastes

CHSI utilizes a mobile waste compactor unit at the facility. The compactor is staged in the Outdoor Container Staging Area and processes hazardous and non-hazardous wastes in containers. The types of materials handled in the unit include, but are not limited to, personnel protective equipment (Tyvek suits, gloves, boots, etc.), rags, oil filters, paint cans, bottles, paper and other debris. The unit is equipped with a liquid removal system which removes liquids that separate out of the solid materials during the compaction process.

Any material that is or contains a hazardous waste that is authorized for storage and transfer is subject to compacting prior to shipment. Storage/transfer waste codes are listed in Table C-9.

F. Treatment of D002 Liquid/Solid Mixtures

CHSI is authorized to "treat" certain storage and transfer wastes bearing EPA Waste Code D002. CHSI notes that by IEPA and USEPA definition, only liquids with a pH of less than 2 or greater than 12.5 are considered to be D002. This "treatment" operation is necessary because many land disposal facilities will not accept solids which are coded as D002 waste.

Specifically, for containers (e.g., drums) of D002 wastes which are accepted for "storage and transfer" and which contain both liquids and solids, CHSI shall "treat" the waste by removing separable liquids layers from the solid portion of the waste. CHSI intends to remove all free liquids from a container using portable pumps.

A representative sample of the "treated" waste (i.e., the remaining solid portion) will be tested using the Paint Filter Test, or equivalent method, to confirm the absence of free liquids. The solid portion would remain in the original container and retain all waste codes used to describe the original liquid/solid mixture except D002.

The liquid portion that is separated from the solids will be placed into another container or tank, or fed directly into the inorganic treatment system. The liquid would retain all waste codes used to describe the original liquid/solid mixture, including D002.

Any liquid/solid mixture of hazardous waste that is authorized for storage and transfer and carries hazardous waste code D002 is a candidate for this treatment operation. Storage/ transfer waste codes are listed in Table C-9.

G. Treatment of D002 Liquids in tanks and Containers

CHSI is authorized to treat D002 corrosive liquids which, upon bulking/mixing with other compatible waste streams no longer exhibit the characteristic of corrosivity, as defined at 35 IAC 721.121(1). The treatment operation is conducted in any container (or tank) in which compatible waste streams are mixed. The success of the treatment operation is confirmed through pH testing upon completion of the consolidation/mixing activity.

Treatment is deemed successful when the resultant consolidated/mixed waste stream has a pH value that does not meet the D002 corrosivity identification criteria (i.e., has a pH value greater than 2.0 but below 12.5 units). If treatment is successful, CHSI shall drop the D002 waste code from the final consolidated/mixed waste stream description accompanying outbound manifest.

Without this treatment authorization, CHSI would be obligated to carry the D002 code, even in instances where the resultant waste stream has a pH value that does not meet the D002 corrosivity identification criteria.

Any liquid hazardous waste that is authorized for storage and transfer, including fuel blending and shredding wastes, and carries hazardous waste code D002 is a candidate for this treatment operation. Storage/transfer waste codes are listed in Table C-9.

H. Treatment of Acid-Cyanide Wastes in Containers

CHSI is authorized to treat cyanides which are in an acid solution. Under US DOT shipping regulations, such wastes cannot be transported. In the event that a non-bulk container of acid-cyanide waste is identified during acceptance analysis, it would be treated in the existing RCRA-exempt inorganic wastewater treatment system or directly in the original non-bulk or bulk container.

Treatment of acid-cyanide waste in non-bulk containers would be accomplished through the addition of sodium hydroxide or other suitable alkaline reagent. Sufficient alkaline would be added to raise the pH of the waste to the level where the waste is acceptable for transportation to an offsite treatment/disposal facility.

Any acidic liquid hazardous waste that is authorized for storage and transfer, listed waste treatment, or fuel blending and that exhibits the presence of free cyanide is a candidate for this treatment operation. Storage/transfer waste codes are listed in Table C-9.

I. Treatment of Organic Peroxides in Containers

CHSI is authorized to treat certain organic peroxides prior to their shipment to an offsite treatment or disposal facility. The treatment operation, the addition of water to the organic peroxide compound, would be conducted in order to: 1) prepare the waste for disposal facility requirements; or 2) meet proper US DOT shipping requirements. Many hazardous waste incineration facilities will accept organic peroxides for treatment, but only at specified dilution levels. In other cases, the possibility exists in which an organic peroxide waste could arrive at CHSI and not meet dilution levels specified by US DOT shipping requirements. In either case water would be added to meet the required dilution level.

Any hazardous waste that is authorized for storage and transfer, particularly lab packs, and that is identified as an organic peroxide compound needing dilution is a candidate for this treatment operation. Storage/transfer waste codes are listed in Table C-9.

J. Treatment of Hazardous Waste in tanks and Containers Through Phase Separation

CHSI is authorized to treat hazardous waste in tanks and containers using phase separation techniques. The treatment operation involves the use of physical (e.g., filtration, gravity separation, heat) and/or chemical (e.g., addition of demulsifiers) means to, for example, separate a solid layer from a liquid layer, or to separate two liquid layers. Phase separation may be conducted prior to onsite treatment (e.g. separation of an organic layer from a water stream) or prior to offsite shipment.

Any hazardous waste that is authorized for storage and transfer, listed waste treatment, or fuel blending is a candidate for this treatment operation. Storage/transfer waste codes are listed in Table C-9.

K. Storage and Shredding of Hazardous Wastes/Metalwashing

CHSI receives and shreds hazardous wastes which may be burned for energy recovery as a hazardous waste fuel or incinerated offsite as a hazardous waste. This system also includes a metal wash unit for shredded metal from the process of received from off-site. The types of waste to be processed by the facility through this operation include: non-halogenated oils; organic liquids with halogens; halogenated multilayered organics, monoliths, and debris. The hazardous waste shredding process involves the receipt and shredding/blending of liquids, semi-solids and solids. Blended fuel or waste for offsite incineration may be shipped in containers or pumped directly onto bulk transport vehicles pending transfer to REWE facilities (e.g., cement kilns) or incinerators.

The list of hazardous waste codes accepted for hazardous waste shredding/metalwashing is presented in Table C-10A. These wastes may be accepted in bulk tanker, container (e.g., 55-gallon drum) or lab pack form. Typical sample analysis for hazardous waste shredding/metalwashing are provided in Appendix C-1, data sheets 38 through 69.

L. Storage and Treatment of Black Powder in Containers

CHSI is authorized to treat black powder in containers prior to shipment to an off-site treatment or disposal facility. The treatment operation, the addition of water (wetting) to the black powder, is conducted to prepare the black powder for disposal facility requirements. Many hazardous waste incineration facilities can accept black powder, but only when wetted. Additionally, the water used for wetting the black powder may be mixed with virgin ethylene glycol based antifreeze when temperatures are expected to go below 32 degrees F. US DOT Regulations require antifreeze when a package containing wetted black powder could freeze. This operation is conducted in the staging area of Unit R1. The black powder would carry EPA hazardous waste codes D001 and D003.

M. Storage and Treatment of Hazardous Waste in Containers by the Addition of Dry Ice

CHSI is authorized to treat hazardous waste in containers to lower temperatures by the addition of dry ice prior to shipment to an off-site treatment of disposal facility. CHSI proposes to add blocks of dry ice into roll-offs/intermodals containing wastes which may ignite under extreme high temperatures. During summer months with high daytime temperatures and high dew point temperatures, nighttime temperatures also remain high. During these periods CHSI places blocks of dry ice into roll-offs/intermodals containing flammable solids (greater than 5000 BTUs/lb) of non-fuel blendable materials. This will occur when daytime temperatures are expected to reach 90 degrees F. or higher; the expected nighttime low temperature is 70 degrees

F. or higher; and the expected high dew point is at or above 70 degrees F. This placement of dry ice will be conducted in Units Q1 and B, but the container could be stored in other transportation vehicle storage areas. Any hazardous waste that is authorized for storage and transfer is a candidate for this treatment operation. Storage and transfer waste codes are listed in Table C-9.

N. Storage and Venting of RCRA Regulated Oxygen to the Atmosphere

CHSI is authorized to vent compressed gas cylinders of oxygen carrying EPA hazardous waste code D001 in Building 25. CHSI also vents non-hazardous atmospheric gases fro Building 25 and utilizes the same procedures. The oxygen is vented using the lab pack consolidation hoods in the acid and alkaline/poison bays. CHSI monitors with an oxygen meter and will cease the operation unless oxygen concentrations are between 19.5% and 23.5%. No flammable operations are allowed during oxygen venting.

N. Storage and Crushing of Hazardous Waste Lamps

CHSI is requesting authorization to crush used lamps for volume reduction and preparation for recycling in Unit 25.These lamps will include fluorescent and high-intensity-discharge lamps. When the lamps are crushed the components are separated into metal, glass and calcium phosphor powder with mercury.

A list of hazardous waste codes accepted for lamp crushing is presented in Table C-17.

C-1a Containerized Waste 703.201 (b) (1)

All of the container storage areas at the facility are equipped with adequate secondary containment. A demonstration of the adequacy of the secondary containment system in each area is provided in Section D-1 of this Application.

As discussed in Section D-1(b)(1), rolloffs containers with free liquids are not allowed for storage in the rolloff storage area. Each rolloff container is subjected to a test for free liquids using EPA Method 9095 to demonstrate that the waste stored in the rolloff does not contain free liquids.

C-1b Waste in Tank Systems 724.291 (b) (2), 724.292 (a)(2)

The hazardous characteristics of the wastes to be handled in each of the onsite tanks systems (existing and proposed) are summarized in Table C-11. Complete design and construction information on each of the tank systems is presented in Section D-2 of this Application.

C-1d Landfilled Waste 724.414 (c)
C-1e Wastes Incinerated and Used in Performance Tests 703.223(b)(1)
C-1f Wastes to be Land Treated 703.206(b)(4), 724.371 (a) (1) and (2), 724.376, Part 721-Appendix H.

CHSI does not operate any new onsite landfills, incinerators, or land treatment units. Therefore, the requirements of Section C-d through c-fare not applicable.

C-2 Waste Analysis Plan 703.206(b) (4) , 724.371 (a) (1) and (2)

This Waste Analysis Plan (WAP) has been developed to document the procedures which shall be used to determine the identity and acceptability of waste materials intended for storage, treatment, and/or transfer at CHSI. Specifically, the WAP includes:

1. Prequalification procedures to determine the acceptability of a particular waste stream pursuant to facility permit conditions and operating capabilities prior to any shipment of waste to CHSI;
2. Incoming load procedures, including conformance (i.e. "fingerprint") testing to verify that the delivered waste matches the accompanying manifest, preacceptance documentation, and at the conditions of the facility permit; and
3. Process operations procedures, to maintain safe and appropriate methods storage, treatment, or other handling of waste within the facility.

Specific waste codes/streams accepted at the facility are identified in Tables C-1 through C-10A. However, specific WAP requirements and procedures are grouped into one of the three following general waste categories based on the particular storage, treatment, or handling operations that the waste code/stream is subjected to while at CHSI. The general waste categories include:

1. Treatment Wastes – The waste streams in this category include hazardous and nonhazardous wastes which undergo onsite treatment. These wastes undergo rigorous perqualification and onsite conformance testing to ensure that: 1) the waste is amenable to the treatment process; 2) the integrity of the treatment process will not be compromised if the waste is handled; and 3) the facility effluent discharge standards are maintained.
2. Storage/Transfer Wastes – Wastes in this category are accepted, stored, consolidated, and ultimately shipped to an offsite treatment, disposal, or reuse facility. Wastes accepted as part of the hazardous waste fuel blending program and hazardous waste shredding are considered storage and transfer wastes. Storage and transfer wastes are subject to prequalification and onsite acceptance screening procedures, but the range of parameters is less than that for treatment wastes. Any waste, which undergoes blending/consolidation, is, however, subject to chemical compatibility testing prior to undertaking the blending/consolidation activity.

3 Special Wastes – Special wastes are unique waste streams that are comprised of identifiable, unused, commercial products which are not mixed with other characteristic or listed hazardous wastes. In most cases, special wastes are "lab packs" in their pure commercial form and original container (e.g. a bottle of acid from a laboratory cleanout). Special wastes also include, but are not limited to, the following:

1. Commercial chemical product containers which are empty as defined in 35 IAC 721.107:

2. Single-substance spill material (e.g., absorbent debris);

3. Off-specification or outdated commercial chemical products;

4. Contaminated commercial products;

5. Asbestos waste from demolition or cleaning:

6. Intact manufactured articles (e.g., thermometers, batteries, lamps) which contain a hazardous waste:

7. Containers of hardened solids or highly viscous wastes which cannot be sampled;

8. "RCRA-empty" (per 35 IAC 721.107) containers, drums, barrels, cans, bags, liner, etc. from waste commercial products or chemicals; and

9. Aerosol cans which are in good exterior condition and which have an original label, or a label, which accurately reflects the generator's knowledge and/or testing of the contents of the container.

Given their unique nature, special wastes are not subject to sampling or analyses as part of the prequalification process or onsite waste acceptance procedures. However, lab pack waste undergoing consolidation or treatment is subject to compatibility testing prior to the mixing/treatment activity

C-2a Parameters and Rationale 724.113(b) (1)

C-2a (1) Waste Prequalification Procedures

CHSI has developed a waste prequalification system to determine the acceptability of candidate waste streams prior to the waste being shipped to the facility. CHSI has established separate waste prequalification requirements for each of the three general waste categories described above.

A. Treatment of Hazardous Wastes

The following procedures will be required for each new waste stream that is a candidate for acceptance, storage, and treatment at CHSI;

1. The generator must complete and submit to CHSI a Generator Waste Material Profile Sheet (GWMPS) or a Safety-Kleen Waste Material Profile (SKWMP), included in Appendix C-5, along with any supporting documentation such as laboratory analyses, MSDS'S product literature, etc.

2. The generator must submit a representative sample for each candidate treatment waste stream. In providing the representative sample, the generator is required to certify (on the GWMPS form or the SKWMP form) that the sample is representative of the waste stream under consideration.

3. The representative sample will, at a minimum, be analyzed for the six "Group I" and nine "Group II" parameters identified in Table C-12 The choice of parameters is based primarily on waste characteristics and those properties that are indicative of treatment performance to ensure that the treated effluent meets all applicable discharge conditions. Waste analysis parameters were selected based on: 1) a review of existing information on the waste properties and constituents (e.g., 40 CFR 261 Appendix VII: 2) an identification of "key indicator properties" which indicate any change in a waste: and 3) a comparison of the waste stream data with the treatment process design criteria and trial treatment test results so as to ensure compliance with RCRA permit conditions, effluent discharge specifications, and offsite disposal facility acceptance criteria. At the discretion of the Laboratory Manager, the sample may also be tested for one or more supplemental parameters listed in Table C-13 to verify or expand the database.

4. CHSI shall review the GWMPS form, any supporting documentation provided by the generator, and any in-house analytical results to determine the acceptability of the waste for storage and treatment.

5. Upon determination that the waste stream is acceptable for storage and treatment at the facility, CHSI will, in accordance with 35 IAC 724.112 (b), provide to the generator a written notice which states that CHSI has been issued all the necessary licenses and permits to receive and manage the waste stream(s) under consideration. The notice will be provided to the generator prior to the initial shipment of the waste to CHSI.

B. Storage and Transfer of Hazardous Wastes

The following procedures will be required for each new waste stream that is a candidate for acceptance, storage, and transfer at CHSI:

1. The generator must complete and submit to CHSI a GWMPS form or a SKWMP form, included in Appendix C-5, along with any supporting documentation such as laboratory analyses, MSDS's. product of literature, etc.

2. The generator may submit a representative sample for each candidate storage and transfer waste stream. If providing the representative sample, the generator is required to certify (on the GWMPS form or SKWMP form) that the sample is representative of the waste stream under consideration.

3. At the discretion of the laboratory manager, a representative sample may be requested and analyzed for the six "Group I" parameters identified in Table C-12. The choice of supplemental parameters is geared towards evaluating the waste in light of the ultimate offsite reuse, treatment or disposal option under consideration.

4. CHSI shall review the GWMPS form or SKWMP form, any supporting documentation provided by the generator, and any in-house analytical results to determine the acceptability of the waste for storage and transfer.

5. Upon determination that a waste stream is acceptable for storage and transfer at the facility, CHSI will, in accordance with 35 IAC 724.112(b), provide to the generator a written notice which states that CHSI has been issued all necessary licenses and permits to receive and manate the waste stream(s) under consideration. The notice will be provided to the generator prior to the initial shipment of the waste to CHSI.

C. Treatment of Non-Hazardous Wastes

The following procedures will be required for each new waste stream that is a candidate for acceptance, storage, and treatment at CHSI:

1. The generator must complete and submit to CHSI a Generator Waste Material Profile Sheet (GWMPS) or a Safety-Kleen Waste Material Profile (SKWMP), included in Appendix C-5, along with any supporting documentation such as laboratory analyses, MSDS' product literature, etc.

2. The generator must submit a representative sample for each candidate treatment waste stream. In providing the representative sample, the generator is required to certify (on the GWMPS form or SKWMP form) that the sample is representative of the waste stream under consideration.

3. The representative sample will, at a minimum, be analyzed for the six "Group I", nine "Group II", and two "Group IV" parameters identified in Table C-12. In lieu of testing, the "Group IV" parameters may be certified by the generator using the IEPA TCLP Certification Form, if applicable. The choice of parameters is based primarily on waste characteristics and those properties that are indicative of treatment performance to ensure that the treated effluent meets all applicable discharge conditions. Waste analysis parameters were selected based on: 1) a review of existing information on the waste properties and constituents (e.g., 40 CFR 261 Appendix VII); 2) an identification of "key indicator properties" which indicate any change in a waste; and 3) a comparison of the waste stream data with the treatment process design criteria and trial treatment test results so as to ensure compliance with RCRA permit conditions, effluent discharge specifications, and offsite disposal facility acceptance criteria. At the discretion of the Laboratory Manager, the sample may also be tested for one or more supplemental parameters listed in Table C-13 to verify or expand the database.

4. CHSI shall review the GWMPS form or the SKWMP form, any supporting documentation provided by the generator and any in-house analytical results to determine the acceptability of the waste for storage and treatment.

5. Upon determination that the waste stream is acceptable for storage and treatment at the facility, CHSI will, in accordance with 35 IAC 724.112 (b), provide to the generator a written notice which states that CHSI has been issued al necessary licenses and permits to receive and manage the waste stream(s) under consideration. The notice will provided to the generator prior to the initial shipment of the waste to CHSI.

Given their unique nature, lab packs and other "special wastes" are not subject to sampling and analyses as part of the prequalification process. Instead, CHSI will rely on generator knowledge and use of the product, container labeling, manufacturer information, MSDS's EPA waste codes, and lab pack inventory review procedures to determine the suitability of the material for approval and acceptance.

Lab pack prequalification is conducted by CHSI personnel at the site of generation. During the waste identification and lab packing process, CHSI personnel compare the EPA hazardous waste codes of the facility's RCRA Part A form. Any waste code which does not appear on the Part A from is not authorized for acceptance and storage at the facility, and will not be allowed for shipment to CHSI. In cases where a container is prepackaged by the generator, CHSI will inspect the container to verify the accuracy of the packing slip and ensure that proper waste packing techniques have been followed.

In the case of unknown lab packs, CHSI shall conduct in-field screening tests to determine their suitability for acceptance. At a minimum, CHSI shall test to RCRA characteristic codes D001 through D003. Additional prequalification testing may be required at the discretion of the Laboratory Manager or the General Manager.

Upon determination that the lab packed waste is acceptable for management at the facility, CHSI will, in accordance with 35 IAC 724.112(b) provide the generator with a written notice which states CHSI has been issued all necessary licenses and permits to receive the waste stream(s) under consideration. The notice will be provided to the generator prior to the initial shipment of the waste to CHSI:

Three additional criteria must be satisfied when shipping lab packs to CHSI:

1. All hazardous waste lab packs must be accompanied by an accurate and complete hazardous waste manifest and Land disposal Restriction Form:

2. A packing slip (inventory) for each drum must accompany the hazardous waste manifest: and:

3. Each container must also have a copy of the packing slip (inventory) attached to it.

Using Clean Harbors unknown waste material fingerprint analysis, any wastes deemed acceptable after testing will be given Clean Harbors code LCCR-U. These wastes will have the fingerprint analysis attached as a packing slip, will not be consolidated at CHSI, and will be shipped off-site for hazardous waste incineration only. The unknown waste material fingerprint analysis procedures are included in Appendix C-9.

C-2a(2) Conformance Testing

A. Treatment Wastes

Upon arrival at the facility, all treatment wastes will undergo mandatory conformance analysis. The conformance testing, or fingerprint, includes basic screening procedures that are performed to provide a general characterization of the waste, to insure that the waste shipped matches the wastes approved under the treat ability of the waste. The treatment waste fingerprint parameters for both hazardous and non-hazardous wastes include the Group I and Group III parameters identified in Table C-12.

In the event that the conformance screening is inconclusive or identifies any potential discrepancy, the Laboratory Manager may require one or more supplemental analyses to provide a more accurate evaluation of the incoming waste. Supplemental analyses listed an described in Table C-13.

B. Storage and Transfer Wastes

Upon arrival at the facility, all storage and transfer wastes will undergo mandatory conformance analysis. The screening procedures are performed to provide a general characterization of the waste, and insure that the wastes shipped matches the waste approved under the prequalification process. The storage and transfer waste fingerprint parameters for both hazardous and non-hazardous wastes include the Group I parameters identified in Table C-12. Additionally, non-hazardous storage and transfer wastes (other than wastes which will not be consolidated and will be shipped to an off-site facility outside of Illinois) require the two "Group IV" parameters identified in Table C-12 on the initial shipment or prequalification sample.

In the event that the conformance screening is inconclusive or identifies any potential discrepancy, the Laboratory Manager may require one or more supplemental analyses (Table C-13) to provide a more accurate evaluation of the incoming waste.

C. Lab Packed Wastes

Lab packed will not be subjected to conformance analyses at the facility. Instead, CHSI will rely on stringent preacceptance review procedures in Section C-2a(i).

C-2a(3) Process Operation and Compatibility Testing

A. Treatment Wastes

CHSI conducts bench scale testing to determine the proper treatment chemicals and mixing ratios for all wastes streams undergoing treatment. Upon completion of the treatment process, treated effluent is analyzed for the parameters specified by the local sewer authority to determine whether the effluent meets the facility's discharge criteria. Treatment process residuals are assessed to determine conformance with offsite treatment/disposal facility acceptance criteria.

CHSI also conducts rigorous bench scale compatibility testing of all waste streams prior to commencing any treatment operation. CHSI utilizes ASTM D5058 Method A to assess waste compatibility.

Compatibility testing of primary treatment wastes involves mixing a sample of each new prospective material with a volume of material from a fully developed batch mixing tank in an approximate ratio in which the prospective material would be added to the material in the batch mixing tank. The materials are considered incompatible when any reactivity, solidification, release of noxious gases, phase separation, or other phenomena are observed. Compatibility testing of wastes to be treated using stabilization/fixation involves the mixing of a sample of the waste with the required stabilization/fixation agents in the proportions to utilized in the final treatment and observing for any reactivity, release of the noxious gases, etc.

B. Storage and Transfer Wastes

i) Prior to Storage

Prior to placing containers of with liquid hazardous wastes into a storage unit CHSI will assess the compatibility of the waste with the storage unit materials of construction and with wastes already stored therein. Compatibility of containers shall be assessed using the procedures described in Appendix C-6

ii) Prior to Mixing/Consolidation

Prior to undertaking any waste mixing or commingling activities, CHSI shall conduct bench scale compatibility testing to ensure that the wastes to be consolidated are chemically compatible and will not cause any reaction, heat, fire, explosion, or other adverse effect. CHSI shall utilize ASTM D5058 Method A to determine the compatibility of materials that are to be mixed. If there is any evidence of a reaction, the materials will be deemed as a unsuitable for consolidation; if no reaction occurs, the materials will be deemed compatible and additional supplemental analyses (Table C-13) to be performed for additional supporting evidence.

For the hazardous waste fuel blending process and hazardous waste shredding process, CHSI shall conduct bench scale testing to determine compatibility, proper waste mixing ratios and final fuel bending or incineration specification. The final specifications will be based on the receiving facility acceptance criteria.

C. Lab Packed Wastes

The compatibility of the contents of a lab pack container with any hazardous wastes already in storage shall be assessed prior to placing the lab pack container into the storage bay. CHSI shall review the packing list for the lab pack container and utilize a chemical classification system based on 40 CFR 264 Appendix V to determine any potentially incompatible group. Lab packs shall be subject to the compatibility testing described in Section C-21a (iii) (B) (ii) prior to any handling activity which involves the consolidation (mixing) of the lab pack chemicals

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C-2b Test Methods 724.113(b) (2)

Table C-14 lists the standard test methods to be used in the analyzing samples retrieved under this Plan. All analyses will be performed by CHSI, other Clean Harbors' analytical laboratories, or qualified independent laboratories. A summary of CHSI's on site laboratory capabilities is included in Appendix C-7.

C-2c Sampling Methods 724.113(b) (3), 40CFR 261 Appendix I

Any waste sampling that is required under this Plan should be performed by qualified CHSI personnel or approved testing laboratories retained by CHSI. All of the procedures and equipment used by CHSI for sampling purposes will conform with American Society for Testing Material (ASTM) and/or US EPA protocol ("Test Methods for Evaluation of Solid Waste:, SW – 846) to ensure the retrieval of reliable and upon the nature of the material and upon the type and size of container and shall follow CHSI's standard operating procedures sampling waste in containers. A summary of the sampling methods and equipment is presented in Table C-15.

The types of containers requiring sampling may include transportable units such as: drums, tanks, roll off containers, tank trucks, and railcars; or stationary units such as bulk storage tanks. The sampling devices are selected depending on the size and type of the container, and on the specific material involved.

Sampling of small containers (i.e., drums, cartons and small tanks) varies with the nature of the waste material. For flowable material, a Coliwasa unit or rigid tube is used to obtain a full vertical section sample. For non-flowable wastes, portions are taken from a vertical section, including any obvious layers.

Large containers of liquids are sampled with Coliwasa or tubing to obtain a vertical section, or by weighted bottle or bomb sample to allow for sampling at various depths. Light, dry powders and granules are sampled with a transparent tube to obtain a vertical core. Heavier solids are sampled by coring with heavy tubing. Tank sediments are sampled from a bottom-sampling valve when not accessible from the tip access ports. All tank trucks and rails cars will be sampled from top access ports.

Each phase of a multi-phase waste will be sampled separately.

C-2d Frequency of Analysis 724.113(b) (4)

The prequalification evaluation procedures will be repeated whenever: 1) the generator notifies CHSI that the process generating the waste has changed; or 2) CHSI has reason to suspect that the hazardous waste received at the facility is not as described in the prequalification documentation or manifest accompanying the shipment.

C-2e Additional requirements for Wastes Generated Offsite 724.113 (c)

In general, no material is accepted at the facility unless its arrival has been scheduled in advance. However, at the discretion of the Laboratory Manager, unscheduled arrivals may be received on a case-by-case emergency basis. Specific waste acceptance procedures and criteria re described in Sections C-2e (I) through C-2e (v) below.

C-2e(1) Bulk Transport Receiving Procedures

Upon arrival of each bulk container, CHSI will review the waste identification information (e.g., EPA waste codes, written description) on the accompanying manifest and Land Disposal Restriction documentation. A sample of the waste is retrieved and analyzed for the Groups I parameters identified in Table C-12. If the material is intended for onsite treatment, Group II fingerprint parameters will also be conducted. The analytical results are to be compared to the prequalification profiling data to verify the identity of the material. If the fingerprint data matches, the wastes will be deemed acceptable. If additional information is necessary the Laboratory Manager may choose one or more of the additional supplemental analyses to be conducted. If any waste material deemed unacceptable, the generator will be notified and the wastes will be shipped back to the generator or to an alternate approved waste management facility.

C-2e(2) Container Receiving Procedures

Upon arrival at the facility, each container shipment is counted and inspected for proper labeling and marking to verify the container piece count and the waste identification information (e.g., EPA waste codes, written description) on the accompanying manifest and Land Disposal Restriction documentation. All containers are place in a staging area where they are opened and visually inspected for color, odor, physical state, (solid, semisolid, liquid), layering, and free liquids to confirm that the waste shipped matches the physical description of the waste approved during the prequalificaiton process. The visual inspection shall be documented.

All containers of incoming storage and transfer wastes (100%) shall be sampled and analyzed for the conformance testing parameters identified in Group I of Table C-12. Samples from containers of the same waste stream (from the same generator) may be composited prior to analysis, provided that the individual samples are similar in physical appearance. The analytical results ("the fingerprint") shall be compared to the prequalification profiling data to verify the identity of the material. If the fingerprint data matches, the wastes will be deemed acceptable. If additional information is necessary, the Laboratory Manager may choose one or more of the additional "supplemental analyses" to be conducted. If any waste material deemed unacceptable, the generator will be notified and the wastes will be shipped back to the generator or to an alternate approved waste management facility.

C-2e(3) Lab Packed Waste Receiving Procedures

Upon arrival at the facility, each load of lab packed waste will be counted and inspected for proper labeling and marking to verify the EPA waste codes, written description on the accompanying manifest and Land Disposal Restriction documentation. The contents of lab packs transported to CHSI by non-CHI hazardous waste transporters will be inspected to verify the accuracy of the packing slip (drum inventory) and ensure that proper waste packing techniques were followed. All discrepancies are noted and additional feedback is generated (where applicable). Based upon a review of the packing slip, CHSI will confirm that the waste is authorized for storage and handling at CHSI, and, if no discrepancies are noted, will accept the load. If any waste material is deemed unacceptable, the generator will be notified and the wastes will be shipped back to the generator or to an alternate approved waste management facility.

C-2e(4) General Waste Acceptance Criteria

In deciding whether or not to accept an incoming waste shipment, the Laboratory Manager, in consultation with the General Manager, shall consider the following criteria, as appropriate:

1. Accuracy of the GWMPS Form or the SKWMP form:
2. Prequalification technical information, including any analytical data;
3. Physical characteristics (through visual observation) of the container and its contents as received;
4. Waste acceptance sampling and analytical results (fingerprint);
5. Piece counts, waste descriptions, container labeling, and EPA Waste Codes per accompanying hazardous waste manifest;
6. Accuracy and completeness of Land Disposal Restriction documentation: and
7. Laboratory Manager's professional experience and judgement.

C-2e(5) Nonconformance

Conformance with preacceptance results means that, in the opinion of the Laboratory Manager, the waste which actually arrives at the facility is substantially similar in physical character and chemical composition to the candidate waste stream considered during the waste preacceptance procedures, and is suitable for the intended mode of processing.

The Laboratory Manager shall classify incoming waste as being "nonconforming" if it is significantly different in composition or volume form the information shown in the GWMPS or SKWMP, the preacceptance results, or on the manifest.

Pursuant to 35 IAC 724.172, CHSI will contact the generator and attempt to resolve any discrepancies between the waste arriving at the facility and the information shown on the manifest.

A. <u>For incoming treatment wastes:</u>

Treatment wastes will be considered "nonconforming" when knowledge and/or analytical data identifies the presence of unanticipated contaminants or characteristics which preclude onsite treatment for one or more of the following reason:

a. The waste meets the description of an EPA waste code that is not on the list of authorized treatment codes in Tables C-1 through C-8, as appropriate;
b. One or more constituents in a waste stream is in excess of the boundary condition(s) listed in Tables C-1 through C-8, as appropriate;

c. The waste is a liquid with a flash point of less than 140 degrees F, except in the case of non-hazardous waste oils;
d. The waste is potentially incompatible with other materials to be stored/treated:
e. The waste contains detectable concentrations of polychlorinated biphenyl's (PCB's), except in the case of non-TSCA regulated waste waters which are amenable to treatment using carbon absorption.

Nonconforming treatment wastes will not automatically be rejected from the facility, CHSI will, to the extent possible redirect a nonconforming treatment waste to other onsite treatment processes (e.g., a waste intended for the inorganic treatment system may be suitable for processing in the listed waste system, to the hazardous waste fuel blending program, or to the storage and transfer portion of the facility pending reshipment to a suitable offsite facility.

B. For incoming fuel blending/hazardous shredding wastes

Fuel blending wastes will be considered "nonconforming" when knowledge and/or analytical data identifies the presence of unanticipated contaminants or characteristics which results in one or more of the following:

a. The waste meets the description to an EPA waste code that is not on the list of authorized fuel blending codes in Table C-10 or the list of authorized hazardous waste shredding codes in Table C-10A
b. The waste is potentially incompatible with other materials to be blended/consolidated;
c. The waste contains concentrations of PCB's equal to or in excess of 50 ppm;
d. The waste contains one or more EPA waste codes, contaminants or characteristics which are not authorized for or exceed acceptance levels at the ultimate receiving facility.

Nonconforming fuel blending wastes or hazardous shredding wastes will, to the extent possible, be redirected to other onsite treatment processes (e.g., stabilization) or to the storage and transfer portion of the facility pending reshipment to an offsite facility.

C. For incoming storage/transfer wastes

Storage/transfer wastes will be considered "nonconforming" when knowledge and/or analytical data identifies the presence of unanticipated contaminants or characteristics which results in one or more of the following:

a. The waste meets the description of an EPA waste code that is not on the list of authorized storage and transfer codes in Table C-9;

b. The waste is potentially incompatible with other materials to be stored; or

c. The waste is one for which CHSI has not established any arrangements with an alternate waste management facility that has authorization to accept such waste.

Nonconforming storage/transfer waste will be rejected from the facility and at the direction of the generator, will be shipped either to the generator or to an alternate facility authorized to accept such waste.

C-2e(6) Rejected Loads

Incoming loads which fail to meet the facility's waste acceptance criteria will be rejected and either:1) returned to the generator or 2) with the consent of the generator, shipped to an alternate waste management facility.

C-2f Additional Requirements for Ignitable, Reactive or Incompatible Wastes 724.113(b) (6), 724117

CHSI prequalification and waste acceptance procedures have been developed to identify the key chemical and physical characteristics of a waste stream. A critical part of these evaluations is to assess chemical compatibility of material so that CHSI can safely store, treat, an/or consolidate the stream under consideration with other accepted wastes.

CHSI segregates all wastes in storage according the chemical characteristics of the wastes being store. CHSI waste segregation measures are described in detail in Section F-5 of this Application.

Prior to placing a container into a storage unit, CHSI shall assess the compatibility of the container with other containers already in the storage bay. CHCI shall determine the compatibility of a waste using the CHSI compatibility procedures in Appendix C-6

Prior to any mixing or commingling operation involving two or more different waste streams, CHSI shall perform a test to determine a compatibility of the wastes, which are to be mixed. In conducting the test, CHSI shall utilize ASTM D5058-90, Method A, "Commingled Waste Compatibility".

C-2g Waste Analysis Requirements of Land Disposal Restrictions (LDR) 40 CFR Part 268

C-2g(1) Waste Testing

A. Incoming Waste Testing

All incoming hazardous waste streams are subject to prequalification analyses and facility acceptance fingerprinting. All generators will be required to comply with the LDR documentation requirements described in Section C-2g(ii) below for each incoming shipment of restricted waste.

B. Outgoing Hazardous Waste Streams

As a generator /treated of hazardous wastes, CHSI will provide LDR documentation as described in Section C-2g (ii) below for each shipment of restricted hazardous waste shipped from CHSI to an offsite treatment or disposal facility. There are two types of hazardous waste which may shipped from CHSI:

1. Wastes that are actually produced by CHSI through an onsite treatment process (e.g., listed waste treatment, etc.), analytical procedures, or other associated activities.:

2. Waste originally accepted for storage/transfer only, including fuel blending and shredding, and that are transferred to an offsite facility in their original container or in consolidated (bulked) form.

CHSI will determine the LDR status of the waste streams produced at the site by applying its knowledge of the waste or by conducting actual TCLP analytical testing prior to shipment. In the case of consolidated waste streams or shipments of waste in original container, CHSI will rely solely on the information provided by the original generator (as verified by the CHSI's waste acceptance procedures) to determine the specific LDR status of the waste.

C. Outgoing Non-Hazardous Treatment Residual

CHSI's CWA wastewater treatment system treats the following hazardous waste streams: D001 (Ignitable-Oxidizer), D002 (Corrosive), D003 (Reactive-Cyanide/Sulfide),D004-D011 (TCLP Toxic Metals),D018-D043 (TCLP Toxic Organic), and lime-stabilized K062 (Corrosive-Toxic for Hexavalent Chromium). The treatment process produces a residue (dewatered sludge). CHSI conducts TCLP analysis for each waste code treated in each batch of treatment residue to determine if the residue is non-hazardous (i.e., that it no longer exhibits any hazardous characteristics). If the treatment residue is determined to be non-hazardous) solid waste landfill or at a RCRA Subtitle C landfill as a non-hazardous solid waste.

Pursuant to 40 CFR 268.9(d) CHSI will, for each shipment of non-hazardous treatment solids to RCRA Subtitle D facilities, submit a one-time notification and certification to US EPA. The notification will include:

1. The name and address of the RCRA Subtitle D facility receiving the waste;

2. A description of the waste as initially generated, including the EPA Waste Code(s) of and the treatability group(s);

3. The treatment standards applicable to the waste at the initial point of generation.

The certification will be signed by an authorized representative of CHSI and will include the language found in 40 CFR 268.7(b) (I).

C-2g(2) LDR Documentation Requirements

Pursuant to 40 CFR 268.7 CHSI is responsible for maintaining copies of the Land Disposal Restrictions (LDR) documentation prepared by the original generator and accompanying each shipment into the facility or as a one-time notification. CHSI is also responsible for preparing and keeping LDR documentation for each load of hazardous waste generated at and shipped from the facility (each shipment or one-time notification). The content and format requirements for the various types of LDR documents are summarized below.

A <u>Incoming Waste Streams</u>

Prior to formal acceptance at the facility, all incoming waste shipments will be checked for compliance with the LDR documentation requirements specified in 40 CFR 268.7 (a). The actual documentation must meet one (or possibly more if the shipment is a mixed waste stream) the following three formats:

1. Generator Notification – Incoming shipment which contains a hazardous waste that does not meet the currently valid treatment standard must be accompanied by a "generator notification" (each shipment or one time) that has been completed and signed by the generator. The notification must includes the following information:

   - EPA Hazardous Waste No (s)
   - Treatability group {i.e., wastewater or nonwastewater)
   - Applicable wastecode subdivisions based on waste specific criteria
   - Statement that the waste is subject to the LDRs
   - Manifest number of the shipment

- Waste analysis data, where available

  For F001-F005, the notification must include the name of the constituent(s)
  For F039, the notification must include the F039 constituents must be identified
  For D001 High TOC Ignitable Liquids subcategory, UHCs do not need to be identified for organic recovery (RORGS) or combustion technology (CMBST)

When not treated in a CWA or equivalent system or Class 1 SWDA

For D001 (other than High TOC Ignitable Liquids), D002, D003 (explosive, water-reactive or other reactive Subcategory), D004-D011, D012-D017, UHCs must be identified
Lab packs meeting the alternate lab pack treatment Standard under 40 CFR 268.42© do not require UHCs to be identified
Hazardous debris meeting the alternate debris Treatment technologies of 40 CFR 268.45 require CSTT's to be identified and a statement identifying the waste as such

2. Generator Certification – If the generator determines (either through actual testing or applying knowledge of the waste) that the shipment meets the applicable treatment standards, the generator through actual testing or by applying knowledge of the waste) that the notification must also include a "generator certification" statement whose wording is identical to 268.7(a) (2) (ii).

3. Variances/Exemptions – If the shipment contains restricted wastes which are subject to a case-by-case extension, a no-migration petition, or a nationwide variance, the generator notification must also include the date that the waste becomes subject to the prohibitions.

For the sake of consistency, CHSI has developed standardized forms to be used for all incoming hazardous waste shipments. The forms include Form LDR-1, the "Land Disposal Restriction Notification Form"; and Form LDR-1 Addendum,, the "Land Disposal Restriction Notification Form Addendum". Copies of Forms LDR-1 and LDR-1 Addendum are presented in Appendix C-8.

B. Outgoing Hazardous Waste Streams

CHSI accepts hazardous waste for storage and consolidation prior to subsequent shipment to an offsite TSD for treatment and/or disposal. All outgoing wastes are shipped in their original container, or in consolidated (bulked) form without having undergone any "treatment". Under RCRA CHSI is considered the "generator " of all hazardous wastes shipped from the facility and must comply with the LDR'S generator recordkeeping requirements.

CHSI will provide all appropriate LDR documentation (using CHSI Forms LDR-1 and LDR-1 Addendum or other such forms designated by the receiving TSD facility) for each outgoing shipment of restricted hazardous waste with each shipment or as a one-time notification.

C. Records Retention

CHSI will retain onsite a copy of all notification, certifications, waste analysis data, and other LDR documentation (for both incoming and outgoing shipments) on file as part of the operating record at the facility for at least five years.

C-3 Quality Assurance 702.105

A. General

(i) Program Goal

It is the goal of the Clean Harbors Services, Inc. (CHSI) QA/QC program to insure the collection of accurate and precise analytical data. The success of the treatment processes are dependent upon the quality of the data. In addition only those waste characteristics that the process is permitted to treat. The anytical equipment available at the facility is listed in Appendix C-7

The laboratory follows the guidelines presented by the Environmental Protection Agency "Handbook for Analytical Quality Control in Water and Wastewater Laboratories: EPA SW-846" Test methods for Evaluating Solid Waste "and other EPA approved methods. Implicit in all procedures is the policy to immediately determine the cause of any abnormal result and to not allow data to be used unless the investing person in the QA/QC organization is confident of the validity of the data.

(ii) Orientation and Training Program

All CHSI laboratory personnel participate in a thorough training program to quality to work on samples.

The overall training program requires that employees become familiar with the following:

1. Laboratory Equipment
2. Laboratory Safety Procedures
3. Analytical Procedures
4. Appropriate QA/QC Procedures

The basic training is conducted by experienced personnel under the supervision of the laboratory manager. Completeness of orientation is assured by spot checks, oral quizzes and re-orientation by the laboratory manager.

When an individual has been fully familiarized with the above, he is then allowed to begin work on the samples. This work is directed by the laboratory manager.

Each procedure is introduced under controlled and monitored circumstances to assure thorough understanding of procedure and safety factors. A typical sequence in training to perform a specific procedure is as follows.

1. Read the procedure in the manual and discuss with the laboratory manager.

2. Become familiar with all regents, equipment, and laboratory facilities designated for the specific operation.

3. Perform the procedure with an individual who is qualified for that procedure.

4. Repeat step 3 until the new person, the qualified individual, and the laboratory manager are satisfied with performance.

5. Periodically run checks on the individual using duplicates, blanks, and/or standards.

In addition to the closely supervised laboratory training experience, CHSI encourages continuing education for all employees in qualified schools through a tuition reimbursement program.

(iii) Analytical Methods

Laboratory personnel have been trained to perform the analytical methods outlined in Table C-14. All data and observations will be recorded into a laboratory log book or a bound laboratory notebook. The entries will include:

- Analyst
- Date
- Results of analysis of laboratory quality control samples
- Calculations
- Instrument identification

All deviations form the method and pertinent observations will be recorded in the laboratory notebook. Also all "out of control" situations observed by the quality control program must be documented in the notebook This includes all corrective actions taken by the analyst, and/or the laboratory manager response to the "out of control " situation.

(iv) Material Purity

All materials (glassware, regents, and solvents) are demonstrated to be free from interferences by running method blanks. Each time a lot of samples is prepared, or there is a change in reagents, a method blank is processed as a safeguard against chronic laboratory contamination. The blank samples are carried through all stage of the sample preparation and measurement steps if contamination is found in the blank samples, appropriate measures are taken to determine and remove the source of the contamination.

When new chemicals are received or new reagents prepared, the material is dated. Chemicals and reagents are replaced as needed before the shelf life has been exceeded. Chemicals and reagents are used on a first –in , first-out basis.

(v) Instruments Maintenance

Each instrument has a maintenance log for documenting instrument maintenance. This maintenance log is available near the instrument and is kept current , The following maintenance information is recorded in the maintenance log

The manufacturer, model number, serial number and installation date are found in the maintenance log

Detailed statement of maintenance activities including date of maintenance and name of person performing of authorizing maintenance.

Any telephone calls regarding service maintenance (phone records) and service reports are maintained in the maintenance file.

Routine maintenance schedules if required should appear with a check list in the maintenance log. Contracted preventive maintenance schedules will be reviewed with appropriate personnel.

Instrument Manuals are maintained in a central file or with the associated instrument and are available as necessary.

B. Quality Control for Reporting Results

(i) Detection Limits

The laboratory will report detection limits for the components analyzed that are no less than twice the instrument background or as consistent with the EPA guidelines. In same cases detection limits will be higher due to matrix interrerences.

(ii) Rounding Off Data

Rounding off of numbers is a necessary operation in all analytical areas. It is automatically applied by the limits of measurement of every instrument and all glassware. However, when it is applied in chemical calculations incorrectly or prematurely it can adversely affect the final results. Rounding off should be applied only as a described in the U.S. EPA "Handbook for Analytical Quality Control in Water and Wastewater Laboratories"

(iii) Units

A few environmental analytical parameters have their own respective units such as pH, specific conductance and turbidity. Most concentrations for organic analysis will be reported in one of four units. Concentrations for liquid samples, except oil, will be reported in micrograms per liter (ugh/l or ppb) or milligrams per liter (mg/l or ppm). Concentrations for solid samples and oil samples will be reported in micrograms per kilogram (ug/kg or ppb) or milligrams per kilograms (mg/kg or ppm). Any deviation from this reporting format will appear in footnote form.

C. Analytical Modifications

All major changes and rationale for the changes from the published analytical procedures and/or QA/QC procedures will be documented by the QA/QC.

D. Data Archiving

The analytical laboratory will maintain on file, all the raw data, laboratory notebooks, and other documentation pertinent to the work on a given project this file will be maintained in permanent storage at the facility.

E. Sample Collection and Tracking

Designated personnel have been trained in the proper sampling techniques for waste shipments. Periodically a chemist evaluates the sample collector 's protocols and reviews the proper techniques to be employed. After each shipment is samples, the equipment is contaminated and inspected to insure against cross contamination and sampling equipment malfunction.

For each truck load of waste received at the facility a uniquely numbered "truck ticket" is issued. For consistency, the sample collected is issued the same number as that appearing on the truck ticket. In addition, a waste analysis form (Figure C-4) is initiated. This form accompanies the sample to the laboratory.

F. Out of Control situations

When any of the following events occur they are defined as an "out of control situation"

- A monitor, calibration, or curve falls outside CHSI control limits.
- Samples are improperly preserved.
- Clean Harbors Services, Inc. QA/QC protocols are not followed.
- An interlaboratory study indicates out result has fallen outside of the study's control limits.
- Lab quality control samples suggest that an analytical result may be of questionable or unknown validity.

The analysis of QC samples monitor precision, accuracy and laboratory contamination for a particular analysis. These QC samples must be run with the sample set they are monitoring if possible. If it is not possible to run all the QC with the sample set, the QC must be complete

before the results are released. No data produced during an "out of control" situation will be considered valid.

G. Corrective Action

When an "Out of Control" situation occurs, the lab manager will be notified as soon as possible. Upon notification the manager will recommend the appropriate corrective action. The situation and corrective action will be documented in the appropriate logbook. The lab manager will initial the documentation of successful corrective action after its completion and must approve resumption of analysis. Repetitive "out of control" situations will be monitored for analyst specific deficiencies.

H. Performance and System Audits

Clean Harbors performs internal system audits/intralaboratory comparisons, and a system of corrective actions. On a 5 to 10% frequency duplicate and spike analysis are performed if possible depending on the frequency required by the method A control limit of 20% for relative percent difference (RPD) shall be used for original and duplicate sample values greater than or equal 5 times the method detection limit (MDL). For sample values less than 5 times the MDL a control limit of +/- the MDL has been established. The control limit for spike recovery is 80-120%. However if the sample concentration exceeds the spike concentration by a factor of 4 or more the 80-120% control limit need not be met. The data is tabulated and/or graph on control charts.

Section C Addendum

CHSI may waive waste prequalification procedures and accept hazardous and non-hazardous waste materials generated from off-site emergency response actions when the following conditions are met:

a. an incident number has been issued for the emergency event,

b.

c. the IEPA's Emergency Response Unit (ERU) has determined that the incident is an immediate threat to human health or the environment, and

d. ERU has approved the request to ship the waste to the CHSI facility.

A full analysis of the waste pursuant to this Waste Analysis Plan shall be conducted once the shipment reaches the CHSI facility.

Table C-1: Primary Treatment Using Chemical Precipitation, Coagulation, and Filtration

Waste Category	EPA Hazardous Waste No.		Hazard Listing Per 40 CFR 261	Condition
Inorganic (a) Wastewater's	D004	Arsenic	Toxic for As	10,000 ppm
	D005	Barium	Toxic for Ba	10,000 ppm
	D006	Cadmium	Toxic for Cd	10,000 ppm
	D007	Chromium	Toxic for Cr	250,000 ppm
	D008	Lead	Toxic for Pb	150,000 ppm
	D009	Mercury	Toxic for Hg	1 ppm
	D010	Selenium	Toxic for Se	10,000 ppm
	D011	Silver	Toxic for Ag	10,000 ppm

Notes: (a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #1

Table C-1a: Primary Treatment of Non-Hazardous Wastes Using Chemical Precipitation, Coagulation, and Filtration

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per 40 CFR 261	Boundary Condition
Inorganic Wastewater's	NONE	Arsenic	Non-Hazardous	5 ppm TCLP
	NONE	Barium	Non-Hazardous	100 ppm TCLP
	NONE	Cadmium	Non-Hazardous	1 ppm TCLP
	NONE	Chromium	Non-Hazardous	5 ppm TCLP
	NONE	Lead	Non-Hazardous	5 ppm TCLP
	NONE	Mercury	Non-Hazardous	0.2 ppm TCLP
	NONE	Selenium	Non-Hazardous	1 ppm TCLP
	NONE	Silver	Non-Hazardous	5 ppm TCLP
	NONE	Copper	Non-Hazardous	150,000 ppm TCLP
	NONE	Iron	Non-Hazardous	200,000 ppm TCLP
	NONE	Nickel	Non-Hazardous	150,000 ppm TCLP
	NONE	Zinc	Non-Hazardous	180,000 ppm TCLP

Table C-2: Pretreatment Using Neutralization (++)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per 40 CFR 261	Boundary Condition
(a)				
Oxidizers	D001	HNO3 (>40%)	Ignitable	pH > 0
(b)				
Acids	D002	H2S04	Corrosive	pH > 0
	D002	HN03	Corrosive	
	D002	HCl	Corrosive	
	D002	Pickle Liquor	Corrosive	
	D002	Galvanizing Acid	Corrosive	
	D002	Mixed Acid	Corrosive	
	D002	Battery Acid	Corrosive	
(c)				
Alkaline	D002	NaOH	Corrosive	pH < 14
	D002	KOH	Corrrosive	
	D002	Degreasers	Corrosive	
	D002	Battery Fluid	Corrosive	
	D002	Lime Waste Water	Corrosive	
	D002	Spent Mixed Caustic	Corrosive	
(d)				
Iron and Steel (By Lime Stabilization)	K062	Pickle Liquor	Corrosive	pH > 0
	K062	Etching Acid	Corrosive	

Notes:

(++) - Waste may be mixed with D003, D004-D011, and/or D018-D043

(a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #2

(b) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #3

(c) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #4

(d) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #5

Table C-2a: Pretreatment of Non-Hazardous Wastes Using Neutralization

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per 40 CFR 261	Boundary Condition
Oxidizers	NONE	HN03 (>40%)	Non Hazardous	pH > 2.0
Acids	NONE	H2S04	Non-Hazardous	pH > 2.0
	NONE	HN03	Non-hazardous	
	NONE	HC1	Non-Hazardous	
	NONE	Pickle Liquor	Non-Hazardous	
	NONE	Galvanizing Acid	Non-Hazardous	
	NONE	Mixed Acid	Non-Hazardous	
	NONE	Battery Acid	Non-Hazardous	
Alkaline	NONE	NaOH	Non-Hazardous	pH < 12.5
	NONE	KOH	Non-Hazardous	
	NONE	Degreasers	Non-Hazardous	
	NONE	Battery Fluid	Non-Hazardous	
	NONE	Lime Waste Water	Non-Hazardous	
	NONE	Spent Mixed Caustic	Non-Hazardous	
Iron and Steel (By Lime Stabilization)	NONE	Pickle Liquor	Non-Hazardous	pH < 2.0
	NONE	Etching Acid	Non-Hazardous	

Table C-3 Pretreatment Using Chemical Oxidation (++)

Waste Category		EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per 40 CFR 261	Boundary Condition
	(a)				
Reactive		D003	Sulfide	Reactive	50,000 ppm
		D003	Cyanide	Reactive	150,000 ppm
	(b)				
Organic		D018	Benzene	Toxic	100 ppm
		D019	Carbon Tetrachloride	Toxic	100 ppm
		D021	Chlorobenzene	Toxic	100 ppm
		D022	Chloroform	Toxic	100 ppm
		D023	o-Cresol	Toxic	400 ppm
		D024	m-Cresol	Toxic	400 ppm
		D025	p-Cresol	Toxic	400 ppm
		D026	Cresol	Toxic	100 ppm
		D027	1,4-Dichlorobenzene	Toxic	100 ppm
		D028	1,2-Dichloroethane	Toxic	100 ppm
		D029	1,1-Dichloroethylete	Toxic	100 ppm
		D030	2,4-Dinitrotoluene	Toxic	100 ppm
		D032	Hexachlorobenzene	Toxic	100 ppm
		D033	Hexachlorobutadiene	Toxic	100 ppm
		D034	Hexachloroethane	Toxic	100 ppm
		D035	Methylethyl ketone	Toxic	400 ppm
		D036	Nitrobenzene	Toxic	100 ppm
		D037	Pentachlorophenol	Toxic	Below TC Level
		D038	Pyridine	Toxic	Below TC Level
		D039	Tetrachloroethylene	Toxic	100 ppm
		D040	Trichloroethylene	Toxic	100 ppm
		D041	2,4,5,-Trichlorophenol	Toxic	400 ppm
		D042	2,4,6,-Trichlorophenol	Toixc	400 ppm
		D043	Vinyl Chloride	Toxic	100 ppm

Notes;

(++) - Waste may be mixed with D002 and/or D004-D011

(a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #6

(b) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #7

Table C-3a: Pretreatment of Non-Hazardous Wastes Using Chemical Oxidation

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Boundary Condition
Reactive	NONE	Sulfide	Non-Hazardous	500 ppm
	NONE	Cyanide	Non-Hazardous	250 ppm
Organic	NONE	Benzene	Non-Hazardous	Below the Toxicity
	NONE	Carbon tetrachloride	Non-Hazardous	
	NONE	Chlorodane	Non-Hazardous	
	NONE	Chlorobenzene	Non-Hazardous	
	NONE	Chloroform	Non-Hazardous	
	NONE	o-Cresol	Non-Hazardous	
	NONE	m-Cresol	Non-hazardous	
	NONE	p-Cresol	Non-Hazardous	
	NONE	Cresol	Non-Hazardous	
	NONE	1,4-Dichlorobenzene	Non-Hazardous	
	NONE	1,2-Dichloroethane	Non-Hazardous	
	NONE	1,1-Dichloroethylene	Non-Hazardous	
	NONE	2,4-Dinitrotoluene	Non-Hazardous	
	NONE	Heptachlor (and its hydroxide)	Non-Hazardous	
	NONE	Hexachlorobenzene	Non-Hazardous	
	NONE	Hexachlorobutadiene	Non-Hazardous	
	NONE	Hexachloroethane	Non-Hazardous	
	NONE	Methyl ethyl ketone	Non-Hazardous	
	NONE	Nitrobenzene	Non-Hazardous	
	NONE	Pentachlorophenol	Non-Hazardous	
	NONE	Pyridine	Non-Hazardous	
	NONE	Tetrachloroethylene	Non-Hazardous	
	NONE	2,4,5-Trichlorohpenol	Non-Hazardous	
	NONE	2,4,6-Trichlorophenol	Non-Hazardous	
	NONE	Vinyl Chloride	Non-Hazardous	

Table C-4: Pretreatment Using Chemical Reduction (++)

Waste Category	EPA Hazardous Waste No.	Waste stream	Basis for Hazard Listing per 40 CFR 261	Boundary Condition
Chromium (a)	D007	Chromium	Toxic	250,000 ppm

Notes:

(++) - Waste may be mixed with D002, D004-D011, and/or D018-D043.

(a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #8

Table C-4a: Pretreatment of Non –Hazardous Wastes Using Chemical Reduction

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per 40 CFR 261	Boundary Condition
Chromium	NONE	Chromium	Non-Hazardous	5 ppm TCLP

Table C-5: Pretreatment By Other Methods (++)

Pre-Treatment	Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Boundary Condition	Method
Ammonia Stripping (a)						
	Non-Hazardous	NONE	Ammonia Containing	Non-Hazardous	Bench Treatment	
	Corrosive	D002	Ammonia Containing	Corrosive	Bench Treatment	
Chelation Breaking	(b) Acids	D002	Cleanout Material	Corrosive	Bench Treatment	
	(c) Alkaline	D002	Cleanout Material	Corrosive	Bench Treatment	
	(d) Inorganic Metals					
		D004	Arsenic	Toxic	10,000 ppm	
		D005	Barium	Toxic	10,000 ppm	
		D006	Cadmium	Toxic	10,000 ppm	
		D007	Chromium	Toxic	250,000 ppm	
		D008	Lead	Toxic	150,000 ppm	
		D009	Mercury	Toxic	1 ppm	
		D010	Selenium	Toxic	10,000 ppm	
		D011	Silver	Toxic	10,000 ppm	

(continued)

Table C-5a: Pretreatment of Non-Hazardous Wastes By Other Methods

Pre-Treatment Method	Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR261	Boundary Condition
Ammonia Stripping	Non-Hazards	NONE	Ammonia Containing	Non-Hazardous	pH > 2.0
Chelation Breaking	Acids	NONE	Cleanout Material	Non-Hazardous	pH > 2.0
	Alkaline	NONE	Cleanout Material	Non-Hazardous	pH < 12.5
	Inorganic Metals	NONE	Arsenic	Non-Hazardous	5 ppm TCLP
		NONE	Barium	Non-Hazardous	100 ppm TCLP
		NONE	Cadmium	Non-Hazardous	1 ppm TCLP
		NONE	Chromium	Non-hazardous	5 ppm TCLP
		NONE	Lead	Non-Hazardous	5 ppm TCLP
		NONE	Mercury	Non-Hazardous	0.2 ppm TCLP
		NONE	Selenium	Non-Hazardous	1 ppm TCLP
		NONE	Silver	Non-Hazardous	5 ppm TCLP

(Continued)

Table C-5: Continued

Pre-Treatment Method	Waste Category	EPA Hazardous Waste no.	Waste Stream	Basis for Hazard Listing	Boundary Condition
Organic (e) Removal	Organic	D018	Benzene	Toxic	100 ppm
		D019	Carbon tetrachloride	Toxic	100 ppm
		D021	Chlorobenzene	Toxic	100 ppm
		D022	Chloroform	Toxic	100 ppm
		D023	o-Cresol	Toxic	400 ppm
		D024	m-Cresol	Toxic	400 ppm
		D025	p-Cresol	Toxic	400 ppm
		D026	Cresol	Toxic	100 ppm
		D027	1,4-Dichlorobenzene	Toxic	100 ppm
		D028	1,2-Dichloroethane	Toxic	100 ppm
		D029	1,1-Dichloroethylene	Toxic	100 ppm
		D030	2,4-Dinitrotoluene	Toxic	100 ppm
		D032	Hexachlorobenzene	Toxic	100 ppm
		D033	Hexachlorobutadiene	Toxic	100 ppm
		D034	Hexachlororethane	Toxic	100 ppm
		D035	Methyl ethyl ketone	Toxic	400 ppm
		D036	Nitrobenzene	Toxic	100 ppm
		D037	Pentachlorophenol	Toxic	Below TC Level
		D038	Pyridine	Toxic	Below TC Level
		D039	Tetrachloroethylene	Toxic	100 ppm
		D040	Trichloroethylene	Toxic	100 ppm
		D041	2,4,5-Trichlorophenol	Toxic	400 ppm
		D042	2,4,6-Trichlorophenol	Toxic	400 ppm
		D043	Vinyl Chloride	Toxic	100 ppm

Notes:

(++) - Waste may be mixed with D002,D004-D011, and/or D018-D043.

(a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #9

(b) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #10

(c) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #11

(d) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #12

(e) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #13

Table C-5a: Continued

Pre-Treatment Method	Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing	Boundary Condition
Organic Stripping	Organic	NONE	Benzene	Non-Hazardous	Below the Toxicity Characteristic (TC) Level
		NONE	Carbon Tetrachloride	Non-Hazardous	
		NONE	Chlorodane	Non-Hazardous	
		NONE	Chlorobenzene	Non-Hazardous	
		NONE	Chloroform	Non-Hazardous	
		NONE	o-Cresol	Non-Hazardous	
		NONE	m-Cresol	Non-Hazardous	
		NONE	p-Cresol	Non-Hazardous	
		NONE	Cresol	Non-Hazardous	
		NONE	1,4-Dichlorobenzene	Non-Hazardous	
		NONE	1,2-Dichloroethane	Non-Hazardous	
		NONE	1,1-Dichloroethylene	Non-Hazardous	
		NONE	2,4-Dinitrotoluene	Non-Hazardous	
		NONE	Heptachlor (And its hydroxide)	Non-Hazardous	
		NONE	Hexachlorobenzene	Non-Hazardous	
		NONE	Hexachlorobutadiene	Non-Hazardous	
		NONE	Hexachloroethane	Non-Hazardous	
		NONE	Methyl ethyl ketone	Non-Hazardous	
		NONE	Nitrobenzene	Non-Hazardous	
		NONE	Pentachlorophenol	Non-Hazardous	
		NONE	Pyridine	Non-Hazardous	
		NONE	Tetrachloroethylene	Non-Hazardous	
		NONE	Trichloroethylene	Non-Hazardous	
		NONE	2,4,5-Trichlorophenol	Non-Hazardous	
		NONE	2,4,6-Trichlorophenol	Non-Hazardous	
		NONE	Vinyl Chloride	Non-Hazardous	

Table C-6: Pretreatment Using Oil Recovery

Waste Category	Waste Stream	Boundary Condition
Non-Hazardous Waste Oils (a)	Oily Wastes, including, but not limited to: - Tank Cleanout - Motor Oils - Fuel Oils - Industrial Oils	35 IAC 726,Subpart E – Used Oil Burned For Energy Recovery - Total Halogens < 4,000 ppm - PCB's < 50 ppm - Specification/Off-Specification levels for metals per 764.140(e)

Note:

(a) - A sample analysis for this waste Category is presented in Appendix C-1, Data Sheet #14

Table C-7: Listed Waste Treatment Process

Waste Category		EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)	Treatment Method(s)\
			(SEE NOTE (r) FOR GENERAL BOUNDARY CONDITIONS)			
Ignitable	(a)	D001	Oxidizers	Ignitable	HN03 > 40%	Neutralization
Corrosive	(b)	D002	Acid/Alkaline	Corrosive	pH< 2.0 or pH > 12.5	Neutralization
Reactive	©	D003	Sulfides	Reactive		Chemical oxidation
		D003	Cyanides	Reactive		
Inorganic Metals	(d)					
		D004	Arsenic	Toxic	Arsenic	Chemical Precipitation or Coagulation
		D005	Barium	Toxic	Barium	
		D006	Cadmium	Toxic	Cadmium	
		D007	Chromium	Toxic	Chromium	
		D008	Lead	Toxic	Lead	
		D009	Mercury	Toxic	Mercury	
		D010	Selenium	Toxic	Selenium	
		D011	Silver	Toxic	Silver	
Organics	(e)	D018	Benzene	Toxic	Benzene	Chemical Oxidation or Carbon Absorption
		D019	Carbon tetachloride	Toxic	Carbon tetrachloride	
		D021	Chlorobenzene	Toxic	Chlorobenzene	
		D022	Chloroform	Toxic	Chloroform	
		D023	o-Cresol	Toxic	o-Cresol	
		D024	m-Cresol	Toxic	p-Ceresol	
		D026	Cresol	Toxic	Cresol	
		D027	1,4-Dichlorobenzene	Toxic	1,4-Dichlorobenzene	
		D028	1,2-Dichloroethane	Toxic	1,2-Dichloroethane	
		D029	1,1-Dichloroethylene	Toxic	1,1-Dichloroethylene	
		D030	2,4-Dinitrotoluene	Toxic	2,4-Dinitrotoluene	
		D032	Hexachlorobenzene	Toxic	Hexachlorobenzene	
		D033	Hexachlorobutadiene	Toxic	Hexachlorobutadiene	
		D034	Hexachloroethane	Toxic	Hexachloroethane	
		D035	Methyl ethyl ketone	Toxic	Methyl ethyl ketone	
		D036	Nitrobenzene	Toxic	Nitrobenzene	

(Continued)

Table C-7: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)	Treatment Method(s)
	D037	Pentachlorophenol	Toxic	Pentachlorophenol	Chemical Oxidation or Carbon Adsorption
	D038	Pyridine	Toxic	Pyridine	
	D039	Tetrachloroethylene	Toxic	Tetrachloroethylene	
	D040	Trichloroethylene	Toxic	Trichloroethylene	
	D041	2,4,5-Trichlorophenol	Toxic	Trichlorophenol	
	D042	2,4,6-Trichlorophenol	Toxic	2,4,6-Trichlorophenol	
	D043	Vinyl Chloride	Toxic	Vinyl Chloride	
Spent Solvents (f)	F001	Spent halogenated solvents used in Degreasing	Toxic	Tetrachlorethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons	Carbon Adsorption
	F002	Spent halogenated solvents	Toxic	Tetrachlorethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane	Carbon Adsorption
	F003	Spent non-halogenated solvents	Ignitable, Toxic	See 40 CFR 261.31	Carbon Adsorption
	F004	Spent non-halogenated solvents	Toxic	Cresols and cresylic acid, nitrobenzene	Carbon Adsorption
	F005	Spent non-halogenated solvents	Ignitable, Toxic	See 40,CFR 261.31	Carbon adsorption

(continued)

Table C-7: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)	Treatment method(s)
(g) Electroplating	F006	Wastewater treatment sludges from electroplating operations	Toxic	Cadmium hexavalent chromium, nickel, cyanide (complexed)	Chemical Oxidation Chemical Precipitation, or Coagulation
	F007	Cyanide plating bath from electroplating	Reactive, Toxic	Cyanide (complexed)	Chemical Oxidation Chemical Precipitation, Or Coagulation
	F008	Plating bath bottoms from electroplating using Cyanide	Reactive, Toxic	Cyanide (complexed)	Chemical Oxidation Chemical Precipitation or Coagulation
(h) Metal Heat Treatment	F009	Stripping and cleaning bath from electroplating using Cyanide	Reactive, Toxic	Cyanide (complexed)	Chemical Oxidation Chemical Precipitation, Or Coagulation
	F010	Quenching bath residues from metal heat treating using cyanide	Reactive, Toxic	Cyanide (complexed)	Chemical Oxidation Chemical Precipitation, or Coagulation
	F011	Spent Cyanide solutions from salt bath pot heat treating using cyanide	Reactive,Toxic	Cyanide (complexed)	Chemical Oxidation, Chemical Precipitation, or Coagulation
	F012	Quenching wastewater treatment sludges from metal heat-treating	Toxic	Cyanide (complexed)	Chemical Oxidation Chemical Precipitation, or Coagulation
(i) Conversion Coating	F019	Wastewater treatment sludges	Toxic	Hexavalent Chromium, cyanide (complexed)	Chemical Oxidation, Chemical Precipitation, Or Coagulation

(continued)

Table C-7: continued

Waste	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituents(s)	Treatment Method(s)
(j) Multi-Source Leachate	F039	Multi-Source Leachate	Toxic	Metals, Organics, etc.	Carbon Adsorption, Chemical Oxidation, Chemical Precipitation Or Coagulation
(k) Inorganic Pigments	K002	Wastewater Treatment Sludge	Toxic	Hexavalent chromium lead	Chemical Precipitation Or Coagulation
	K003	Wastewater Treatment Sludge	Toxic	Hexavalent chromium lead	Chemical Precipitation Or Coagulation
	K004	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead	Chemical Precipitation Or Coagulation
	K005	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead	Chemical Precipitation Or Coagulation
	K006	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead	Chemical Precipitation Or Coagulation
	K007	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead	Chemical Precipitation Or Coagulation
	K008	Oven Residue	Toxic	Hexavalent chromium, Lead	Chemical Precipitation Or Coagulation
(l) Explosives	K046	Wastewater treatment Sludge from lead-based Initiating compounds	Toxic	Lead	Chemical Precipitation Or Coagulation

(continued)

Table C-7: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)	Treatment Method(s)\
(m)					
Petroleum Refining	K048	Dissolved Air Flotation (DAF) From Petroleum	Toxic	Hexavalent Chromium lead	Chemical Precipitation or Coagulation
	K052	Leaded Tank Bottom From petroleum refining	Toxic	Lead	Chemical Precipitation or Coagulation
(n)					
Iron And Steel	K061	Emission Control Dust/ Sludge in Electric Furnaces	Toxic Toxic	Hexavalent Chromium Lead	Chemical Precipitation or Coagulation
	K062	Spent Pickle Liquor	Corrosive, Toxic	Hexavalent Chromium Lead	Chemical Precipitaion or Coagulation
(o)					
Coking	K060	Ammonia still Lime sludge	Toxic	Cyanide, naphthalene, compounds arsenic	Chemical Precipitation Or Coagulation
	K087	Decanter tank Tar sludge	Toxic	Phenol, naphthalene	Chemical Precipitation Coagulation, or Air Stripping

(continued)

Table C-7: Continued

Waste Category		EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)	Treatment Method(s)
Secondary	(p)	K069	Emission Control Dust/ Sludge from Secondary Lead Smelting	Toxic	Hexavalent chromium, lead, cadmium	Chemical Precipitation or coagulation
		K100	Leaching Solution Acid Leaching or Emission Control Dust/Sludge form Secondary Lead Smelting.	Toxic	Hexavalent chromium lead, cadmium	Chemical Precipitation or coagulation
Ink Formulation	(q)	K086	Solvent wastes Sludges	Toxic	Hexavalent chromium lead	Chemical Precipitation or coagulation

Notes:

(a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #15
(b) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #16
(c) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #17
(d) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #18
(e) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #19
(f) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #20
(g) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #21
(h) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #22
(i) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #23
(j) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #24
(k) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #25
(l) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #26
(m) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #27
(n) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #28
(o) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #29
(p) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #30
(q) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #31
(r) - Boundary conditions for acceptance of waste material for storage, consolidation, and transfer are limited only by the acceptance criteria of the offsite recovery, recycling, treatment or disposal facility to which the wastes are ultimately shipped.

Table C-8: Stabilization/Fixation Prior to Offsite Disposal

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing	Boundary Condition
(a) Corrosive	D002	Acids/Alkalines	Corrosive	1.0 > pH < 13.5
(b) Reactive	D003	Reactive Waste	Reactive	See Note (e)
(c) Inorganic Metals	D004	Arsenic	Toxic	See Note (e)
	D005	Barium	Toxic	
	D006	Cadmium	Toxic	
	D007	Chromium	Toxic	
	D008	Lead	Toxic	
	D009	Mercury	Toxic	
	D010	Selenium	Toxic	
	D011	Silver	Toxic	
(d) Iron And Steel	K062	Spent pickle liquor	Corrosive, Toxic	See Note (e)

(continued)

Table C-8: Continued

Waste	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing	Boundary Condition
Electroplating (e)	F006	Wastewater	Toxic	
	F007	Cyanide plating bath	Reactive, Toxic	
	F008	Plating bath bottoms	Reactive, Toxic	
Metal Heat Treatment (e)	F009	Stripping and cleaning bath from electroplating using cyanide	Reactive, Toxic	
	F010	Quenching bath residues from metal heat treating using cyanide	Reactive, Toxic	
	F011	Spent cyanide solutions from salt bath pot treating using cyanide	Reactive,Toxic	
	F012	Quenching wastewater treatment sludges from metal heat-treating	Toxic	

(continued)

Table C-8: Continued

Waste	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing	Boundary Condition
Conversion Coating (e)	F019	Wastewater treatment sludges from chemical conversion coating of aluminum	Toxic	

Notes:

(a) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #32

(b) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #33

(c) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #34

(d) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #36

(e) - The specific boundary conditions for acceptance are limited only by the acceptance criteria of the land disposal site. Typical acceptance criteria generally include: <200 ppm amenable cyanides; <200 ppm reactive sulfides; <3% phenolics; <50 ppm PCB's; and flashpoint > 70 degrees F. In addition, most landfills will not accept wastes which are pyrophoric, shock sensitive, explosive, water reactive, radioactive, strong oxidizing or etiologically hazardous, or that fail paint filter test.

Table C-9: Wastes for Storage and Transfer

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CRF 261	Hazardous Constituents(s)
(SEE NOTE (BB) FOR GENERAL BOUNDARY CONDITIONS)				
(WASTE CODES MARKED WITH AN ASTERISK (*) ARE EXCLUDED FOROM ACCEPTANCE AND STORAGE IN ROLLOFF CONTAINERS - SEE NOTE (CC)				
(ALL WASTE CODES ARE ELIGIBLE FOR TRATMENT USING COMPACTION – SEE NOTE (DD)				
(a)				
Ignitable	D001	Ignitable	Flash Point < 140 Degree F	
(b)				
Corrosive	D002	Acid/Alkaline	pH < 2.0 or pH> 12.5	
(c)				
Reactive	D003	Sulfides	Reactive	
	D003	Cyanides	Reactive	
	D003*	Water Reactive	Reactive	
(d)				
Inorganic Metals	D004	Arsenic	Toxic	Arsenic
	D005	Barium	Toxic	Barium
	D006	Cadmium	Toxic	Cadmium
	D007	Chromium	Toxic	Chromium
	D008	Lead	Toxic	Lead
	D009	Mercury	Toxic	Mercury
	D010	Selenium	Toxic	Selenium
	D011	Silver	Toxic	Silver
(e)				
Pesticides Herbicides	D012	Endrin	Toxic	1,2,3,4,10,10-hexachloro-1,7 epoxy 1,4,4a,5,6,7,8a-octahydro-1,4-endo, endo-5, 8-dimethanonaphthalene
	D013	Lindane	Toxic	1,2,3,4,5,6-hexachloro-cyclohexane, gamma Isomer
	D014	Methoxychlor	Toxic	1,1,1-Tri-chloro-2,2-bias(p-methoxphenyl) Ethane
	D015	Toxaphene	Toxic	C10H10C18, Technical Chlorinated Camphene, 69%-69% chlorine

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
	D016	2,4-D	Toxic	2,4-D (2,4-Dichlorophenoxy acetic acid)
	D017	2,4,5-TP Silver	Toxic	2,4,5-Trichlorophenoxpropionic acid

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
Organics (f)	D018	Benzene	Toxic	Benzene
	D019	Carbon tetrachloride	Toxic	Carbon tetrachloride
	D020	Chlordane	Toxic	Chlordane
	D021	Chlorobenzene	Toxic	Chlorobenzene
	D022	Chloroform	Toxic	Chloroform
	D023	o-Cresol	Toxic	o-Cresol
	D024	m-Cresol	Toxic	m-Cresol
	D025	p-Cresol	Toxic	p-Cresol
	D026	Cresol	Toxic	Cresol
	D027	1,4-Dichlorobenzene	Toxic	1,4-Dichlorobenzene
	D028	1,2-Dichloroethane	Toxic	1,2-Dichloroethane
	D029	1,1-Dichloroethylene	Toxic	1,1-Dichloroethylene
	D030	2,4-Dinitrotoluene	Toxic	
	D031	Heptachlor (and its epoxide)		
	D032	Hexachlorobenzene	Toxic	Heptachlor
	D033	Hexachlorobutadiene	Toxic	Hexachlorobutadiene
	D034	Hexachloroethane	Toxic	Hexachloroethane
	D035	Methyl ethyl ketone	Toxic	Methyl ethyl ketone
	D036	Nitrobenzene	Toxic	Nitorbenzene
	D037	Pentachlorophenol	Toxic	Pentachlorohpenol
	D038	Pyridine	Toxic	Pyridine
	D039	Tetrachloroethylene	Toxic	Tetrachloroethylene
	D040	Trichloroethylene	Toxic	Trichloroethylene
	D041	2,4,5-Trichlorophenol	Toxic	2,4,5-Trichlorophenol
	D042	2,4,6-Trichlorophenol	Toxic	2,4,6-Trichlorophenol
	D043	Vinyl Chloride	Toxic	Vinyl Chloride
Spent (g) Solvents	F001	Spent halogenated Solvents used in Degreasing	Toxic	Tetrachlorethylene, methylene chloride trichloroethylene,1,1,1-trichloroethane, carbon tetrachloride, chlorinated Fluorocarbons
	F002	Spent halogenated Solvents	Toxic	Tetrachloroethylene, methylene,chloride, trichloroethylene 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2, Trifluoroethane, ortho-dichlorobenzene,

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per 40 CFR 261	Hazardous Constituent(s)
	F003	Spent non-halogenated Solvents	Ignitable, Toxic	See 40CFR 261.31
	F004	Spent non-halogenated Solvents	Toxic	Cresols and cresylic acid, nitrobenzene
	F005	Spent non-halogentated Solvents	Ignitable, Toxic	See 40 CFR 261.31
(h) Electroplating	F006	Wastewater Treatment sludges From electroplating Operations	Toxic	Cresols and cresylic acid, nitrobenzene cyanide (complexed)
	F007	Cyanide plating bath From electroplating	Reactive, Toxic	Cyanide (complexed)
	F008	Plating bath bottoms From electroplating Using cyanide	Reactive, Toxic	Cyanide (complexed)
	F009	Stripping and cleaning Bath from electroplating Using cyanide	Reactive, Toxic	Cyanide (complexed)
(i) Metal Heat Treatment	F010	Quenching bath residues from metal heat treating Using cyanide	Reactive, Toxic	Cyanide (complexed)
	F011	Spent Cyanide solutions From salt bath pot treating Using cyanide	Reactive, Toxic	Cyanide (complexed)
	F012	Quenching waste-water Treatment sludges from Metal heating treatment	Toxic	Cyanide (complexed)

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
(j) Conversion Coating	F019	Wastewater Treatment sludges	Toxic	Hexavalent chromium cyanide (complexed)
(k) Dioxin Series	F020	Tri or Tretrachlorophenol	Acutely Toxic	Tri or Tetrachlorophenol
	F021	Pentachlorophenol	Acutely Toxic	Pentachlorophenol
	F022	Tetra-, Penta-, or Heaxchlorobenzene	Acutely Toxic	Tetra-, Penta-, or Heaxchlorobenzene
	F023	Tri- or Tetrachlorophenol	Acutely Toxic	Tri or Tetrachlorophenol
	F024	Chlorinated Aliphatic Compounds	Toxic	See 40 CFR 261.31
	F025	Chlorinated Aliphatic Compounds	Toxic	See 40 CFR 261.31
	F026	Tri-, tetra, or Pentachlorophenol or Derived chlorophenols	Acutely Toxic	Tri-, tetra- or pentachlorophenol
	F027	Tri-, tetra, or Pentachlorophenol or Derived chlorophenols	Acutely Toxic	Tri-, tetra- or pentachlorophenol
	F028	F020-F023, F026, F027 Incineration residue	Acutely Toxic	See 40 CFR 261.32

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	F032	Wastewaters, process Residuals, preservative drippage, And spent formulations from Wood preserving processes Generated at plants that Currently use of have previously Used chlorophenolic formulations.	Acutely Toxic	See 40 CFR 261 Appendix VII
	F034	Wastewaters, process Residuals, preservative drippage, And spent formulations from Wood preserving processes Generated at plants that use Cresote formulations.	Acutely Toxic	See 40 CFR 261 Appendix VII
	F035	Wastewaters, process Residuals, preservative drippage, And spent formulations from Wood preserving processes Generated at plants that use Inorganic preservatives Containing arsenic or chromium.	Acutely Toxic	See 40 CFR 261 Appendix VII
(l) Multi-Source Leachate	F039	Multi-Source Leachate	Toxic	Metals, Organics, etc.

(continued)

Table C-9: Continued

Waste Category		EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
Wood Preservation	(m)	K001	Wastewater Treatment sludge	Toxic	Pentacholorophenol, phenol, 2-chlorophenol p=chloro-m-cresol,2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetrachlorophenols, etc.
Inorganic Pigments	(n)				
		K002	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
		K003	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
		K004	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
		K005	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
		K006	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
		K007	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
		K008	Oven Residue	Toxic	Hexavalent chromium, lead
Organic Chemicals	(o)				
		K009	Distillation Bottoms	Toxic	Chloroform,formaldehyde, methylene chloride, methyl chloride, paraldehyde, Formic acid
		K010	Distillation Side cuts	Toxic	Chloroform,formaldehyde, methylene chloride, methyl chloride, paraldehyde, Formic acid

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent (s0
	K011	Bottom stream from Wastewater stripper	Reactive, Toxic	Acrylonitrile, acetonitrile, hydrocyanic acid
	K013	Bottom stream Acrylonitrile column	Reactive, Toxic	Hydrocyanic acid, acetonitrile, Acetonitrile
	K014	Bottoms From Acetonitrile Purification	Toxic	Acetonitrile, acrylamide
	K015	still bottoms From distillation	Toxic	Benxyl chloride, chlorobenzene, toluene, benzorichloride
	K016	Heavy ends	Toxic	Hexachlorobenzene, hexachachlorobutadiene Carbon tetrachloride, hexachloroethane, Perchloroethylent
	K017	Heavy ends	Toxic	1,2-dichloroethane, trichloroethylene, Hexachlorobutadiene, hexachlorobenzene
	K018	Heavy ends Fractionation	Toxic	Methyl chloride
	K019	Heavy Ends	Toxic	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,1,2-tetrachloroethane, Trichloroethylene, carbon tetrachloride, Chloroform vinyl chloride, vinylidene chloride
	K020	Heavy ends	Toxic	Ethylene dichloride 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,2-tetra-chloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride

(Continued)

Table C-9: Continued

Waste category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K021	Aqueous spent Antimony	Toxic	antimony, carbon tetrachloride, chloroform
	K022	Distillation Bottom tars	Toxic	Phenol, tars (polycyclic aromatic hydrocarbons)
	K023	Distillation Light ends	Toxic	Phthalic anhydride, maleic, anhydride
	K024	Distilation bottoms	Toxic	Phthalic angydride, 1,4-naphtoquinone
	K025	Distillation bottoms	Toxic	Meta-dinitrobenzene, 2,4-dinitrotoluene
	K026	Stripping still tails	Toxic	Paraldehyde, pyridines, 2-picoline
	K027	Centrifuge and distillation Residues from TDI production	Reactive, Toxic	Toluene diisocyanate, toluene-2,4-diamine
	K028	Spent catalyst	Toxic	1,1,1-Trichloroethane, vinyl chloride
	K029	Product steam stripper	Toxic	1,2-dichloroethane, 1,1,1-trichloroethane Vinyl chloride, vinylidene chloride
	K030	Column bottoms	Toxic	Hexa ahlorobenzene, hexachlorobutadiene, Hexachloroethane, 1,1,2-tetrachloroethane, Ethylene dichloride
	K083	Distillation bottoms	Toxic	Aniline, diphenylamine, nitrobenzene
	K085	Distillation or fractionation Column bottoms	Toxic	Benzene, dichlorobenzenes, trichlorobenzenes, pentachlorobenzene, hexachlorobenzene, Benzyl chloride
	K093	Distillation light ends	Toxic	Phthalic anhydride, malaeic anhydride

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K094	Distillation Bottoms	Toxic	Phthalic anhydride
	K095	Distillation bottoms	Toxic	1,1,2-Trichloroethane, 1,1,1,2-Tetrachloroethane, 1,1,2,2-tetrachloroethane
	K096	Heavy ends	Toxic	1,2-dichloroethane,1,1,1-trichloroethane, 1,1,2-trichloroethane
	K103	Process residues	Toxic	Aniline, nitrobenzenes, phenylenedlamine
	K104	Combined wastewater streams	Toxic	Aniline, benezene,diphenylamine, Nitrobenzene, phenylenediamine
	K105	Separate aqueous Streams	Toxic	Benzene, monochlorobenzene,
	K107	Column bottoms from the Production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	Toxic	1,1-dimethylhydrazinev(UDMH)
	K108	Column overheads from The production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	Ignitable, toxic	1,1-dimethylhydrazine (UDMH)
	K109	Filter cartridges from the Production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	Toxic	1,1-dimethylhydrazine(UDMH)

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing Per 40 CFR 261	Hazardous Constituent(s)
	K110	Column overheads from The production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	Toxic	1,1-dimethylhydrazine (UDMH)
	K111	Product Washwaters	Toxic, Corrosive	Dinitrotoluene
	K112	Reaction by product Water	Toxic	Toluenediamine
	K113	Condensed liquid Light ends	Toxic	Toluenediamine
	K114	Vicinals	Toxic	Toluenediamine
	K115	Heavy Ends	Toxic	Toluenediamine
	K116	Organic	Toxic	Toluene diiscoyanate
	K117	Wastewater from reactor Vent gas scrubber	Toxic	Ethylene dibromide
	K118	Spent adsorbent solids	Toxic	Ethylene Dibromide
	K136	Still bottom	Toxic	Ethylene Dibromide

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes	Toxic	Benomyl, carbaryl, carbendazim, carbofuran, carbosulfan, formaldehyde, methylene chloride, triethylamine
	K157	Wastewater (including scrubber waters, condenser waters, washwaters, and separation wasters) from the production of carbamates and carbamoyl oximes	Toxic	Carbon tetrachloride, farmaldehyde methyl chloride, methylene chloride, pyridine, triethylamine
	K158	Baghouse dusts and filter/separation solids from the production of carbamates and carbamoyl oximes	Toxic	Benomyl, carbendazim, carbofuran, carbosulfan, chloroform, methylene chloride
	K159	Organics from the treatment of thiocarbamate wastes	Toxic	Benzene, butylate, eptc, molinate, pebulate, vernolate

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K160	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes	Toxic	Benzene, butylate, eptc, molinate, pebulate, vernolate
	K161	Purification solids (including filtration, evaporation, and centrigugation solids,), bag house dust, and floor sweepings from the production of dithiocarbamate acide and their salts. (This lisitng does not include K125 or 126)	Reactive, Toxic	Antimony, arsenic, metam-sodium, ziram
Organobromine	K140	Floor sweepings, off Specification product and Spent filter media from the Production of 2,4,6-Tribromophenol	Toxic	2,4,6-Tribromophenol

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K149	Distillation bottoms from the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these fuctional groups.	Toxic	
	K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chorides, and compounds with mixtures of these functional groups.	Toxic	
	K151	Wastewater treatment sludges excluding neutralization and biological sludges, generated during the treatment of wash waters from the production of alpha-(or methyl-) chlorinated toluense, ring-chlorinated toluenes benzoyl chlorides, and compounds with mixtures of these functional groups.	Toxic	

(continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K169	Crude oil storage tank Sediment from petroleum Refining operations	Toxic	Benzene
	K170	Clarified slurry oil Storage tank sediment And/or in-line filter/ Separation solids from Petroleum refining operations	Toxic	Benzo (a) pyrene, dibenz (a,h) anthracene, Benzo (a) anthracite, Benzo (b) fluoranthene, Benzo (k) fluoranthene, 7,12-dimethylbenz (a) anthracite
	K171	Spent hydrotreating Catalyst from petroleum Refining operations including Guard beds used to desulfurize Feeds to other catalytic units(not Including inert support media	Ignitable, Toxic	Benzene, arsenic
	K172	Spent hydrorefining Catalyst from petroleum Refining operations including Guard beds used to desulfurize feeds to Other catalytic units (not including Inert support media)	Ignitable, Toxic	Benzene, arsenic

(continued)

Table C-9: Continued

Waste Category	EPA	Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
Pesticides	(p)	K031	By-product salts	Toxic	Arsenic
		K032	Wastewater Treatment sludge	Toxic	Hexachlorocyclopentadiene
		K033	Wastewater Scrub water	Toxic	Hexachlorocyclopentadiene
		K034	Filter solids	Toxic	Hexachlorocyclopentadiene
		K035	Wastewater Treatment sludge	Toxic	Creosote, naphthalene, fluoranthene chryserne,benzo (b) fluoranthene benzo (a) pyrene, Indeno (1,2,3-cd) pyrene, benzo (a) anthracene, dibenso (a) anthracene, acenaphthalene
		K036	Still Bottom	Toxic	Toluene, phosphorodithoic and Phosphorothioic acid esters
		K037	Wastewater Treatment	Toxic	Toluene, phosphorodithoic and phosphorothioic acid esters
		K038	Wastewater From washing and Stripping	Toxic	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
		K039	Filter cake	Toxic	Phosphorodithioic and phosphorothioic acid esters
		K040	Wastewater Treatment sludge	Toxic	Phorate, formaldehyde, phosphorodithioic and prosphorothioic acid esters
		K041	Wastewater Treatment sludge	Toxic	Toxaphene
		K042	Heavy ends or	Toxic	Hezachlorobenzene, orthodichlorobenzene

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis Hazard Listing Per 40 CFR 261	Hazardous Constituent(s)
	K043	2,6 dichlorophenol Toxic Waste		2,4-dichlorophenol, 2,6-dichlorophenol, 2,3,6-trichlorophenol
	K097	Vacuum stripper Toxic Discharge		Chlordane, heptachlor
	K098	Untreated process Toxic Wastewater		Toxaphene
	K099	Untreated wastewater	Toxic	2,4-dichlorophenol, 2,4,6-trichlorophenol
	K123	Process Wastewater Scrubber Water	Toxic, Corrosive	Ethlyene bisdithiocarbamic, acids and salts
	K124	Reactor Vent Scrubber water	Toxic, Corrosive	Ethylene bisdithiocarbamic, acids and salts
	K125	Filtration, Toxic Evaporation, and Centrifugation Solids		Ethylene bisdithiocarbamic, acids and salts
	K126	Bag house dust and Toxic Sweepings		Ethylene bisdithiocarbamic, acids and salts
	K131	Wastes from production Of methyl bromide.	Corrosive, Toxic	
	K132	Absorbents and solids From production Of methyl bromide.	Toxic	
Secondary (q) Lead	K069	Emission control Toxic Dust / sludge		Hexavalent chromium, lead cadmium
	K100	Waste Leaching Solution	Toxic	Hexavalent chromium, lead cadmium

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing Per No. CFR 261	Hazardous Constituent(s)
(r) Petroleum Refining	K048	DAF/float	Toxic	Hexavalent Chromium, Lead
	K049	Slop oil	Toxic	Hexavalent chromium, Lead
	K050	Heat exchanger	Toxic	Hexavalent chromium

(continued)

Table C-9 Continued

Waste Category		EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
		K051	API Separator sludge	Toxic	Hexavalent chromium Lead
		K052	Tank bottoms	Toxic	Lead
Iron And Steel	(s)	K061	Emission control dust/ sludge	Toxic	Hexavalent chromium, lead cadmium
		K062	Spent Pickle Liquor	Corrosive,Toxic	Hexavalent Chromium, lead
Coking	(t)	K060	Ammonia still Lime sludge	Toxic	Cyanide, napthalene, phenolic compounds arsenic
		K087	Decanter tank Tar sludge	Toxic	Phenol, naphthalene
		K141	Process residues from the recovery of coal tar, including, but not listed to, tar collecting sump residue from the production of coke from coal or the recovery of coke by-products produced from coal.	Toxic	
		K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products from coal.	Toxic	

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K143	Process residues from the recovery, of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Toxic	
	K144	Wastewater treatment sudges from light oil refining, including but not limited to, intercepting or or contamination sump sludges from the recovery of coke by-products produced from coal.	Toxic	
	K145	Residues from napthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Toxic	

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K147	Tar storage tank residues from coal tar refining.	Toxic	
	K148	Residues from coal tar distillation, including but not limited to, still bottoms.	Toxic	
Ink Formulation (u)	K086	Solvent wastes sludges	Toxic	Hexavalent chromium, lead
Veterinary Pharmaceuticals (v)	K084	Wastewater treatment sludges	Toxic	Arsenic
	K101	Distillation tar residues	Toxic	Arsenic
	K102	Residue from Activated carbon	Toxic	Arsenic
Inorganic Chemical (w)	K071	Brine purification muds	Toxic	Mercury
	K073	Chlorinated	Toxic	Chloroform, carbon tetrachloride, Hexachloroethane, trichloroethane, Tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane.

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K106	Wastewater Treatment sludge	Toxic	Mercury
Explosives (x)	K044	Wastewater treatment Sludges from explosives	Reactive	Not Applicable
	K045	Spent carbon from Wastewater containing Explosives	Reactive	Not Appicable
	K047	Pink / red water from Sludges	Reactive	Not Applicable
(ee) Primary Copper	K064	Acid plant blowdown Slurry/sludge from Primary copper Production.	Toxic	Lead, cadmium
(ff) Primary Lead	K065	Surface impoundment Solids at primary Lead smelting facilities.	Toxic	Lead, cadmium
(gg) Primary Zinc	K066	Treatment sludges from Primary zinc production	Toxic	Lead, cadmium
(hh) Primary Aluminum	K088	Spent potliners from primary aluminum Reduction.	Toxic	Cyanide Complexes

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
(ii) Ferroalloys	K090	Emission control dust Or sludge form ferro-Chromiumsilicon production	Toxic	Chromium
	K091	Emission control just Or sludge from ferro-Chromium production.	Toxic	Chromium
	K175	Wastewater treatment sludge from the production of ethylene dichloride or vinly chloride monomer.	Toxic	Mercury

(continued)

Table C-9: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
	K176	Baghouse filters from the production of antimont oxide, including filters from the production of intermediates.	Toxic	
	K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production intermediates.	Toxic	
	K178	Solids from manu-facturing and manufacturing-site storage of Ferric Chloride from acids formed during the production of titamium dioxide using the chloride-ilmenite process.	Toxic	
Non-Hazardous (y)	None	N/A	Non-Hazardous	Waste Oil Oily Debris Medical Wastes Industrial non-RCRA

(continued)

Table 9 - Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
Commercial Chemical Products	(z,aa)	All P-codes in 40 CFR 261.33(e) and all U-codes in 40 CFR 261.33(F) as listed on the facilities most recent RCRA Part A Form in Section A of the License Application. Refer to the attached tables excerpted from 40 CFR 261.		

Notes:

(a) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #38.
(b) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #39
(c) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #40
(d) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #41
(e) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #42
(f) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #43
(g) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #44
(h) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #45
(i) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #46
(j) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #47
(k) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #48
(l) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #49
(m) - A sample analysis for this waste category is presented in Appendix C-1 Data Sheet #50
(n) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #51
(o) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #52
(p) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #53
(q) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #54
(r) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #55
(s) - A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #56

Table 9 - Continued

Waste Category		EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
(t)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #57			
(u)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #58			
(v)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #59			
(w)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #60			
(x)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #61			
(y)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #62			
(z)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #63			
(aa)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #64			
(bb)	-	Boundary conditions for acceptance of waste material for storage, consolidation, and transfer are limited only by the acceptance criteria of the offsite recovery, recycling, treatment or disposal facility to which the wastes are ultimately shipped.			
(cc)	-	All roll off containers will be subject to a free liquids test. A sample analysis for free is presented in Appendix C-1, Data Sheet #65. If free liquids are present, the rolloff container will be temporarily stage in a secondary containment area (e.g., truck unloading pad) until such time that the liquids can be removed and/or solidified through The use of absorbents (e.g., speed-dry). Once the waste passes the free liquids test, the container will be moved into storage.			
(dd)	-	All wastes that are or contain any waste code listed for storage and transfer may be treated using a mobile compactor unit prior to shipment.			
(ee)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #65			
(ff)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #66			
(gg)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #67			
(hh)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #68			
(ii)	-	A sample analysis for this waste category is presented in Appendix C-1, Data Sheet #69			

Resid and spill residues there of261.33 Discarded commercial chemi products, off specification species, container residues, and spills residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in 261.2 (a)(2)(1), when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment. When they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when in lieu of their original intended use, they are produced for use as (or as a component of a fuel, distributed for use as a fuel or burned as a fuel

(a) Any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.

(b) Any off specification commercial chemical product for manufacturing chemical intermediate which, if it meet specifications, would have the generic name listed in paragraph (e) or (f) of this section.

(c) Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section, unless the container is empty as defined in 261.7 (b) of this chapter.

(Comment: Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed: or being accumulated, store, transported or treated prior to such use, re-use, recycling or reclamation, EPA considers the residue to be intended for discard and thus a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioned that reconditions the drum but discards the residue.)

d) Any residue or contaminated so water or other deb esulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the general name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into on any land or water, of any off-specifications chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.

(Comment: The phrase "commercial chemical product or manufacturing chemical into" refers to a chemical substance which manufactured or formulated for commercial or manufacturing use which consists of commercially pure grade of the chemical any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole acting ingredient. It does not refer t a material such as a manufacturing process waste, that contains any of the substances listed in paragraph (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in either 261.31 or 261.32 or will be identified as a hazardous waste by the characteristics set forth in subpart C of this part.)

e) Commercial chemical products, manufacturing chemical intermediates off specification commercial chemical products or manufacturing chemical intermediates refer in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be small quantity exclusion defined 261.5(e).

(Comment: For the convenience of the related community the primary hazard properties of these materials have been indicated by the letters T (Toxicity). And Re-activity). Absence of a letter indicates to the compound only is listed for acute toxicity.)

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous Waste No.	Chemical abstracts No.	Substances
P023	107-20-0	
P002	591-08-2	
P067	640-19-7	
P068	62-74-8	
P002	591-08-2	
P003	107-02-8	
P070	116-06-3	
P004	309-00-2	
P005	107-18-6	
P006	20859-73-8	
P007	2763-96-4	
P008	504-24-6	
P009	131-74-8	
P119	7803-65-6	
P099	506-61-6	
P010	7778-39-4	
P012	1327-53-3	
P011	1303-28-2	
P011	1303-28-2	
P012	1327-53-3	
P038	692-42-2	
P036	696-28-6	
P054	151-58-4	
P057	75-55-8	
P013	542-62-1	
P024	106-47-8	
P077	100-01-6	
P028	100-44-7	
P042	51-43-4	
P046	122-09-8	
P014	108-98-6	
P001	181-81-2	
00	011	
P028	100-44-7	
P015	7440-41-7	
P017	596-31-2	
P018	357-57-3	
P045	39196-18-4	

Hazardous Waste No.	Chemical Abstracts No.	Substance
P021	592-01-8	Calcium cyanide
P021	592-01-8	Calcium cyanide Ca(CN)2
P022	75-15-0	
P096	75-44-6	
P023	107-20-0	
P024	106-47-8	
P026	5344-82-1	
P027	542-76-7	
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P034	131-89-5	
P016	542-88-1	
P036	696-28-6	
P037	60-57-1	
P038	692-42-2	
P041	311-45-5	
P040	297-97-2	
P043	55-91-4	
P004	309-00-2	
P060	465-73-6	
P037	60-57-1	
P051	172-20-8	
P044	60-51-5	

Hazardous Waste No.	Chemical abstracts No.	Substances
P046	122-09-8	
P047	1535-52-1	
P048	51-28-5	
P020	88-85-7	
P085	152-16-9	
P111	107-49-3	
P039	298-04-4	
P049	541-53-7	
P050	115-29-7	
P088	145-73-3	
P051	72-20-8	
P051	72-20-8	
P042	51-43-4	
P031	460-19-5	
P068	16752-77-5	
P101	107-12-0	
P054	151-56-4	
P097	52-85-7	
P056	7782-41-4	
P057	640-19-7	
P058	62-74-8	
P065	628-86-4	
P059	76-44-8	
P062	757-58-4	
P116	79-19-6	
P068	60-34-4	
P016	542-88-1	
P112	509-14-8	
P118	70-70-7	
P050	115-29-7	
P059	76-44-8	
P066	16752-77-5	
P068	60-34-4	
P064	324-83-9	
P069	75-86-5	

Hazardous Waste No.	Chemical Abstracts No.	Substance
P071	298-00-0	
P072	86-88-4	
P073	13483-39-3	
P073	13483-39-3	
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cyanide Ni(CN)2
P075	154-11-5	
P076	10102-43-9	
P077	100-01-6	
P078	10102-44-0	
P076	10102-43-9	Nitric oxide
P078	10102-44-0	
P081	55-63-0	Nitroglycerine®
P082	62-75-9	
P084	4549-40-0	
P085	152-16-9	
P087	20816-12-0	
P087	20816-12-0	
P088	145-73-3	
P089	56-38-2	
P034	131-89-5	
P048	51-28-5	
P047	1534-62-1	
P020	88-85-7	
P009	131-74-8	

Hazardous Waste No.	Chemical Abstracts No.	Substance
P092	62-38-4	
P093	103-85-5	
P094	298-02-2	
P095	75-44-6	
P096	7803-51-2	
P041	311-45-5	
P039	298-04-4	
P094	298-02-2	
P044	60-51-6	
P043	55-91-4	
P089	56-38-2	
P040	297-97-2	
P097	52-85-7	
P071	298-00-0	
P110	78-00-2	
P098	151-60-8	
P098	151-60-8	
P099	506-61-6	
P070	116-06-3	
P101	107-12-0	
P027	542-76-7	
P069	75-86-5	
P061	55-83-0	
P017	598-31-2	
P102	107-19-7	
P003	107-02-8	
P005	107-18-8	
P067	75-55-8	
P102	107-19-7	
P006	504-24-6	
P075	154-11-6	
P114	12039-62-0	
P103	630-10-4	
P104	506-64-9	
P104	506-64-9	

Hazardous Waste No.	Chemical Abstract No.	Substance
P105	26628-22-8	
P106	143-33-9	
P106	143-33-9	
P108	157-24-9	
P018	357-57-3	
P108	157-24-9	
P115	7446-18-6	
P109	3689-24-6	
P110	78-00-2	
P111	107-49-3	
P112	509-14-8	
P062	757-58-4	
P113	1314-32-5	
P113	1314-32-5	
P114	12039-52-0	
P115	7446-18-6	
P109	3689-24-5	
P110	78-00-2	
P111	107-49-3	
P112	509-14-8	
P062	757-58-4	
P113	1314-32-5	
P113	1314-32-5	
P114	12039-52-0	
P115	7446-18-6	
P109	3689-24-5	
P045	39196-18-4	
P049	541-53-7	
P014	108-98-5	
P116	79-19-6	
P026	5344-82-1	
P072	86-88-4	
P093	103-85-5	
P123	8001-35-2	
P118	75-70-7	
P119	7803-55-6	
P120	1314-62-1	
P120	1314-62-1	

Hazardous Waste No.	Chemical Abstracts No.	Substance
P064	4549-40-0	
P001	181-81-2	
P121	557-21-1	
P121	557-21-1	

Hazardous Waste No.	Chemical Waste No.	Substance
P122	1314-87-7	

CAS Number gave for parent compound only.

f) The commercial chemical product, manufacturing chemical Intermediates, or off-specification commercial chemical Products referred to in paragraphs (a) through (d) of this Section, are identified as toxic wastes (T), unless otherwise Designated and are subject to the small quantity generator Exclusion defined in 261.5 (a) and (g).

Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity). I (Ignitability) and C (Corrosively). Absence of a letter indicates that the compound is only Listed for toxicity) these wastes and their corresponding EPA Hazardous Waste Number is:

Hazardous Waste No.	Chemical Abstracts No.	Substance
U001	75-07-0	
U034	75-87-6	
U187	62-44-2	
U005	53-96-3	
U240	194-75-7	
U112	141-78-6	
U144	301-04-2	
U214	563-68-8	
See F027		
U002	67-64-1	
U003	75-05-8	
U004	98-86-2	
U005	53-96-3	
U006	75-36-5	
U007	75-36-5	
U008	79-10-7	
U009	107-13-1	
U011	61-82-5	
U012	62-63-3	
U136	75-60-5	
U014	492-80-8	
U015	115-02-6	

Hazardous Waste No.	Chemical Abstract No.	Substance
U010	50-07-7	
U157	56-49-6	
U016	225-51-4	
U017	98-87-3	
U192	23950-68-5	
U018	56-55-3	
U094	57-97-6	
U012	62-53-3	
U014	492-80-8	
U049	3165-93-3	
U093	60-11-7	
U328	95-53-4	
U353	106-49-0	
U158	101-14-4	
U222	636-21-5	
U181	99-55-8	
U019	71-43-2	
U038	510-15-6	
U030	101-65-3	
U035	305-03-3	
U037	108-90-7	
U221	25376-45-8	
U028	117-81-7	
U069	84-74-2	
U088	84-66-2	
U102	131-11-3	

Hazardous Waste No.	Chemical Abstracts No.	Substance
U107	117-84-0	
U070	95-60-1	
U071	541-73-1	
U072	106-46-7	
U060	72-54-8	
U017	98-87-3	
U223	26471-62-5	
U239	1330-20-7	
U201	108-46-3	
U127	118-74-1	
U056	110-82-7	
U220	108-88-3	
U105	121-14-2	
U106	606-20-2	
U056	98-82-8	
U169	98-96-3	
U183	608-93-6	
U185	82-68-8	
U020	98-09-9	
U020	98-09-9	
U207	95-94-3	
U061	50-29-3	
U247	72-43-5	
U023	98-07-7	
U234	99-35-4	
U021	92-87-5	
U202	81-07-2	
U203	94-59-7	
U141	120-68-1	
U090	94-68-6	
U064	189-55-9	

Hazardous Waste No.	Chemical Abstract No.	Substance
U248	181-81-2	
U022	50-32-8	
U197	106-61-4	
U023	98-07-7	
U085	1464-53-5	
U021	92-57-5	
U073	91-94-1	
U091	119-90-4	
U095	119-93-7	
U225	75-25-2	
U030	101-55-3	
U128	87-68-3	
U172	924-16-3	
U031	71-36-3	
U159	78-93-3	
U160	1338-23-4	
U053	4170-30-3	
U074	764-41-0	
U143	303-34-3	
U031	71-36-3	
U136	75-60-5	
U032	13765-19-0	
U238	51-79-6	
U178	615-53-2	
U097	79-44-7	
U114	1111-54-6	
U062	2303-16-4	
U215	6533-73-9	
U033	353-50-4	
U156	79-22-1	
U023	353-50-4	
U211	56-23-5	

Hazardous Waste No.	Chemical Abstract No.	Substance
U034	75-87-6	
U035	305-03-3	
U036	57-74-9	
U026	494-03-1	

Environmental Waste No.	Chemical Abstract No.	Substance
U037	108-90-7	
U038	510-15-6	
U039	59-60-7	
U042	110-75-8	
U044	67-66-3	
U046	107-30-2	
U047	91-68-7	
U048	95-67-8	
U049	3165-93-3	
U032	13765-19-0	
U050	218-01-9	
U051		
U052	1319-77-3	
U053	4170-30-3	
U055	98-82-8	
U246	506-68-3	
U197	106-61-4	
U056	110-82-7	
U129	58-89-9	
U057	108-94-1	
U130	77-47-4	
U058	50-18-0	
U240	19475-7	
U059	20803-81-3	
U060	72-54-8	
U061	50-29-3	
U062	2303-16-4	
U063	53-70-3	
U064	189-55-9	
U066	96-12-8	
U069	84-74-2	
U070	95-60-1	
U071	541-73-1	
U072	106-46-7	
U073	91-94-1	

Hazardous Waste No.	Chemical Abstract No.	Substance
U074	764-41-0	
U075	75-71-8	
U078	75-35-4	
U079	156-60-5	
U025	111-44-4	
U027	108-60-1	
U024	111-91-1	
U081	120-83-2	
U082	87-65-0	
U084	542-75-6	
U085	1464-63-5	
U108	123-91-1	
U028	117-81-7	
U086	1615-80-1	
U087	3288-68-2	
U088	84-66-2	
U089	56-63-1	
U090	94-68-6	
U091	119-90-4	
U092	124-40-3	
U093	60-11-7	
U094	57-97-6	
U095	119-93-7	
U096	80-15-9	
U097	79-44-7	
U098	57-14-7	
U099	540-73-8	
U101	105-67-9	
U102	131-11-3	
U103	77-78-1	
U105	121-14-2	
U106	606-20-2	
U107	117-84-0	
U108	123-91-1	
U109	122-66-7	
U110	142-84-7	

Hazardous Waste No.	Chemical Abstract No.	Substance
U111	621-64-7	
U041	106-89-8	
U001	75-07-0	
U174	55-18-5	
U155	91-80-5	
U067	106-93-4	
U076	75-34-3	
U077	107-06-2	
U131	67-72-1	
U024	111-91-1	
U117	60-29-7	
U025	111-44-4	
U184	75-01-7	
U208	630-20-6	
U209	79-34-5	
U218	62-66-5	
U226	71-55-6	
U227	79-00-5	
U359	110-80-5	
U173	1116-64-7	
U004	98-86-2	
U043	75-01-4	
U042	110-75-4	
U078	75-34-4	
U079	156-60-5	
U210	127-18-4	
U228	79-01-6	
U112	141-78-6	
U113	140-88-5	
U238	51-79-6	
U117	60-29-7	
U114	111164-6	
U067	106-93-4	
U077	107-06-2	
U359	110-80-5	
U115	75-21-8	

Hazardous Waste No.	Chemical Abstracts No	Substance
U116	96-45-7	
U076	75-34-3	
U118	97-63-2	
U119	62-60-0	
U120	206-44-0	
U122	50-00-0	
U123	64-48-6	
U124	110-00-9	
U125	98-01-1	
U147	108-31-6	
U213	109-99-9	
U125	98-01-1	
U124	110-00-9	
U206	18883-66-4	
U206	18883-66-4	
U126	765-34-4	
U163	70-25-7	
U127	118-74-1	
U128	87-68-3	
U130	77-47-4	
U131	67-72-1	
U132	70-30-4	
U243	1888-71-7	
U133	302-01-2	
U086	1615-80-1	
U098	57-14-7	
U099	540-73-8	
U109	122-66-7	
U134	7664-39-3	
U134	7664-39-3	
U135	7783-06-4	
U135	7783-06-4	
U096	80-15-9	
U116	96-45-7	
U137	193-39-5	

Hazardous Waste No.	Chemical Abstract No.	Substance
U190	85-44-9	
U140	73-83-1	
U141	120-58-1	
U142	143-50-0	
U143	303-34-4	
U144	301-04-2	
U146	1335-32-6	
U145	7446-27-7	
U146	1335-32-6	
U129	58-89-9	
U163	70-25-7	
U147	108-31-6	
U148	123-3-1	
U149	109-77-3	
U150	148-82-3	
U151	7439-97-5	
U152	126-98-7	
U092	124-40-3	
U029	74-83-9	
U045	74-87-3	
U046	107-30-2	
U068	74-95-3	
U080	75-09-2	
U075	75-71-8	
U138	74-88-4	
U119	62-50-0	
U211	56-23-5	
U153	74-93-1	
U225	75-25-2	
U044	67-66-3	
U121	75-69-4	
U038	57-74-9	
U154	67-56-1	
U155	91-80-5	
U142	143-50-0	

Hazardous Waste No.	Chemical Abstracts No.	Substance
U247	72-43-5	
U154	67-56-1	
U029	74-83-9	
U186	504-60-9	
U045	74-87-3	
U156	79-22-1	
U226	71-55-6	
U157	56-49-6	
U158	101-14-4	
U068	74-95-3	
U080	75-09-2	
U159	78-93-3	
U160	1338-23-4	
U138	74-88-4	
U161	108-10-1	
U162	80-62-6	
U161	108-10-1	
U164	56-04-2	
U010	50-07-7	
U059	20830-81-3	
U167	134-32-7	
U168	91-59-8	
U026	494-03-1	
U165	91-20-3	
U047	91-58-7	
U166	130-15-4	
U236	72-57-1	
U166	130-15-4	
U167	134-32-7	
U168	91-59-8	
U217	10102-45-1	
U169	98-95-3	
U170	100-02-7	
U171	79-46-9	
U172	924-16-3	

Hazardous Waste No.	Chemical Abstract No.	Substance
U173	1116-54-7	
U174	55-18-5	
U175	759-73-9	
U177	684-93-6	
U178	615-63-2	
U179	100-75-4	
U180	930-65-2	
U181	99-65-8	
U193	1120-71-4	
U058	50-18-0	
U115	75-21-8	
U126	765-34-4	
U041	10-89-8	
U2	123-63-7	
U183	608-93-5	
U184	76-01-7	
U185	82-68-8	
See F027	87-86-5	
U161	108-10-1	
U186	504-60-9	
U187	62-442	
U188	108-95-2	
U048	95-67-8	
U039	59-60-7	
U061	120-83-2	
U082	87-55-0	
U089	56-63-1	
U101	105-67-9	
U052	1319-77-3	
U132	70-30-4	
U170	100-02-7	
See F027	87-86-5	
See F027	58-90-2	

Hazardous Waste No.	Chemical Abstracts No.	Substance
See F027	95-96-4	
See F027	88-06-2	
U150	148-82-3	
U145	7446-27-7	
U087	3288-58-2	
U189	1314-80-3	
U190	85-44-9	
U191	109-06-8	
U179	100-75-4	
U192	23950-58-5	
U194	107-10-8	
U111	621-64-7	
U110	142-84-7	
U066	96-12-8	
U083	78-87-5	
U149	109-77-3	
U171	79-46-9	
U027	108-60-1	
U193	1120-71-4	
See F027	93-72-1	
U235	126-72-7	
U140	78-83-1	
U002	67-64-1	
U007	79-06-1	
U084	542-75-6	
U243	1888-71-7	
U009	107-13-1	
U152	79-10-7	
U008	79-10-7	
U113	140-88-5	
U118	97-63-2	
U162	80-62-6	

Hazardous Waste No.	Chemical Abstract No.	Substance
U194	107-10-8	
U083	73-87-5	
U148	123-33-1	
U196	110-86-1	
U191	109-06-8	
U237	66-75-1	
U164	56-04-2	
U180	930-5-2	
U200	50-55-5	
U201	108-46-3	
U202	181-07-2	
U203	94-69-7	
U204	7783-00-8	
U204	7783-00-8	
U205	7488-66-4	
U205	7488-66-4	
U015	115-02-6	
See F027	93-72-1	
U026	18883-66-4	
U103	77-78-1	
U189	1314-80-3	
See F027	93-76-5	
U207	95-94-3	
U208	630-20-6	
U209	79-34-5	
U210	127-18-4	
See F027	58-90-2	
U213	109-99-9	
U214	563-68-8	
U215	6533-73-9	
U216	7791-12-0	
U216	7791-12-0	
U217	10102-45-1	
U218	62-55-5	

Hazardous Waste No.	Chemical Waste No.	Substance
U153	74-93-1	
U244	137-26-8	
U219	62-56-8	
U244	137-26-8	
U220	108-88-3	
U221	25376-45-8	
U223	26471-62-6	
U328	95-53-4	
U353	106-49-0	
U222	636-21-5	
U011	61-82-5	
U227	79-00-5	
U228	79-01-6	
U121	75-69-4	
See F027	95-95-4	
See F027	88-06-2	
U234	99-35-4	
U182	123-63-7	
U235	126-72-7	
U236	72-57-1	
U237	66-75-1	
U176	759-73-9	
U177	684-93-5	
U043	75-01-4	

Hazardous Waste No.	Chemical Abstract No.	Substance
U248	81-81-2	
U239	1330-20-7	
U200	50-65-6	
U249	1314-84-7	

1 CAS Number given for parent compound only.

(45 FR78529,78541,Nov. 25,1980)

Editorial Note: For Federal Register citations affection 261.33 see the List of CFR Section Affected in the Finding Aids section of this volume.

261.33 Deletion of certain hazardous waste codes following equipment cleaning and replacement.

(a) Wastes from wood preserving or initiate use of chlorophenolic preservatives will not meet the listing definition of F032 once the generator has met all of the requirements of paragraphs (b) and (c) of this section. These wastes may, however, continue to meet another hazardous waste listing description or may exhibit one or more of the hazardous waste characteristics.

(b) Generators must either clean or replace all process equipment that may have come into contact with chlorophenolic formulations or constituents thereof, including, but not limited to, treatment cylinders, sumps, tanks, piping systems, drip pads, fork lifts, and trams, in a manner that minimizes or eliminates the escape of hazardous waste or constituents, leachate, contaminated drippage, or hazardous waste decomposition products to the ground water, surface water, or atmosphere.

(1) Generators shall do one of the following:

(i) Prepare and follow an equipment cleaning plan and clean equipment in accordance with this section:

(ii) Prepare and follow an equipment replacement plan and replace equipment in accordance with this section: or

(iii) Document cleaning and replacement in accordance with this section. Carried out after termination of use of chlorophenolic preservations.

(2) Cleaning Requirements.

(i) Prepare and sign a written equipment cleaning plan that describes;

(A) The equipment to be cleaned:

(B) How the equipment will be cleaned:
(C) The solvent to be used in cleaning:
(D) How solvent rinses will be tested: and
(E) How cleaning residues will be disposed
(ii) Equipment must be cleaned as follows:
(A) Remove all visible residues from process equipment
(B) Rinse process equipment with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse.
(iii) Analytical requirements.
(A) Rinses must be tested in accordance with sw-846, Method 8290.
(B) "Not detected" means at or below the lower method calibration limit (MCL) in Method 8290, Table 1.
(iv) The generator must manage all residues from the cleaning process as F032 waste.
(3) Replacement requirements.
(i) Prepare and sign a written equipment replacement plan that describes:
(A) The equipment to be replaced:
(B) How the equipment will be replaced: and
(C) How the equipment will be disposed.

(ii) The generator must manage the discarded equipment as F032 waste.
(4) Documentation requirements.
(i) Document that previous equipment cleaning and/or replacement was performed in accordance with this section and occurred after cessation of use of chlorophenolic preservatives.
(c) The generator must maintain the following records documenting the cleaning and

Replacement as part of the facility's operating record:

Hazardous Waste No.	Chemical Abstract No.	Substance
U248	81-81-2	
U239	1330-20-7	
U200	50-55-5	
U249	1314-84-7	

ICAS Number has given for parent compound only.

(45 FR 78529, 78541, Nov. 25, 1980)

EDITORIAL NOTE; For FEDERAL REGISTER citations affecting 261.33 see the List of CFR Sections Affected in the Finding Aids section of this volume.

Table C-10: Hazardous V Fuel Blending

Waste Category (a)	EPA Waste No. Hazardous	Waste Stream	Basis for per 40 CFR 261 Hazard Listing	(s) Hazardous Constituents
		(SEE NOTE (B) FOR GENERAL BOUNDARY CONDITIONS)		
Ignitable	D001	Ignitable	Flash Point < 140 Degree F	
Corrosive	D002	Acid/Alkaline	pH < 2.0 or pH > 12.5	
Reactive	D003	Sulfides	Reactive	
	D003	Cyanides	Reactive	
Inorganic Metals	D004	Arsenic	Toxic	Arsenic
	D005	Barium	Toxic	Barium
	D006	Cadmium	Toxic	Cadmium
	D007	Chromium	Toxic	Chromium
	D008	Lead	Toxic	Lead
	D009	Mercury	Toxic	Mercury
	D010	Selenium	Toxic	Selenium
	D011	Silver	Toxic	Silver
Pesticides/ Herbicides	D012	Endrin	Toxic	1,2,3,4,10,10-hexachloro-1,7-epoxy 1,4,4a,5,6,7,8a-octahydro-1,4endo, endo-5 8-dimethanonaphthalene
	D013	Lindane	Toxic	1,2,3,4,5,6-hexachloro-cyclohexane, Gammaisomer
	D014	Methoxychlor	Toxic	1,1,1-Tri-chloro-2,2-bias (p-methoxhpenyl) Ethane
	D015	Toxaphene	Toxic	C10H10C18, Technical Chlorinated Camphene, 69-69% chlorine.

(Continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard listing per 40 CFR 261	Hazard Constituent (s)
	F003	Spent non-halogenated Solvents	Ignitable, Toxic	See 40 Cfr 261.31
	F004	Spent non-halogenated Solvents	Toxic	Cresols and cresylic acid, nitrobenzene
	F005	Spent non-halogenated Solvents	Ignitable, toxic	See 40 CFR 261.33
Electroplating	F006	Wastewater treatment Sludges from electroplating Operations	Toxic	Cadmium, hexavalent chromium, nickel cyanide (complexed)
	F007	Cyanide plating bath From electroplating	Reactive, Toxic	Cyanide (complexed)
	F008	Plating bath bottoms from Electroplating using cyanide	Reactive, Toxic	Cyanide (complexed)
	F009	Stripping and cleaning bath From electroplating using cyanide	Reactive, toxic	Cyanide (complexed)
Metal Heat Treatment	F010	Quenching bath residues from Metal heat-treating using cyanide	Reactive, Toxic	Cyanide (complexed)
	F011	Spent cyanide solutions from Salt bath pot treating using cyanide	Reactive, Toxic	Cyanide (complexed)
	F012	quenching wastewater treatment Slugs from metal heating Treatment	Toxic	Cyanide (complexed)

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Conversion coating	F019	Wastewater Treatment Sludges	Toxic	Hexavalent chromium, cyanide (complexed)
Dioxin Series	F024	Chlorinated Aliphatic Compounds	Toxic	See 40 CFR 261.31
	F025	Chlorinated Aliphatic Compounds	Toxic	See 40 CFR 261.31
Wood Preserving	F034	Wastewater's, process residuals, Preservative drippage, and spent Formulations from wood preserving Processes generated at plants that Use creosote formulations.	Toxic	See 40 CFR 261 Appendix VII
	F035	Wastewater's process residuals Preservative drippage, and spent Formulations from wood preserving Processes generated at plants that Use inorganic preservatives Containing arsenic or chromium.	Toxic	See 40 CFR 261 Appendix VII

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Petroleum	F037	Petroleum Refinery Primary Primary oil/water/solids Separation sludge—any sludge Generated from the gravitational Separation of oil/waste/solids During the storage or treatment Of process wastewater's and Oil cooling wastewater's from Petroleum refineries.	Toxic	See 40 CFR 261 Appendix VII
	F038	Petroleum refinery Secondary (Emulsified) oil/water/solids Separation sludge- - any sludge Of float generated from the Physical Or chemical separation of Oil/water/solids in process Wastewater's and oil cooling Wastewater from the physical or Chemical separation of oil/water/solids In process wastewaters and oil cooling Wastewaters form petroleum refineries.	Toxic	See 40 CFR 261 Appendix VII
Multi-Source Leachate	F039	Multi-Source Leachate	Toxic	Metals, Organics, ets.

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Wood Preservation	K001	Wastewater treatment Sludge	Toxic	pentacholorophenol, phenol, 2-chlorophenol p=chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, Tetrachlorophenols, etc.
Inorganic Pigments	K002	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K003	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K004	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K005	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K006	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K007	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K008	Oven Residue	Toxic	Hexavalent chromium, lead
Organic Chemicals	K009	Distillation Bottoms	Toxic	Chloroform, formaldehyde, methylene Chloride, methyl chloride, paraldehyde, Formic acid
	K010	Distillation side cuts	Toxic	Chloroform, formaldehyde, methylene Chloride, methyl chloride, paraldehyde, Formic acid

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K011	Bottom stream from Wastewater stripper	Reactive, Toxic	Acrylonitrile, acetonitrile, hydrocyanic acid
	K013	Bottom stream Acrylonitrile column	Reactive, Toxic	Hydrocyanic acid, acetonitrile, acetonitrile
	K014	Bottoms from acetonitrile Purification's	Toxic	Acetonitrile, acrylamide
	K015	Still bottoms from Distillation	Toxic	Benzyl chloride chlorobenzene, toluene, benzotrichloride
	K016	Heavy Ends	Toxic	Hexachlorobenzene, hexachlorobutadiene, Carbon tetrachloride, hexachloroethane, Perchloroethylene
	K017	Heavy Ends	Toxic	1,2-dichloroethane, trichloroethylene, Hexachlorobutadiene, hexachlorobenzene
	K018	Heavy Ends Fractionation	Toxic	Methyl chloride
	K019	Heavy Ends	Toxic	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,1,2-tetrachloroethane, trichloroethylene, Carbon tetrachloride, chloroform, vinyl chloride Vinylidene chloride.
	K020	Heavy Ends	Toxic	Ethylene dichloride 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,2-tetra-Chloroethane), trichloroethylene, Tetrachloroethylene, carbon tetrachloride, Chloroform, vinyl chloride, vinylidene chloride

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K021	Aqueous spent antimony	Toxic	Antimony, carbon tetrachloride, chloroform
	K022	Distillation bottom tars	Toxic	Phenol, tars (polycyclic aromatic hydrocarbons)
	K023	Distillation light ends	Toxic	Phthalic anhydride, maleic anhydride
	K024	Distillation bottoms	Toxic	Phthalic anhydride, 1,4-naphtoquinone
	K025	Distillation bottoms	Toxic	Meta-dinitrobenzene, 2,4-dinitrotoluene
	K026	Stripping still tails	Toxic	Paraldehyde, pyridines, 2-picoline
	K027	Centrifuge and distillation Residues from TDI production	Reactive, Toxic	Toluene disocyanate, toluene-2,4 diamine
	K028	Spent catalyst	Toxic	1,1,1-trichloroethane, vinyl chloride
	K029	Product steam stripper	Toxic	1,2-dichloroethane, 1,1,1-trichloroethane, Vinyl chloride, vinylidene chloride
	K030	Column bottoms	Toxic	Hexachlorobenzene, hexachlorobutadiene, Hexachloroethane, 1,1,1,2-tetrachloroethane, Ethylene dichloride
	K083	Distillation bottoms	Toxic	Aniline, dephenylamine, and nitrobenzene Phenylenediamine
	K085	Distillation or fractionation Column bottoms	Toxic	Benzene, dichlorobenzenes, trichlorobenzenes, pentachlorobenzene, hexachlorobenzene, Benzyl chloride
	K093	Distillation light ends	Toxic	Phthalic anhydride, malaeic anhydride

(Continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K094	Distillation Bottoms	Toxic	Phthalic anhydride
	K095	Distillation Bottoms	Toxic	1,1,2-trichlorethane 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane
	K096	Heavy ends	Toxic	1,2 dichloroethane, 1,1,1-trichloroethane 1,1,2-trichloroethane
	K103	Process residues	Toxic	Aniline, nitrobenzene's, phenylenediamine
	K104	Combined wastewater	Toxic	Aniline, benzene, diphenylamine, Nitrobenzene, phenylenediamine
	K105	Separate aqueous streams	Toxic	Benzene, monochlorobenzene, Dichlorobenzenes, 2,4,6-trichloropheno
	K107	Column bottoms from the Production of 1,1-dimethyl-Hydrazine (UDMH) from Carboxylic acid hydroxides	Corrosive, Toxic	1,1-dimethylhydrazine (UDMH)
	K108	Column overheads from the Production of 1,1-dimethyl-Hydrazine (UDMH) from Carboxylic acid hydroxides	Ignitable, Toxic	1,1-dimethylhydrazine (UDMH)
	K109	Filter Cartridges from the Production of 1,1-dimethyl-Hydrazine (UDMH) from Carboxylic acid hydroxides	Toxic	1,1-dimethylhydrazine (UDMH)

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K110	Column overheads from the Production of 1,1dimethylhydrazine (UDMH) from carboxylic acid hydroxides	Toxic	1,1-dimethylhydrazine (UDMH)
	K111	Product Washwaters	Toxic, Corrosive	Dinitrotoluene
	K112	Reaction by-product Water	Toxic	Toluenediamine
	K113	Condensed liquid	Toxic	Toluenediamine
	K114	Vicinal	Toxic	Toluenediamine
	K115	Heavy Ends	Toxic	Toluenediamine
	K116	Organic	Toxic	Toluene diiscoyanate
	K117	Wastewater from reactor vent gas Scrubber	Toxic	Ethylene dibromide
	K118	Spent absorbent solids	Toxic	Ethylene dibromide
	K136	still bottoms	Toxic	Ethylene dibromide
	K159	Organic from the treatment of Thiocarbamate wastes	Toxic	Benzene, butyrate, etc, Molinate, peculate, vernolate
	K161	Purification solids (including Filtration, evaporation, and Centrifugation solids), bag house Dust, and floor sweepings from the Production of dithiocarbamate acids And their salts.(This listing does not include K125 or K126)	Toxic	Antimony, arsenic, Metal-sodium, ziram

(continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Pesticides	K031	By-products salts	Toxic	Arsenic
	K032	Wastewater treatment Sludge	Toxic	Hexachlorocyclopentadiene
	K033	Wastewater Scrub water	Toxic	Hexachlorocyclopentadiene
	K034	Filter solids	Toxic	Hexachlorocyclopentadiene
	K035	Wastewater treatment Sludge	Toxic	Creosote, naphthalene, fluoranthene chryserne, benzo (b) fluoranthene, Benzo (a) pyrene, Indeno (1,2,3-cd) Pyrene, benzo (a) anthracite, dibenzo (a) Anthracene, acenaphthalene
	K036	Still bottoms	Toxic	Toluene, phosphorodithoic and Phosphorothioic acid esters
	K037	Waste water treatment	Toxic	Toluene, phosphorothioic acid esters
	K038	Wastewater from washing And stripping	Toxic	Phonate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
	K039	Filter cake	Toxic	Phosphorodithioic and phosphorothioic Acid esters
	K040	Wastewater treatment Sludge	Toxic	Phonate, formaldehyde, phosphorodithioic and prospphorothioic acid esters
	K041	Wastewater treatment Sludge	Toxic	Toxaphene
	K042	Heavy ends or Distillation residues	Toxic	Hexachlorobenzene, orthodichlorobenzene

(Continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K043	2,6 dichlorophenol Waste	Toxic	2,4-diclorophenol, 2,6-Chlordane, heptachlor
	K097	Vacuum stripper Discharge	Toxic	Chlordane, heptachlor
	K098	Untreated process Wastewater	Toxic	Toxaphene
	K099	Untreated wastewater	Toxic	2,4-dichlorophenol, 2,4,6-Trichlorophenol
	K123	Process wastewater Scrubber water	Toxic, Corrosive	Ethylene Bissdithiocarbamic, acids and `` salts
	K124	Reactor Vent Scrubber water	Toxic, Corrosive	Ethylene bisdithiocarbamic, acids and salts
	K125	Filtration, Evaporation and Centrifugation Solids	Toxic	Ethylene bisdithiocarbamic, acids and salts
	K126	Bag house dust and sweepings	Toxic	Ethylene bisdithiocarbamic, acids and salts
	K131	Wastes from production Of methyl bromide.	Corrosive, Toxic	
	K132	Absorbents and solids from From production of methyl Bromide	Toxic	
Secondary Lead	K069	Emission control	Toxic	Hexavalent chromium, lead cadmium
	K100	Waste leaching solution Distillation residues	Toxic	Hexavalent chromium, lead, cadmium

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Petroleum Refining	K048	DAF/float	Toxic	Hexavalent chromium, lead
	K049	Slop oil emulsion solids	Toxic	Hexavalent chromium, lead
	K050	Heat exchanger cleaning	Toxic	Hexavalent chromium
	K169	Crude oil storage tank Sediment from petroleum Refining operations	Toxic	Benzene
	K170	Clarified slurry oil Storage tank sediment And/or in-line filter/ Separation solids from Petroleum refining operations	Toxic	Benzo (a) pyrene, dibenz (a,h) anthracene, Benzo (a) anthracite, Benzo (b) fluoranthene, Benzo (k) fluoranthene, 7,12-dimethylbenz (a) anthracite
	K171	Spent hydrotreating Catalyst from petroleum Refining operations including Guard beds used to desulfurize Feeds to other catalytic units(not Including inert support media)	Ignitable, Toxic	Benzene, arsenic
	K172	Spent hydrorefining Catalyst from petroleum Refining operations including Guard beds used to desulfurize feeds to Other catalytic units (not including Inert support media)	Ignitable, Toxic	Benzene, arsenic

(Continued)

Table C-10: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes	Toxic	Benomyl, carbaryl, carbendazim, carbofuran, carbosulfan, formaldehyde, methylene chloride, triethylamine
	K157	Wastewater (including scrubber waters, condenser waters, washwaters, and separation wasters) from the production of carbamates and carbamoyl oximes	Toxic	Carbon tetrachloride, farmaldehyde methyl chloride, methylene chloride, pyridine, triethylamine
	K158	Baghouse dusts and filter/separation solids from the production of carbamates and carbamoyl oximes	Toxic	Benomyl, carbendazim, carbofuran, carbosulfan, chloroform, methylene chloride
	K160	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes	Toxic	Benzene, butylate, eptc, molinate, pebulate, vernolate

(continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K149	Distillation bottoms from the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these fuctional groups.	Toxic	
	K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chorides, and compounds with mixtures of these functional groups.	Toxic	
	K151	Wastewater treatment sludges excluding neutralization and biological sludges, generated during the treatment of wash waters from the production of alpha-(or methyl-) chlorinated toluense, ring-chlorinated toluenes benzoyl chlorides, and compounds with mixtures of these functional groups.	Toxic	

(continued)

Table C-10: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
	K176	Baghouse filters from the production of antimont oxide, including filters from the production of intermediates.	Toxic	
	K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production intermediates.	Toxic	
	K178	Solids from manufacturing and manufacturing-site storage of Ferric Chloride from acids formed during the production of titamium dioxide using the chloride-ilmenite process.	Toxic	

(continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K051	API separator sludge	Toxic	Hexavalent chromium, lead
	K052	Tank bottoms	Toxic	Lead
Iron and Steel	K061	Emission control Dust/sludge	Toxic	Hexavalent chromium, lead cadmium
	K062	Spent pickle Liquor	Corrosive, Toxic	Hexavalent chromium, lead
Coking	K060	Ammonia still lime Sludge	Toxic	Cyanide, naphthalene, phonemic .compounds arsenic
	K087	Decanter tank tar Sludge	Toxic	Phenol, naphthalene, phenolic compounds, arsenic
	K141	Process residues from the recovery of coal tar, including, but not listed to, tar collecting sump residue from the production of coke from coal or the recovery of coke by-products produced from coal.	Toxic	
	K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products from coal.	Toxic	

(continued)

Table C-10: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K143	Process residues from the recovery, of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Toxic	
	K144	Wastewater treatment sudges from light oil refining, including but not limited to, intercepting or or contamination sump sludges from the recovery of coke by-products produced from coal.	Toxic	
	K145	Residues from napthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Toxic	

(continued)

Table C-10: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K147	Tar storage tank residues from coal tar refining.	Toxic	
	K148	Residues from coal tar distillation, including but not limited to, still bottoms.	Toxic	
Ink Formulation	K086``	Solvent wastes Sludges	Toxic	Hexavalent chromium, lead
Veterinary Pharmaceuticals	K084	Wastewater treatment Sludges	Toxic	Arsenic
	K101	Distillation tar Residues	Toxic	Arsenic
	K102	Residue from activated Carbon	Toxic	Arsenic
Inorganic Chemicals	K071	Brine Purification muds	Toxic	Mercury
	K073	Chlorinated Hydrocarbon	Toxic	Chloroform, carbon tetrachloride, Hexachloroethane, trichloroethane Tetrachloroethylene, dichloroethylene 1,1,2,2-tetrachloroethane

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K106	Wastewater treatment Sludge	Toxic	Mercury
Explosives	K044	Wastewater treatment Sludges from explosives	Reactive	Not Applicable
	K045	Spent carbon from Wastewater containing Explosives	Reactive	Not Applicable
	K046	Wastewater treatment Sludges from the Manufacturing, formulation and Loading of lead based initiating Compounds	Toxic	Lead
	K047	Pink/red waste from Slugs	Reactive	Not Applicable
Primary Copper	K064	Acid plant blowdown Slurry/sludge from Primary copper production.	Toxic	Lead, cadmium
Primary Lead	K065	Surface impoundment Solids at primary Lead smelting facilities.	Toxic	Lead, Cadmium
Primary Zinc	K066	Treatment sludges from Primary zinc production	Toxic	Cyanide Complexes
Primary Aluminum	K088	Spent potliners from primary aluminum Reduction	Toxic	Cyanide Complexes

(Continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Ferroalloys	K090	Emission control dust or Sludge from Ferro-Chromium silicon production	Toxic	Chromium
	K091	Emission control dust or Sludge from ferrochromium Production.	Toxic	Chromium
Organobromine	K140	Floor sweepings, off Specification product and Spent filter media from the Production of 2,4,6-Tribromophenol.	Toxic	2,4,6-Tribromophenol
Ethylene Dichloride	K174	Wastewater treatment sludge from the production of ethylene dichloride or vinyl chloride monomer.	Toxic	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dloxin (1,2,3,4,6,7,8-HpCDD), 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF), 1,2,3,4,7,8,9-Heptachlorodlbenzofuran (1,2,3,6,7,8,9-HpCDF) HxCDDs (all Hexachlorodlbenzo-p-dioxins), HxCDFs (All Hexachlorodlbenzofurans,) PeCDDs (All Pentachlorodlbenzo-p-dioxins), OCDD (1,2,3,4,6,7,8,9-Octachlorodlbenzo-p-dioxin, OCDF (1,23,4,6,7,8.9-Octachlorodlbenzofuran), PeCDFs (All pentachlorodlbenzofurans), TCDDs (All tetrachlorodi-Benzo-p-dioxins), TCDFs (All tetrachlorodlbenzofurans).
	K175	Wastewater treatment sludge from the production of ethylene dichloride or vinyl chloride monomer.	Toxic	Mercury

(continued)

Table C-10 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Non-Hazardous Wastes	None	N/A	Non-Hazardous	Waste Oil, oily debris, Medical wastes Industrial non-RCRA wastes
Commercial Chemical Products	All P-codes in 40 CFR 261.33 (e) and all U-codes in 40 CFR 261.33 (f) as listed on the facility's most recent RCRA part A Form.			

Notes:

(a) - Sample analyses conducted by CHSI for incoming and outgoing hazardous waste fuels are provided in Appendix C-1, Data Sheet #66.

(b) - The boundary limits for incoming hazardous waste fuels are restricted only by the permit limitations and fuel specifications of the end burner facility (e.g., cement kiln). Wastes fuels will be considered suitable for blending purpose if they are liquids, semisolids, or solids and meet the following specification:

Minimum BTU Value	-	5000 BTU / lb.	Solids Content	-	No Limit
Chlorine Content	-	No Limit	Water Content	-	No Limit
PCB	-	Less than 50 ppm			

The 5,000 BTU per pound limit, as well as other parameters, are subject to the "Burning of Hazardous Waste in Boilers nd Industrial Furnaces" (BIF) regulations at 40 CFR 266.103. However CHSI will require a 5,000 BTU per pound minimum on all incoming hazardous waste fuels unless the offsite-receiving facilities are permitted to accept hazardous waste fuel with a heat value of less than 5,000 BTU per pound. CHSI shall maintain on file at the facility documentation of a receiver facility's authority to accept hazardous waste fuel containing less than 5,000 BTU per pound.

Table C-11: Hazardous Characteristics of Wastes in Tank Systems

		Tank System	Typical Wastes Stored or Processed, as listed by US EPA Waste Code or Generic Waste Group	Hazardous Characteristic(s)
I.	-	EXISTING TANK SYSTEMS		
	-	Primary Treatment /Pretreatment System		
	a.	Receiving Pits 2-4	D001-D011, D018-D043, K062	Corrosive, and Toxic
	b.	Pretreatment Reactor	D001-D011, D018-D043, K062	Corrosive, Toxic
	c.	Primary Storage (Tank #2)	D002, D004-D011	Corrosive, Toxic
	d.	Mix Tank (Tank #4)	D002, D004-D011	Corrosive Toxic
	e.	Chemical Treatment Unit	D002, D004-D011, D018-D043, K062	Corrosive, Toxic
	f.	Primary Clarifiers/Gravitates (4 total)	D004-D011	Toxic
	g.	Clarifier Collection/Surge Tank	D004-D011	Toxic
	h.	Secondary Treatment Tanks (2 total)	D004-D011	Toxic
	i.	Flocculator Tank	D004-D011	Toxic
	j.	Secondary Clarifier	Metal Hydroxides, Solids	Non-Hazardous
	k.	Sludge Sump	Metal Hydroxides, Solids	Non-Hazardous
	l.	Sludge Concentrator (Tank#3)	Metal Hydroxides, Solids	Non-Hazardous
	m.	Sludge Conditioning	Metal Hydroxides, Solids	Non-Hazardous
	n.	Effluent Discharge (Tank #1)	Treated Effluent	Non-Hazardous
	o.	Effluent Collection/Surge Tank	Treated Effluent	Non-Hazardous
	-	Fuel Blending Storage/Processing	D001, D003, D004-D011, D018-D043, F001-F005, K001, K009-K014, K019, K022-K024,K028, K029, K048-K052, K083, K085-K087, K093-K096, Most U-codes (see Table C-10)	Ignitable, Reactive
B.		PROPOSED TANK SYSTEMS		
	-	Listed Waste Treatment/Processing	D001-D011, D018-D043, F001-F012, F019, F039, K002-K008, K046, K052, K060-K062, K069, K086, K087, K100	Ignitable, Corrosive, Reactive, Toxic, Acutely Toxic
	-	Shredding Storage/Processing	D001, D003, D004-D011, D018-D043, F001-F005, K001, K009-K014, K019, K022-K024,K028, K029, K048-K052, K083, K085-K087, K093-K096, Most U-codes (see Table C-16)	Ignitable, Reactive

Table C-12: Pre-acceptance and Conformance Testing Parameters

Parameter	Purpose
Group I Analysis – For all shipments of hazardous and non-hazardous waste	
Physical Description	Used to determine the general characteristics of the waste including color, odor Viscosity, layering, free liquids, and other observable characteristics. This Facilitates subjective comparison of the sampled waste with prior waste descriptions Or samples.
pH Screen	used to indicate the corrosive nature of the waste. PH may not apply to certain Special wastes, i.e., organic solvent waste, oil waste, or insoluble solid waste.
Water Mix	Used to determine whether the waste is miscible in water, or if it has a potential to Vigorously react with water to form gases or other products, or whether it generates Significant heat. This test does not apply to wastes that are already in contact with Excess water, or for which sufficient analytical data exist that indicate no potential Reactivity with water.
Ignitable Screen	Used to indicate the fire-producing potential of the waste, and to determine whether The waste is a RCRA ignitable waste or is regulated as flammable or combustible by the Federal DOT. This test can be applied to all waste liquids, semi-solids or solids, But need not be applied if other information indicates the waste is not ignitable.
Reactive Cyanides Screen	Used to determine whether the waste produces hydrogen cyanide upon acidification below pH It is not required if the pH of the waste is less than 6.0, if the waste is not water-soluble, or if the waste is not aqueous. Wastes containing cyanide with concentrations less than 100 ppm are considered non-reactive
Reactive Sulfides Screen	Used to determine whether the waste produces hydrogen sulfide upon acidification below pH2. It is not required if the pH of the waste is less than 6.0, if the waste is not water-soluble, or if the waste is not aqueous. Wastes containing sulfides with concentrations less than 100 ppm are considered non-reactive.

(Continued)

Table C-12: Continued

Parameter		Purpose
GROUP II ANALYSIS – For all hazardous and non-hazardous waste intended for onsite treatment; initial shipment only.		
1.	Settable Solids	This determination is performed on all prospective samples and is an indication of the volume of settable material In the sample, The determination involves pouring a portion of the thoroughly mixed prospective sample into a Graduated cylinder and determining the volume percent of settable solids present in the material after a period of Time.
2.	Floating Solids or Oil	In the determination of volumetric estimate is made of the floating solids or free oil present in the sample. Again a thoroughly mixed portion of the prospective sample is poured into a graduated cylinder and the volume percent of floating solids or free oil is determined after a period of time.
3.	Oil on Acidification	Whenever it appears necessary, a portion of the prospective sample is acidified with concentrated sulfuric acid to determine whether and in what concentration the material contains oil. This test gives an indication of what treatment, if any, the material should be subjected to prior to introduction into the main facility. This test is performed by mixing concentrated sulfuric acid with a measured amount of prospective sample and determining the amount of oil which separates after a period of time.
4.	Neutralization Equivalent	To determine whether the waste, if acidic, should first be neutralized with alkali before introduction into the system, a neutralization equivalent is determined.
5.	Solids content	the total solids (TS) and/or total suspended solids (TSS) content of the waste.
6.	Metal Content	To determine the concentration of the following metals: arsenic, cadmium, chromium, copper, iron, lead, Mercury, nickels selenium, silver, and zinc.
7.	Organic Components	Total organic (Characteristic Volatile Organic or Total Organic Carbon).
8.	Compatibility	To determine the chemical and physical compatibility of the waste for storage and waste mixing (consolidation and treatment) operations.
9.	Sample Treatability	Each prospective sample is treated according to the scheme then being used in the facility. This treatment is performed in order to determine whether the material in fact could be treated. Acceptance of any prospective material is dependent upon its being treatable.

(Continued)

Table C-12: Continued

Parameter		Purpose
Group III ANALYSIS – For all hazardous and non-hazardous wastes intended for onsite treatment; every shipment.		
1.	Settable Solids	this determination is performed on al prospective samples and is an indication of the volume of settable material in the sample. The determination involves pouring a portion of the thoroughly mixed prospective Sample into a graduated cylinder and determining the volume percent off settable solids present in the Material after a period of time.
2.	Floating Solids or Oil	In this determination of volumetric estimate is made of the floating solids or free oil present in the sample Again a thoroughly mixed portion of the prospective sample is poured into a graduated cylinder and the Volume percent of floating solids or free oil is determined after a period of time.
3.	Oil on Acidification	whenever it appears necessary, a portion of the prospective sample is acidified with concentrated sulfuric acid to determine whether and in what concentration the material contains oil. This test gives an Indication of what treatment, if any, the material should be subjected to prior to introduction into the main facility. This test is performed by mixing concentrated sulfuric acid with a measured amount of Prospective sample and determining the amount of oil which separates after a period of time.
4.	Neutralization Equivalent	To determine whether the waste, if acidic, should first be neutralized with alkali before introduction into the system, a neutralization equivalent is determined.
5.	Solids Content	The total solids (TS) and /or total suspended solids (TSS) content of the waste.
6.	Total Metal Content	To determine the concentration of the following metals: cadmium, chromium, copper, iron, lead, Nickel, and zinc.
7.	Compatibility	To determine the chemical and physical compatibility of the waste for storage and waste mixing (Consolidation and treatment) operations.
8.	Sample Treatability	Each prospective sample is treated according t the scheme then being used in the facility. This treatment is performed in order to determine whether the material in fact could be treated. Acceptance of any prospective material is dependent upon its being treatable.

(Continued)

Table C-12: Continued

	Parameter	Purpose
GROUP IV ANALYSIS – For all non-hazardous wastes intended for onsite storage, treatment, and/or transfer; initial shipment only.		
1.	Total "Characteristic" Metals	Non –hazardous waste accepted for treatment or storage will be analyzed of the eight (8) "RCRA" Characteristic metals to determine total concentrations. If a metal concentration exceeds the Regulatory level, then the waste will be either further analyzed utilizing TCLP or assumed to be a "hazardous waste for the metal(s) identified as exceeding the regulatory limit.
2.	Total "Characteristic" Volatile and Semi-Volatile Organic	Non-hazardous waste accepted for treatment or storage will be analyzed for the characteristic volatile and semi-volatile organic suing a Gas Chromatograph (GC). If the concentration of a Volatile or semi-volatile organic compound exceeds the characteristic regulatory level, then the Waste will be either further analyzed utilizing TCLP or assumed to be a "hazardous waste" for the Volatile or semi-volatile organic(s) identified as exceeding the regulatory limit.

Table C-13: List [illegible]pplemental Analyses

Parameter	Purpose
Percent Acidity	Determines the acidity in the waste by species. It is only used if the waste is Aqueous and below a pH of 7.
Percent Alkalinity	Determines the amount of alkalinity in the waste by species. It is only used if the waste is aqueous and above a pH of 7.
Absorbent Reactivity	Determines whether the waste is amenable to solidification, and to determine the ration of absorbent-to-waste required to effect solidification.
PH Spectrum	Determines the phase behavior of the waste over a wide pH change, and is particularly applicable to Deep will disposal.
CG/MS Scan	Used to separate and identify organic compounds.
Specific Gravity	Indicates density of the waste (i.e., to determine suitability for solvent recovery).
Neat Phase Separation	Determines phases behavior with respect to temperature fluctuation, and is applicable to deep well disposal.
Gas Chromatography Scan	Used to separate and identify organic compounds.
Cyanides – Peroxide Amenable	Determines the effectiveness of H2O2 for cyanide treatment.
Cyanides – Chlorination Amenable (Sodium Hypochlorite or Direct Chlorination)	Determines the effectiveness of hypochlorite for cyanide treatment.
Cyanides – Conversion Amenable	Determines the effectiveness of other types of reagents treatment for cyanides.
Liquid Waste Compatibility	Detrmines whether liquid wastes are stored or processed together are compatible.
Soluble Sulfides	Provides quantitative backup to the reactive sulfide screen.
Sulfate Screen	Indicates sulfate presence, since a waste with high dissolved sulfates will have a tendency to precipitate.
Sulfide – Peroxide Amenable	Determines the effectiveness of H2O2 for sulfide treatment.
Paint Filter Test	Indicates if free liquid is present in a solid or semi-solid material.

(Continued)

Table C-13: Continued

Parameter	Purpose
Distillation	Determines the percent recovery and boiling range of a sample, and to generate a distillate of The material suitable for furthers testing.
Active Test	Detrmines the percent of active solvents in a blend.
Water Acceptance	determines the percent of water-soluble solvents.
Toxicity Characteristic	Uses the Toxicity Characteristic Leaching Procedure (TCLP) to determine the presence of organic Chemicals described by EPA Waste Codes D004 through D043.
Hexavalent Chromium	To quantify the concentration of this species for treatment control.
Heavy Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag)	To quantify heavy metals concentration to determine process operating parameters.
Miscellaneous Metals (Cu, Fe, Ca, Mg, Mn, Ni, An)	To determine potential salt precipitation and for monitoring certain processes.
Sulfates	To determines if the major acid component sulfuric acid or its salts.
Phosphates	To determines if the major acid component is phosphoric acid or its salts.
Chlorides	To determines if the major acid component is hydrochloric acid or its salts.
Nitrates	To determines if the major acid component is nitric acid or its salts.
Free Cyanides	To measure the cyanides that would be potentially reactive under acid conditions.
Total Cyanides (by distillation With MgCl2)	To quantify the concentration of all free and complexed cyanides.
Total Sulfides	To quantify the concentration of total sulfide.
Oil and Grease	To quantify the amount of oil and grease so as not to impact certain processes.
Phenols	To quantify the concentration of phenols.
Total Residue	To quantify the suspended and dissolved solids present and moisture content for selected processes.

(Continued)

Table C-13: Continued

Parameter	Purpose
Filterable Residue	To quantify the suspended solids presents to determine filtration requirements in process operations.
Non-Filterable Residue	To quantify the dissolved solids present to determine acceptability for certain processes.
Specific Organic Compounds	To determine the concentrations of specific organic.
Flash Point	to further characterizes ignitable wastes to establish proper storage mode and conformance with Permit conditions. A closed cup is used for liquids, and an open cup for solids.
Viscosity	To determine the pumpability of a waste.
Elemental Analyses (including Cl)	To determine the potential for HCI has generation during incineration.
Water Content	To determine the amount of free water or indicate the combustibility of the waste.
Heat Value	To assess the amount of heat available for release during thermal combustion (incineration or use as fuel Supplement).
Percent Ash	To estimate particulate generation, and inorganic solid residue for incineration system control.
Priority Pollutant Scan	To identify the presence of EPA priority pollutants, i.e., volatile organics, acid extracts, and base/neutral extracts.

Sources:

1. "Test Methods for Evaluation Solid Waste: SW –846, U.S. Environmental Protection Agency Office of Water and Waste Management, Washington, D.C. 20406, 1980.

2. "Standard Methods for the Examination of Water and Waste Water", 15th edition, American Public Health Association, 1980

3. "Annual Book of ASTM Standards, Parts 15, 19, 31, "American Society for Testing Materials, 1916 Race Street, Philadelphia, Pennsylvania, 19103.

4. "Methods of Chemical Analysis of Water and Wastes", Epa-600/4-79-020, US Environmental Protection Agency, Environmental
Monitoring and Support Laboratory, Cincinnati, Ohio 452268, March 1979.

Table C-14: Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
Ignitable	D001	Flash Point	1010(a); D-93(d)
Corrosive	D002	pH, Neutralization	9040(a); 423(b); 150.1 (c);402(b); 403(b)
Reactive	D003	Cyanide	9010(a); 412Ab;) 412B(b); 412C(b); 412D(b); 412E(b); 335.2(c); 335.3(c)
	D003	Sulfide	9030(a); 427B(b); 427C(b); 427D(b); 376.1(c); 376.2(c)
Inorganic Metals	D004	Arsenic	7061(a); 7060(a); 6010(a); 303E(b); 305(b); 307A(b); 200.7(c); 206.2(c); 206.3(c); 206.4(c);
	D005	Barium	7080(a); 6010(a); 303C(b); 305(b) 200.7(c); 208.1(c)
	D006	Cadmium	7130(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 213.1(c)
	D007	Chromium	7190(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 218.1(c)

(Continued)

Table C-14: Continued

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
	D008	Lead	7420(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 239.1 (c)
	D009	Mercury	7470(a); 303F(b); 245.1(c); 245.2(c); 245.5(c)
	D010	Selenium	7741(a); 303E(b); 305(b); 200.7(c); 270.2(c); 270.3(c);
	D011	Silver	7760(a); 6010(a) 303A(b); 200.7(c) 305(b); 200.7(c); 272.1(c);
Organics	D018	Benzene	8020(a); 8240(a); 8260(a)
	D019	Carbon tetrachloride	8010(a); 8240(a) 8260(a);
	D020	Chlordane	8080(a)' 8250(a); 8270(a)
	D021	Chlorobenzene	8010(a); 8020(a); 8240(a); 8260(a);
	D022	Chloroform	8010(a); 8240(a); 8260(a)
	D023	o-Cresol	8040(a); 8250(a); 8270(a)

(Continued)

Table C: Continued

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
	D024	m-Cresol	8040(a); 8250(a); 8270(a)
	D025	p-Cresol	8040(a); 8250(a); 8270(a)
	D026	Cresol	8040(a); 8250(a); 8270(a)
	D027	1,4-Dichlorobenzene	8010(a); 8020(a); 8120(a); 8240(a); 8250(a); 8260(a)
	D028	1,2-Cichloroetnane	8010(a); 8240(a); 8260(a)
	D029	1,1-Dichloroethylene	8010(a); 8240(a); 8260(a)
	D030	2,4-Dinitrotoluene	8090(a); 8250(a) 8270(a)
	D031	Heptachlor (and its epoxides)	8080(a); 8250(a); 8270(a)
	D032	Hexachlorobenzene	8120(a): 8250(a); 8270(a)
	D033	Hexachlorobutadiene	8120(a); 8250(a); 8260(a); 8270(a)
	D034	Hexachloroethane	8120(a); 8250(a); 8270(a)
	D035	Methyl, ethyl, ketone (MEK)	8240(a)

(Continued)

Table C-14: Continued

W Category	EPA Hazardous Waste No.	Parameter	Analytical Methods(s)
	D036	Nitrobenzene	8090(a)
	D037	Pentachlorophenol	8090(a); 8250(a); 8270(a)
	D038	Pyridine	8240(a); 8270(a)
	D039	Tetrachloroethylene	8010(a); 8240(a); 8260(a)
	D040	Trichloroethylene	8010(a); 8240(a); 8260(a)
	D041	2,4,5-Trichlorophenol	8040(a); 8250(a); 8270(a)
	D042	2,4,6-Trichlorophenol	8040(a); 8250(a); 8270(a)
	D043	Vinyl Chloride	8010(a): 8240(a); 8260(a)
All Aqueous Wastes		pH	9040(a); 423(b); 150.1(c)
		Neutralization Equivalent	402(b); 403(b)
		Miscibility	No Standard Method
	D004; K084; K101; K102	Arsenic	7061(a); 7060(a); 6010(a); 303E(b); 305(b); 307A(b); 200.7(c); 206.2(c); 206.3(c); 206.4(c)

(Continued)

Table C-14: Continued

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
	D005	Barium	7080(a); 6010(a); 303C(b); 305(b); 200.7(c); 208.1(c)
	D006; F006; K061; K069 K100	Cadmium	7130(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 213.1(c)
	D007; F006: F019: K069; K003; K004 K005; K006; K007; K008; K048; K058; K051; K061; K062; K069; K086; K100; U032	Chromium	7190(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 218.1(c)
	D007; F006 F019; K002 K003;K004 K005; K006; K007; K008; K048; K050; K051; K061; K062; K069; K086; K100; U032	Chromium	7196(a); 312B(b); 218.3(c); 218.4(c); 218.5(c)

(Continued)

Table C-14: Continued

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
	D008; K002; K003; K005; K046; K048; K049; K051; K052; K061; K062; K069; K086; K100; U144; U145 U146	Lead	7420(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 239.1(c)
	D009; K071 K106	Mercury	7470(a); 303F(b); 245.1(c); 245.2(c); 245.5(c)
	D010	Selenium	7741(a); 6010(a); 303E(b); 305(b); 200.7(c); 270.2(c); 270.3(c)
	D011	Silver	7760(a); 6010(a) 303A(b); 303B(b); 305(b); 200.7(c); 272.1(c)
	F006	Nickel	7520(a); 6010(a); 303A(b); 303B(b); 305(B); 321a(B); 200.7(C); 249.1(C)
	U246	Zinc	7950(a); 6010(a); 303A(b); 303B(b); 305(b); 328A(b); 200.7(c); 289.1(c)

(Continued)

Table C-14: Continued

Waste category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
	F001; F002; F024: All "U" Wastes Except U144; U145 U146; U246	Volatile Organic Compounds	8010(a); 8015(a); 8020(a); 8030(a); 8240(a); 8260(a)
	F004; F024 U028; U039; U048; U049 U073; U081; U082; U088; U101; U102: U105; U107; U109; U111; U130; U131; U165; U169; U170; U196; U213	Various BNA Compounds (Phenols; Phthalate Esters; Cyclic Ketones; Nitro-Aromatics; Polynuclear Aromatic Hydrocarbons; and Chlorinated Hydrocarbons	8040(a); 8060(a); 8090(a); 8100(a); 8120(a);8240(a); 8260(a);
All Aqueous Wastes		Ammonia	417(a); 417B(b); 417C(b); 417D(b); 350.1(c); 350.2(c); 350.3(c)
		Copper	7210(a); 6010(a); 303A(b); 303B(b); 305(b); 313A(b); 200.7(c); 220.1(c)
		Phenol	510A(b); 510B(b); 8040(a); 8250(a); 8270(a); 420.1(c); 420.2(c); 420.3(c)

(Continued)

Table C-14; Continued

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s)
		Suspended Solids (After Bench Treatment)	209C(b); 160.1 (c)
		Fluorides	413A(b); 413B(b); 413C(b)
		Settable Solids	209F(b); 106.5(c)
		Specific Gravity	213E(b)
		Sulfides – Total	9030(a); 427D(b); 376.1(c); 376.2(c)
		COD	508A(b); 410.1(c);
		Suspended Solids	209C(b); 160.1(c)
		Oil And Grease	503B(b); 503C(b); 503A(b); 503E(b); 413.2(c); 413.2(c)
All Appropriate Wastes		Flash Point	1010(a); 1020(a); D-93(d)
All Mixed/Consolidated Wastes		Compatibility	ASTM D5058 Method A(e)

Method References;

A - "Test Methods for Evaluation Solid Waste: Physical/Chemical Methods" 2nd or rd edition, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C. July 1982 or November 1986.

B - "Standard Methods for the Examination of Water and Wastewater: 16th edition, American Public Health Association, American Waterworks Association, Water Pollution Control Federation, Washington, D.C., 1985

c. "Methods for the chemical Analysis of Water and Wastes" Publication EPA-600/4-79-020, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory. Cincinnati, OH. 1979, revised March 1983.

d. "Petroleum Products and Lubricants (l); D56-D1660", Annual Book of ASTM Standards, Volume 5.01, American Society for Testing and Material, Philadelphia, PA. 1985.

e. "Standard Test Methods for Compatibility of Screening Analysis of Waste" , ASTM Designation D5058-90, American Society for Testing and Materials, Revised 1990.

Table C-15 Sampling Method

Containment Device	Sample Matrix	Sampling Technique	Number of Samples taken	Comments	Reference(s)
1. Tank/ Tank Truck	a. Liquid	Access limited to tank ports. Grab Sample with COLIWASA sampler	Single	Wear goggles, rubber gloves and protective clothing.	Technique SW-846 Section 1.4.1 Device SW-846 Section 1.2.1.1. Place sample in Linear polyethylen Container.
	b. Semisolid	Access limited to tank ports. Grab sample with COLIWASA sampler Or Trier.	Three vertical core samples through depth of truck. Front Middle and back Composited	Wear goggles, rubber gloves and protective clothing. Place sample in Linear polyethylene Container.	Technique SW-846 Section 1.4.1 Device SW-846 Section 1.2.1.1
	c. Solids	No solids accepted in tank trucks			
II.Rolloff or Dump Trailer	a. Solid	Access through open Top. Grab sample with Trier or Thief.	Three vertical core samples through Depth of truck. Front, middle And back Composited.	Wear Goggles, rubber gloves And protective clothing Place sample In polyethylene container.	Technique SW-846 Section 1.4.1 Device SW-846 Section 1.2.1.5

(Continued)

Table C-15: Continued

Containment Device	Sample Matrix	Sampling Technique	Number of Samples taken	Comments	Reference(s)
II. Rolloff (con't.)	b. Semisolid	Grab sample with COLIWASA Sampler or Trier.	Three vertical core samples through Depth of rolloff. Front, middle and Back composited.	Wear goggles, rubber gloves And protective clothing Place sample in Linear polyethylene Container.	Technique SW-846 Section 1.4.1 Device SW-846 Section 1.2.1.1.
III. Drums	a. Liquid	Simple random Sampling. Grab sample with COLIWASA Sampler	One per drum	Wear goggles, Rubber gloves and protective clothing Place sample in Linear polyethylene Container.	Technique SW-846 Section 1.4.1 Device SW 846 Section 1.2.1.1
	b. Solid	Simple random Sampling. Grab sample With Trier or Thief	One per drum	Wear goggles, Rubber gloves, and protective clothing Place sample in Linear polyethylene Container	Technique SW-846 Section 1.4.1 Device SW-846 Section 1.2.1.5 or Section 1.4.1
	c.Semisolid	Simple random sampling. Grab sample with Trier or COLIWASA Sampler.	One per drum	Wear Goggles, rubber gloves and protective clothing. Place sample in Linear polyethylene Container.	Technique SW-846 Section 1.2.1.5 or 1.2.1.1

Table C-16: Hazardous Waste Shredding/Metal Washing

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard listing per 40 CFR 261	Hazard Constituent (s)
		(SEE NOTE (B) FOR GENERAL BOUNDARY CONDITIONS)		
Ignitable	D001	Ignitable	Flash Point < 140 Degree F	
Corrosive	D002	Acid/Alkaline	pH < 2.0 or pH > 12.5	
Reactive	D003	Sulfides	Reactive	
	D003	Cyanides	Reactive	
Inorganic Metals	D004	Arsenic	Toxic	Arsenic
	D005	Barium	Toxic	Barium
	D006	Cadmium	Toxic	Cadmium
	D007	Chromium	Toxic	Chromium
	D008	Lead	Toxic	Lead
	D009	Mercury	Toxic	Mercury
	D010	Selenium	Toxic	Selenium
	D011	Silver	Toxic	Silver
Pesticides/ Herbicides	D012	Endrin	Toxic	1,2,3,4,10,10-hexachloro-1,7-epoxy 1,4,4a,5,6,7,8a-octahydro-1,4endo, endo-5 8-dimethanonaphthalene
	D013	Lindane	Toxic	1,2,3,4,5,6-hexachloro-cyclohexane, Gammaisomer
	D014	Methoxychlor	Toxic	1,1,1-Tri-chloro-2,2-bias (p-methoxhpenyl) Ethane
	D015	Toxaphene	Toxic	C10H10C18, Technical Chlorinated Camphene, 69-69% chlorine.

(Continued)

Table C-16: Hazardous Waste Shredding/Metal Washing

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard listing per 40 CFR 261	Hazard Constituent (s)
	D016	2,4-D	Toxic	2,4-d (2,4-Dichlorophenoxy acetic acid)
	D017	2,4,5-TP Silver	Toxic	2,4,5-Trichlorophenoxypropionic Acid)

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Organics	D018	Benzene	Toxic	Benzene
	D019	Carbon Tetrachloride	Toxic	Carbon Tetrachloride
	D020	Chlordane	Toxic	Chlordane
	D021	Chlorobenzene	Toxic	Chlorobenzene
	D022	Chloroform	Toxic	Chloroform
	D023	o-Cresol	Toxic	o-Cresol
	D024	m-Cresol	Toxic	m-Cresol
	D025	p-Cresol	Toxic	p-Cresol
	D026	Cresol	Toxic	Cresol
	D027	1,4-Dichlorobenzene	Toxic	1,4-Dichlorobenzene
	D028	1,2-Dichloroethane	Toxic	1,2-Dichloroethane
	D029	1,1-Dichloroethylene	Toxic	1,1-Dichloroethylene
	D030	2,4-Dinitrotoluene	Toxic	2,4-Dinitrotoluene
	D031	Heptachlor(and its epoxide)	Toxic	Heptachlor
	D032	Hexachlorobenzene	Toxic	Hexachlorobenzene
	D033	Hexachlorobutadiene	Toxic	Hexachlorobutadiene
	D034	Hexachloroethane	Toxic	Hexachloroethane
	D035	Methyl ethyl ketone	Toxic	Methyl ethyl ketone
	D036	Nitrobenzene	Toxic	Nitrobenzene
	D037	Pentachlorophenol	Toxic	Pentachlorophenol
	D038	Pyridine	Toxic	Pyridine
	D039	Tetrachloroethylene	Toxic	Tetrachloroethylen
	D040	Trichloroethylene	Toxic	Trichloroethylene
	D041	2,4,5-Trichlorophenol	Toxic	2,4,5-Trichlorophenol
	D042	2,4,6-Trichlorophenol	Toxic	Trichlorophenol
	D043	Vinyl Chloride	Toxic	Vinyl Chloride
Spent Solvents	F001	Spent halogenated Solvents used in degreasing	Toxic	Tetrachlorethylene, methylene chloride trichloroethylene, 1,1,1-trichloroethane,
	F002	Spent Halogenated Solvents	Toxic	Tetrachloroethylene, methylene chloride, trichloroethylene,1,1,1-trichloroethane, Chlorobenzene, 1,1.2-trichloro-1,2,2, Trichlorofluoromethane

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Petroleum	F037	Petroleum Refinery Primary Primary oil/water/solids Separation sludge—any sludge Generated from the gravitational Separation of oil/waste/solids During the storage or treatment Of process wastewater's and Oil cooling wastewater's from Petroleum refineries.	Toxic	See 40 CFR 261 Appendix VII
	F038	Petroleum refinery Secondary (Emulsified) oil/water/solids Separation sludge- - any sludge Of float generated from the Physical Or chemical separation of Oil/water/solids in process Wastewater's and oil cooling Wastewater from the physical or Chemical separation of oil/water/solids In process wastewaters and oil cooling Wastewaters form petroleum refineries.	Toxic	See 40 CFR 261 Appendix VII
Multi-Source Leachate	F039	Multi-Source Leachate	Toxic	Metals, Organics, ets.

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Wood Preservation	K001	Wastewater treatment Sludge	Toxic	pentacholorophenol, phenol, 2-chlorophenol p=chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, Tetrachlorophenols, etc.
Inorganic Pigments	K002	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K003	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K004	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K005	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K006	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K007	Wastewater Treatment Sludge	Toxic	Hexavalent chromium, lead
	K008	Oven Residue	Toxic	Hexavalent chromium, lead
Organic Chemicals	K009	Distillation Bottoms	Toxic	Chloroform, formaldehyde, methylene Chloride, methyl chloride, paraldehyde, Formic acid
	K010	Distillation side cuts	Toxic	Chloroform, formaldehyde, methylene Chloride, methyl chloride, paraldehyde, Formic acid

(Continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K011	Bottom stream from Wastewater stripper	Reactive, Toxic	Acrylonitrile, acetonitrile, hydrocyanic acid
	K013	Bottom stream Acrylonitrile column	Reactive, Toxic	Hydrocyanic acid, acetonitrile, acetonitrile
	K014	Bottoms from acetonitrile Purification's	Toxic	Acetonitrile, acrylamide
	K015	Still bottoms from Distillation	Toxic	Benzyl chloride chlorobenzene, toluene, benzotrichloride
	K016	Heavy Ends	Toxic	Hexachlorobenzene, hexachlorobutadiene, Carbon tetrachloride, hexachloroethane, Perchloroethylene
	K017	Heavy Ends	Toxic	1,2-dichloroethane, trichloroethylene, Hexachlorobutadiene, hexachlorobenzene
	K018	Heavy Ends Fractionation	Toxic	Methyl chloride
	K019	Heavy Ends	Toxic	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,1,2-tetrachloroethane, trichloroethylene, Carbon tetrachloride, chloroform, vinyl chloride Vinylidene chloride.
	K020	Heavy Ends	Toxic	Ethylene dichloride 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,2-tetra-Chloroethane), trichloroethylene, Tetrachloroethylene, carbon tetrachloride, Chloroform, vinyl chloride, vinylidene chloride

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K021	Aqueous spent antimony	Toxic	Antimony, carbon tetrachloride, chloroform
	K022	Distillation bottom tars	Toxic	Phenol, tars (polycyclic aromatic hydrocarbons)
	K023	Distillation light ends	Toxic	Phthalic anhydride, maleic anhydride
	K024	Distillation bottoms	Toxic	Phthalic anhydride, 1,4-naphtoquinone
	K025	Distillation bottoms	Toxic	Meta-dinitrobenzene, 2,4-dinitrotoluene
	K026	Stripping still tails	Toxic	Paraldehyde, pyridines, 2-picoline
	K027	Centrifuge and distillation Residues from TDI production	Reactive, Toxic	Toluene disocyanate, toluene-2,4 diamine
	K028	Spent catalyst	Toxic	1,1,1-trichloroethane, vinyl chloride
	K029	Product steam stripper	Toxic	1,2-dichloroethane, 1,1,1-trichloroethane, Vinyl chloride, vinylidene chloride
	K030	Column bottoms	Toxic	Hexachlorobenzene, hexachlorobutadiene, Hexachloroethane, 1,1,1,2-tetrachloroethane, Ethylene dichloride
	K083	Distillation bottoms	Toxic	Aniline, dephenylamine, and nitrobenzene Phenylenediamine
	K085	Distillation or fractionation Column bottoms	Toxic	Benzene, dichlorobenzenes, trichlorobenzenes, pentachlorobenzene, hexachlorobenzene, Benzyl chloride
	K093	Distillation light ends	Toxic	Phthalic anhydride, malaeic anhydride

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K094	Distillation Bottoms	Toxic	Phthalic anhydride
	K095	Distillation Bottoms	Toxic	1,1,2-trichlorethane 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane
	K096	Heavy ends	Toxic	1,2 dichloroethane, 1,1,1-trichloroethane 1,1,2-trichloroethane
	K103	Process residues	Toxic	Aniline, nitrobenzene's, phenylenediamine
	K104	Combined wastewater	Toxic	Aniline, benzene, diphenylamine, Nitrobenzene, phenylenediamine
	K105	Separate aqueous streams	Toxic	Benzene, monochlorobenzene, Dichlorobenzenes, 2,4,6-trichloropheno
	K107	Column bottoms from the Production of 1,1-dimethyl-Hydrazine (UDMH) from Carboxylic acid hydroxides	Corrosive, Toxic	1,1-dimethylhydrazine (UDMH)
	K108	Column overheads from the Production of 1,1-dimethyl-Hydrazine (UDMH) from Carboxylic acid hydroxides	Ignitable, Toxic	1,1-dimethylhydrazine (UDMH)
	K109	Filter Cartridges from the Production of 1,1-dimethyl-Hydrazine (UDMH) from Carboxylic acid hydroxides	Toxic	1,1-dimethylhydrazine (UDMH)

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K110	Column overheads from the Production of 1,1dimethylhydrazine (UDMH) from carboxylic acid hydroxides	Toxic	1,1-dimethylhydrazine (UDMH)
	K111	Product Washwaters	Toxic, Corrosive	Dinitrotoluene
	K112	Reaction by-product Water	Toxic	Toluenediamine
	K113	Condensed liquid	Toxic	Toluenediamine
	K114	Vicinal	Toxic	Toluenediamine
	K115	Heavy Ends	Toxic	Toluenediamine
	K116	Organic	Toxic	Toluene diiscoyanate
	K117	Wastewater from reactor vent gas Scrubber	Toxic	Ethylene dibromide
	K118	Spent absorbent solids	Toxic	Ethylene dibromide
	K136	still bottoms	Toxic	Ethylene dibromide
	K159	Organic from the treatment of Thiocarbamate wastes	Toxic	Benzene, butyrate, etc, Molinate, peculate, vernolate
	K161	Purification solids (including Filtration, evaporation, and Centrifugation solids), bag house Dust, and floor sweepings from the Production of dithiocarbamate acids And their salts.(This listing does not include K125 or K126)	Toxic	Antimony, arsenic, Metal-sodium, ziram

(continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Pesticides	K031	By-products salts	Toxic	Arsenic
	K032	Wastewater treatment Sludge	Toxic	Hexachlorocyclopentadiene
	K033	Wastewater Scrub water	Toxic	Hexachlorocyclopentadiene
	K034	Filter solids	Toxic	Hexachlorocyclopentadiene
	K035	Wastewater treatment Sludge	Toxic	Creosote, naphthalene, fluoranthene chryserne, benzo (b) fluoranthene, Benzo (a) pyrene, Indeno (1,2,3-cd) Pyrene, benzo (a) anthracite, dibenzo (a) Anthracene, acenaphthalene
	K036	Still bottoms	Toxic	Toluene, phosphorodithoic and Phosphorothioic acid esters
	K037	Waste water treatment	Toxic	Toluene, phosphorothioic acid esters
	K038	Wastewater from washing And stripping	Toxic	Phonate, formaldehyde, phosphorodithioic and phosphorothioic acid esters
	K039	Filter cake	Toxic	Phosphorodithioic and phosphorothioic Acid esters
	K040	Wastewater treatment Sludge	Toxic	Phonate, formaldehyde, phosphorodithioic and prospphorothioic acid esters
	K041	Wastewater treatment Sludge	Toxic	Toxaphene
	K042	Heavy ends or Distillation residues	Toxic	Hexachlorobenzene, orthodichlorobenzene

(Continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K043	2,6 dichlorophenol Waste	Toxic	2,4-diclorophenol, 2,6-Chlordane, heptachlor
	K097	Vacuum stripper Discharge	Toxic	Chlordane, heptachlor
	K098	Untreated process Wastewater	Toxic	Toxaphene
	K099	Untreated wastewater	Toxic	2,4-dichlorophenol, 2,4,6-Trichlorophenol
	K123	Process wastewater Scrubber water	Toxic, Corrosive	Ethylene Bissdithiocarbamic, acids and `` salts
	K124	Reactor Vent Scrubber water	Toxic, Corrosive	Ethylene bisdithiocarbamic, acids and salts
	K125	Filtration, Evaporation and Centrifugation Solids	Toxic	Ethylene bisdithiocarbamic, acids and salts
	K126	Bag house dust and sweepings	Toxic	Ethylene bisdithiocarbamic, acids and salts
	K131	Wastes from production Of methyl bromide.	Corrosive, Toxic	
	K132	Absorbents and solids from From production of methyl Bromide	Toxic	
Secondary Lead	K069	Emission control	Toxic	Hexavalent chromium, lead cadmium
	K100	Waste leaching solution Distillation residues	Toxic	Hexavalent chromium, lead, cadmium

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Petroleum Refining	K048	DAF/float	Toxic	Hexavalent chromium, lead
	K049	Slop oil emulsion solids	Toxic	Hexavalent chromium, lead
	K050	Heat exchanger cleaning	Toxic	Hexavalent chromium
	K169	Crude oil storage tank Sediment from petroleum Refining operations	Toxic	Benzene
	K170	Clarified slurry oil Storage tank sediment And/or in-line filter/ Separation solids from Petroleum refining operations	Toxic	Benzo (a) pyrene, dibenz (a,h) anthracene, Benzo (a) anthracite, Benzo (b) fluoranthene, Benzo (k) fluoranthene, 7,12-dimethylbenz (a) anthracite
	K171	Spent hydrotreating Catalyst from petroleum Refining operations including Guard beds used to desulfurize Feeds to other catalytic units(not Including inert support media)	Ignitable, Toxic	Benzene, arsenic
	K172	Spent hydrorefining Catalyst from petroleum Refining operations including Guard beds used to desulfurize feeds to Other catalytic units (not including Inert support media)	Ignitable, Toxic	Benzene, arsenic

(Continued)

Table C-16: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes	Toxic	Benomyl, carbaryl, carbendazim, carbofuran, carbosulfan, formaldehyde, methylene chloride, triethylamine
	K157	Wastewater (including scrubber waters, condenser waters, washwaters, and separation wasters) from the production of carbamates and carbamoyl oximes	Toxic	Carbon tetrachloride, farmaldehyde methyl chloride, methylene chloride, pyridine, triethylamine
	K158	Baghouse dusts and filter/separation solids from the production of carbamates and carbamoyl oximes	Toxic	Benomyl, carbendazim, carbofuran, carbosulfan, chloroform, methylene chloride
	K160	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes	Toxic	Benzene, butylate, eptc, molinate, pebulate, vernolate

(continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K149	Distillation bottoms from the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these fuctional groups.	Toxic	
	K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chorides, and compounds with mixtures of these functional groups.	Toxic	
	K151	Wastewater treatment sludges excluding neutralization and biological sludges, generated during the treatment of wash waters from the production of alpha-(or methyl-) chlorinated toluense, ring-chlorinated toluenes benzoyl chlorides, and compounds with mixtures of these functional groups.	Toxic	

(continued)

Table C-16: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream Hazard	Basis for Listing per 40 CFR 261	Hazardous Constituent(s)
	K176	Baghouse filters from the production of antimont oxide, including filters from the production of intermediates.	Toxic	
	K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production intermediates.	Toxic	
	K178	Solids from manufacturing and manufacturing-site storage of Ferric Chloride from acids formed during the production of titamium dioxide using the chloride-ilmenite process.	Toxic	

(continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K051	API separator sludge	Toxic	Hexavalent chromium, lead
	K052	Tank bottoms	Toxic	Lead
Iron and Steel	K061	Emission control Dust/sludge	Toxic	Hexavalent chromium, lead cadmium
	K062	Spent pickle Liquor	Corrosive, Toxic	Hexavalent chromium, lead
Coking	K060	Ammonia still lime Sludge	Toxic	Cyanide, naphthalene, phonemic compounds arsenic
	K087	Decanter tank tar Sludge	Toxic	Phenol, naphthalene, phenolic compounds, arsenic
	K141	Process residues from the recovery of coal tar, including, but not listed to, tar collecting sump residue from the production of coke from coal or the recovery of coke by-products produced from coal.	Toxic	
	K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products from coal.	Toxic	

(continued)

Table C-16: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K143	Process residues from the recovery, of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Toxic	
	K144	Wastewater treatment sudges from light oil refining, including but not limited to, intercepting or or contamination sump sludges from the recovery of coke by-products produced from coal.	Toxic	
	K145	Residues from napthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Toxic	

(continued)

Table C-16: Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazardous Constituent(s)
	K147	Tar storage tank residues from coal tar refining.	Toxic	
	K148	Residues from coal tar distillation, including but not limited to, still bottoms.	Toxic	
Ink Formulation	K086``	Solvent wastes Sludges	Toxic	Hexavalent chromium, lead
Veterinary Pharmaceuticals	K084	Wastewater treatment Sludges	Toxic	Arsenic
	K101	Distillation tar Residues	Toxic	Arsenic
	K102	Residue from activated Carbon	Toxic	Arsenic
Inorganic Chemicals	K071	Brine Purification muds	Toxic	Mercury
	K073	Chlorinated Hydrocarbon	Toxic	Chloroform, carbon tetrachloride, Hexachloroethane, trichloroethane Tetrachloroethylene, dichloroethylene 1,1,2,2-tetrachloroethane

(Continued)

Table C-16 Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
	K106	Wastewater treatment Sludge	Toxic	Mercury
Explosives	K044	Wastewater treatment Sludges from explosives	Reactive	Not Applicable
	K045	Spent carbon from Wastewater containing Explosives	Reactive	Not Applicable
	K046	Wastewater treatment Sludges from the Manufacturing, formulation and Loading of lead based initiating Compounds	Toxic	Lead
	K047	Pink/red waste from Slugs	Reactive	Not Applicable
Primary Copper	K064	Acid plant blowdown Slurry/sludge from Primary copper production.	Toxic	Lead, cadmium
Primary Lead	K065	Surface impoundment Solids at primary Lead smelting facilities.	Toxic	Lead, Cadmium
Primary Zinc	K066	Treatment sludges from Primary zinc production	Toxic	Cyanide Complexes
Primary Aluminum	K088	Spent potliners from primary aluminum Reduction	Toxic	Cyanide Complexes

(Continued)

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Ferroalloys	K090	Emission control dust or Sludge from Ferro-Chromium silicon production	Toxic	Chromium
	K091	Emission control dust or Sludge from ferrochromium Production.	Toxic	Chromium
Organobromine	K140	Floor sweepings, off Specification product and Spent filter media from the Production of 2,4,6-Tribromophenol.	Toxic	2,4,6-Tribromophenol
Ethylene Dichloride	K174	Wastewater treatment sludge from the production of ethylene dichloride or vinyl chloride monomer.	Toxic	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dloxin (1,2,3,4,6,7,8-HpCDD), 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF), 1,2,3,4,7,8,9-Heptachlorodlbenzofuran (1,2,3,6,7,8,9-HpCDF)HxCDDs (all Hexachlorodlbenzo-p-dioxins),HxCDFs (All Hexachlorodlbenzofurans,) PeCDDs (All Pentachlorodlbenzo-p-dioxins), OCDD (1,2,3,4,6,7,8,9-Octachlorodlbenzo-p-dioxin, OCDF(1,23,4,6,7,8.9-Octachlorodlbenzofuran), PeCDFs(All pentachlorodlbenzofurans), TCDDs (All tetrachlorodi-Benzo-p-dioxins), TCDFs (All tetrachlorodlbenzofurans).
	K175	Wastewater treatment sludge from the production of ethylene dichloride or vinyl chloride monomer.	Toxic	Mercury

(continued)

Table C-16; Continued

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard Listing per 40 CFR 261	Hazard Constituent (s)
Non-Hazardous Wastes	None	N/A	Non-Hazardous	Waste Oil, oily debris, Medical wastes Industrial non-RCRA wastes
Commercial Chemical Products	All P-codes in 40 CFR261.33 (e) and all U-codes in 40 CFR 261.33 (f) as listed on the facility's most recent RCRA part A Form.			

Notes:

(b) - The boundary limits for incoming hazardous wastes are restricted only by the permit limitations and fuel specifications of the endburner facility (e.g., cement Kiln, incinerator). Hazardous waste will be considered suitable for shredding purposes if they are liquid semi-solids or solids and meet the following Specifications:

Minimum BTU Value – No limit
Chlorine Content – No Limit
PCB – Less than 50 ppm
Solids Content – No Limit
Water Content- No Limit

Table C-17: Hazardous Waste Lamp Crushing

Waste Category	EPA Hazardous Waste No.	Waste Stream	Basis for Hazard listing per 40 CFR 261	Hazard Constituent (s)
Reactive	D003	Sodium	Reactive	
Inorganic Metals	D005	Barium	Toxic	Barium
	D006	Cadmium	Toxic	Cadmium
	D008	Lead	Toxic	Lead
	D009	Mercury	Toxic	Mercury
Universal Wastes	None	Sodium	Reactive	
		Barium	Toxic	Barium
		Cadmium	Toxic	Cadmium
		Lead	Toxic	Lead
		Mercury	Toxic	Mercury
Non-Hazardous	None	N/a	Non-Hazardous	Used lamps

All in PPM			Raw/Treated	Raw/Treated	Raw/Treated	Raw/Treated	Raw/Treated	Raw/Treated	Raw/Treated
Waste Code	Constituent	Permit Limit	CHI#8544	CHI#9106	CHI#8826	CHI#7874	CHI#8244	CHI#8656	CHI#8791
D018	Benzene	35							0.52/<0.35
D028	1,2-Dichloroethane	10							
D029	1,1-Dichloroethylene	100					2.205/<0.5		
D030	2,4-Dinitrotoluene	5	1.6/<0.13						
D032	Hexachlorobenzene	10	0.99/<0.13						
D033	Hexachlorobutadiene	10	6.2/<0.5						
D034	Hexachloroethane	5	3.7/<3.0						
D035	Methyl-Ethyl-Ketone	400				390/<200			
D036	Nitrobenzene				11.19/<1.0				
D039	Tetrachloroethylene	5						1.6/<0.7	
D040	Trichloroethylene	10		33/<0.1					

Waste Code	Constituent		Max. Raw
D018	Benzene	35	0.52
D028	1,2-Dichloroethane	10	None
D029	1,1-Dichloroethylene	100	2.205
D030	2,4-Dinitrotoluene	5	1.6
D032	Hexachlorobenzene	10	7.6
D033	Hexachlorobutadiene	10	6.2
D034	Hexachloroethane	5	3.7
D035	Methyl-Ethyl-Ketone	400	390
D036	Nitrobenzene		11.19
D039	Tetrachloroethylene	5	1.6
D040	Trichloroethylene	10	33

Raw/Treated CHI#9024	Raw/Treated CHI#8647	Raw/Treated CHI#8373
		/<0.7
	1.6/<0.13	
	7.6/<0.13	
		/<0.7
2.76/<0.1	0.77/<0.5	/<0.5

TABLE OF CONTENTS

1.0 WASTEWATER TREATMENT SYSTEM

1.1 Chemical Precipitation, Coagulation, Filtration
1.2 Oil Recovery System
1.3 Container Storage, Consolidation and Transfer

2.0 PART B ACTIVITIES

2.1 Container Storage, Consolidation and Transfer
2.2 Drum Crushing/Compacting Operation
2.3 Bulking Operations
2.4 Listed Waste Treatment Operation
2.5 Lab Pack Operations
2.6 Fuels Blending Operation
2.61 Hazardous Waste Shredding Operation
2.62 Metal washing Operation
2.7 Rail Car Transfer Operations
2.8 Hazardous Waste Transfer Facility/Truck to Truck Transfer Operations
2.9 Hazardous Waste Lamp Crushing

The Metalwash Tank has a capacity of 3,730 gallons and the Rinse Tank has a capacity of 987 gallons. Both tanks are constructed of carbon steel and are equipped with level alarms. The metalwash Tank has an emergency vent and will be nitrogen blanketed to eliminate the potential for fires or explosion. The feed hopper will vent to the carbon adsorption system (same as the Bulk Flammable Tank Farm) to control organic air emissions.

2.7 Rail Car Transfer Operations

CHSI operates a concrete-lined storage area for railcar transfer operations (Unit 13). The railcar area is located next to the Ignitable Liquids Tank Farm and is sized to accommodate up to two (2) 30,000 – gallons rail tank cars.

Waste materials may be transferred between the railcars and the tank farm, between truck and railcar. All material transfer operations are conducted using the Clean Harbors rail/truck standard operating procedures listed in Appendix-D-2 in Attachment 1.

2.8 Hazardous Waste Transfer Facility/Truck to Truck Transfer

Under the hazardous waste transfer facility requirements of 35 IAC 723.112, a hazardous waste transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of 35 IAC 722.130 for a period of ten days or less is not subject to regulations under 35 IAC 702, 703, 724, 725 or 728 with respect to the storage of those wastes.

CHSI currently operates a transfer facility for hazardous waste in containers and tank trucks, which are in-transit to facilities other than CHSI. Such vehicles are allowed to stop at the facility for a period of up to 10 days.

In addition, CHSI performs truck-to-truck transfers of waste between in-transit vehicles. Truck to truck transfer activities are accomplished by parking two (2) in-transit trailers either at a loading dock or tailgate-to-tailgate and then directly transferring the container (s) from one vehicle to the other, or transferring bulk liquids or solids from one transport vehicle to another for continuing transport offsite. The containers being transferred are not opened or staged on the loading dock or on the ground during the transfer. Once the transfer is complete, the accompanying manifest (s) are modified to reflect the continuing transport of the transferred containers, and the vehicles continue their shipments to there next intended destination.

CHSI documents all in-transit/truck to truck activities. A copy of the log and drum grid sheet used to track these activities are included in Appendix D-2.

2.9 Hazardous Waste Lamp Crushing

CHSI has proposed to construct and operate a hazardous waste lamp crusher in Unit 25. The lamp crushing operation will be utilized for volume reduction and preparation for recycling.

This system segregates the crushed lamps into glass, metal and phosphor powder containing mercury. The filtration system of the unit is designed to filter the particulate phosphor and mercury vapor with a series of high efficiency particulate air filters and activated carbon. As bulbs are fed into the unit, they are crushed and segregated using vibrating mesh conveyors, magnets and air movement. The components are collected into containers for off-site shipment.

Table D-1: Container Management Area

Type	Container Management Area	Waste Category (See Note 1)		Number/Volume
I.	DRUM STORAGE AREAS (55-GALLON DRUMS, OR EQUIVALENT			
	A. Existing Areas			
	DRUM STORAGE ARE (UNIT G1)	- Acidic –1		192
		- Acidic –2		96
		- Alkaline		192
		- Staging		72
			Subtotal	552
	DRUM STORAGE AREA (UNIT R1)	- Oxidizer		96
		- Reactive		96
		- Poisons		96
		- Flammable – 1		160
		- Flammable – 2		160
		- Staging (Inbound)		160
			Subtotal	768
	DRUM Storage Expansion (UNIT R2)	- Oxidizer		96
		- Reactive		96
		- Poisons/PCB's		96
		- Staging (Outbound)		80
			Subtotal	368
	Lab Pack POUROFF STATION (UNIT F1)	- Alkaline/Acids		8
				8
	CONTAINER MANAGEMENT Building (UNIT 25)	- Alkaline/Poison		248*
		- Acids		136
		- Flammable		184
		- Truck Pad		88
			Subtotal	656*
	IGNITABLE CONTAINER MANAGEMENT Building (Unit 26)	- Ignitable/PCB		192
			Subtotal	192
	Container HANDLING Dock (Unit 61)	- Staging		160
			Subtotal	160
	B. Approved/Not Yet Constructed Area			
	DRUM Storage Expansion (UNIT R2)	- Flammable – 3		160
			Subtotal	160
	Lab pack REPACK & CONSOLIDATION AREA (UNIT U)	- Acid/Alkaline		10
		- Other		25
			Subtotal	35

Table D-1: Continued

Paint and Paint Related Processing Area (Unit 42)	- Westside Pad		24
	- Building		28
	- Hopper (405)		64 Cu.Ft
		Subtotal	52 Plus 64 Cu.Ft.
Shredder Process Building (Unit 24)	- Conveyor		16
	- Drum (412)		1
	- Tote (407)		64 Cu.Ft.
		Subtotal	17 Plus 64 Cu.Ft.
Metal Wash Pad (Unit 68)	- Drum (434)		1
		Subtotal	1

C. Facility Total

---- 2,969 55-gallon drums (163,295 gallons total), or equivalent plus 128 Cu.Ft.*

* - When the lamp crusher is in Building 25, the capacity of the alkaline bay will be reduced to 73 55-gallon drums, Unit 25 capacity will be reduced to 481 55-gallon drums and the facility total capacity will be reduced to 2,794 55-gallon drums and 128 cu. Ft.

(continued)

Appendix D-38 (partial)
Atmospheric Gases Venting
Plan of Operation

Clean Harbors Services, Inc.
Atmospheric Gases Venting
Plan of Operation

Material Description:

A. Nitrogen, Compressed. (2.2, UN1066)
B. Oxygen, Compressed. (2.2, UN1072)
C. Krypton, Compressed. (2.2, UN1056)
D. Argon, Compressed. (2.2, UN1006)
E. Neon, Compressed. (2.2, UN1065)
F. Helium, Compressed. (2.2, UN1046)
G. Xenon. (2.2, UN2036)
H. Air, Compressed. (2.2, UN1002)
I. Carbon Dioxide, (2.2, UN1013)

Condition of Material:

Nitrogen is a colorless gas which is a simple asphyxiant.

Oxygen is a colorless, odorless, tasteless gas which is necessary for combustion and is an oxidizer.

Krypton is a colorless gas which is an asphyxiant.

Argon is a colorless gas which is a simple asphyxiant.

Neon is a colorless, odorless gas which is an asphyxiant.

Helium is a colorless, odorless, tasteless gas which is a simple asphyxiant.

Xenon is a colorless gas which is a simple asphyxiant.

Air is a colorless, odorless gas which can accelerate combustion.

Carbon Dioxide is a colorless, odorless, slightly acidic gas which is an asphyxiant.

Basic Equipment:

Building 25 lab pack consolidation hoods in the acid and poison/alkaline bays.

O2/LEL meter

Operation Procedures:

1) Inspect to confirm the compressed gas is one allowed for venting. This includes inspecting the cylinder for labels and the Cylinder Evaluation Form.

2) Confirm no operations are taking place in the flammable bay during inert gas venting.

3) Check oxygen content at lab pack consolidation hood with an O2/LEL meter. Continue to operate until venting is completed. If meter alarms (i.e., oxygen concentration below 19.5%), immediately stop operation.

4) Move cylinder from storage to lab pack consolidaton hood in the acid or alkaline/poison bay depending on compatibility. Do not block aisle space or emergency access in bay.

5) Secure cylinder in cylinder clamp to hold while venting. Place CGA fitting to SS series 250 regulator or into inlet of consolidation hood. Note and verify presure.

6) Confirm hood is operating.

7) Slowly open valve/regulator letting cylinder contents vent into hood.

8) When venting complete, close cylinder valve and verify pressure to ensure cylinder is empty.

9) Disconnect and tag cylinder.

Secondary Containment Calculation for Unit 15

Available Volume:
T/SLAB @ high point = 102'3"
T/SLAB @ low point = 100'9"
Depth = 1.5'

Volume = (0.5) x 1.5' x 60.17' x 29' = 1309 CF = 9789 gallons

Volume required:
Unit contains maximum of two tankers with a maximum volume of 7200 gallons each

14,400 gallons x 10% = 1440 gallons
Largest container = 7200 gallons

Sump is offset by I-Beams
Unit is covered by a canopy

Therefore 9789 gallons meets required containment capacity.

B-14R

USEPA

CleanHarbors®
ENVIRONMENTAL SERVICES, INC.

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Chicago, IL 60617
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Fax 773-646-6381
www.cleanharbors.com

October 7, 2004

Ms. Joyce Munie, P.E.
Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Springfield, IL 62702

RECEIVED
OCT 08 2004
IEPA-BOL
PERMIT SECTION

Transmit Via Federal Express

Re: Notice of Deficiency – Technical Issues – Clean Harbors Services, Inc. ILD000608471

Dear Ms. Munie:

Clean Harbors Services, Inc. (CHSI) is submitting requested deficiency responses from technical review per your letter dated November 25, 2003.

In order to clarify our response per each issue, we are responding in the same order as the issues raised in Attachment A of the November 25, 2003 letter.

CHSI is stating that no information from this submittal is exempt from public disclosure.

Should you have any questions, please contact me at (773) 646-6202.

Sincerely,

James R. Laubsted
Facility Compliance Manager

SECTION N
PART B CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

John E. Lancaster
VP-General Manager – Clean Harbors Services, Inc.

Anthony G. Ianello
Executive Director – Illinois International Port District

CleanHarbors®
ENVIRONMENTAL SERVICES, INC.

11800 South Stony Island Avenue
Chicago, IL 60617
773.646.6202
Fax 773-646-6381
www.cleanharbors.com

October 7, 2004

Olive-Harvey College
10001 S. Woodlawn Avenue
Chicago, IL 60628

Dear Sir or Madam:

Clean Harbors Services, Inc. (CHSI) is submitting a copy of the Technical Deficiencies to the facility's RCRA Part B permit application submitted May 7, 2003. Please make this available with the RCRA Part B application for public viewing during the renewal period. If a member of the public requests to view the Part B permit renewal, please allow them to view the application. CHSI will have a public meeting on the Part B permit at Olive-Harvey College during the renewal period. If you have any questions concerning the submittal, please contact me at (773) 646-6202, x233.

Sincerely,

James R. Laubsted
Facility Compliance Manager

October 7, 2004

Permit Section, RCRA Unit
Bureau of Land Pollution Control
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

RE: Clean Harbors Services, Inc.
11800 S. Stony Island Avenue
Chicago, IL 60617
Part B Permit Application

Dear Sir or Madam:

Please refer to: 0316000051 – Cook County
Clean Harbors Services, Inc.
ILD000608471
RCRA Permit Log No. 16
RCRA Permit File

I hereby certify that I, the undersigned am a Professional Engineer, licensed to practice in the State of Illinois in accordance with Ill. Rev. State., par. 5101, Sec. 1 and par. 5119, Sec. 13.1.

I certify under penalty of law that this document with "Cross Reference of Revisions (10/07/04 revision date) (one Page) attached and all attachments were prepared under my direct supervision and in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person who manages the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Respectfully submitted,

Kenneth D. Spaulding, P.E.

KENNETH D. SPAULDING
62-33249
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

Attachment: Cross Reference of Revisions (10/07/04 revision date)

SECTION D
PROCESS INFORMATION

Introduction

Clean Harbors Services, Inc. (CHSI) accepts hazardous and non-hazardous wastes for storage, consolidation, onsite treatment, and/or transfer to approved offsite waste management facilities. CHSI operates under a RCRA Part B license issued by the Illinois Environmental Protection Agency (IEPA) on November 4, 1993. CHSI receives wastes in non-bulk containers such as 55-gallon drum, and lab packs, and bulk containers such as rolloffs, railcars, tote tanks, and tank trucks. Accepted wastes are stored in containers and tanks and either treated onsite or consolidated and shipped to offsite treatment and/or disposal facilities.

The hazardous waste management units which are currently in existence and which are approved but not yet constructed are described Section D-1 (containers) and Section D-2 (tanks) below. A summary listing of the units, as well as typical waste codes for each of the noted waste types (e.g. flammables, poisons), is presented in Table D-1 (containers) and Table D-2 (tanks). A detailed process description for each container/tank unit operation at the facility is provided in Appendix D-1.

D-1 Containers

D-1 (i) Drum Container Storage Activities

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 163,295 gallons (2969 55- gallon drums or equivalent) (plus 128 cu ft) of hazardous waste in eleven designated container management areas. The total figure includes 148,720 gallons (2704 55-gallon drums or equivalent) of hazardous waste in seven existing storage/processing areas, and 14,575 gallons (265 55-gallon drum or equivalent) (plus 164 cu ft) of hazardous waste in five approved/not yet constructed storage areas:

Existing Drum Container Storage Areas

1. Drum Storage Area (Unit G1)
2. Drum Storage Area (Unit R1)
3. Lab Pack Pouroff Station (Unit F1)
4. Drum Storage Area Expansion (Unit R2)
5. Container Storage Building (Unit 25)
6. Ignitable Container Management Building (Unit 26)
7. Container Handling Dock (Unit 61)

Approved/Not Yet Constructed Drum Container Storage Areas

1. Drum Storage Area Expansion (Unit R2)
2. Lab Pack Repack & Consolidation Area (Unit U)
3. Paint and Paint Related Processing Area (Unit 42)
4. Shredder Process Building (Unit 24)
5. Metalwash Pad (Unit 68)

Each of the existing and approved /not yet constructed container storage areas is described below. Design details, container layout, and other features of the container storage areas are provided in the following drawings:

GENERAL

4203	1 of 3	Site Plan Existing Facilities	A
4203	2 of 3	Site Plan Existing Facilities	A
4203	3 of 3	Site Plan Existing Facilities	A
4204B	1 of 3	Site Plan - Existing, Approved, Modified & Proposed Activities	0
4204B	2 of 3	Site Plan - Existing, Approved, Modified & Proposed Activities	1
4204B	3 of 3	Site Plan – Existing, Approved & Modified Activities	A

Existing Lab Pack Pouroff Station (Unit F1)

4213	3 of 3	Equipment Layout – Approved Operations	B

Existing Drum Storage Area (Unit G1)

4209	1 of 2	Existing Drum Storage Layout – Building 2	B
4209	2 of 2	Existing Drum Storage Layout – Building 2	C

Existing Drum Storage Area (Unit R1)

4210	1 of 3	Existing, Approved and Proposed Container Management Area Layout & Details	D
A2		Direct Design: Containers Outdoor Storage Area Phase I – Building Elevations	N/A
A3		Direct Design: Containers Outdoor Storage Area Phase I – Foundation/Floor Plan	N/A
A4		Direct Design: Containers Outdoor Storage Area Phase I – Foundation Details	N/A

Existing/Approved Drum Storage Area Expansion (Unit R2)

A1		Direct Design: Containers Outdoor Storage Area Phase II – Foundation Detail	N/A
A5		Direct Design: containers Outdoor Storage Area Phase II - Foundation/Floor Plan	N/A
A6		Direct Design: Containers Outdoor Storage Area Phase II – Building Elevations	N/A

Existing Container Management Building (Unit 25)

4282		Container Management Area Layout – Building 25	A

Existing Ignitable Container Management Building (Unit 26)

4210	2 of 3	Proposed Container Management Area Layout – Building 26	0

Existing Fuels Blending Operation (Unit 43)

4213	2 of 3	Equipment Layout – Proposed Fuels Blending Operation	0

Existing Container Handling Dock (Unit 61)

4245	2 of 3	Container Handling Dock	2

Approved Lab Pack Repack & Consolidation Area (Unit U)

4211	Approved Lab Pack Repack and Consolidation Area Details	D
4228	Approved Lab Pack Repack and Consolidation Area Elevations	C

Approved Paint and Paint Related Processing Area (Unit 42)
Approved Shredder Process Building (Unit 24)

4287	Shredding Process Equipment Layout	F

Approved Metalwash Pad (Unit 68)

4290	Metal Wash	A

A. Existing Drum Container Storage Areas

1. Drum Storage Area (Unit G1)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 30,360 gallons (552 55-gallon drums or equivalent) of hazardous waste in the existing Drum Storage Area (Unit G1) located inside Process Building 2 (Unit G). The Drum Storage Area includes three segregated storage bays for acidic and alkaline wastes, and a staging area for incoming waste.

~	Acidic-1	192	Drums
~	Acidic-2	96	Drums
~	Alkaline	192	Drums
~	Staging	72	Drums
	Total	552	Drums (or 30,360 Gallons)

Layout, design details and pertinent operating data, including unit dimensions, storage capacity, and secondary containment capacity calculations for the unit are shown in CHCI DWG Nos. 4209 Sheet 1 of 2, 4209 Sheet 2 of 2, and 4210.

2. Drum Storage Area (Unit R1)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 42,240 gallons (768 55-gallon drums or equivalent) of hazardous waste in the existing

Drum Storage Area (Unit R1). The existing Drum Storage Area is located south of, and adjacent to, the existing wastewater treatment bulk storage tank farm. The Drum Storage Area includes a truck unloading pad, a drum staging and container consolidation pad; five segregated storage bays; an overhead metal canopy to protect containers and storage areas from direct precipitation; and ramp connecting the offloading area with the storage bays. The storage bays include:

~	Flammable-1	160	Drums	
~	Flammable-2	160	Drums	
~	Oxidizer	96	Drums	
~	Reactive	96	Drums	
~	Poison	96	Drums	
~	Staging (Inbound)	160	Drums	
	Total	768	Drums	(or 42,240 gallons)

The dimensions, storage capacity, and containment capacity of each existing unit is provided in a tabular form in CHCI DWG No 4210, Sheet 1 of 3. Additional design and construction details are provided in Direct Design DWG. Nos. A2, A3, A4.

3. Drum Storage Area Expansion (Unit R2)

Under the terms of the November 1993 Part B License, CHSI is authorized to store/expand the existing Drum Storage Area (Unit R2) to include an additional 29,040 gallons (528 55-gallon drums, or equivalent) of hazardous waste. The expansion includes: a truck loading dock; a drum staging area for outbound shipments; four segregated storage bays; an overhead metal canopy to protect containers and areas form direct precipitation, and ramps connection the units. The additional storage Bays include:

~	Flammable-3	160	Drums	
~	Oxidizer	96	Drums	
~	Reactive	96	Drums	
~	Poison/PCB's	96	Drums	
~	Staging (Outbound)	80	Drums	
	Total	528	Drums	(or 29,040 gallons)

Flammable Bay #3 is approved, not constructed. All other bays are existing.

The dimensions, storage capacity, and containment capacity of each unit is provided in a tabular form in CHCI DWG. No. 4210, Sheet 1 of 3. Additional design and construction details are presented in Direct Design DWG. Nos. A1, A5, and A6.

4. Lab Pack Pour-off Station (Unit F1)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 440 gallons (8 55-gallons drums or equivalent) of hazardous waste at a "pour off" station (Unit F1) located in the RCRA-Exempt wastewater treatment processing room inside

Process Building 1 (Unit F). Individual containers of acidic, alkaline, and other inorganic chemical wastes that are received at CHSI in lab pack form and determined to be suitable for onsite treatment are place into a gondola box which is moved form the container staging/storage bays to reactor vessel. The waste are opened and "poured off" for treatment in accordance with written standard operating procedures (SOP's) for onsite treatment. The lab pack pouroff SOP's are contained in CHSI's Container Management Guidelines included in Appendix D-2.

5. Existing Container Management Building (Unit 25)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 31,240 gallons of hazardous waste (568 55-gallon drums or equivalent) in the container management building (Unit 25). Building 25 is fully enclosed container storage structure located along the west property line adjacent to the eastern edge of Slip No. 6. Building 25 includes three main segregated storage bays used for the storage of ignitable, acidic, and alkaline/poison/PCB hazardous wastes in non-bulk containers (e.g., 55-gallon drums) for liquids and solids, as follows:

~	Alkaline/Poisons/PCBs	248	Drums	
~	Acids	136	Drums	
~	Flammable	184	Drums	
	Total	568	Drums	(or 31,240 gallons)

CHSI intends to locate a hazardous waste lamp crusher in the alkaline bay of Unit 25, occupying some of the current drum storage. Although this bay is currently permitted for 13,640 gallons (248 55-gallon drums), this will be limited to 4,015 gallons (73 55-gallon drums) when the lamp crusher is in the unit.

The Building 25 truck unloading pad is located on the northeast side of Building 25. This pad is for one van trailer of up to 88 drums (4840 gallons equivalent) for waste going to or coming from Building 25. The pad is connected to a dock to facilitate forklift loading/unloading of the trailer.

Design details and pertinent operating data, including unit dimensions, storage capacity, and secondary containment capacity calculations are shown in CHSI DWG. No. 4282.

The Building 25 truck unloading pad design details are shown in CHSI DWG. No. 4283. Secondary containment calculations are included as Appendix D-37.

6. Existing Ignitable Container Management Building (Unit 26)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 10,560 gallons of hazardous waste (192 55-gallon drums or equivalent) in the ignitable container management building (Unit 26). Building 26 is fully enclosed container storage structure used for the storage of ignitable liquids and solids in non-bulk containers (e.g., 55-gallon drums) and bulk containers (e.g., tote tanks). The non-bulk containers consist primarily of hazardous wastes which are intended to be processed in the CHSI Fuels Blending Operation (Unit43) located in Building 43. The containers are transferred to the Fuels Blending processing equipment by means of an enclosed conveyer system which connects the two buildings. In addition, Building 26 is equipped with an enclosed and ventilated drum pumping station to facilitate the pumping of liquids/sludges directly to the bulk ignitable tank farm.

Design details and pertinent operating data, including unit dimensions, storage capacity, and secondary containment capacity calculations for Building 26, the drum pumping station and the drum conveyor are shown in CHSI DWG. No. 4210, Sheet 2 of 3.

7. Existing Container Handling Dock (Unit 61)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 8800 gallons of hazardous waste (160 55-gallon drums or equivalent) in the container handling dock (Unit 61). The dock/staging area is used for loading and unloading of vehicles, and for the staging, sampling and receipt of inbound containers. The dock is equipped with an overhead metal canopy to protect containers and storage areas from direct precipitation, with a ramp connecting the offloading area to Building 26. The dock is also equipped with an automatic foam fire suppression system. In addition, Unit 61 is equipped with a drum pumping station to facilitate the pumping of liquids/sludges directly to the bulk ignitable tank farm.

Design details and pertinent operating data, including unit dimensions, storage capacity, and secondary containment capacity calculations are shown in CHCI DWG. No. 4245.

B. Approved/Not Yet Constructed Drum Container Storage Areas

1. Lab Pack Repack & Consolidation Area (Unit U)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a 2,400 square foot processing building for consolidation (bulking) and repackaging of lab packed wastes. The Building (Unit U) is authorized for the storage of up to 1,925 gallons (35 55-gallon drums or equivalent) of hazardous waste. The repack area includes seven separate bays which junction as segregated working stations of potentially incompatible materials. The seven bays for lab pack repack include:

~	Ignitable	6	Drums
~	Organic	5	Drums
~	Acid	5	Drums
~	Alkaline	5	Drums
~	Oxidizer	5	Drums
~	Pesticides	5	Drums
~	Organic Pouroff	4	Drums
	Total	35	Drums (or 1,925 gallons)

Design details, storage/work bay layout, containment structures, and building elevations/details for the area are shown in CHCI DWG. Nos. 4211 and 4228.

2. The Paint and Paint Related Processing Area (Unit 42)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate area in association with the hazardous waste shredding operation. The area (Unit 42) is authorized for the storage of up to 2,860 gallons (52 55-gallon drums or equivalent) and one 64 cubic foot hopper of hazardous waste. The area includes a staging area west of Building 42 (Westside Pad) for 1,320 gallons (24 drums or equivalent) and Building 42 for 1,540 gallons (28 drums or equivalent). Building 42 also has one 64 cubic foot hopper for non-dispersible shredded material.

Design details, storage bay layout, and containment capacities for the area are shown in CHSI DWG. No. 4287.

3. Shredder Process Building Area (Unit 24)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a shredding processing building for shredding of hazardous wastes. Drums awaiting processing will be staged on the conveyor/drum lift. The conveyor is outside of the Building (Unit 24). This area is authorized for the storage of up to 880 gallons (16 55-gallon drums or equivalent) of hazardous waste. A portion of the conveyor hangs outside Building 24. A steel pan 22 feet long, 5 feet wide and 8 inches deep will be positioned below the conveyor/drum lift to provide additional containment. Additionally, one 55 gallon drum (Item 412) and one 64 cubic foot tote will be located in Unit 24 for debris collection.

Design details, storage layout, containment structures, and building elevations/details for the area are shown in CHSI DWG. Nos. 4287 and 4288.

4. Metal Wash Pad Area (Unit 68)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a metal wash system utilized to clean shredded metal fragments from the shredding system. One 55 gallon drum (Item 43) will be located in Unit 68 for sludge collection.

Design details, storage layout and containment capacities for the area are shown in CHSI DWG. Nos. 4287.

D-1(ii) Bulk Solids (Rolf) Container Management Activities

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store up to 360 cubic yards (12 30-CY yard rolloff containers or equivalent) of bulk solid hazardous waste. The total number of bulk solids containers includes eleven units in two existing storage areas, along with one additional unit in an approved not yet constructed storage/processing areas;

Existing Container Storage Areas

1. Bulk Container Storage Area (Unit Q1)
2. Bulk Solids Storage Pad (Unit B)

Approved/Not Yet Constructed Container Storage Areas

1. Listed Waste Rolloff Storage Area (Unit Z1)

Each of the existing and approved/not wet constructed bulk solid container storage areas is described below. Design detail, container layout, and other features are shown in the following drawings:

CHCI	TITLE	ISSUE
CHSI 4203, 1 of 3	Site Plan Existing Facilities	A
4204B 1 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	0
4204B 2 of 3	Site plan – Existing, Approved, Modified & Proposed Activities	1
4204B, 3 of 3	Site Plan – Existing, Approved & Modified Activities	A
Existing Bulk Container Storage Area (Unit Q1)		
4210, 1 of 3	Existing, Approved and Proposed Container Management Area Layout & Details	D
4234	Truck Loading Dock & Truck Sampling Pad Details	E
Approved Bulk Solids Storage Pad (Unit B)		
4218	Approved Bulk Solids Storage Pad & Proposed Truck Staging Area Details	0
Approved Listed Waste Rolloff Storage Area (Unit Z1)		
4229	Process Building 3 Plan, Sections, Details	C
4230	Approved Process Building 3 Elevations	C

1. Bulk Container Storage Area (Unit Q1)

Under the terms of the November 1993 Part B License, CHSI is authorized to store up to 90 cubic yards (3 30-CY rolloff containers or equivalent) of bulk solid hazardous waste in the bulk container storage area (Unit Q1) located along the southern edge of the existing truck pad in theTruck Unloading Area & Bulking Area (Unit Q). Refer to CHCI DWG. No 4210 for the layout of the rolloffs in this area, CHCI DWG. No. 4234 for design details of the truck pad, and DWG. No. 4306 FB5 Dumping Fire System.

1. Bulk Solids Storage Pad (Unit B)

Under the terms of the November 1993 Part B License, CHSI is authorized to construct and operate a storage pad of up to 240 cubic yards (30-CY rolloff containers or equivalent) of hazardous waste solids. The approved Bulk Solids Storage Pad (Unit B) is located near the southeast fence line of the property, as shown on CHCI DWG. No. 4204 Sheet 1 of 3. Layout and design details for the Bulk Solids Storage Pad are presented in CHCI DWG No. 4218.

B. Approved/Not Yet Constructed Bulk Solids Storage Areas

1. Under the terms of the November 1993 Part B License, CHSI is authorized to store up to 30 cubic yards (1 30-CY rolloff container or equivalent) of bulk solids hazardous waste in the Listed Waste Rolloff Storage Area (Unit Z1) inside Process Building No. 3 (Unit Z). Bulk solids stored in this area typically consist of hazardous sludges from the listed wastewater treatment process or

treatment residues form hazardous waste stabilization activities. Design details for Process Building No. 3 are presented in CHCI DWG. No. 4229 and 4230

D-1 (iii) Hazardous Waste Transporter Storage/Staging

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to store 268,800 gallons of hazardous waste in transportation vehicles in the following designated RCRA container storage areas of the facility;

A. Existing Areas
   1. Truck Unloading Area & Bulking Area (Unit Q)
   2. Truck Loading Dock (Unit V)
   3. Truck Staging Area (Unit C)
   4. Truck Staging Area (Unit 59)
   5. Tank Truck Unloading Platform (Unit 15)
   6. Truck Pad (Unit 62)
   7. Rail Car Unloading Area (Unit 13)

B. Approved/Not Yet Constructed Areas
   1. Truck Unloading Pad (Unit X)
   2. Truck to Truck Transfer Dock (Unit W)
   3. Truck Loading/Unloading Pad (Unit 69)

The Maximum number of transportation vehicles staged/stored at the facility is two (2) railcars and 29 highway transportation units (e.g., box trucks, van trailers, flat beds, vacuum trucks, rolloffs, dump trailers, and bulk liquid transporters). The total number of highway vehicles does not include:

1. Any "In Transit " or other RCRA-Exempt vehicles as described in Section D-1 (V) below: and

2. Any rolloff or box truck stored inside the approved bulk solids storage Pad since wastes stored in this area are already counted against the rolloff Storage capacity of the unit.

For maximum design Permitting capacity purposes, CHSI shall assume that the rail units are tank cars with a capacity of 30,000-gallons per unit, and that the highway units are bulk liquid transporters with a capacity of 7,200 gallons per unit. Thus, the total gallonage at the site in transportation vehicles is 60,000 gallons in rail cars (2 30,000-gallon units, or equivalent) and 208,800 gallons in bulk highway transporters (29 7,200-gallonunits, or equivalent).

Each of the existing and approved/not yet constructed truck staging/storage areas is described below. Design details, container layout, and other features are shown in the following drawings:

CHCI GENERAL		TITLE	ISSUE
CHSI 4203,	1 of 3	Site Plan Existing Facilities	A

4203, 3 of 3	Site Plan Existing Facilitates	A
4204B, 1 of 3	Site Plan -Existing, Approved, Modified & Proposed Activities	0
4204B, 2 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	1
4204B, 3 of 3	Site Plan – Existing, Approved & Modified Activities	A

Truck Unloading Area & Bulking Area (Unit Q)

4210, 1 of 3	Existing, Approved and Proposed Container Management Area Layout & Details	D

Truck Loading Dock (Unit V)

4234	Truck Loading Dock & Truck Sampling Pad Details	E

Truck Staging Area (Unit C)

4218	Approved Bulk Solids Storage pad & Proposed Truck Staging Area Details	0

Truck Staging Area (Unit 59)

4247	Proposed Tank Truck Staging Area Details	0

Truck Unloading Platform (Unit 15)

4248	Truck Unloading Platform	2

Truck Pad (Unit 62)

4246	Proposed Truck Pad	0

Rail Car Unloading Area (Unit 13)

4217, 1 of 3	Foundation Plan, Sections, & Details for Rail Car Unloading Area	1
4217, 2 of 3	Superstructure for rail Car Unloading Area - Plans and Sections	0
4217, 3 of 3	Superstructure for Rail Car Unloading Area - Sections	B
4251	Proposed Rail Car Unloading Area Details	0

Approved Truck Unloading Pad (Unit X)

4213, 1 of 3	Equipment Layout – Approved Operations	D
4216	Approved Listed Wastes Storage/Transfer Tank Farm Details	E

Proposed Truck to Truck Transfer Dock (Unit W)

4244	Proposed Truck to Truck Transfer Dock	A

A. Existing Areas

1. Truck Unloading Area & Bulking Area (Unit Q)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate the existing Truck Unloading Area & Bulking area (Unit Q) located at the eastern end of the Outdoor Container Storage Area. Up to three (3) highway units (e.g., box trucks, van trailers, flat beds, vacuum truck, and bulk transporters) may be staged/stored in the existing concrete-lined and contained truck loading /unloading pad. Typically the pad is used for the loading and offloading of container shipments in van trailers. An additional three units may be stage/stored in the rolloff staging area along the southern wall of the pad. Refer to CHCI DWG. No 4210, Sheet 1 of 3 for layout details and No. 4234 for design details of the truck pad.

2. Truck Unloading Dock (Unit V)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate the Truck Loading Dock (Unit V) located at the western end of the Drum Storage Area (Unit R2). Up to three (3) highway units (e.g., box trucks, van trailers, flat beds, vacuum truck, and bulk transporters) may be staged/stored in the existing concrete-lined and contained truck loading /unloading pad. Typically, the pad is used for the loading and offloading of container shipments in van trailers. Refer to CHCI DWG. No. 4210, Sheet 1 of 3 for layout details and No. 4234 for design details of the truck pad.

3. Truck Staging Area (Unit C)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate the Truck Staging Area (Unit C), a concrete-lined and contained truck staging area along the eastern edge of the facility next to the Bulk Solids Storage Pad (Unit B). The Truck Staging Area (Unit C) has two containment systems up to three (3) highway units each (six- (6) highway units total) (e.g., box trucks, van trailers, flat beds, vacuum truck, and bulk transporters) which may be staged/stored in the existing concrete-lined and contained truck pad. Typically, the transportation vehicles are bulk tankers awaiting analytical approval for the inorganic wastewater treatment system or van trailers waiting for a slot at the Outdoor Container Storage Area unloading dock. No bulk transporters containing ignitable waste shall be stored/staged in this area. Outbound vehicles may also be staged in this area. Design details for the pad are shown in CHCI DWG. No. 4246.

4. Truck Staging Area (Unit 59)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate the Truck Staging Area (Unit 59), a concrete-lined and contained staging/storage area for bulk transport vehicles hauling ignitable liquids. The Truck Staging Area (Unit 59) is located north of the existing bulk tanker-offloading pad adjacent to the Tank Farm (Unit 16). The Truck Staging Area is sized to accommodate up to three (3) highway units (e.g., box trucks, van trailers, flat beds, vacuum truck, and bulk transporters), typically bulk tankers of ignitable liquids. This area may be used for non-ignitable truck staging/storage. Incoming bulk transporters of ignitable liquids intended for receipt at CHSI shall be directed to this pad for temporary holding while laboratory analyses are completed, or until a bulk tanker unloading slot becomes available at the

Ignitable Truck Unloading Platform (Unit 15). The Truck Staging area (Unit 59) is within the zone of coverage of the existing foam fire suppression monitors. Design details are shown in CHCI DWG. NO. 4247.

5. Truck Unloading Platform (Unit 15)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate the Truck Unloading Platform (Unit 15), a concrete-lined and contained bulk liquid offloading area adjacent to the Tank Farm (Unit 16). The offloading area is sized to accommodate up to Two (2) bulk liquid highway tankers. The area is covered by a canopy, and is equipped with foam fire suppression. Design details for Truck Unloading Platform are shown in CHCI DWG. No. 4248.

6. Truck Pad (Unit 62)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate a Truck Pad (Unit 62) next to the Proposed Container Handling Dock (Unit 61). Units 61 and 62 are to locate north of existing Building 26. Up to four (4) highway units (e.g., box trucks, van trailers, flat beds vacuum truck, and bulk transporters) may be staged/stored in the concrete-lined and contained truck loading/unloading pad. Typically, the pad shall be used for loading/offloading of container shipments in van trailers. Refer to CHCI DWG. No. 4245 for design details of the truck pad.

7. Rail Car Unloading Area (Unit 13)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to operate a rail spur equipped with a concrete secondary containment vault, which provides containment for 100% of the volume of one railcar. The rail spur, identified as the Rail Car Unloading Area (Unit 13), is sized to accommodate the loading and offloading of up to two (2) 30,000-gallon capacity tank cars, and is equipped with an overhead roof structure to minimize precipitation accumulation inside the basin. The total storage capacity of the railcar storage area is 60,000 gallons.

Design details for the railcar storage area, including secondary containment and roof features, are shown in CHCI DWG. 4217, Sheet 1 of 3. Detailed drawings of the loading /offloading equipment in the railcar unloading area are shown on CHCI DWG. No. 4253.

B. Approved/Not yet constructed Areas

1. Truck Loading /Unloading Pad (Unit X)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to build the Truck Loading/Unloading Pad (Unit X), a 70-foot long by 30-foot wide loading/offloading pad along the eastern wall of the approved Listed Waste Storage tanks (Unit Y). Up to two (2) highway units (e.g., Box trucks, van trailers, flat beds, vacuum floor surface will b a 10-inch thick concrete slab that is sloped to a liquid collection sump. Design details of the unit are shown in CHCI DWG. No. 4216

2. Truck to Truck Transfer Dock (Unit W)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to construct and operate a truck staging/storage pad adjacent to the West End of the approved Drum Storage Area Expansion (Unit R2). Up to four (4) highway units (e.g., box trucks, van trailers, flat beds, vacuum truck, and bulk transporters) may be stage/stored in this concrete-lined and contained truck loading/unloading pad. CHSI notes that although the pad will be a licensed truck storage unit, it will also be used for truck to truck transfers between " In-Transit" hazardous waste transportation vehicles carrying manifested loads of hazardous waste not destined for, or shipped from, CHSI. Refer to CHCI DWG. No. 4244 for layout and design details of the truck pad.

3. Truck Loading/Unloading Pad (Unit 69)

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to construct and operate a truck loading/unloading pad adjacent to the north side of the approved Flammable Tank Farm (Unit 22). Up to two (2) highway units (e.g., box trucks, van trailers, flat beds, roll-offs/intermodals, vacuum truck, and bulk transporters) may be staged/stored in this concrete-lined and contained truck loading/unloading pad. This pad will be used for waste loading/unloading, (tank trucks and containers) from Unit 22, the shredding system or metal wash system, loading and storage of hazardous waste debris roll-offs/intermodals and storage of hazardous waste transportation vehicles. Refer to CHSI DWG. No. 4292 for layout and design details of the truck pad.

CHSI notes that the Bulk Solids Storage Pad (Unit B), a rolloff container storage pad, can be used for the storage/staging of up to six (6) highway transportation vehicles. Layout and Design details for the bulk solids storage pad are presented in CHCI DWG. No. 4218.

Due to secondary containment limitations, bulk hazardous waste liquid transport vehicles shall not be stored in the bulk solids storage pad. However box or van trailers caring drummed liquids may be stored up to limit of 80 55-gallon drums (or Equivalent) per vehicle. Drummed or bulk solid containers may be stored up to a limit of 30 cubic yards per vehicle. Rolloff and box trailers stored in the bulk solids storage area shall be counted towards the unit's permitted rolloff storage capacity, and not towards the facility's RCRA vehicle storage capacity.

CHSI also notes that although the above transportation vehicle storage areas are licensed truck storage units, it will also be used for truck to truck transfers between " In-Transit" hazardous waste transportation vehicles carrying manifested loads of hazardous waste not destined for, or shipped from CHSI. In-Transit activities involving non-RCRA wastes in these permitted RCRA units will involve truck-to-truck transfers between in-transit vehicles and storing shipments of non-RCRA wastes which are not destined to be received at the CHSI facility for a period of ten days or less.

D-1 (iv) Other RCRA-Regulated Container Management Activities

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to conduct the following container management activities which are subject to RCRA Hazardous waste permitting and facility management requirements:

Existing Activities

1. Mobile Waste Compactor
2. Treatment of D002 Liquid/Solid Mixtures
3. Treatment of D002 Liquids
4. Testament of Acid Cyanide Wastes
5. Treatment of Organic Peroxides
6. Treatment of Hazardous Waste Using Phase Separation
7. Treatment of Black Powder waste
8. Treatment of waste by addition of dry ice
9. Treatment of oxygen by venting

A detailed description of these existing treatment activities is provided below.

A. Existing Activities

1. Mobile Waste Compactor

CHSI utilizes a mobile waste compactor unit at the facility. The compactor is staged in the Staging Area of the existing drum storage area (Unit R1) and processes hazardous and non-hazardous wastes in drum-size containers (i.e., 55-gallon containers or smaller). The types of materials handled in the unit include, but are not limited to, personnel protective equipment (Tyvek suits, gloves, boots, etc.), rags, oil filters, paint cans, bottles, paper and other debris The unit is equipped with a liquid removal system which removes liquids that separate out of the solid materials during the compaction process. Manufacturer's literature describing the unit, its operating procedures, and safety features is presented Appendix D-3

2. Treatment of D002 Liquid/Solid Mixtures

CHSI treats certain storage and transfer wastes bearing EPA Waste Code D002. Specifically, for containers (e.g. drums, Rolloff, and Bulk Transporters) of D002 wastes which are accepted for "storage and transfer" (See Table C-9) and which contain both liquids and solids CHSI "treats" the waste by separation the solids form the liquids.

CHSI removes all free liquids from a container using portable pumps or other means. The liquid portion is then placed into another container or tank, and retains all waste codes used to describe the original liquid/solid mixture, including D002. The solid portion remains in the original container or is re-containerized and retains all waste codes used to describe the original liquid/solid mixture except D002. Treatment is considered successful when a representative sample of the remaining solid portion is test by the Paint Filter Test, or equivalent method, and found to have no free liquids. This treatment activity is conducted in any of the authorized container management or processing areas of the facility.

3. Treatment of D002 Liquids

CHSI is authorized to "treat" D002 corrosive liquids which, upon bulking/mixing with other compatible waste streams, no longer exhibit the characteristic of corrosively, as defined at 35 IAC 721.121(1). The treatment operation is conducted in any container (or tank), Including bulk liquid transport vehicles, in which compatible waste streams are mixed. The success of the treatment operation is confirmed though pH testing upon completion of the consolidation/mixing activity.

Without this authority CHSI is required to carry the D002 code, even in instances where the resultant waste stream has a pH value that does not meet the D002 corrosively identification criteria (i.e., the example, that many cement kilns are not authorized to accept a hazardous waste fuel identified as D002, even if the pH of the fuel is actually tested and found to be neutral. A "treatment" authorization enables CHSI to drop the D002 waste code from the final consolidated/mixed waste stream (e.g., hazardous waste fuel), and thus provide a more accurate description of the waste on the accompanying outbound manifest.

4. Treat of Acid Cyanide Wastes

CHSI is authorized to treat cyanides, which are in an acid solution. Under US DOT shipping regulations, such wastes cannot be transported. In the event that a bulk (e.g., vacuum truck or bulk liquid transporter) or non-bulk container of acid cyanide waste is identified during acceptance analysis, it is treated in the existing RCRA-exempt inorganic wastewater treatment system or directly in the original non-bulk or bulk container.

Treatment of acid cyanide waste in containers would be accomplished through the addition of sodium hydroxide or other suitable alkaline reagent. Sufficient alkaline would be added to raise the pH of the waste to the level where the waste is acceptable for transportation to an offsite treatment/disposal facility. For non-bulk containers, specially trained employees in Level B protection would perform the treatment operation in the operating fume hood in the Outdoor Storage Area. Bulk tankers containing acid cyanide mixtures would use the vehicle's vacuum hose to add sodium hydroxide to the tanker. If the truck did not have vacuum capability, a vacuum tanker would be connected to pull the sodium hydroxide solution. A copy of the SOP"s for the acid cyanide treatment operation is included in Appendix D-4.

5. Treatment of Organic Peroxides Through Addition of Water

CHSI is authorized to treat certain organic peroxides prior to their shipment to an offsite treatment or disposal facility. The treatment operation, the addition of waster to the organic peroxide compound, is conducted in order to 1) prepare the waste for disposal facility requirements; or 2) meet proper US DOT shipping requirements. Many hazardous waste incineration facilities will accept organic peroxides for treatment, but only at specified dilution levels. In other cases, the possibility exists in which an organic peroxide waste could arrive at CHSI and not meet dilution levels specified by US DOT shipping requirements. In either case water is added to meet the required dilution level. For non-bulk containers, this treatment is performed under the operating fume hood in the Drum Storage Area (Unit G1) or the Building 1 Lab Pak Processing Area (Unit F1). Bulk containers are handled in the same manner as described above for bulk acid/cyanide treatment. Specially trained employees in Level B protection

perform the addition of water. After treatment has been completed, the waste is placed into storage prior to offsite disposal. A copy of the SOP's for the organic peroxide treatment operation is included in Appendix D-5.

6. Phase Separation

CHSI has authority to treat hazardous wastes in containers using phase separation techniques. The treatment operation involves the use of physical (e.g., filtration, gravity separation, heat) and/or chemical (e.g., addition of demulsifiers) means to, for example, separate a solid layer, or to separate two liquid layers. Phase separation is conducted for bulk and non-bulk containers prior to onsite treatment (e.g., separation of an organic layer from a water stream) or prior to offsite shipment.

7. Treatment of Black Powder Wastes

CHSI has authority to treat black powder hazardous wastes in containers through the addition of water (wetting). The treatment operation involves wetting the black powder with the mount of water equal to 20% by weight of black powder. Virgin ethylene glycol based antifreeze is added to the water when the temperature is expected to go below 32 degrees F. Wetting of black powder is conducted in containers in Unit R1 Staging Bay prior to offsite shipment. A copy of the SOP's for the wetting of black powder treatment operation is included in Appendix D-61.

8. Treatment of Hazardous Waste Through the Addition of Dry Ice

CHSI has authority to conduct treatment of hazardous waste in containers by the addition of dry ice. The treatment operation involves adding dry ice to roll-off/intermodal containers to lower temperatures (prevent spontaneous combustion) prior to offsite shipment. This treatment is conducted on containers with waste identified by CHSI as FB5 (non-processable fuel) in Units B and Q1. Dry ice is added when daytime temperatures exceed 90 degrees F, nighttime temperatures exceed 70 degrees F and the dew point temperature exceeds 70 degrees F. Daily inspections of the containers check the amount of dry ice present and temperature of the container. A copy of the SOP's for the addition of dry ice treatment operation is included in Appendix D-62.

9. Treatment of Oxygen through Venting

CHSI has authority to conduct treatment of hazardous waste oxygen in containers (i.e., cylinders) by venting to the atmosphere from Building 25. The venting operation occurs in the fume hoods located in Unit 25. During inert atmospheric gas venting CHSI monitors with an oxygen meter. Operations cease if the oxygen concentration drops below 19.5% or rises above 23.5%. Oxygen is not vented when flammable containers are open or in the process of being moved, consolidated or sampled. A copy of the SOP's for the venting of oxygen treatment operation is included in Appendix D-8

CHSI notes that non-RCRA hazardous, atmospheric gases are also authorized for venting to the atmosphere from Unit 25. This operation follows the SOP's in Appendix D-8.

D-1 (v) RCRA-Exempt Container Management Activities

The November 1993 RCRA Part B License authorized CHSI to conduct a number of container management activities that are exempt from RCRA permitting and management requirements.

CHSI conducts the following container/Vehicle management activities, which are exempt from the RCRA hazardous waste permitting and facility management requirements:

Existing Units

1. CWA wastewater treatment system loading /unloading areas
   - Units J1 and J2: Outdoor offloading pads for receiving Tanks 1 through 4
   - Unit F3: Inside process building No. 1
   - Unit G3: Inside process building No. 2
2. Non-hazardous rolloffs in process operation areas
   - Unit G3: Process building No. 2 sludge accumulation
3. Truck sampling pad (Unit D)
4. Existing Truck Scale (Unit 14)
5. Roll-off storage area (Unit 60)
6. Non-Hazardous bulking area (Unit S)
7. Hazardous waste transfer facility
8. Empty, Non-Hazardous and Onsite-Generated Vehicles

Approved/Not Yet Constructed Units

9. Drum crushing and compaction area (Unit T)

Each of the existing and approved/not yet constructed RCRA-exempt activities is described below. Design details, container layout, and other features are provided in the following drawings:

CHCI	Title	Issue
GENERAL		
CHSI 4203, 1 of 3	Site Plan Existing Facilities	A
4204B, 1 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	0
4204B, 2 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	1
4204B, 3 of 3	Site Plan - Existing, Approved & Modified Activities	A
Existing Truck Sampling Pad (Unit D)		
4234	Truck Loading Dock & Truck Sampling Pad Details	E

Fuel Blending Roll-off Area (Unit 60)

4213, 2 of 3	Equipment Layout – Proposed Fuels Blending Operation	0

Approved Non-Hazardous Solids Bulking Area (Unit S)

4210, 1 of 3	Existing, Approved and Proposed Container Management Area Layout Details	D

Approved Drum Crushing and Compaction Area (Unit T)

4212	Approved Drum Crushing and compacting Operation Details	C

Hazardous Waste Transfer Facility

4254, 1 of 2	Site Plan – RCRA Waste Transporter Storage Areas	A
4254, 2 of 2	Site plan – RCRA Waste Transporter Storage Areas	A

Empty, Non-Hazardous, and Onsite-Generated Vehicles

4254, 1 of 2	Site Plan – RCRA Waste Transporter Storage Areas	A
4254, 2 of 2	Site Plan _ RCRA Waste Transporter Storage Areas	A

A. Existing Units

1. CWA Wastewater Treatment System Loading/Unloading Areas (Units J1, J2, F3, and G3)

As part of the CWA wastewater treatment system, CHSI operates four (4) concrete-lined and sloped loading/unloading areas:

- Units J1 and J2: Existing outdoor concrete pads for offloading of up to Four (4) bulk liquid transport vehicles into receiving sumps 1 through 4:

- Unit F3: Existing Area inside process Building No. 1 for offloading up to one (1) Bulk liquid transport vehicle into the CWA treatment system or the non-hazardous waste oil storage/treatment system; and

- Unit G3: Existing Area inside process building No. 2 for offloading up to one (1) bulk liquid transport vehicle into the CWA sludge conditioning tank.

Refer to section D-2 (III) (A) for a detailed description of the CWA wastewater treatment system and the non-hazardous waste oil storage/treatment system.

2. Non-Hazardous Roll-off in Process Operation Areas

CHSI utilizes two (2) 30-cubic yard rolloff containers and /or dump trailers to accumulate dewatered, non-hazardous treatment residuals (sludge) from two existing plate and frame filter presses in the Process Building No.2 (Unit G) CWA wastewater treatment system.

3. Truck Sampling Pad (Unit D)

The Truck Sampling Pad (Unit D) is located on the eastern side of the existing facility laboratory (Unit E). Incoming bulk transporters, upon entering the facility, are directed to the pad for retrieval of samples to be used for conformance testing purposed. Construction details for the proposed unit is shown in CHCI DWG. No. 4234.

4. Non-Hazardous Solids Bulking Area (Unit S)

Under the terms of the November 1993 Part B License, CHSI is authorized to operate an 840 square foot pad adjacent to Unit Q1 which includes a 2500 gallon mixing tub and storage of one (1) 30-cubic yard rolloff container to be used of consolidation of non-hazardous wastes.

5. Non-Hazardous Roll-off in Process Operation Areas (Unit 60)

Under the terms of the November 1993 Part B License, CHSI is authorized to operate a roll-off storage area (Unit 60) in the fuels blending operation (Unit 43). Design and layout details for Unit 60 are provided in CHCI DWG. No. 4213, sheet 2 of 3.

6. Truck Scale (Unit 14)

Under the terms of the November 1993 Part B License, CHSI is authorized to operate the existing truck scale (Unit 14) for the weighing of up to one (1) inbound or outbound highway transport vehicle carrying hazardous and non-hazardous wastes bulk solids and bulk liquids. The truck scale unit is located southeast of the existing flammable tank farm (Unit 16).

7. Hazardous Waste Transfer Facility

Under the hazardous waste transfer facility requirements of 35 IAC 723.112, a hazardous waste transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of 35 IAC 722.130 for a period of ten days or less is not subject to regulations under 35 IAC 702, 703, 724, 725, or 728 with respect to the storage of those wastes.

CHSI currently operates a transfer facility for hazardous waste in containers, which are in-transit to facilities other than CHSI. In addition, CHSI performs truck –to-truck transfers of containers between in-transit vehicles.

Hazardous Waste Transfer Facility Activities shall be conducted in:

1. The proposed new truck to truck transfer area (Unit W), or
   Any other RCRA-Regulated highway transportation Area as identified in CHCI DWG. No. 4254; and

2. Any area onsite which meets the 35 IAC 702.110 definition of "Transfer" Facility", that is, any transportation related facility including loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

8. Empty, Non-Hazardous, and On-Site Generated Vehicles

CHSI manages certain other types of vehicles, which are exempt from RCRA Facility permitting standards. The vehicle types include:

1. Empty vehicles;

2. Vehicles hauling Non-RCRA wastes; and

3. Vehicles holding hazardous waste, which has been, generated onsite (e.g., wastewater treatment residuals) and which is being managed in accordance with 35 IAC 722 hazardous waste generator management standards.

Since these activities are exempt from RCRA permitting requirements, CHSI may stage such vehicles throughout the facility without limitation or regard to storage number or location, provided that vehicles holding onsite-generated hazardous waste are managed in accordance with 35 IAC 722 hazardous waste generator management standards.

B. Approved/Not Yet Constructed

1. Drum Crushing & Compact on Area (Unit T)

Under the terms of the November 1993 part B License, CHSI is authorized to construct and operate a drum crushing and compacting area for drums which are "RCRA-empty" pursuant to 40 CFR 261.7 (b) (1). Crushed/shredded drums and compacted debris are stored in a roll-off container pending shipment to an appropriate offsite disposal facility. The Equipment layout and containment features of the proposed drum crushing and compacting area shown in CHCI DWG. No. 4212.

D-1a Containers With Free Liquids

This section applies only to those containers, which are used to hold wastes, which contain free liquids. Containers, which hold free liquid, are managed in the following container storage areas:

A. Existing Container Storage Areas
1. Drum Storage Area (Unit G1)
2. Drum Storage Area (Unit R1)
3. Labpack pouroff station (Unit F1)
4. Drum storage area expansion (Unit R2)
5. Container Management Building (Unit 25)
6. Ignitable Container Management Building (Unit 26)
7. Container Handling Dock (Unit 61)

B. Approved/Not Yet Constructed Container Storage Areas
1. Lab Pack Repack & Consolidation Area (Unit U)
2. Paint and Paint Related Processing (Unit 42)
3. Shredder Process Building (Unit 24)
4. Metal Wash Pad (Unit 68)

C. Transportation Unit Staging/Storage Areas

Existing Areas
1. Truck Unloading Area & Bulking Area (Unit Q)
2. Truck Loading Dock (Unit V)
3. Rail Car Unloading Area (Unit 13)
4. Tank Truck Unloading Platform (Unit 15)
5. Ignitable Bulk Liquid Truck Staging Area (Unit 59)
6. Bulk Solids Storage Pad (Unit B)
7. Truck Pad (Unit 62)
8. Truck Staging Area (Unit C)

Approved/Not Yet Constructed Areas
1. Tank Unloading Pad (Unit X)
2. Truck to truck transfer area (Unit W)
3. Truck Loading/Unloading Pad (Unit 69)

Containers such as bulk solid rolloffs, which are used to hold only wastes that contain no free liquids, are described in Section D-1b.

D-1a(1)Description of Containers 724.271, 724.272

All containers of hazardous wastes that are received at, and/or shipped from, CHSI shall be in good condition with no severe resting or apparent structural defects. The containers (e.g., drums, carboys, tote tanks, etc.) may be new, used, or reconditioned, and may vary in sizes up to 500 gallons. All of the containers shall be made of, or lined with, materials which will to react with, or are otherwise compatible with, the hazardous waste being stored, All containers will meet US Department of Transportation (DOT) packaging requirements as described in 49 CFR 173, and the labeling and marking requirements of

35 IAC Part 722 Subpart C and 49 CFR 172.

A description of the general types of containers, which are acceptable for handling and storing waste at CHSI, is presented in Table D-7. Examples of the label and markings required on each container in compliance with DOT requirements and 35 IAC Part 722 Subpart C are shown Appendix D-6.

In the event that hazardous wastes is shipped to the facility in a non-DOT container, or if an accepted DOT-approved container shows signs of structural defects or leakage, CHSI will under take appropriate action to immediately transfer the waste and/or the container into a structurally sound container or overpack drum.

CHSI utilizes a computerized waste tracking system to monitor the ultimate disposition of material processed through the facility. Upon arrival, a unique bar code tracking label is affixed to each container. CHSI's waste tracking system is described in Appendix D-6.

A. General Considerations

All containers, whether in a storage building or on a transport vehicle, remain closed at all times except while waste is being added, removed, or sampled. Closed head drums must have bungs in place and the bungs must be tightly secured. Open-top drums must have covers, gaskets, and rings, and the covers must be tightly secured.

All container handling activities, including Lab Pack consolidation operations, are described in detail in CHSI's Container Management Guidelines included in Appendix D-2.

B. Storage In Buildings

All non-bulk containers are stacked on pallets within designated storage bays. Containers are stacked one-high (55-gallon drum height equivalent) in flammable bays (other than Unit 25) and staging areas, and two-high in all other areas. For 55-gallon drums, pallets are provided between each layer; for smaller containers (e.g., 5-gallon pails), pallets are provided for every 3.5 feet of stack height (i.e., height equivalent to one 55-gallon drum). Each storage area is designed to provide adequate aisle space to ensure unobstructed movement. Container layout and aisle space are shown on the following CHCI drawings:

1. Existing Container Storage Areas

- Drum Storage Area (Unit G1)
  No. 4209, Sheet 1 of 2, and
  No. 4209, Sheet 2 of 2
- Drum Storage Area (Unit R1)
  No. 4210, Sheet 1 of 3
- Lab Pack Pouroff Station (Unit F1)
  No. 4208
- Drum Storage Area Expansion (Unit R2)
  No. 4210, Sheet 1of 3
- Container Management Building (Unit 25)
  CHSI No. 4282
- Ignitable Container Management Building (Unit 26)
  No. 4210, Sheet 3 of 3
- Container Handling Dock (Unit 61)
  No. 4245

2. Approved/Not Yet Constructed container Storage Areas

- Lab Pack Repack & Consolidation Area (Unit U)
  No. 4211

- Paint and Paint Related Processing (Unit 42)
  CHSI No. 4287
- Shredder Process Building (Unit 24)
  CHSI No. 4287
- Metal Wash Pad (Unit 68)
  CHSI No. 4287

In the container storage areas, individual storage bays are separated by concrete curbs and ramps to prevent liquid migration between adjacent bays. In addition, in the Drum Storage Area (Unit G1) inside Process Building No. 2 and in the Container Management Building (Unit 25), metal railings have been constructed between adjacent bays as a physical barrier to prevent drums from falling off a pallet and into an adjacent bay in which incompatible wastes are being stored.

Container storage areas are inspected daily for accumulation of waste, proper drainage, and any construction material deterioration. Each drum is inspected for structural integrity (corrosion, collapsing, crushing), leakage and proper stacking. A complete description of the container inspection program is included in Section F (Procedures to Prevent Hazards) of this application.

C. Storage On Vehicles

CHSI is authorized to store hazardous waste on 29 highway transportation vehicles (and 2 railcars) in eleven (11) designated vehicle container storage units. The location of the units and the layout of vehicles within the units are shown on CHCI DWG. No. 4254. The vehicle container storage areas are:

1. Existing Areas
   A. Truck Unloading Area & Bulking Area (Unit Q)
   B. Rail Car Unloading Area (Unit 13)
   C. Truck Loading Dock (Unit V)
   D. Tank Truck Unloading Platform (Unit 15)
   E. Bulk Solids Storage Pad (Unit B)
   F. Ignitable Bulk Liquid Truck Staging Area (Unit 59)
   G. Truck Pad (Unit 62)
   H. Truck Staging Area (Unit C)

2. Approved/Not Yet Constructed Areas
   A. Tank Unloading Pad (Unit X)
   B. Truck to Truck Transfer Area (Unit W)
   C. Truck Loading/Unloading Pad (Unit 69)

As shown in Drawing 4254, there are a total of 35 truck slots, which are designated as RCRA-regulated storage areas for highway transportation units. However, six (6) of the slots are located inside the existing Bulk Solids Storage Pad (Unit B) which is already permitted as "Rolloff Container Storage Area". CHSI is designated Unit B as a Transportation Vehicle Storage Area to allow vehicles other than rolloff to be stored inside the unit, but not to include Unit B in the calculation of the facility's permitted truck storage capacity so that waste which is already counted towards the permitted rolloff storage capacity of the facility is not "double counted". Therefore, the total number of highway vehicles for RCRA permitting purposes is (35 – 6) or 29.

In general, the vehicle container storage areas manage two types of vehicles: 1) those on which containers of hazardous waste are stored such as a van trailer carrying 80 55-gallon drums, or equivalent; and (2) those which function as the primary waste holding vessel for hazardous waste such as a vacuum truck or bulk liquid transporter, In all cases, containers of hazardous waste that are on vehicles, and all vehicles functioning as the primary storage vessel for hazardous waste, shall meet all applicable us DOT requirement for container vehicle type marking labeling and placarding as required.

For trucks carrying containers of hazardous waste, the containers shall be stacked a maximum one-high for 55-gallon drums, or up to 3.5 feet (55-gallon height equivalent) for smaller containers such as 5-gallon pails. The containers shall be loaded in compliance with US DOT hazardous material segregation procedures as described in 49 CFR 177.848. A Drum by Drum inventory of the lading of each truck shall be maintained through he use of a truck grid sheet (Shown in attachment 2 of Appendix D-2). The completed grid sheet shall be updated whenever a drum is added or removed from the vehicle, and the up-to-date sheet shall be maintained in a conspicuous location on or near the truck. Container vehicles shall be parked with a minimum of 2 feet of aisle space between each truck.

Multiple bulk liquid vehicles that are functioning as the primary containment vessel (e.g., vacuum truck, bulk liquid transporters) may be parked in the same vehicle storage unit provided that a compatibility test is conducted to demonstrate that the contents of the vehicles are not incompatible. CHSI shall utilize the compatibility testing procedure (i.e., Bucket Test) described in section C-2F of the CHSI waste analysis plan. Bulk liquid vehicles carrying incompatible liquids may be parked in the Truck Staging Area (Unit C) provided that the trucks are parked in different (segregated) bays. However all trucks containing ignitable liquids shall be parked only in the truck-unloading platform (Unit 15) or in the truck staging area (Unit 59) only. A record of the lading of each truck shall be maintained through the use of a manifest. The lading record shall be updated whenever waste is added or removed from the vehicle, and the up-to-date record shall be maintained in a conspicuous location on or near the truck.

All vehicles in storage shall be parked with a minimum of 2 feet of aisle space between each truck. The external sides of each truck, and the container storage pad areas shall be inspected daily of spillage leakage, or construction material deterioration, or other sign of a release or improper containment.

D. Onsite Handling and Movement of Containers

Incoming containers are placed in the staging areas (i.e., Units R1, R2, and 61) during sampling/analysis and paperwork review procedures. Upon confirmation, drums of compatible wastes are moved to an appropriate segregated storage bay. In general, the movement of drums within a specific storage/containment unit (e.g., from the Staging Area to the Flammable –2 Bay with Unit R1) shall be accomplished using fork trucks and hand trucks. If a drum must be transported over a non-contained area (e.g., from the unit 61 Receiving Dock to Building 25) specially designed self-contained pallets and tie-down straps shall be used to prevent spills drum tippage. The movement of containers between the CHSI and former CWMCSI storage areas (e.g., from Unit R1 to Unit 61) shall be accomplished using box trucks, van trailers and/or flat bed trucks. Specific procedures for transporting wastes throughout the facility are described in Appendix D-2.

E. Material Handling/Transfer Operations

To the extent practicable, hazardous wastes received at CHSI are shipped to offsite treatment and disposal facilities in their original containers without intermediate handling. There are, however, a number of basic wastes handling operations, which may be performed at CHSI in order to facilitate treatment and disposal. Table D-9 identifies the container handling activities, which are conducted in each, permitted RCRA container storage area (Drum and Vehicle). A description of the various handling activities is provided below. Refer to Appendix D-2 for detailed container management procedures.

Decanting

"Decanting" refers to the pumping of liquids and sludges between containers (i.e., drums and vehicles), and between containers and the bulk storage/treatment tanks. Decanting is an open container activity which involves the mixing/commingling of compatible waste streams for storage and/or treatment. Decanting is performed using equipment such as the fixed-base drum pumping station inside Building 26, portable pumps, or vehicle-mounted equipment such as vacuum trucks.

Solids Bulking

Hazardous and non-Hazardous solids in drums, bags, or other containers are bulked into a rolloff container or other suitable DOT-approved solids container. Solids bulking is an "open container" activity on which the containers to be bulked are staged adjacent to the reliving container, lifted by manual or mechanical (e.g., fork lift) means, and then dumped into a polyethylene-lined rolloff container or other suitable container.

Pouring Off

"Pouring Off" is an open-container operation in which chemically compatible hazardous wastes form small individual containers (e.g., vials, jars, bottles, etc.) are poured/mixed into a common bulk container such as 16-gallon kiln pack, a 55-gallon drum or a 345-gallon tote tank, or directly into a waste treatment vessel such as the reactors in Process Building 1.

Consolidation

"Consolidation" refers to the sorting and repackaging of individual containers (bottles, jars, etc.) of chemically compatible wastes into a common lab pack container. "Consolidation" is a "closed-container" activity, which does not involve any actual mixing of waste streams. Compatibility is determined through the knowledge of the chemical (e.g., Label Information, MSDS's profile data) and use of standard chemical compatibility charts/references. Consolidation activities are performed under fixed-base or portable ventilation hoods.

D-1a (3) **Secondary Containment System Design and Operation** 703.201(a) (1), 724.275 (a) and (d)

In general the container storage areas are divided into number of smaller storage bays in order to provide adequate segregation of incompatible materials. Each storage bay is equipped with secondary containment features which serve to prevent spilled wastes from (1) migrating into soil, ground water, or surface water resources on or off the site, and (2) contacting containers or commingling with spilled wastes in adjacent storage bays where incompatible materials may be stored.

Each containment structure is designed with concrete-lined floors and walls, which are coated with sealant that, are chemically compatible with the waste, which is being stored. In general, the floor of each storage/staging area is sloped, typically to a collection trench or sump; to facilitate the collection of collect spilled liquids and precipitation. There are no drains, pipes, or valves in any containment structure, collection sump, or trench through which liquids could flow and commingle with potentially incompatible liquids from other storage bays. Collected liquids are removed using portable pumps or other means as described in Section D-1a (3)(e).

D-1a (3) (a) **Requirements for the Base or Liner to Contain Liquids 724.275**(a) (1)

A detailed description of the secondary containment features of each existing and approved/not yet constructed container storage areas are presented below. PE certification letters for the existing and approved/not yet constructed container storage area are included in Appendix D-7. Information on the soil bearing capacity in the general location of the container storage units are found in the following reports which are included in Appendix D-9:

- Walter & Associates, Initial Facility Construction, September 1980
- PSI, Inc. Phase I Drum Storage, August 1990
- O'Brien & Associates, Proposed Construction, June 1991

A. Existing Container Storage Areas

1. Drum Storage Area (Unit G1)

The layout and secondary containment design features for the existing Drum Storage Area (Unit G1) inside Building 2 are shown in CHCI DWG. Nos. 4209, Sheet 1 of 2, and 4209, Sheet 2 of 2.

The floor surfaces constructed of a minimum six-inch thick concrete base, which slopes to a collection trench at the back of the each bay. Individual storage bays are separated by means of 6-inch high angle-iron barriers, which are anchored, to the floor and caulked to prevent liquid seepage, the collection trench is blocked off between liquids. Under the storage bay layout,

potentially incompatible material (i.e., Acids and Bases) are stored in adjacent bays. As an added precaution, 6-foot high metal railings shall be maintained between each bay to prevent containers from accidentally falling over into an adjacent bay where incompatibles are kept.

The existing floor surfaces in the storage area are topped with monolithic sealants that are compatible with the waste materials being store. Three of the storage bays (Staging, Alkalines, Acidic-2) are coated with a one-quarter inch thick epoxy resin sealant; the fourth storage bay (Acidic-1) is coated with a one-quarter inch thick vinylester resin sealant. In addition, the Alkaline Bay, Acidic-2 and Staging Area were top-coated with Protecto-Coat 900, a vinylester-based coating that is more resistant to a wider range of organic compounds. Technical specifications for the Protecto-Coat system, manufactured by Dudick, Inc., are presented in Appendix D-10, Data Sheet #2.

The construction of the existing Drum Storage Area (Unit G1) has been inspected and certified by an independent registered professional engineer (PE). The certification attests to structural integrity of the concrete flooring, the integrity of the floor coatings, the compatibility of the coating systems with the wastes stored. A copy of the PE certification statement is provided in Appendix D-7

2. Drum Storage Area (Unit R1)

The layout and secondary containment design features for the existing Drum Storage Area (Unit R1) are shown in CHCI DWG. No. 4210, Sheet 1 of 3. As noted on the drawing, there are four Individual storage bays and one general staging area for inbound/outbound containers. Each storage bay and staging area is separated by means of 6" wide curbs provide proper segregation of incompatible wastes and to prevent migration of spilled liquids.

All of the floor surfaces within the storage bays and staging area are constructed o a minimum six-inch thick concrete base which slopes to one or more containment sumps. The floor surface in each by is topped with a monolithic sealant that is compatible with the waste materials being stored. In addition, all construction joints are fitted with chemical resistant water stops. All floor surfaces are topped with a minimum 3/16-inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system. Technical specifications for Protecto-Crete system are included in Appendix D-10, Data Sheet #2.

3. Lab Pack Pouroff Station (Unit F1)

In the Lab Pack Pouroff Station (Unit F1) inside Process Building No. 1, lab packs are placed into gondolas boxes which are plastic containment pallets with polyvinyl chloride sides 18 inches higher than the pallet. Up to two (2) gondolas are placed on the mezzanine adjacent to the lab pack pouroff station on top of the reactor. Separate gondola boxes are used to provide segregation of incompatible wastes (e.g. Acids and Bases). A total of 440 gallons (8 55-gallon drums or equivalent) may be stored in this area. This 12-foot by 20-foot mezzanine is surrounded by one-inch angle iron. The mezzanine is entirely in Building 1. Building 1 has 4-inch high curbs at each door and the floor is constructed of smooth concrete, which slopes to a liquid collection sump. The secondary maximum containment volume of the floor/sump is 17,166 gallons.

4. Drum Storage Area Expansion (Unit R2)

The layout and secondary containment design features for the Drum Storage Area Expansion Unit R2) are shown in CHCI DWG. No. 4210. The drawing notes the four additional storage bays, and on additional staging area. Each storage bay and staging area is separated by means of 12-inch wide curbs to provide segregation of incompatible wastes and prevent migration of spilled liquids.

The floor surface within the storage bays and staging area is constructed of a minimum 6-inch thick concrete base, which slopes to one or more containment sumps. The floor surface in each bay is topped with a monolithic sealant that is compatible with the waste materials being stored. In addition, all construction joints are fitted with chemical resistant water stops. Each storage bay and staging area is topped with a minimum 3/16-inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick Inc., or equivalent system. Technical specifications for the Proteco-Crete system are included in Appendix D-10, Data Sheet#2.

5. Container Management Building (Unit 25)

The layout and secondary containment design features for Container Management Building (Unit 25) 25 are shown in CHSI DWG. No. 4282.

The floor surface is constructed of a reinforced concrete base that is topped with a non-absorbent chemically–resistant sealant (see Appendix D-10, Data Sheet #8). Secondary containment is provided by means of a 6-inch high concrete curb at the perimeter of the building. The floor is divided into three individual storage bays are separated by means of a 6-inch high by 8-inch wide concrete curb system.

Under the storage bay layout, potentially incompatible materials (i.e. acids and bases) are stored in adjacent bays. As an added precaution, 6-foot high metal railings shall be maintained between each bay to prevent containers from accidentally falling over into an adjacent bay where incompatibles are kept.

The construction of Building 25 has been inspected and certified by are registered professional engineer (PE). The certification attests to structural integrity of the concrete flooring, the integrity of the floor coatings, and the compatibility of the coating systems with the wastes stored. A copy of the PE's Analysis and Certification Statement is provided in Appendix D-8.

Building 25 also includes a Truck Loading/Unloading Pad for van trailers and box trucks with containers of waste. A maximum of 88 drums are allowed on one truck in this bay. The layout and secondary containment design features for Building (Unit) 25 Truck Loading/Unloading Pad are shown in CHSI DWG. No. 4283. The floor surface of the secondary containment system is constructed of smooth reinforced concrete which slopes to a liquid containment sump. All new construction joints are fitted with chemical resistant water stops. The floor surface is topped with a minimum 3/16-inch coat of Protecto-Coat 900, a vinylester-based sealant manufactured by Dudick Inc., or equivalent system. Technical specifications for the Protecto-Coat system included in Appendix D-10, Data Sheet #2.

6. Ignitable Container Management Building (Unit 26)

The layout and secondary containment design features for Ignitable Container Management Building (Unit 26) are shown in CHCI DWG. No. 4210, Sheet 2 of 3.

The floor surface is constructed of a reinforced concrete base that is topped with a non-absorbent chemically –resistant sealant (see Appendix D-10, Data Sheet #8). Secondary containment is provided by means of a 9-inch high concrete curb at the perimeter of the building.

The construction of Building 26 has been inspected a certified by a registered professional engineer (PE). The certification attests to structural integrity of the concrete flooring, the integrity of the floor coatings, and the compatibility of the coating systems what the wastes stored. A copy of the PE"s analysis and certification statement is provided in Appendix D-8.

7. Container Handling Dock (Unit 61)

The layout and secondary containment design features for the Container Handling Dock (Unit 61) are shown in CHCI DWG. NO. 4245. The floor surface within the dock area is constructed of a minimum six-inch thick concrete base, which slopes to a containment sump. The floor surface is topped with a minimum 3/16-inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system (see Appendix D-10, Data Sheet #2). In addition, all construction joints are fitted with chemical resistant water stops.

The container handling dock is primarily intended for the receipt and handling of chemically-compatible organic liquids and solids which are intended for storage in the ignitable container management building (Unit 26) and subsequent processing in the fuels blending operation (Unit 43). However, the dock may also be used for the conveyance of containers of acid, alkaline, flammable and PCB waste materials destined for storage in the container management building (Unit 25). In order to provide proper segregation for potentially incompatible materials that shall Specially Designed "self-contained" pallets in the event that a waste material, which is incompatible with materials already present on the dock, is encountered. CHSI shall maintain a readily available supply of ENPAC Corporation "Poly-Spillpallet 3000" or equivalent, for container dock handling activities. Manufacturer's literature for the self-contained pallet devices is provided in Appendix D-35.

B. Approved/Not Yet Constructed Container Storage Areas

1. Lab Pack Repack & Consolidation Area (Unit U)

The layout and secondary containment design features for the Lab Pack Repack and Consolidation Area (Unit U) are shown in CHCI DWG. No. 4211. As shown on the drawing, there are seven (7) individual storage bays and one general staging area. Under the storage bay layout, potentially incompatible materials (i.e., acids and bases) may be stored inside the building, As a result, individual storage bays are separated by means of six-inch wide curbs to provide

proper segregation of incompatible wastes and to prevent migration of spilled liquids. The design of the unit calls for incompatible materials such as acids and bases to be stored on opposite sides of the building. In addition, the unit shall be operated such that incompatible wastes are not staged the common floor area at the same time.

The floor surfaced in each bay is topped with a monolithic sealant that is compatible with the waste materials being stored. In addition, all construction joints re fitted with chemical resistant water stops. Each storage bay and the general processing floor area are topped with a minimum 3/16-inch coat to Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, inc., or equivalent system, Technical specifications for Protecto-Crete system are included in Appendix D-10, Data Sheet #2.

2. Paint and Paint Related Material Processing Area (Unit 42)

The layout and secondary containment design features for Unit 42 are shown in CHSI DWG. No. 4287. This area consists of the Westside Pad, Building and Hopper 405. The floor surface is constructed of a minimum six-inch thick concrete base, which slopes to a containment sump. The floor surface is topped with a minimum 3/16-inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system (see Appendix D-10, Data Sheet #2). In addition, all construction joints are fitted with chemical resistant water stops.

The Paint and Paint Related Material Processing Area is primarily intended for the staging and handling of chemically-compatible organic liquids and solids which are intended for subsequent processing in the shredding operation (Unit 24). Hopper 405 is for processed material from the shredder.

3. Shredder Process Building Area (Unit 24)

The layout and secondary containment design features for Unit 24 are shown in CHSI DWG. No. 4287. This area consists of the shredder conveyor, Drum 412 and Hopper 407. The floor surface is constructed of a minimum six-inch thick concrete base, which slopes to a containment sump. The floor surface is topped with a minimum 3/16-inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system (see Appendix D-10, Data Sheet #2). In addition, all construction joints are fitted with chemical resistant water stops. A portion of the conveyor hangs outside Building 24. A steel pan 22 feet long, 5 feet wide and 8 inches deep will be positioned below the conveyor/drum lift to provide additional containment.

Shredder Process Building Area is primarily intended for the staging and handling of chemically-compatible organic liquids and solids which are intended for subsequent processing in the shredding operation (Unit 24). Additionally, one 55 gallon drum (Item 412) and one 64 cubic foot tote will be located in Unit 24 for debris collection.

4. Metal Wash Pad Area (Unit 68)

The layout and secondary containment design features for Unit 68 are shown in CHSI DWG. No. 4287. The area consists of the metal wash operation, including one 55 gallon drum (Item 434) for sludge collection. The floor surface is constructed of a minimum six-inch thick concrete base,

which slopes to a containment sump. The floor surface is topped with a minimum 3/16-inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system (see Appendix D-10, Data Sheet #2). In addition, all construction joints are fitted with chemical

C. Transportation Unit Staging/Storage

The floor surface of the secondary containment system (pad or vault) in each of the designated transpiration staging/storage areas area farm is constructed of smooth reinforced concrete which slopes to a liquid containment sump. The floor surface in each staging/storage area is topped with a monolithic sealant that is compatible with the waste materials being stored. In addition, all new construction joints are fitted with chemical resistant water stops. Each RCRA regulated vehicle storage area (i.e., Units B, C, Q, V, W, X, 13, 15, 59, 62 and 69) shall be topped with a minimum 3/16-inh coat of Protecto-Coat 900, a vinylester-based sealant manufactured by Dudick Inc., or equivalent system. Technical specifications for the Protecto-Coat system included in Appendix D-10, Data Sheet #2.

Bulk liquid transport vehicles containing potentially incompatible hazardous wastes shall not be managed in a common secondary containment system at any time. CHSI notes that the proposed truck staging area (Unit C) is sub-divided to provide segregated containment within the same vehicle storage Unit. To ensure that bulk liquid transport vehicles containing incompatible materials are not parked/stored in a common containment system, CHSI shall conduct a compatibility test whenever two or more vehicles are intended to be parked/staged together at any one time. Bulk solids transporters shall not be subject to the compatibility test procedures

Transport vehicles containing drum shipments shall not be subject to compatibility testing. However, containers on all vehicles in storage shall at all time comply with USDOT container segregation regulations as described in 49 CFR 177.848.

D-1a (3) (b) Containment System Drainage 703.201 (a) (3), 724.275 (b) (3)

A. Existing Container Storage Areas

1. Drum Storage Area (Unit G1)

As shown in CHCI DWG. 4209, Sheet 1 of 2, the floor of each storage bay within the existing drum Storage Area (Unit G1) inside building 2 slopes 1/8-inch per foot towards a collection trench which runs parallel to the building wall. The collection trench within each bay slopes 1/4-inch per foot in the direction indicated on the drawing. The trench is divided into sections by means of concrete block walls to isolate liquids, which accumulate in the individual storage bays, thus preventing the possible commingling of potentially incompatible materials.

2. Drum Storage Area Expansion (Unit R1)

As shown in CHCI DWG No. 4210, Sheet 1 of 3, the floor surface within the four storage bays and one staging area slope to one or more containment sumps in each unit. The rate of slope and direction of liquid flow in each unit is noted on the drawing.

3. Lab Pack Pouroff Station (Unit F1)

Process Building No. 1 has 4-inch high curbs at each door, and the floor is constructed of smooth concrete, which slopes to a liquid collection sump. The secondary maximum containment volume of the floor/sump is 17,166 gallons.

4. Drum Storage Area Expansion (Unit R2)

As shown in CHCI DWG. No. 4210, Sheet 1 of 3, the floor surface within the four storage bays and one staging area slope to one or more containment sumps in each unit. The rate of slope and direction of liquid flow in each unit is noted on the drawing.

5. Container Management Building (Unit 25)

The Container Management Building (Unit 25) has a smooth reinforced-concrete floor with a 6-inch containment curb at the perimeter of the building. The floor is not sloped; spills inside the will be localized inside one to the three segregated storage bays and will be cleaned up immediately upon discovery. All containers in permitted storage areas will be place on pallets to minimize contact with accumulated liquids.

The Truck Loading/Unloading Pad has a six inch concrete curb with a sloped floor to provide containment.

6. Ignitable Container Management Building (Unit 26)

The Ignitable Container Management Building (Unit 26) has a smooth reinforced-concrete floor with a 9-inch containment curb at the perimeter of the building. The floor is not sloped: spills inside the will be localized and cleaned up immediately upon discovery. All containers in permitted storage areas will be placed on pallets to minimize contact with accumulated liquids.

7. Container Handling Dock (Unit 61)

As shown in CHCI DWG No. 4245, the floor surface of the staging area slopes to a liquid containment sump. The rate of slope and direction of liquid flow is noted on the drawing.

B. Approved/Not Yet Constructed Container Storage Areas

1. Lab Pack Repack & Consolidation Area (Unit U)

As shown in CHCI DWG. No. 4211, all of the floor surfaces within the bays and staging area will be constructed of a minimum 8-inch thick concrete base. The general staging area slopes to a containment sump. The floor surface in the storage bays slope from front to back at the rate shown on the drawing. The containment wall at the front of each storage bay consists of a 2-inch high angle iron (3-inch high in the organic bay). Containers in the storage bays are elevated off the floor surface by means of a 2-inch high fiberglass reinforced plastic grating (3-inch high steel grating in organic bay).

2. Paint and Paint Related Material Processing Area (Unit 42)

Unit 42 has a smooth reinforced-concrete floor with a 6-inch containment curb at the perimeter of the building. The floor is not sloped: spills inside the will be localized and cleaned up immediately upon discovery.

3. Shredder Process Building Area (Unit 24)

Unit 24) has a smooth reinforced-concrete floor with a 6-inch containment curb at the perimeter of the building. The floor is not sloped: spills inside the will be localized and cleaned up immediately upon discovery.

4. Metal Wash Pad Area (Unit 68)

Unit 68 has a smooth reinforced-concrete floor with a 6-inch containment curb at the perimeter of the building. The floor is not sloped: spills inside the will be localized and cleaned up immediately upon discovery.

C. Transportation Staging /Storage Areas

The floor surface of the secondary containment system (pad or vault) in each of the designated transportation staging storage areas area farm is constructed of smooth reinforced concrete which slopes to a liquid containment sump. The rate of slope and direction of liquid flow is noted on the referenced drawing for each unit:

A Existing Areas

1. Truck unloading area & bulking area (Unit Q)
   No. 4210, 1 of 3.
2. Truck Loading Dock (Unit V) – No. 4234
2. Rail Car Unloading Area (Unit 13) – No. 4217, 1 of 3
4. Truck Unloading Platform (Unit 15)- No. 4248
5. Truck Staging Area (Unit 59) – No. 4247
6. Bulk solids Storage Pad (Unit B) – No. 4218
7. Truck Pad (Unit 62) – No. 4246
8. Truck Staging Area (Unit C) – No. 4218

3. Transportation Staging/Storage Areas

A. Existing Areas

1. Truck Unloading Area & Bulking Area (Unit Q) - No. 4210, 1 of 3
2. Truck Loading Dock (Unit V) - No. 4234
3. Rail Car Unloading Area (Unit 13) – No.4217, 1 of 3
4. Truck Unloading Platform (Unit 15) – No. 4248
5. Truck Staging Area (Unit 59) – No. 4247
6. Bulk Solids Storage Pad (unit B)- No. 4218
7. Truck Pad (Unit 62) – No. 4246
8. Truck Staging Area (Unit C) – No. 4218

B Approved/Not Yet Constructed Areas

1. Tank unloading pad (Unit X) -No. 4213, 1 of 3; 4216
2. Truck To Truck Transfer Dock (Unit W) – No. 4244
3. Truck Loading/Unloading pad (Unit 69) – No. 4292

D-1a (3) (d) Control of run-on 703.201(a) (4), 724.275 (b) (4)

Run-on and flooding are not considered to be a factor given the secondary containment design features of each unit, and the fact that the existing and the proposed systems are outside of the 100-year floodplain as discussed in Section B-3b of this Application. All container management areas are designed to prevent run-on. Specific run-on prevention measures for each container storage area are discussed below.

A. Existing container Storage Areas

1. Drum Storage Area (Unit G1)

Process Building No. 2 has a floor elevation of 15.5 feet. The concrete entrance apron is sloped away from the building to the open concrete entrance apron is sloped away from the building to the open yard which is at an elevation of 15.0 feet. Thus, the building floor is 6" higher than the ground in the front. As shown in CHCI DWG. Nos. 4201 & 4204, local topography is contoured to divert all precipitation away from the building and is adequately sloped for proper drainage. Moreover, inside Building 2, the containers are stored on pallets within four bays, and a minimum 3-inch high curb surrounds each bay.

2. Drum Storage Area (Unit R1)

As shown in CHCI DWG. No. 4210, a 6 inch high (minimum) concrete curbing is provided along the south side of the drum storage bays, the staging area and truck unloading area. The west edge is also elevated by six inches with a peak occurring along the west edge. On

the north side of the proposed area, a 2-inch concrete curbing is installed. On the East Side, along the east edge of the truck unloading pad, the edge of the concrete pad will be the high point with an elevation of 15.5 feet. The ground along all four sides slopes away with a minimum slope of one inch per 25 feet. The drum storage bays and staging area dock are at an elevation of 17.5 feet.

3. Lab Pack Pour-off Station (Unit F1)

Process Building No. 1 has a floor elevation of 15.5 feet. The concrete entrance apron is sloped away from the building to the open yard, which is at an elevation of 15.0 feet. Thus, the building floor is 6" higher than the ground in the front. As shown in CHCI DWG. Nos. 4201 & 4204, local topography is contoured to divert all precipitation away from the building and is adequately sloped for proper drainage.

4. Drum Storage Area Expansion (Unit R2)

As shown in CHCI DWG. No. 4210, a 6-inch high (minimum) concrete curbing is provided along the south side of the expanded drum storage bays, the staging area, and the truck unloading area. The west edge is also elevated by six inches with a peak occurring along the west edge. On the north side of the area, a 2-inch angle curbing is installed. Along the east edge of the truck unloading pad, the edge of the concrete pad is the high point with an elevation of 15.5 feet the ground along all four sides slopes away with a minimum slope of tone inch per 25 feet. The drum storage bays and staging area dock are at an elevation of 17.5 feet.

5. Container Management Building (Unit 25)

The Container Management Building (Unit 25) is an enclosed structure with a roof and a 6-inch containment curb at the perimeter of the building. The curb extends six inches above the surrounding grade. The entrances to the building are raised to prevent run-on. Refer to CHSI DWG. No. 4282, for perimeter curbing and entrance apron design details.

The Truck Loading/Unloading Pad has a six inch curb with a ramp at the front to Prevent run-on. Refer to CHSI DWG No. 4283 for elevations.

6. Building 26 (Unit 26)

The Ignitable Container Management Building (Unit 26) is an enclosed structure with a roof and a 9-inch containment curb at the perimeter of the building. The curb extends nine inches above the surrounding grade. The entrances to the building are raised to prevent run-on. Refer to CHCI DWG. No. 4210, sheet 2 of 3, for perimeter curbing and entrance apron design details.

7. Container Handling Dock (Unit 61)

The Container Handling Dock (Unit 61) has walls on 3 sides and a canopy roof structure. The drum staging dock is at an elevation of 17.5 feet, 4 feet higher than the surface of the truck-parking pad.

B. Approved/Not Yet Constructed Container Storage Areas

1. Lab Pack Repack and Consolidation Area (Unit U)

This area is inside a building, which is designed to be built at an elevation of 17.0 feet. The ground area around the building will be sloped away from the building at a minimum slope of one inch per 25 feet. Refer to CHCI DWG. No. 4204 for final topographic contours.

2. Paint and Paint Related Processing Area (Unit 42)

A portion of this area is in Building 42 which has a 6 inch curb with 3 inch ramps at each door. The Westside Pad is surrounded by a 6 inch curb. Ramps are raised to prevent run-on. Refer to CHSI DWG. No. 4287 for elevations.

3. Shredder Process Building Area (Unit 24)

Unit 24 is an enclosed building with a 6 inch containment curb. The building is surrounded by other contained areas (Units 42, 68 and 70) except on the east side, which is 6 inches lower. The conveyor overhangs Unit 70, but a steel pan provides containment for drums in that area. Ramps are raised to prevent run-on. Refer to CHSI DWG. No. 4287 for elevations.

4. Metal Wash Pad (Unit 68)

Unit 68 is surrounded by a 9 inch containment curb with raised ramps to prevent run-on. Refer to CHSI DWG No. 4287 for elevations.

C. Transportation Staging/Storage Areas

Each of the truck staging/storage pads (i.e., Units B, C, Q, V, X, W, 15, 59, 62 and 69) is constructed to prevent run-on. Each is equipped with a minimum 6-inch high concrete berm or apron to prevent run-on. In addition, the approach to each pad is sloped away from the containment structure.

For the railcar storage unit (Unit 13), the side walls of the concrete secondary containment vault are higher than the surrounding grade and slope away from the unit to prevent run-on into the unit. In addition, the containment structure is fully covered with a steel canopy roof. Refer to CHCI DWG. No. 4218 for design details.

D-1a (3) (e) Removal of Liquids from Containment System 703.201 (a) (5), 724.275 (b0 (5)

Any precipitation or spilled/leaked liquids collected within a secondary containment system will be either treated onsite or containerized (in a drum or bulk tank) and shipped off-site to a properly licensed waste management facility. Depending upon the quantity of accumulated liquid, CHSI shall utilize absorbent materials, portable pumps and/or vacuum trucks to remove accumulated liquids, All liquids or spilled materials shall be collected in a timely manner so as not to allow the containment structure to overflow. CHSI shall become the "Generator" of any waste that is collected from spills to secondary containment structures, and shall classify the waste as hazardous based on CHSI's knowledge and/or testing of the waste that was spilled. For example, if the source of a release is known (i.e., a readily identifiable leaking drum), CHSI shall use its knowledge of the contents of the drums (as taken from the drum label, waste GWMPS/pre-qualification procedures, post-treatment residual analysis, etc.) to classify the waste. If the source is multiple drums, CHSI shall use the information from each drum which is involved. If the source cannot be readily identified, CHSI shall use its onsite laboratory testing capabilities to perform characteristic and/or listed constituent testing to provide the necessary information.

With respect to rainwater, within 24 hours of completion of a precipitation event, rainwater is removed from all sumps, pallets, etc. and placed into portable containers such as tote tanks or bulk trailers. The collected water carries generator status and, therefore it may be stored in a generator accumulation area for up to 90 days in accordance with CHSI's Large Quantity Generator (LQG) management plan described in Section C of this Application.

Prior to disposal, a composite sample of the collected rainwater is submitted for analysis that consists of Group I parameters (see Section C, Waste Analysis Plan, Table C-12), RCRA metals, PCB's and an F001-F005 scan. Upon submittal of samples, laboratory results are typically available within one week. Upon review of the data generated by the above analysis, the laboratory manager makes a determination of the disposition of this waste. The waste may be treated on-site, or sent for off-site disposal.

D-1b Containers Without Free Liquids

This section applies only to those containers which are greater than 110 gallons in size (e.g., roll-off containers) which are used to hold wastes that do not contain free liquids. The following bulk solids storage areas are subject to the Section D-1b standards:

A. Existing Container Storage Areas

1. Bulk container storage area (Unit Q1)
2. Bulk Solids Storage Pad (Unit B)

B. Approved/Not Yet Constructed Container Storage are

1. Listed Waste Roll-off Storage Area (Unit Z1)

D-1b (1) Test for Free Liquids

All containers managed in the designated bulk solids storage areas are tested for the presence of free liquids using EPA Method 9095 (Paint Filter Liquids Test) as described in Test Methods For Evaluating Solid Wastes, Physical/Chemical Methods (SW-846).

D-1b (2) Description of Containers 724.271, 729.272

Rolloff containers of hazardous wastes are utilized for storage, consolidation (i.e., bulking), treatment (i.e., stabilization) and/or transfer of hazardous waste solids to properly licensed offsite waste management facilities.

All bulk solids containers, which are received or utilized at CHSI, shall be in good condition with no severe rusting or apparent structural defects. The containers may be new, used, or reconditioned, and may vary in sizes up to 30 cubic yards. All of the containers shall be made of, or lined with, materials, which will not react with, or is otherwise compatible with the hazardous waste being stored.

The typical rolloff container utilized at CHSI has a capacity of 30-cubic yards and approximate dimensions of 8 feet wide by 26 feet long by 4 feet high. The rolloff containers are open top with an adjustable tarpaulin cover, and constructed of one-quarter inch thick mild steel plate with stiffeners. The rolloff containers are typically equipped with a gate at the back end of the unit.

D-1b (3) Container Management Practices 724.273

A weather-tight tarpaulin cover shall be secured over the top of each rolloff container at all times except when waste is either added or removed or sampled. A minimum 2-foot aisle space is maintained between adjacent rolloff containers in the bulk solids pad and the unloading pad to ensure unobstructed movement.

All container storage areas are inspected daily for accumulation of waste, proper drainage, and any construction material deterioration. Each rolloff is inspected for structural integrity (e.g., signs of corrosion, collapse, or crushing), leakage and proper aisle space arrangement. A complete description of the rolloff inspection program is included in Section F of this Application.

All incoming rolloffs will be paced in the storage area during sampling/analysis and paper work review procedures. Wastes held in storage may be consolidated with other compatible wastes. Solids bulking operations will be performed from the drum staging area using fork truck or other devices to tip the solids into the container. All rolloff containers are lined with plastic sheeting (e.g., polyethylene) prior to initially adding any waste.

D-1b (4) **Container Storage Area Drainage** 703.201(b) (2), 724.275 (c)

A. Existing Container Storage Areas

1. Bulk Container Storage Area (Unit Q1)

The floor surface in the Bulk Container Storage Are (Unit Q1) along the southern edge of the Existing Truck Unloading Area & Bulking Area (Unit Q) is concrete-lined and slopes to a liquid collection sump. Refer to CHCI DWG. No. 4234 for containment details.

2. Bulk Solids Storage Pad (Unit B)

The floor surface of the Bulk Solids Storage Pad (Unit B) is constructed of a minimum 10-inch thick concrete base. The storage pad is divided into six (6) storage bays to provide proper segregation potentially incompatible materials. The bays are separated by a concrete curbing, which increases in height over the length of the bay, from 6 inches at the front of the bay to 12 inches at the rear of the bay. The slope and direction of liquid flow are indicated on the drawing. Refer to CHCI DWG. 4218 for containment details.

B. Approved/Not Yet Constructed Container Storage Areas

1. Listed Waste Rolf Storage Area (Unit Z1)

The listed Waste Rolf Storage Area (Unit Z1) is located inside Process Building No. 3 The floor surface in building 3 is a minimum 8-inch thick concrete pad which slopes to a liquid collection sump at the center of the floor. The floor surface is topped with a vinylester-based sealant, or approved equivalent. Refer to CHCI DWG. No. 4229 for containment design details,

D-2 **Tank Systems**

RCRA –Regulated tank storage and treatment activities are described in sections D-2 (I) and D-2 (II) below. CHSI notes that there are two Non-RCRA regulated tank systems in existence at CHSI as of the date of this request for permit renewal. These tank systems are utilized as part of CHSI's wastewater treatment system that is regulated under the Clean Water Act (CWA) and as part of a waste oil storage that is exempt from RCRA facility permitting. Tank systems, which are exempt from RCRA, are designed in Section D-3 (III) below.

D-2 (i) RCRA-Regulated Tank Storage/Treatment Activities

Under the terms of the November 1993Part B license, CHSI is authorized to store up to 306,356 gallons of hazardous waste in 37 tanks located in five tank management systems:

A. Existing Tank Systems
   1. Fuels Blending operation (Unit 43)
   2. Flammable Bulk Liquid Tank Farm (Unit 16)

B. Approved/Not Yet Constructed Tank Management Activities
   1. Process Building No. 3 listed Waste Treatment (Unit Z)
   3. Listed Waste Storage Tanks (Unit Y)
   4. Flammable Storage Tank Farm (Unit 22)

A listing of the existing and approved/not yet constructed RCRA-Regulated tanks and a summary of pertinent physical data are included in Table D-5. The physical data listed on Table D-5 includes:

- Tank identification number and name;
- Design capacity, outer dimensions, design standard/code, and operation capacity;
- Material of construction, type of foundation, and internal corrosion protection; and
- Secondary containment features.

Pertinent operation data for each RCRA-Regulated tank is presented in Table D-6, and includes;

- Tank identification number, and primary use;
- Operation temperature and pressure;
- Tank vent type and size;
- Waste characteristics (pH and specific gravity) ; and
- Feed system safety cutoff and overfill protection devices.

Location, design details, equipment layout, and other features of the RCRA-Regulated tank system are provided in the following drawings:

CHCI DWG. No.		Title	Issue
GENERAL			
CHSI 4203,	1 of 3	Site Plan Existing Facilities	A
4203,	3 of 3	Site Plan Existing Facilities	A
4204B,	1 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	0
4204B,	2 of 3	Site Plan – Existing, Approved, Modified & Proposed Activities	1
4204B,	3 of 3	Site Plan – Existing, Approved & Modified Activities	A
Approved Process Building No. 3 Listed Waste Treatment System (Unit Z)			
4207,	1 of 5	Process Flow, Piping and Instrumentation Diagram – Approved Operations	C
4207,	2 of 5	Process Flow, Piping and Instrumentation Diagram – Approved Operations	D
4213,	1 of 3	Equipment Layout – Approved Operations	D
4229		Process Building 3 Plan, Sections, Details	C
4230		Approved Process Building 3 Elevations	C
Approved Listed Waste Storage Tanks (Unit Y)			
4207,	1 of 5	Process Flow, Piping and Instrumentation Diagram – Approved Operations	C
4213,	1 of 3	Equipment Layout – Approved Operations	D
Approved Fuels Blending Operation (Unit 43)			
4207,	3 of 5	Process Flow, Piping and Instrumentation Diagram – Modified Fuels Blending Operations	1
4207,	4 of 5	Process Flow, Piping and Instrumentation Diagram – Modified Fuels Blending Operations	3
4213,	2 of 3	Equipment Layout – Proposed Fuels blending Operations	0
4235		Control Panel Face Layout Drum Processing	C
4236		Control Panel Face Layout Waste Processing	C
4237		Drum Processing System Schematic	C
4238		Enclosure Vacuum, Fire Prevention and Suppression	C
4239		Drum Movement Isometric	C
4240		Simplified Process Flow and Material Balance	C
4241		Waste Liquid Piping Schematic	C

Flammable Storage Tank Farm (Unit 16)

4207,	3 of 5	Process Flow, Piping and Instrumentation Diagram – Modified Fuels Blending Operations	1
4207,	4 of 5	Process Flow, Piping and Instrumentation Diagram – Modified Fuels Blending Operations	3
4207,	5 of 5	Process Flow, Piping and Instrumentation Diagram – Tank Farm Operation	1
4215		Modified Ignitable Storage Tank Form Details	F

Flammable Storage Tank Farm (Unit 22)

CHSI 4291	Proposed Tank Farm – Unit 22	A
CHSI 4293	Process Piping Between Unit 22 & Unit 16	B
CHSI 4294	Blended Liquid Storage Tanks T-415 & T-416	A
CHSI 4295	Diluent Waste Storage Tank T-417 –Vessel Lyt.	A
CHSI 4296	Metal Wash Solvent Storage Tank T-418	A
CHSI 4297B	Metal Wash Tank 424 – Vessel Layout	A
CHSI 4298B	Metal Wash Rinse Tank 427 – Vessel Layout	A

Black Clawson		
22375910-1	Assembly, Hydropulpar	3
22375910-2	Assembly, Hydropulpar	3

A description of each existing and approved/not yet constructed tank system is presented below. Detailed process descriptions for these tank operations are provided in Appendix D-1

A. Existing Tank Systems

1. Fuels Blending Operation (Unit 43)

CHSI is authorized to operate a hazardous waste fuels processing system designed by Pegasus Niagara, Inc. under the terms of the November 1993 Part B License, The Pegasus System is to be located in Building 43, the fuels blending operation (Unit 43).

The Pegasus System utilizes a series of mixing tanks, pumps, and shredders/grinders to mix organic-based solids, sludges and liquids to produce a low viscosity liquid hazardous waste fuel that can be burned for energy recovery. Under the approved design, the finished liquid fuel product is pumped to the flammable bulk liquid tank farm (Unit 16) for blending and eventual shipment offsite in bulk liquid highway vehicles or railcars.

Details on the construction, design and operation of the tanks within the Pegasus processing system is provided in the operations manual in Appendix D-11 and in CHCI DWG. No. 4213, Sheet 2 of 3, and Nos. 4235 through 4241.

An equipment layout for the Fuels Blending Operation is shown in CHCI DWG. No. 4213, Sheet 2 of 3. Process flow diagrams and piping and instrumentation are shown in CHCI DWG. No. 4207.

The layout and secondary containment design features for Building 43 are shown in CHCI DWG. No. 4213, Sheet 2 of 3.

The floor surface of Building 43 is constructed of a reinforced concrete base that is tipped with a non-absorbent chemically-resistant sealant (see appendix D-10, Data Sheet #8). Secondary containment is provided by means of a 9-inch high concrete curb at the perimeter of the building.

The construction of Building 43 has been inspected and certified by a registered professional engineer (PE). The certification attests to structural integrity of the concrete flooring, the integrity of the floor coating, and the compatibility of the coating system with the waste to be processed in the building. A copy of the PE's analysis and certification statement is provided in Appendix D-8.

2. Flammable Liquid Tank Farm (Unit 16)

Under the terms of the November 1993 Part B Permit, CHSI is authorized to operate the Flammable Liquid Tank Farm (Unit 16) to store 135,000 gallons of hazardous waste in 10 tanks. Nine tanks have a capacity of 12,800 gallons of hazardous waste while one tank has a capacity of 19,800 gallons of hazardous waste. Design details of the tank farm are presented in CHCI DWG. No 4215.

Eight of the tanks are constructed of carbon steel; the remaining two tanks are constructed of stainless steel. A professional engineering assessment of the structural integrity of the tanks is provided in Appendix D-12. Detailed tank design drawings are provided in Appendix D-36.

The floor/dike surface in the tank farm provides an individual secondary containment basin for each tank. Each containment basin is coated with a minimum 3/16-inch coat of Protecto-Coat 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system. Technical specifications for Protecto-Coat system are included in Appendix D-10, Data Sheet #2.

Each tank shall be equipped with a conservation vent, individual emergency vents and a nitrogen blanketing system. The tank shall be operated at ambient temperature and shall be maintained under positive pressure of approximately 2-inches of water column. Each tank is equipped with a continuous microwave-type liquid level monitor, which is electronically connected to a high-level alarm system. In addition, each tank is equipped with a motorized mechanical agitator/mixer to maintain a consistent blended liquid product inside each tank.

Design details of the Truck Unloading Platform (which also serves as a RCRA container storage area for vehicles) are shown on CHCI DWG. No. 4215.

B. Approved/Not Yet Constructed Tank Systems

1. Process Building No. 3 Listed Waste Treatment System (Unit Z)

The listed Waste Treatment System is located inside a new Building 3 (Unit Z). The listed waste treatment process uses conventional wastewater treatment technologies (e.g., chemical addition, precipitation, filtration, etc.) and/or specialized treatment technologies such as carbon absorption and stabilization. The listed waste system is designed to treat organic-based listed wastes (i.e., F, K, U, and P-code) hazardous wastes. Process flow, piping and instrumentation, and equipment layout diagrams for listed waste system are shown in CHCI DWG. No. 4207 Sheets 1 and 2 of 5, and 4213, Sheet 1 of 3.

The listed waste treatment system includes the process tanks, classifiers, sand filters, and carbon adsorption units (Items 123, 137, 138, 142, 149, 150, 152, & 153) identified in Table D-5. Items 138, 142, 50, and 153 are internally coated with a 6-mil coat of epoxy-based primer (Carbomastic #3) and a 6-mil Epoxy-based topcoat (Carbomastic #6) manufactured by Carboline, Inc., or equivalent system. Technical specifications for the coating system are included in Appendix D-10, Data Sheet #3.

Design and elevation details for the new Building 3 are shown in CHCI DWG. Nos. 4229 and 4230.

2. Listed Waste Storage Tanks (Unit Y)

The Listed Waste Bulk Liquid Tank Farm includes eight (8) 11,025-gallon aboveground tanks (Items 121 & 155). Six tanks are used to store untreated listed hazardous wastes; Two tanks are used to store treated effluent from the treatment process. Each of the eight tanks is cylindrical with a cone shaped bottom.

Each tank is internally coated with a 6-mil coat of epoxy-based primer (Carbomastic #3) and a 6-mil epoxy-based topcoat (Carbomastic #6), or equivalent system. Technical specifications for the coating system are included in Appendix D-10, Data Sheet #3.

All of the tanks utilize a manual feed and cutoff system, however all tanks are be equipped with continuous Ultrasonic-type liquid level monitors which are electronically connected to a high-level alarm system. The tanks are operated at ambient temperature and pressure, and are vented to the atmosphere.

The tanks are located outdoors under a single canopy structure. The secondary containment system is designed to include two separate concrete-lined basins with four tanks each. Each basin is coated with a 3/16-inch thick coat of Protecto-Coat 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system. Technical specifications of Protecto-Coat system are included in Appendix D-10, Data Sheet #2.

CHSI is also authorized to build a 70-foot long by 30-foot wide bulk Truck Loading/Unloosing Pad (Unit X) along the eastern wall of the tank farm. The floor surface will be a 10-inch thick concrete slab that is sloped to a liquid collection sump. Design details for the unit is shown in CHCI DWG. No. 4216.

3. Flammable Storage Tank Farm (Unit 22)

Under the terms of the November 1993 Part B Permit, CHSI is authorized to construct and operate the Flammable Storage Tank Farm (Unit 22) to store 51,006 gallons of hazardous waste in 7 tanks. The tanks include:

1.	T-414, Hydropulpar	3490 gallons
2.	T-415, Blended Liquid Storage Tank	10,558 gallons
3.	T-416, Blended Liquid Storage Tank	10,558 gallons
4.	T-417, Diluent Feed Tank	15,547 gallons
5.	T-418, Metal Wash Solvent Tank	6.136 gallons
6.	T-424, Metal Wash Tank	3,730 gallons
7.	T-427, Rinse Tank	987 gallons

These tanks are associated with the hazardous waste shredding system. T-414 is located in Unit 24, T-415 – T-418 are located in Unit 22, and T-424 and T-427 are in Unit 68.

T-415 and T-416 will be constructed from carbon steel as dish bottom tanks and have an operating capacity of 10,000 gallons each. These tanks will be used for storage of blended liquid from the shredding system or diluent to be fed to the shredding system. Design details are provided on CHSI DWG. No. 4294.

T-417 is an existing tank and will be used to store diluent to be fed to the shredding system or blended liquid from the shredding system. The tank is constructed of carbon steel and has an operating capacity of 15,000 gallons. Design details are provided on CHSI DWG. No. 4295.

T-418 will be constructed from carbon steel as a dish bottom tank and has an operating capacity of 6000 gallons. This tank will be used for storage of solvents (typically chlorinated) for use in the metal wash system. Design details are provided on CHSI DWG. No. 4296.

A professional engineering assessment of the structural integrity and suitability of the proposed tanks, ancillary equipment and modified secondary containment is provided in Appendix D-12.

The floor/dike surface in Unit 22 will be modified to provide an individual secondary containment basin for each tank. Each containment basin is coated with a minimum 30 to 40 mil coat of Protecto-Coat 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system. Technical specifications for Protecto-Coat system are included in Appendix D-10, Data Sheet #2.

Each tank shall be equipped with a conservation vent, individual emergency vents and a nitrogen blanketing system. The tank shall be operated at ambient temperature and shall be maintained under positive pressure of approximately 2-inches of water column. Each tank is equipped with a continuous microwave-type liquid level monitor, which is electronically connected to a high-level alarm system. In addition, each tank is equipped with a motorized mechanical agitator/mixer to maintain a

consistent blended liquid product inside each tank.

Design details of the Truck Loading/Unloading Platform (Unit 69)(which also serves as a RCRA container storage area for vehicles) are shown on CHSI DWG. No. 4292.

T-414 (Hydropulpar Tank) blends shredded wastes with low viscosity liquids to produce a thick flowable liquid. T-414 is constructed of carbon steel and has an operating capacity of 2500 gallons. Design details are provided on Black Clawson DWG. Nos. 22375910-1 and 22375910-2. The tank shall be equipped with a flame arrestor, emergency vent and nitrogen blanketing. The tank s also equipped with a liquid level point monitor which is electronically connected to a high level alarm system.

The floor/dike surface in Unit 24 is coated with a minimum 3/16 inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system. Technical specifications for Protecto-Crete system are included in Appendix D-10, Data Sheet #12.

A professional engineering assessment of the structural integrity and suitability of the proposed tank, ancillary equipment and secondary containment is provided in Appendix D-12.

A metal wash system will be utilized to clean shredded metal fragments from the shredding system and off-site generated metal which can be reclaimed after cleaning. The metal wash tank (T-424) and the rinse tank (T-427) are constructed of carbon steel. Design details are provided on CHSI DWG. Nos. 4297 and 4298. The metal wash tank is nitrogen blanketed.

The floor/dike surface in Unit 68 is coated with a minimum 3/16 inch coat of Protecto-Crete 900, a vinylester-based sealant manufactured by Dudick, Inc., or equivalent system. Technical specifications for Protecto-Crete system are included in Appendix D-10, Data Sheet #12.

A professional engineering assessment of the structural integrity and suitability of the proposed tank, ancillary equipment and secondary containment is provided in Appendix D-12.

D-2 (ii) Other RCRA-Regulated Tank Treatment Activities

Under the terms of the November 1993 RCRA Part B License, CHSI is authorized to conduct other tank treatment activities including D002 treatment and phase separation activities in the units described in D-2 (I) above.

A detailed description of the treatment activities is provided below.

1. Treatment of D002 Corrosive Liquids

CHSI has authority to "treat" D002 corrosive liquids which, upon bulking/mixing with other compatible waste streams, no longer exhibit the characteristic of corrosively, as defined at 35 IAC 721.121(1). The treatment operation is conducted in any tank (or Container) in which compatible waste streams are mixed. The success of the treatment operation is confirmed through pH testing upon completion of the consolidation/mixing activity.

Without this authority, CHSI is required to carry the D002 code, even in instances where the resultant waste stream has a pH value that does not meet the D002 corrosivity identification criteria (i.e., the pH value is greater than 2.0 but below 12.5 units). CHSI notes that many cement kilns are not authorized to accept a hazardous waste fuel identified as D002, even if the pH of the fuel is actually tested and found to be neutral. A "treatment" authorization would enable CHSI to drop the D002 waste code form the final consolidated /mixed waste stream (e.g., hazardous waste fuel), and thus provide a more accurate description of the waste on the accompanying outbound manifest.

2. Treatment Using Phase Separation Techniques

CHSI has authority to treat hazardous wastes in containers using phase separation techniques. The treatment operation involves the use of physical (e.g., filtration, gravity separation, and heat) and/or separates a solid layer from a liquid layer, or to separate two liquid layers. Phase separation may be conducted prior to onsite treatment (e.g., separation of an organic layer from a water stream) or prior to offsite shipment.

D-2 (iii) Tank Management System Exempt from RCRA

CHSI operates various tank management activities, which are exempt from the RCRA hazardous waste permitting and facility management requirements. The activities include:

A. Existing RCRA-Exempt Tank Activities
   1. Inorganic Wastewater Treatment System (Units F-N)
   2. Waste Oil Storage/Treatment Reactors (Inside Unit F)
   3. Storm Water Treatment System (Unit 47)

B. Authorized/Not Yet Constructed RCRA Tank Activities
   1. Sludge Conditioning Tank (Unit P)
   2. Additional Treatment Reactors (Inside Unit F)

CHSI notes that detailed information on the existing RCRA-exempt activities (i.e., inorganic wastewater system and waste oil storage/treatment) was originally provided as part of the November 1993 license application process, and is repeated here for informational purposes only.

A listing of the existing and approved/not yet constructed RCRA-exempt tanks, and a summary of pertinent physical data, is presented in Table D-3. Pertinent operating data for each tank is presented in Table D-4. Design details, equipment layout, and other features of the RCRA-exempt tanks are provide dint he following drawings

CHCI DWG. No.	Title	Issue
4205, 1 of 2	Process Flow, Piping and Instrumentation Diagram – Existing Operations	C
4205, 2 of 2	Process Flow, Piping and Instrumentation Diagram – Existing Operations	D
4206	Piping and Instrumentation Diagram - Air Pollution Control Systems for Existing Operations	C
4207, 1 of 5	Process Flow, Piping and Instrumentation Diagram – Approved Operations	C
4208	Equipment Layout Existing Facilities	E
4213, 1 of 3	Equipment Layout – Approved Operations,	D
4213, 3 of 3	Equipment Layout – Approved Operations,	B
4214	Existing Tank Farm Details	A
4219	Proposed Sludge Conditioning Tank Details	D
4231	Reactor Vessel Installation and Secondary Containment Plan and Details	C

A detailed process description for each tank unit operation is provided in Appendix D-1

A. Existing RCRA-Exempt Tank Systems

1. Inorganic Wastewater Treatment System (Units F-N)

CHSI operates an existing waste water treatment system under a permit issued by the Metropolitan Water Reclamation District of Greater Chicago, Inc. (MWRD), a publicly owned treatment works (POTW). The CHSI wastewater treatment system is exempt from RCRA regulations pursuant to 35 IAC 724.101 (f) (6).

With the exception of four bulk storage tanks (Items 10, 13, 24, and 31) and the four concrete receiving tanks (Items 1 & 8), all of the tanks are housed inside Building 1 and Building 2. The layout of the indoor tanks and associated wastewater treatment equipment is shown in 4208. The layout of the bulk storage tanks and the concrete receiving tanks in relation to the entire facility is shown in CHCI DWG. No. 4204. Piping and instrumentation diagrams (PID's) showing the use of each tank within the storage and treatment process, waste flows, and the air pollution control equipment in use at the facility are included in CHCI DWG. No. 4205 Sheet 1 of 2, 4205 Sheet 2 of 2, and 4206.

The tanks which make up the inorganic wastewater treatment system are described below. Note that "item number " refers to the tank identification number listed in Tables D-3 and D-4

a. Concrete Receiving Tanks (Unit J)

CHSI utilizes four 7,000-gallon in-ground concrete tanks (Items 1 & 8) for general waste acceptance, pretreatment, and other handling activities. The receiving tanks were built in-place in 1980 using reinforced concrete. The inside concrete surfaces of the tanks are each lined with ¼-inch fiberglass reinforced liner topped with a top coat of vinylester (Item 8) or epoxy (Item 1) resin. Technical specifications for the coating system, manufactured by Dudick Corrosion Proof, Inc., are presented in Appendix D-10, Data Sheet #2. Design details for the receiving tanks are shown in Appendix D-13.

The receiving tanks are rectangular in shape and have a sloped bottom to facilitate waste removal. The tanks are partially in –ground with top 2-foot portion projecting above ground. The tanks are constructed together and are provided with a sloped trench (i.e., scupper) along the entire outer perimeter to collect any accidental overflow. The trench also acts as a collection system for the truck-unloading pad located directly in front of the tanks. The waste is received by gravity drain from the tankers. Waste removal is accomplished using manually operated pumps.

Specific waste handling activities for which the receiving tanks are utilized include:

1. Unloading and holding of incoming bulk liquid loads;
2. Consolidation of drummed liquids;
3. Pretreatment of complex metals (e.g., copper, nickel) Containing total ammonia content of less than 2000ppm;
4. Pretreatment of phenol less than 100 ppm;
5. Pretreatment (oxidation) of organic D-codes;
6. Elementary neutralization;
7. Accumulation and holding of filtrate from the plate and frame Filter press used for sludge dewatering;
8. Accumulation and holding of overflow from sludge concentrator tanks;
9. Accumulation and holding of decant water from the waste oil system;
10. Backflow from tank to draw prime on pumps;
11. Accumulation and holding of liquids from containment sumps;
12. Accumulation and holding of rinsates from truck washout activities; and
13. Accumulation and storage of rinsates from washout of empty drums.

b. Outdoor Bulk Storage Tanks (Unit N)

The four (4) storage tanks (Items 10, 13, 24 and 31) are located outdoors and were built in 1980 in accordance with AWWA standards. The tanks are used to store untreated waste, treated effluent, and concentrated sludge. All tanks are internally coated with a 6-mill coat of epoxy-based primer (Carbomastic #3) and a 6-mil epoxy-based topcoat (Carbomastic #6). Technical specifications for the coating system are included in Appendix D-10, Data Sheet #3. Design details for the existing tanks are provided in Appendix D-14.

The tanks are supported by 12-inch thick reinforced concrete ring foundations support the tanks. The two 30-foot by 40-foot tanks (Items 10 and 24) are anchored to the foundation using 12 anchor shoes each. The ring foundation extends 12 inches above the immediately surrounding ground. The area within the ring foundation is lined with a 20-mil thick impervious polyvinyl chloride (PVC) liner installed 4 inches below the surface of the wall. Oiled sand is placed on top of the liner.

A common diking is provided surrounding the tanks. This dike area is lined with a 20-mil thick PVC liner. The liner is glued to the tank foundation and other penetrations such as concrete pillars for pipe supports. Construction details for the tank farm, including the diked area, tanks, liner, foundation, and pipe supports are shown in CHCI DWG. No. 4214. The tanks are fitted with air diffusers. The mix tank (Item 13), the effluent storage tank (Item 31), and the primary storage tank (Item 10) are constantly aerated to keep the mixture homogeneous, and are vented through a dual bed automatic activated carbon scrubbers to remove any incidental volatile organic that might be present in the wastes. No chemical additives are introduced into the tanks.

c. Indoor Treatment Tanks (Inside Units F & G)

The indoor treatment tanks include seven separate operation units within the existing treatment process building. The units include:

(i) Main Treatment Tanks

The main treatment train includes the chemical treatment unit (Item 17), four clarifiers (Item 19), the secondary clarifier (Item 20) and clarifier collection tank (Item 49). This treatment train is used for the precipitation and coagulation heavy metals and suspended solids. A manually controlled pump feeds flow to the chemical treatment unit (CTU). From the CTU, waste flow cascades to the four clarifies and subsequently to either secondary clarifier or to the clarifier collection tank. All tanks are open top and are operated at an ambient temperature. Chemicals are added only to the chemical treatment unit. Design details for the CTU and clarifiers are included in Appendix D-15 and Appendix D-16. All tanks are internally coated with a 6-mil coat of epoxy based topcoat (Carbomastic #6). Technical specifications for the coating system are included in Appendix D-10, Data Sheet #3.

(ii) Secondary Treatment Tanks

The secondary treatment tank system is an effluent polishing system that was added in 1987. The system includes three open top tanks (Items 51, 52, and 53) which are utilized only the need for further treatment arises. Flow cascades by gravity (overflow) sequentially through the tank ad ultimately to the secondary clarifier (Item 20). Design details for the secondary treatment tanks are shown in Appendix D-17. The three polishing tanks are not lined. The secondary clarifier is internally coated with a 6-mil coat to epoxy-based primer (Carbomastic #3) and a 6-mil epoxy-based topcoat (Carbomastic #6). Technical specifications for the coating system are included in Appendix D-10, Data Sheet #3.

(iii) Concrete Sludge Sump

The concrete sludge sump (Item 22) is a 13,000-gallon in-ground tank used for collection of clarifier underflow and equipment drain. The tank is rectangular in shape and has a sloped bottom with an open top fitted with bar grating. The tank was built in-place out of reinforced concrete cement. Design details for the concrete sludge sump are shown in Appendix D-18. No internal coating is considered necessary since the pH of the sludge collected in the sump ranges between 8.5 and 10, and the material is not considered to be corrosive to concrete.

(iv) Sludge Conditioning Tank

The sludge conditioning tank (Item 29) is 10,400-gallon above ground Carbon Steel tank used for preparing a batch of sludge for dewatering by the addition of chemical additives. The tank is closed top and is vented to atmosphere, and is fitted with an ultrasonic level indicator and a high level alarm. Design details for the sludge-conditioning tank are shown in Appendix D-19. The tank is not internally coated as the pH of the waste stored in the tank is between 8.5 and 12 and is not considered corrosive.

(iv) Reactor Vessel

The reactor vessel (Item 3) is a rectangular; closed top tank constructed out of Carbon Steel. The tank, which is connected to two packed bed scrubbing towers, is used for specialized bath treatment using chemical reactions. Design details for the reactor vessel are shown in Appendix D-20. The tank is internally with the coating system that includes: 1) 3-mil to 5-mil coat of P-370 primer; 2) a 1/16-inch coat of Ceilcrete 6650AR with a glass cloth, and; 3) a second 1/16-inch coat of Ceilcrete 6650AR. Technical specifications for the coating system, manufactured by Ceilcote, Inc, are presented in Appendix D-10, Data Sheet #4. The reactor is operated under slight negative pressure (1/4-inch of water column) due to the induced flow of the scrubber fans. Due to the exothermic nature of some chemical reactions, (such as acid neutralization), heat may be produced. However, the unit is operated below 140 degree F via controlled chemical feeds, Mounted above the reactor is a labpack pouroff station or inorganic labpacks. Liquid collected in the reactor from this operation is batch treated.

(vi) Effluent Collection Tank

The effluent collection tank (Item 42) acts as a surge tank for the effluent flow coming from the flow metering Parshall flume, prior to the pressurized discharge to the sewer. It is an open top rectangular tank constructed out of coated carbon steel. Design details for the effluent collection tank are shown in Appendix D-21.

(vii) Waste Storage Tank

The waste storage tank (Item 63) is constructed out of Fiberglass reinforced plastic (FRP) and is used for temporary storage of ammonium sulfate from the acid scrubber. It is a closed top tank which vented to atmosphere and fitted with a mechanical level indicator. Design details for the waste storage tank are shown in Appendix D-22.

2. Waste Oil Storage/Treatment (Unit F2)

Four of the tanks (Items 58 and 59) listed on Tables D-3 and D-4 are used for the storage and processing of non-hazardous waste oils. CHSI notes that these waste oil tanks are not subject to 35 IAC 724.292 standards.

The oily waste treatment system consists of four (4) tanks which are used for batch treatment of emulsified oily wastes. Two product tanks (Item 59) are used to store separated/recovered oil layer and "cuff" layer from the waste. Waste oil in the two reactors (Item 58) is heated to a temperature of 120 to 140 degree F using steam. The potential for accidental overheating is considered minimal due to the fact that: 1) the facility has only a very limited supply of steam and 2) the heating process is conducted gradually so as not to overheat the tanks. The reactors are vented through dual bed activated carbon scrubbers for the removal of any incidental hydrocarbons that may be present. Each of the four tanks is fitted with an individual mechanical level indicator. Design details for the waste oil tanks are shown in Appendix D-23.

3. Stormwater System (Unit 47)

CHSI has assumed operational control of an existing wastewater treatment system operating under the CWA through a permit issued by the MWRD. This existing system was designed to treat air pollution control process waters from a hazardous waste incineration unit formerly operated at the site. The system is also designed to treat stormwater collected from the incineration facility complex.

The hazardous waste incinerator has ceased to exist, but the wastewater treatment system continues to operate to treat collected stormwater. It is CHSI intention to modify the treatment system so that it may be used to treat hazardous and non hazardous waste generated from offsite sources. The licensing and operation of this system is exempt from RCRA permitting requirements. Any future modifications to this system will be submitted to the IEPA Bureau of Land and the MWRD for review and approval.

B. Authorized/Not Yet constructed RCRA-Exempt Tank Units

1. Sludge Conditioning Tank (Unit P)

The sludge conditioning tank (Item 101) is an 11,780-gallon capacity vertical cylindrical tank constructed of Carbon Steel The tank is internally coated with a 6-mil coat of epoxy-based primer (Carbomastic #3) and a 6-mil epoxy-based top coat (Carbomastic #6), or equivalent system. Technical specifications for the coating system are included in Appendix D-10, Data Sheet #3. The tank is equipped with a high level alarm and continuous level indicator, and filled using a manually operated feed system. The tank operates a t ambient temperature and pressure, and is vented to the atmosphere.

The tank is located outdoors on a concrete containment pad adjacent to Building 2. The pad is coated with 2-mill Futura Bond 502 primer and a 50-mil thick coat of Geothane 520 (a modified urethane coating), or equivalent system. Technical specifications for the coating system manufactured by Futura Coating, inc. is presented in Appendix D-10, Data Sheet #5

2. Pretreatment Reactors(Inside Unit F)

CHSI is authorized to install two new reactors (Items 111 & 118) intended for waste pretreatment operations inside existing Building 1. Each reactor is designed for batch treatment operations, and is equipped with a monitoring and alarm system to control liquid level, pH, and temperature. The level monitor is electronically connected to an automatic waste feed cutoff. Chemical feeds are controlled by either pH or temperature as monitored in the reactor. Both reactors are operated at a slight negative pressure created due to the induced flow by scrubber blower.

The floor of Building 1 (Unit F), which includes a liquids collection sump, is intended to provide the required secondary containment for the new reactors. The concrete floor shall be coated with a ¼-inch thick coat of Stonclad GS epoxy resin mortar, or equivalent system. Technical specifications for the Stonclad system, manufactured by Stonehard, Inc., are presented in Appendix D-10, Data Sheet #6.

D-2a Existing Tank Systems

D-2a (1) Assessment of Existing Tank System's Integrity 703.202(a), 724.291

A. RCRA-Regulated Tank Systems

In accordance with the requirements of 35 IAC 724.291, a qualified, registered professional engineer (PE) has reviewed and certified (sealed) the structural integrity and suitability of the existing tanks and ancillary equipment used for storing and treating hazardous waste.

Copies of the certified tank assessments for the Tank Farm (Unit 16) is included in Appendix D-12; certification of the Tank Farm containment structure is included in Appendix D-26. A certified assessment for the tanks used in the Pegasus hazardous waste Fuels Blending Operation (Unit 43) is included in Appendix D-27.

B. Tank Systems Exempt Under RCRA

The wastewater treatment system and the waste oil storage/treatment system are exempt from the requirements of 35 IAC 724.291. However, as part of the November 1993 Part B License Application process, CHSI retained an independent registered professional engineer (PE) to conduct an assessment of the integrity of the existing inorganic wastewater treatment tanks and ancillary equipment.

The PE assessment determined that the tanks are adequately designed and have sufficient structural strength and compatibility with the wastes to be stored or treated to ensure that no tank will collapse, rupture or fail. The PE assessment considered: 1) design standards according to which the tanks and ancillary equipment were constructed; 2) the hazardous characteristics of the waste (s) that have been and will be handled; 3) existing corrosion protection measures; and 4) the results of internal tanks integrity inspections. A copy of the PE certification letters are included in Appendix D-24

D-2a(2) **External Corrosion Protection** 703.202(e), 724.292(b) (3)

A. RCRA-Regulated Tank Systems

Each of the storage tanks in Unit 16 are fitted with stainless steel covered insulation jackets which prevent direct contact between precipitation and the external wall surface of the tanks. Both of the storage tanks in Unit 43 are located indoors and are externally coated with a weather- resistant epoxy base paint to a minimum 6-mil dry film thickness to prevent corrosion of external surface. The integrity of the insulation and surface coating will be inspected on a daily basis as part of CHSI's inspection plan.

B. Tank Systems Exempt From RCRA

The existing inorganic wastewater treatment system is exempt from the requirements of 35 IAC 724.292. Nonetheless, all existing tanks that are located outdoors have been outfitted with external corrosion protection. The concrete receiving tanks (Item 1 & 8) and the concrete sludge sump (Item 22) are externally lined with a 20-mil thick PVC liner. All exposed external surfaces of the outdoors bulk storage tanks (Items 10,13,24 and 31) have been coated with an epoxy –based paint at a minimum 6-mil dry film thickness.

D-2b **New Tank Systems**

D-2b (1) **Assessment of New Tank System's Integrity** 703.202(a), 724.292

In accordance with the requirements of 35 IAC 724.292, a qualified, registered professional engineer (PE) has reviewed and certified (sealed) the structural integrity and suitability of the authorized/not yet constructed tanks and ancillary equipment used for storing and treating hazardous waste.

Copies of the certified tank assessments for the approved/not yet constructed Listed Waste Treatment System (Unit Z) and Listed Waste Storage Tanks (Unit Y) are included in Appendix D-25. A copy of the certified tank and containment structure assessments for the Tank Farm (Unit 22), Building 24 (Unit 24) and Metal Wash System (Unit 68) are included in Appendix D-12.

D-2b (2) **External corrosion Protection** 703.202(e), 724.292(f)

Each of the Approved/Not Yet Constructed steel tanks are to be externally coated with a weather- resistant epoxy base paint to a minimum 6-mil dry film thickness to prevent corrosion of external surface. The integrity of the surface coating will be inspected on a daily basis as part of CHSI's inspection plan.

D-2b(3) **Description of the Tank System Installation and Testing Plans and Procedures** 703.202(f), 724.292(b) – (e)

To ensure that proper handling procedures are adhered to in order to prevent damage to all proposed tank systems during installation, CHSI shall, prior to placing a new tank system or component into use, retain a qualified installation inspector or a qualified, registered PE, either of whom is trained and experienced in the proper installation of tank systems or components, to inspect the system for the presence of any: weld breaks; punctures; scrapes of protective coatings; cracks; corrosion; or other structural damage or inadequate construction/installation. All new tanks and ancillary equipment shall be tested for tightness prior to being placed into use. Finally, all ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction. All piping shall be installed in accordance with ANSI B31.3 standards.

D-2c **Dimensions and Capacity of Each Tank** 703.202(b)

The dimensions and capacity of each tank are provided in Table D-3 for RCRA-Exempt Tanks and in Table D-5 for each existing and authorized/not yet constructed RCRA-Regulated tank.

D-2d **Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls** 703.202 (c)

A. RCRA-Regulated Tank Systems

Feed system, safety cutoff, bypass system, and pressure control features for the existing and approved/not yet constructed RCRA-regulated tanks are listed on Table D-6 and summarized below.

1. Listed Waste Treatment System (Unit Z)

Given the nature of the wastewater treatment operations, the design and use of certain tanks (i.e., batch treatment, continuous cascading outfall), and CHSI's continuous operator/laboratory control over each phase of the treatment operation, the feed system and safety cutoff controls are all manually activated. All of the tanks are operated at atmospheric pressure. The reactor vessel is operated at a slight negative pressure, and has a level controlled feed cutoff.

2. Listed Waste Storage Tanks (Unit Y)

The six untreated waste storage tanks and two treated effluent storage tanks utilize manual feed and cutoff systems. The tanks are equipped with ultrasonic-type continuous liquid level monitors and a high-high level alarm system. The tank filling function is constantly attended by an operator. Therefore, knowledge of the tank level, available space and a warning of high level allow for sufficient time to manually cutoff the feed without overfilling any tank.

3. Fuels Blending Operation (Unit 43)

Refer to the Pegasus system operations manual in Appendix D-11 for a description of the feed controls, safety features, and process monitoring instrumentation.

4. Tank Farm (Unit 16)

The feed systems, level controls and pressure controls for the tank farm (Unit 16) are shown on CHCI DWG. No. 4207 sheets 3 through 5. The location of ancillary equipment in and around the tank farm is provided in CHCI DWG. No. 4250.

There are 10 tanks within the tank farm structure. Each tank is equipped with its own secondary containment basin. Nine of the tanks in the tank farm (TK-101 through TK-107, TK-109, TK-110) have a capacity of 12,800 gallons; the remaining tank (TK-112) has a capacity of 19,800 gallons. The tanks shall be used as follows:

T103-106 & 109: Carbon Steel Tanks, for Hazardous Waste Fuels.

TK-101 & 107: Stainless Steel Tanks, for Mild Acidic Wasters, Lean Waters, and /or Hazardous Waste Fuels.

TK-102 & 110: Carbon Steel Tanks, for PCB Wastes.

T112: Carbon Steel Tank, for Neutral pH Waters, Lean Waters, and/or Hazardous Waste Fuels.

Each tank in Unit 16 is provided with individual single fill line and individual single drain line. The fill lines and the drain lines for tanks TK-103 thru TK-106 and TK-109 shall be connected to three common fill headers and three drain headers respectively thru automatic air actuated valves (AOV). The fill lines and drain lines for tanks TK-101 and TK-107 are connected to a common fill header and a drain header respectively through AOV's. Tanks TK-102, TK-110, and TK-112 are each equipped with individual fill and drain headers lines through AOV's to ensure pooper waste segregation purposes. All AOV's will be operated from the control panel and will have position indicating lights. The control logic will allow only one tank to be filled through one header.

In general, the feed system for all the tanks (routing, pump selection and start of the pump) is activated manually by the operator but the cutoff is automatic. After completing the necessary hose connections, the operator selects the feed tank by opening the particular AOV valve(s) (from control panel) on the feed piping header. The valve is open. Then the operator manually turns the Receiving/Transfer pump on. The setting of the AOV valve(s) will select (through logic) which tank level switches and level set points will shut the pump off in case of high-level alarm condition. The drain system operates similar to the feed system. The level in the rail car or tanker is monitored manually during feed or drain operation.

Each tank in Unit 16 is provided with individual level monitoring system using microwave radar technology. The level monitoring system is capable of three alarm outputs (Spill, SPL, and SPH) which are connected to an audible and visual alarm system. Set point Low-Low (SPLL) is off during draining operation. Set point low (SPL) is used for turning the tank agitator off when the level in the tank falls below the lower paddle. Set point high (SPH) is used for sounding the high level alarm and automatically shutting the transfer pump off during fill operation. Each tank is also provided with two point level switches (LSL and LSH) to provide redundancy. Level switch low (LSL) is used for level condition and automatically shutting the transfer pump off during the fill operation in case the level monitoring system failed. Due to automatic cut-off system and redundancy in level controls, it is not likely for an overfill situation to occur. Thus no by pass system is provided for any tanks.

The headspace of each tank is blanketed with nitrogen to provide an inert atmosphere above the liquid surface. A pressure between 1 and 2 inches of water column is maintained in the headspace with nitrogen. Each tank is provided with a low-pressure switch (LDP) which will activate an alarm if the pressure in the tank drops below 0.5 inches of water to alert the operator of possible malfunction in nitrogen supply. Each tank is also supplied with a fire arrestor and a pipe away type combination breather vent. The pressure side of the combination breather vent is vented to atmosphere through a common vent header and carbon columns. Each tank is provided with a high-pressure switch (HDP) which will activate an alarm and shut off any transfer pumps feeding the tank if the pressure in the tank rised above the set point. Each tank is also equipped with an emergency vent.

The storage tanks are not heated using any external source and no internal heat generation is anticipated. Thus no temperature controls are provided to the tank system. However local temperature indicators are provided the discharge of the transfer and receiving pumps to monitor the temperature.

In general, the piping for all the tanks except TK-101 and TK-107 shall be constructed of Carbon Steel. Piping material for tanks TK-101 and TK-107 shall be 316SS. The piping shall be designed to withstand 100 PSIG at minimum. The pumps shall be of Carbon Steel, Iron or Stainless Steel construction. The material of construction for individual pump is provided in the equipment list on CHCI drawings 4207 sheet 3 of 5, sheet 4 of 5 and sheet 5 of 5. The gasket material shall be EPDM, Viton, or Teflon (E.G. PTFE). The hoses shall be made of chemical resistant rubber with cross-linked Polyethylene lining and Stainless Steel fittings.

The tank system shall be operated from an operation center adjacent to tank farm. All the control panels and the alarm panels for the tank system operation shall be located within the operations center. All audible signals shall be capable of being heard throughout the operations center and the tank farm loading /offloading area. The automated designed tank control features allow material transfers to and between the tanks to be accomplished by a single operator stationed in the operation center. Outbound vehicles shall be loaded in accordance with Truck/Rail standard operating procedures (SOP'S) using the equipment shown in CHCI DWG. Nos. 4250 and 4251.

Upon activation of any alarm signal, the tank farm operator shall immediately investigate the condition and take the appropriate response measure. For example, when the high level alarm is triggered, the pumps shall (by design) automatically shut down, and the operator shall then reset the feed system to direct the waste to a second tank which has available volume. Additional flow into the first (i.e., filled) tank is not possible since the control logic of the system will not open to allow waste into the tank until the liquid level is reduced to below the liquid level control monitor.

4. Tank Farm (Unit 22)

The feed systems, level controls and pressure controls for the shredding process are shown on CHSI DWG. No. 4286. In Unit 22, each tank is equipped with a continuous microwave-type liquid level monitor which is electronically connected to a high level alarm system and automatic feed cutoff. Upon activation of any alarm signal, the tank farm operator shall immediately investigate the condition and take the appropriate response measure. For example, when the high level alarm is triggered, the pumps shall (by design) automatically shut down, and the operator shall then reset the feed system to direct the waste to a second tank which has available volume. Additional flow into the first (i.e., filled) tank is not possible since the control logic of the system will not open to allow waste into the tank until the liquid level is reduced to below the liquid level control monitor.

The Hydropulpar Tank, Metal Wash Tank and Rinse Tank are equipped with a liquid level point monitor which is electronically connected to a high level alarm system. Refer to the shredding system operations manual in Appendix D-11 for a complete description of the feed controls, safety features, and process monitoring instrumentation.

B. Tank Systems Exempt From RCRA

Feed system, safety cutoff, bypass systems, and pressure controls for the three authorized/not yet constructed RCRA-exempt tanks are listed on Table D-6 and summarized below.

1. Sludge Conditioning tank (Unit P)

The feed system utilizes a manually operated pump. The tank is equipped with a continuous level indicator, which allows the operator to monitor the feed. Sufficient freeboard is ensured through the use of a highlevel alarm, which will set at a level which provides sufficient time for operator to stop the feed pumps. The tank will be operated at an atmospheric pressure and has an overfill pipe which directs the flow into the secondary containment area in case of a failure of alarm system.

2. Pretreatment Reactors (Inside Unit F)

The feed system to each reactor tank will utilize an individual pump that is electronically controlled to automatically shut off when the pre-set level is reached in the reactor. Either pH or temperature will control chemical feeds to the reactors.

D-2e Diagram of Piping, Instrumentation and Process Flow for Each Tank System 703.202(d)

A. RCRA-Regulated Tank Systems

Piping, instrumentation and process flow diagrams for each tank system and associated equipment are identified in CHCI DWG No. 4207 Sheets 1 through 5, and the following:

Tank System	CHCI DWG.
- Listed Waste Treatment System (Unit Z)	4229
- Listed Waste Storage Tanks (Unit Y)	4216
- Fuels Blending Operation (Unit 43)	4213, Sheet 2 of 3
- Tank Farm (Unit 16)	4215
- Shredding Process (Units 22, 24 & 68)	CHSI 4286 CHSI 4287

The drawings provide details of waste flow patterns, piping size (s), and instrumentation associated with the proposed tanks and systems. Also shown are feed pumps, withdrawal pumps, gravity drains, overflow pipes, vents, emergency vents, alarms level indicators, pressure indicators and controllers, and temperature indicators and controllers.

All existing and approved/new tank system components and ancillary equipment (e.g., hose coupling, pipe caps, etc.) shall be constructed of carbon steel, stainless steel, or other material which is compatible with the waste materials being contacted. All pipe-hose connections utilize shall utilize EPDM, VITON, or TEFLON (e.g., PTFE) gaskets. All existing and approved/new pumps shall be of carbon steel, iron or stainless steel construction, and shall be air diaphragm pumps which are seal less, or centrifugal pumps with a double mechanical sealant a liquid barrier fluid. The material of construction of for individual pumps is provided in the equipment list on CHCI Drawing 4207 Sheet of 5, Sheet 4 of 5 and Sheet 5 of 5. In general, the piping for all the tanks except TK-101 and TK-107 (Unit 16) shall be constructed of Carbon Steel. Piping Material for tanks TK-101 and TK-107 shall be 316SS. The piping shall be designed to withstand 100 PSIG at minimum. The hoses shall be made of chemical resistant rubber with cross-linked polyethylene lining and stainless steel fittings.

B. Tank System Exempt From RCRA

The authorized/not yet constructed inorganic wastewater treatment system tanks are exempt for 35 IAC part 703 regulations. However, for informational purposes only, secondary containment details are provided in CHCI DWG. No. 4219 (Sludge Conditioning Tank) and CHCI DWG. No. 4231 (Pretreatment Reactors).

D-2f Containment and Detection of Releases 724.293

D-2f (1) Plan and Description of the Design, construction, and Operation of the Secondary Containment System for Each Tank System 724.93 (b) – (f), 703.202(g)

A. RCRA-Regulated Tank Systems

Each of the existing and approved/not yet constructed tank systems is equipped with a secondary containment structure (i.e., vault) which meets all applicable design and operating requirements specified in 35 IAC 724.293. For process tanks located inside a building, the concrete-lined and sealed floors of the building act as a "vault" and provides the required secondary containment. Outdoor task are situated aboveground in concrete-lined and sealed dikes. Detailed plans showing the design, construction of the vault systems are shown in the drawings referenced in Section D-2 above and repeated here for the ease of review:

Tank System	CHCI DWG. No.
- Listed Waste Treatment System (Unit Z)	4229
- Listed Waste Storage Tanks (Unit Y)	4216
- Fuels Blending Operation (Unit 43)	4213, Sheet 2 of 3
- Tank Farm (Unit 16)	4215
- Shredding System (Units 22, 24 and 68)	CHSI 4286 CHSI 4287

Additional details are provided in Section D-2f (1) (a) through (c) below.

B. Tank Systems Exempt From RCRA

The authorized/not yet constructed inorganic wastewater treatment system tanks are exempt form 35 IAC Part 724 regulations. However, for informational purposes only, secondary containment details are provided in CHCI DWG. No. 4219 (Sludge conditioning tank) and CHCI DWG. No. 4231 (pretreatment reactors).

D-2f (1) (a) Tank Age Determination 724.293(a), 703.202(g)

The age of each tank at the facility is provided in Table D-3 for RCRA –Exempt tanks and in Table D-5 for existing and approved/not yet constructed tanks regulated under RCRA.

D-2f (1) (b) **Requirements for Secondary Containment and Leak Detection** 724.293 (b)- (c), 703.202(g)

The secondary containment systems to be constructed for the authorized /not yet constructed tanks systems are designed, and will be installed and operated, so as to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater or surface water at any time during the use of the tank system. In addition, the secondary containment structures are equipped with devices, which will be capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

All of the secondary containment systems are designed with an adequate foundation to support the structures and the tank systems within them. The concrete mat foundation for all proposed tank farms is designed to withstand uneven reaction forces due to soil motions caused by differential settlement, freeze/thaw cycles, and frost heaves. Engineering design and secondary containment calculations for the authorized/not yet constructed Listed Waste Treatment System (Unit S), Listed Waste Storage Tanks (Unit Y) and Tank Farm (Unit 22) are shown in Appendix D-28. Similar design and secondary containment calculations for the existing Tank Farm (Unit 16) are shown in Appendix D-29.

All tank containment systems are built directly on the soil at grade level, so that the slab supporting the tanks is at or above the ground level. Therefore, there are no external hydrological forces acting on the structure or on the interior coating system. Moreover, since the containment structures (vaults) are above ground and have concrete walls that extend above surrounding grade, run-on or infiltration of ground water is not possible. The ground surrounding each secondary containment system will be graded to divert the rainfall away from the structures as shown on CHCI DWG. No. 4204B.

All secondary containment structures are designed such that the tanks are freely supported within the vault, either on structural supports, such as legs, for cone bottom tanks; or on the sub-pad for poured concrete with no sub-grade joints, thus eliminating the need for waterstops. The use of special concrete mix and the control of overall size of the containment structures have eliminated requiring control joints.

All secondary containment structures are sloped to collection sump(s) in order to drain and remove liquids resulting from leaks, spills or precipitation. Each sump is equipped with a liquid level sensor that is electronically connected to an alarm system. In addition, the daily inspection program shall include a visual check of each tank containment structure and liquid collection sump for the presence of accumulated liquids.

In the event of precipitation or a failure of primary tank structure, the liquid will flow into the sump(s), thus activating the alarm. The activation of alarm system shall initiate immediate response from the facility operations personnel to investigate the location, extent and cause of the leak. Plant personnel shall immediately enact the facility's Contingency Plan (see Section G) if the cause is determined to be spill or leak from a tank. All liquids accumulating inside the secondary containment unit shall be pumped into the other storage tanks waste which is compatible with the liquid which

accumulated/spilled; otherwise, the liquid shall be pumped into tanker trucks for immediate removal from the containment area. If the detected liquid is due to precipitation, then the liquid shall be pumped into the storage tank(s) located wthin the containment structure. Routine daily inspection shall ascertain proper functioning of the liquid sensors.

Any precipitation or spilled/leaked liquids collected within a secondary containment system sill be either treated on site or containerized (In a drum or Bulk Tank) and shipped off-site to a properly licensed waste management facility. Depending upon the quantity of accumulated liquid, CHSI shill utilizes absorbent materials, portable pumps and/or vacuum trucks to remove accumulated liquids.

With respect to rainwater, within 24 hours of completion of a precipitation event, rainwater is removed from all sumps, pallets, etc. And place into portable containers such as tote tanks or bulk trailers. The collected water carries generator status and, there fore it may be stored in a generator accumulation area for up to 90 days in accordance with CHSI's large quantity generator (LQG) management plan described in section C of this application.

Prior to disposal, a composite sample of the collected rainwater is submitted for analysis that consists of group I parameters (See Section C, Waste Analysis Plan, Table C-12), RCRA metals, PCB's and an F001-F005 scan. Upon submit of samples, laboratory results are typically available within one week. Upon review of the data generated by the above analysis, the laboratory manager makes a determination of the disposition of this waste. The waste may be treated on –site, or sent for off-site disposal.

D-2f (1) (c) Requirements for External Liner, Vault, Double-Walled Tank or Equivalent Device
703.202(g), 724,293 (d) and (e)

The secondary containment volume for a vault structure is required to be large enough to contain: 1) 100% of the largest tank within the containment structure or 10% of the total volume of all tanks within the structure, whichever is larger, and; designed to prevent run on or infiltration of precipitation unless the collection system has sufficient excess capacity to contain precipitation from a 25-year 24—hour rainfall event. Secondary containment design calculations are provided in appendix D-28 (Approved /not yet constructed units) and Appendix D-29 (existing).

All vault systems shall be constructed with chemically resistant water stops in place at all construction joints using Sonneborn "Sonolastic NP-1" joint compound or equivalent material (Appendix D-10, Data Sheet #7). All interior surfaces of all secondary containment units shall be provided with a coating that is compatible with the wastes stored in the tanks contained by the structure, The coating systems are identified in Section D-2a and D-2b above. No exterior moisture barrier is used on the surfaces of the vaults, since it is not considered to be a factor due to the type of design of the vaults that do not produce any exterior hydrological pressure.

The tanks in the Tank Farms (Units 16 & 22)) shall be provided with nitrogen blanketing to prevent formation and ignition of vapors. In addition, each of the tanks is equipped with a conservation vent to maintain a predetermined pressure within each tank. The breathing losses from each tank shall be vented through the conservation vent, when the combined pressure within the manifold system exceeds the pre-set pressure, and released into atmosphere after passing through a set of carbon beds to remove any incidental organic vapors. For safety reasons, each tank shall also be fitted with an individual emergency vent and a flame arrestor.

CHSI has incorporated into tank farm/truck unloading areas (Units 16 and 22), two vapor balancing lines, rigidly connected at one end through individual flame arrestor to the activated carbon vapor control units. The other end of these lines will have a shut off valve and a hose connection. During loading or unloading of railcars or tank trucks through a a special dome cover, the tanker/railcar that is to be worked on will be connected to the applicable vapor balancing line via hose. During tanker/railcar filling operation, the displaced vapors will be conveyed from the tanker/railcar to the activated carbon bed. During unloading operation, the same connection will convey vapors & nitrogen displaced from the tank being filled, to the tanker/railcar being emptied.

CHSI has an SOP for carbon breakthrough and change-out based upon similar operation experience at other hazardous waste facilities. Breakthrough shall be determined through measuring of inlet/out air concentrations of volatile organic compounds. Breakthrough shall have occurred when the outlet concentration exceeds a certain percentage of the inlet concentration, as established in the final air pollution control permit for the device. In addition, CHSI shall maintain at least a supply of at least one (1) replacement carbon canister at all times.

The Fuels Blending Operation (Unit 43) and Shredding Operation (Units 24 & 68) process tanks and equipment operate in fully-enclosed, nitrogen-blanketed atmosphere to prevent formation and ignition of vapors. The Fuel Blending System (Unit 43) and Shredding System (Unit 24) are equipped with emergency carbon dioxide deluge systems in case of fire or excessive temperature within the unit. Unit 24 also has a deflagration system utilizing dry chemical extinguishing agent in case of pressure changes in the system. Detailed descriptions of these systems are provided in Appendix D-11. Exhaust from the units shall be directed through activated carbon air pollution control devices.

D-2 (1) (d) Secondary Containment and Leak Detection Requirements for Ancillary Equipment

A. RCRA-Regulated Tank System

Piping and ancillary equipment for the existing and authorized/not yet constructed systems are shown in the drawing referenced in Section D-2 above and repeated here for ease of review:

Tank System	CHCI DWG. No.
- Listed Waste Treatment System (Unit Z)	4207, Sheet 1 of 5
- Listed Waste Storage Tanks (Unit Y)	4207, Sheet 2 of 5
- Fuels Blending Operation (Unit 43)	4207, Sheet 3 & 4 of 5
- Tank Farm (Unit 16)	4215
- Shredding System (Units 22, 24 & 68)	CHSI 4286 CHSI 4287

As discussed in the secondary containment section for the tanks, all of the tanks are provided with a lined and sealed concrete vault that meets applicable standards. All proposed piping is above ground and, to the extent possible, within the containment areas of the tanks. The portion of the piping that will run between the secondary containment of the tanks, is all welded construction with welded flanged joints. All piping and ancillary equipment is visually inspected for leaks on a daily basis.

The leak detection, collection and removal system for the secondary containment structure of the tanks also serves the same functions for the ancillary equipment and the piping system that is installed within the same secondary containment structure.

The secondary containment structures are designed to with stand the loading of the tank(s) and provide sufficient structural strength for the loading exerted by the ancillary equipment and the piping system.

B. Existing Tank System Exempt From RCRA

Existing piping system and other ancillary equipment for the inorganic wastewater treatment system is exempt form 35 IAC Part 724 regulations. However, for informational purposes only, design details are provided in CHCI DWG. No. 4207 Sheet 1 of 5 (Sludge Conditioning Tank) and CHCI DWG. No. 4207 Sheet 2 of 5 (Pretreatment Reactors).

D-2f (2) Requirements for Tank Systems Until Secondary Containment is Implemented 724.293(i)

CHSI does not currently operate any existing RCRA-regulated tank systems at the facility which do not meet the requirements of this section. Therefore, the requirements of this section do not apply. CHSI notes that as part of the November 1993 RCRA Part B license application, a qualified registered independent professional engineer conducted tank and piping assessments of the RCRA- exempt inorganic waste water treatment system. Copies of the tank and piping assessments are included in Appendix D-24.

D-2f (3) Variance from Secondary Containment Requirements 703.202 (h), 724.293(g)

CHSI does not claim a waiver from the secondary containment requirements of 35 IAC 732.293.

D-2g Controls and Practices to Prevent Spills and Overflows 703.202(I), 724.294(b)

Specific level control equipment for each tank is identified Table D-4 for RCRA-Exempt tanks and in Table D-6 for existing and approved/not yet constructed tanks regulated under RCRA.

All tanks are located inside secondary containment structures. None of the secondary containment structures have valves or drain lines through which spilled liquids or accumulated precipitation could escape. Each new secondary containment unit is equipped with leak detectors to alert CHSI personnel to liquid accumulation within the containment structure. Specifically, a float switch will be installed one (1) foot off the floor in each new containment unit to provide the leak detection in the secondary containment. The switch will be connected to the audible and visual alarm panel in the tank farm operations center.

All bulk transport loading/unloading, and all container emptying/pumping activities are conducted within secondary containment structures. No material transfer into or out of a storage tank is conducted until the process operator has ascertained that the receiving vessel has adequate capacity to accept the volume of material to be transferred. All valve movements are motorized; with the proper valve sequencing is determined and controlled by computer. In addition, allmaterial transfer operations are conducted under constant visual observation by the process operator. In the case of material transfers to and between the tanks in the tank farm (Unit 16), the design of the automated tank control/monitoring devices (e.g., waste level, nitrogen pressure) allows the transfer operation to be accomplished by a single operator stationed in the operations center adjacent to the tank farm. In the case of outbound tank trucks and railcars, material transfers are conducted in accordance a written standard operation procedure (SOP) which requires that the receiving vessel (e.g., tank truck, railcar) be gauged prior to the initiation of the transfer to determine the available volume in the tank, that the liquid level in the receiving vessel be visually checked repeatedly throughout the coarse of the transfer operation to ensure that no overfills occur, and that the filling is continuously attended (See Appendix D-2).

The primary instrumentation for operation the monitoring systems (e.g., tank levels, secondary containment sumps, valve sequencing, pump temperature gauges) is a control panel located in an operations center adjacent to the tank farm. A multipoint level monitor is mounted on the control panel. This monitor provides the required excitation for the ultrasonic level transducers and the signals for recording by the data acquisition system. An annunciator panel will be provided to sound an alarm whenever any storage tank or secondary containment sump experiences a high level. The data acquisition system will provide display and recording of bulk storage tank levels in each bulk storage tank.

CHSI has installed a block valve to ensure that material does not leak out during maintenance activities such as pump change-outs In addition, all activities requiring a line, pump or other device to be opened are done so only in accordance with CHSI's lock-out/tag out SOP in which all electrical sources (e.g., power to pumps) are de-energized, and all block valves are properly sequenced to prevent injury, accidental starting of equipment, or accidental backflow/spillage of material. Spill collection pans/buckets are positioned under each line break to ensure that drips are properly collected. In addition, CHSI has developed a line clearing SOP in which material obstructing a pipeline is blown only in the direction of the flow (i.e., to tank, tank truck, or railcar) to eliminate the possibility for worker exposure.

Finally, all hose connections shall be made inside secondary containment systems. Cam and groove type couplings will be used for hoses with 2-inch and larger diameter, while Chicago Fittings will be used for hoses smaller then 2-inch diameter. As shown in CHCI DWG. No. 4207, Sheet 4 of 5, at each hose connection, the tank farm operation has a provision for a drain valve, between the isolation valve on a pipeline and the hose connection. The hose joint disconnection procedure is to shut off the isolation valves at each end of the hose, drain/depressurize the hose connection and then physically disconnect the hose.

A. RCRA-Regulated

1. Listed Waste Treatment System (Unit Z)

The Listed Waste Treatment System tanks (Unit Z) are located indoors and are operated under constant surveillance by highly trained operators. Most tanks have cascading gravity flow, therefore, by controlling the flow rate to the first tank, feed to all other tanks in the treatment train are automatically regulated. Operator(s) routinely visually check the level in each treatment tank when they approach each tank for visual observation (e.g., the coagulation/precipitation process) and during sample collection.

Known quantities of waste are fed to the treatment system for batch treatment. Once a batch of waste is transferred into the tank, no other waste is fed into it until the batch is completely treated and transferred out. Careful control over the batch treatment laboratory and operation personnel prevents any spills or overflow from occurring.

2. Listed Waste Storage Tanks (Unit Y)

The Listed Waste Storage Tanks (Unit Y) are equipped with high level alarms that provide a warning signal to operator (s) will in advanced of any overflow. An electronic level indicator is fitted to each tank to allow close continuous level monitoring of each tank from a centrally located workstation. This alerts the operator by indicating the available space in gallons for each storage tanks, on a continuous basis. The listed waste storage tanks also have a redundant high level alarm.

3. Fuel Blending Operation (Unit 43)

The fuels blending operation-processing tanks are equipped with ultrasonic liquid level sensors to maintain proper liquid levels in the mixing tank and other tanks. Refer to Appendix D-11 for a description of the Pegasus liquid level monitoring equipment.

4. Tank Farm (Unit 16)

The storage tanks in Unit 16 are equipped with high level alarms that provide a warning signal to operator(s) well in advance of any overflow. An electronic level indicator is also fitted to each tank, which will allow close continuous level monitoring of each tank from a centrally located workstation. This provision alerts the operator by indication the available space in gallons for each storage tanks, on a continuous basis. The ignitable waste storage tanks are also equipped with a redundant high level alarm.

5. Tank Farm (Unit 22)

The storage tanks in Unit 22 are equipped with high level alarms that provide a warning signal to operator(s) well in advance of any overflow. An electronic level indicator is also fitted to each tank, which will allow close continuous level monitoring of each tank from a centrally located workstation. This provision alerts the operator by indication the available space in gallons for each storage tanks, on a continuous basis. The ignitable waste storage tanks are also equipped with a redundant high level alarm.

6. Shredding System (Units 24 & 68)

The Hydropulpar Tank (414), Metal Wash Tank (424) and Rinse Tank (427) are equipped with liquid level point monitors which are electronically connected to a high level alarm system to maintain proper liquid levels in the tanks.

B. Existing Tank System Exempt From RCRA

The inorganic wastewater treatment system tanks are located indoors and are operated under constant surveillance by highly trained operators. Most tanks have cascading gravity flow, therefore, by controlling the flow rate to the first tank, feed to all other tanks in the treatment train are automatically regulated. Operator(s) routinely visually check the level in each treatment tank when they approach each tank (e.g., visual observation of the coagulation/precipitation process and) and during sample collection.

The reactor vessel is used for batch treatment of specialized wastes. Known quantities (individual truck shipments are directly pumped into the reactor) of waste is place into the reactor for the batch treatment. Once a batch of waste is transferred into the tank, no other waste is fed into it until the batch is completely treated and transferred out. Careful control over the batch treatment by laboratory and operation personnel prevents any spills or overflow from occurring.

All inorganic wastewater treatment system bulk liquid effluent/sludge storage tanks have ultrasonic continuous level indicators and ultrasonic high level alarm. A redundant float-operated high-level alarm system is also provided for each tank to prevent overfilling. In addition to the high level alarms, the sludge concentrator tank also has a gravity overflow line which is diverted to the receiving tanks.

D-3 **Waste Piles**

CHSI does not operate any waste piles. Therefore, the requirements of Sections D-3 are not applicable.

D-4 **Surface Impoundment's** 35 IAC 724 Subpart K

CHSI has assumed operational control of four existing hazardous waste surface impoundment's which are closed in accordance with RCRA, but which are in the RCRA Post Closure oversight period.

Two of the four impoundment's were formerly used to cool and store process water generated by an onsite hazardous waste incinerator's air pollution control system. A third impoundment was used to receive and solidify slugs generated from the process water impoundments. A fourth impoundment received stormwater run-off from the approved areas of the incineration complex. The four surface impoundments were taken out of service in 1988, and replaced by the existing wastewater pretreatment process.

An Interim Status Closure plan was filed with the IEPA in February 1987 which specified procedures intended to facilitate clean closure (i.e., removal of residuals to an offsite disposal location) for the impoundment's. That closure plan was approved by the Agency on August 27, 1987. However, due to the promulgation of Land Disposal Restriction (LDR) regulations, a facility capable of accepting the surface impoundment closure residuals could not be found. As a result, a revised Surface Impoundment's Interim Status Closure plan was seeking agency approval of closure of the surface impoundment's in-place. The in place closure of these units incorporated a minimum technology cap which includes a synthetic liner underlying clay cap. The in-place closure plan was approved by IEPA, and construction of the cap was completed in 1993. Final closure of the surface impoundments was certified complete by the Agency in a letter dated June 30, 1994. The surface impoundments remain active land disposal units operating under Post-Closure care. Refer to Section I of this Application for the approved Interim Status Post-Closure Plan.

D-4a **Design**

The surface impoundments are located on the pier between slips No. 6 and No. 8 in Lake Calumet. The Cooling Basins 1 and 2 are approximately 168 feet by 142 feet by 112 feet by 5.5 feet deep. The Stormwater Basin is approximately 168 feet by 146 feet by 5.5 feet deep (See Figure D.401). These dimensions do not include the three-foot berm around the perimeter.

The impoundments have a clay liner with dividing berms, also constructed of clay. The clay liner has a hydraulic conductivity of 1 x 10(-7) cm/sec. The clay liner for the solids Retention and Stormwater Basins is approximately three feet thick. The clay liner for the Cooling Water Basins is approximately four feet thick. The three-foot berm is constructed at the perimeter of the impoundment's to prevent stormwater run-on from entering the impoundment's.

D-4b **History**

The surface impoundment's, in operation since early 1980, were removed from service November 1988. The impoundments were lined in early 1982 prior to initiating incinerator operations. The Solids Retention and Stormwater Basins were originally four feet deep. However, during the previous attempt to clean close the impoundments, approximately 1 to 1.5 feet of clay was removed from the liner of these impoundments.

Before the current process water treatment system was installed, surface impoundment's were used to retain process water and resulting solids. The process water generated by the air pollution control system was neutralized prior to transfer to the surface impoundments. Settled solids in the impoundments were periodically removed, filter pressed or solidified, and disposed of off site at a hazardous waste disposal facility.

The process water and resulting solids were treatment residues from the incineration of hazardous and non-hazardous wastes. These materials are hazardous by definition 35 IAC 721.103 (c) because they are solid wastes generated from the treatment of listed hazardous wastes. Neither the process water nor sludge exhibits the characteristics of hazardous waste and the surface impoundments were never used to receive listed wastes from off-site generators. Waste codes were assigned to the sludge based on the waste code material which were incinerated during particular periods of time, by virtue of the "derived from " rule (35 IAC 721.103). Those waste codes and treatment standards are contained in Appendix D-30.

D-4c **Site Geology and Hydrogeology**

The pier on which the surface impoundments are located was constructed during the late 1950's by placing fill material over unconsolidated marsh and lacustrine deposits. The fill consists of cement fragments, masonry, rubble, wood and metal scraps, slag, sludge, cinders and clay. The fill material varies in thickness from about 7 to 10 feet. The pier is located between the Illinois International Port Slip Nos. 6 and 8.

The heterogeneous nature of the fill materials and the fact that fill materials have been placed below the water line of Lake Calumet make the hydrogeologic setting of the facility very unnatural. The fill is underlain by a thick continuous sequence of lacustrine silty clay and till which is acting as an aquiclude separation the fill unit from the bedrock underlying the silty clay. Therefore, the fill services as the uppermost water-bearing zone. Monitoring wells, therefore, have been screened in the fill, which is the uppermost water-bearing formation, to provide means of detecting any possible migration of hazardous waste or hazardous waste constituents that may have occurred from the surface impoundments.

A variety of sediment types underlie the fill material. These sediments include sand and silty sand, peat, black organic rich silt and sand, and gray to brown silly clay. Further discussion of the site geology is provided tin the Post-Closure Groundwater Monitoring Plan in Section E of this Application

The fill material functions as the uppermost water bearing unit or zone beneath the site. The heterogeneous nature of the fill, and the fact that the fill materials have been placed below the Lake Calumet waterline, create an artificial hydrogeologic setting beneath the site. Beneath the fill material is a thick sequence of low permeability lacustrine deposits which inhibit the down ward migration of groundwater into any underlying water-bearing zones.

Recharge to the uppermost water-bearing zone is from infiltration of precipitation. The fluctuations that occur are attributed to changes in the amount of precipitation's, to changes in lake level affecting the perimeter groundwater monitoring wells, and to the nature of the fill materials (i.e., heterogeneous). Figure D. 4-2 shows the surface impoundment's and fill materials in cross-section. Also depicted on this figure is the seasonal high and low groundwater elevations based on information collected from the monitoring wells. The permeability of the fill and parent material is also shown.

The Post-Closure Groundwater Monitoring Plan (See Section E to this Application) describes the compliance-monitoring program to be performed upon closure of the surface impoundments. A comprehensive discussion of the hydrogeology at the facility is also found in this plan.

D-4d **Process Water Cooling Basins 1 and 2 (Northeast and Southeast Impoundment's)**

The Process Water Cooling Basins 1 and 2 were used temporarily to hold process water generated by the incinerator's air pollution control equipment. The maximum volume in each Cooling Basin was approximately 500,000 gallons. Solids generated during neutralization of the process water settled in these impoundments. Periodically, the settled solids (sludge) were removed from the impoundments and transferred to the Solids Retention Basin. Beginning in 1986, the basins were dewatered at least annually. A filter press, temporarily set up on the berm west of these impoundment's, separated sludge from wastewater. The sludge was sent offsite for disposal in a hazardous waste landfill. Sludges, which were not pumpable, were transferred to the Solids Retention Basin for solidification.

The process waste contained approximately 1000 ppm Total Suspended Solids (TSS) and 3 to 4 percent Total Dissolved Solids (TDS). The suspended solids were typically metal oxides/hydroxides, silicates, and carbonaceous solids. Dissolved solids were primarily sodium chloride and metal salts. The pH in the impoundment's was maintained between 5 and 10. Trace levels (, 50 ppb) of organics found in the process waster were attributed to degradation products from the transmission and process water handling systems. The process waster which had been contained in the Cooling Basins was regulatorily defined as a hazardous waste by virtue of the "derived from rule (35 IAC 721.103.

No process water is currently present in the basins. The only water present is from precipitation events.

D-4e **Solids Retention Basin (Northwest Impoundment)**

The Solids Retention Basin was only used to accept sludges from the Cooling Basins for solidification. Periodically, sludge was pumped from the Cooling Basins to the Solids Retention Basin using temporary equipment. Care was taken during all activity to maintain the integrity of the clay liner.

During solids removal, a filter press treated approximately 70 to 90 percent of the solids. The filter cake generated was disposed of offsite at a hazardous waste facility and the filtrate was recycled back to the process. The remaining non-pumpable solids were solidified and disposed off site at a hazardous waste facility.

D-4f **Stormwater Basin (Southwest Impoundment)**

During its period of operation, the Stormwater Basin held surface water run-off associated with rainfall events. Stormwater was transferred to the Stormwater Basin in accordance with the facility Spill Prevention, control, and Countermeasure Plan (SPCC Plan).

D-4g **Closure Notices**

D-4g (1) Closure Notification

The closure of the surface impoundments has been certified by the owner/ operator and are registered professional engineer. The purpose of these certifications was to confirm that closure was performed according to the approved closure plan. This certification report consists of the following elements:

- The volume of waste and waste residue removed, including the waste (residue) resulting from decontamination activities,
- A description of the method of waste handling and transport,
- Waste manifest numbers from removal of waste and waste residues,
- A description of the sampling and analysis methods used
- A chronological summary of closure activities,

- Photographic documentation of closure showing the unit before, during, and after closure, and
- Tests performed methods, and results.

The certification report was submitted to the IEPA in December 1993. The report included a certification statement with an original signature of a responsible corporate officer and by the registered professional engineer overseeing the project. A copy of the closure certification statement is included in Appendix D-31. A copy of the IEP's acknowledgement of final closure is included in appendix D-32.

D-4g (2) **Survey Plat**

Simultaneous with the submission of the certification of closure, a survey plat was filed with the IEPA. The survey plat indicates the location and dimensions of the landfill with respect to permanently surveyed benchmarks, in accordance with 35 IAC 725.216. A record of the type, quantity, and location of hazardous wastes disposed was also be submitted to IEPA, in accordance with 35 IAC 725.219. The plat was prepared and certified by a professional land surveyor. The plat contains a prominently displayed note stating that the owner and operator are obligated to restrict disturbances to the integrity of the final cover, liners, and other components of the containment system as well as the groundwater monitoring systems, except in certain limited circumstances described in the regulations.

The survey plat with the prominently displayed note, and the record of type, quantity, and location of hazardous wastes disposed was also provided to the Illinois International Port for its filing with the Cook County Recorder's Office, applicable zoning authority, or authority with jurisdiction over local land use. A Copy of the survey plat in included in Appendix D-33.

D-4g (3) **Post –Closure Notices**

The Illinois International Port (property owner) has filed the survey plat described in Subsection D-4g (2) above, and placed a notation on the property deed (or some other instrument normally examined during title search) within 60 days of certification of the surface impoundment closure. The Illinois International Port has been provided with the notation which indicates that the land has been used to manage hazardous waste, and thus use of the property is restricted pursuant to 35 IAC 724.219.

With 60 days following certification of closure of the impoundment's, an additional certification to IEPA was filed. The certification states that the required post-closure notices have been filed. Copies of all post-closure notices were including in this additional certification, and a complete set was provided to the Illinois International Port. A copy of the post-closure notice included in Appendix D-34.

D-5 Trial Burns

D-6 Landfills

D-7 Land Treatment

CHSI does not operate any incinerators, landfills, or land treatment units. Therefore, the requirements of Sections D-5 through D-7 are not applicable

D-10 Miscellaneous Units

D10.1 Miscellaneous Units 724.701

Under the November 1993 RCRA Part B Permit, CHSI is authorized to construct and operate two miscellaneous units. CHSI may treat paints (including coatings, sealants, turpentine and mineral spirits used as paint thinner) identified by the hazardous waste codes D001 (ignitable) for characteristic, D004 through D008 for specific heavy metal toxics and D018 through D040 and D043 for specific organic toxics in the compactor in Building 42. CHSI may shred full or partially full containers of waste, separate out the resulting metal fragments and blend the contents into pumpable slurries or non-dispersable solids. All existing USEPA hazardous waste codes on 04/19/03 can be treated by shredding except F020, F021, F022, F023, F026, F027, and F028.

The compactor in Building 42 is designed for containers (metal, glass or plastic) which are 5 gallons or smaller. The containers are fed into the unit and slowly crushed as they pass through. The liquids are collected in a drum at the end of the unit with crushed, empty containers collected in another container. The unit allows paint materials to be bulked without pouring-off the materials manually.

The shredder in Unit 24 is used to shred wastes in containers and disperse these into pumpable liquids or non-dispersable solids. Containers will be transferred using forklifts from Unit 61 across a metal ramp in Unit 62 and through a contained area to Building 42. For processing, containers are moved via roller conveyors to the container elevator and again conveyed into the inlet hopper of the shredder. The shredder operates on a batch basis, typically two 55-gallon containers at one time. The containers are placed into the hopper inlet which is then purged with nitrogen along with the primary shredder shear chamber. The containers are hen dropped into the primary shredder which uses low-speed shear action to puncture the waste containers , free the contained liquid, semi-solid and solid waste materials, and reduce the container carcass to small pieces. Low viscosity liquids are added to assist the flow of the shredded materials. These materials are further sized through the secondary low-speed, shear-type shredder. Shredded metal from containers are captured using a rotary magnet. In dispersable materials operation, this metal drops onto a vibratory screen to further remove contaminants from the shredded metal fragments. One drum collects shredded metal (for metal washing) and anther collects contaminants (rerouted to the shredder).

In dispersable materials operation, decontainerized wastes are conveyed through a feed chamber for the dual screw auger to the hydropulpar tank (Tk-414). At times low viscosity liquids are added to the hydropulpar tank to adjust the end product. The hydropulpar tank blends with a rotating blade at the bottom of the tank to mix materials into a thick flowable liquid. This blended material is transferred through an in-line grinder before pumping to Unit 16 or 22.

In non-dispersable materials operation, shredded materials are conveyed through the dual screw auger on the opposite side of the hydropulpar by reversing the auger direction. This material is loaded into a covered hopper which when full is emptied into a roll-off for off-site shipment.

D10.1.1 Dimensions

The compactor in Building 42 has main compartment dimensions of 44.25" x 27" x 57".

The shredder is shown on CHSI DWG. No. 4288. Detailed operating descriptions, manufacturer's literature and system operating manual are included in Appendix D-42.

D10.1.2 Process Rate

The compactor in Building 42 has a process rate of 110 gallons per hour or approximately 18,000 pounds per day. The shredder in Unit 24 has a process rate of 48,000 pounds per hour.

D10.1.3 Design Standards

See Appendix D-40 for engineering assessments of the compactor in Building 42 and the shredder in Unit 24. CHSI DWG Nos. 4287 and 4289 also provide engineering calculations and design information.

D10.1.4 Safety Features

Building 42 will be equipped with a fire system (sprinkler) in case of fires from compacting. The compactor will not be operated unless the fire system is operational. The compactor itself is explosion-proof design.

During the shredding operation, the shredding tower will use nitrogen to create an inert atmosphere. Oxygen sensors will be strategically placed to limit operation to oxygen concentrations of 4% to 8%. A computer controlled logic system will automatically flood the sytem with nitrogen when higher levels of oxygen are detected. The shredding tower is equipped with a carbon dioxide fire suppression system which operates automatically by high temperature or manually. A deflagration system will monitor pressure changes in the system and automatically trigger dry chemical extinguishing agent for explosion control. The shredding system uses access limit switches to prevent the system from operating if doors or ports are not fully closed. Also, the system will not operate if tank high level alarms are activated, the carbon adsorption system is not operating or collection drums/hoppers are not secured in place.

D10.1.5 Description of Wastes to be Treated

The compactor in Building 42 may treat paints (including coatings, sealants, turpentine and mineral spirits used as paint thinner) identified by the hazardous waste codes D001 (ignitable) for characteristic, D004 through D008 for specific heavy metal toxics and D018 through D040 and D043 for specific organic toxics. The compatibility of the waste to be processed through the compactor shall be assessed by performing a liquid waste compatibility test as described in the letter dated September 17, 1993 from Paul Ahearn, CHCI. The compatibility of wastes received in lab packs may be assessed using EPA-600/2-80-076, A method for Determining the compatibility of Hazardous Wastes.

For a description of the wastes to be treated using shredding, see Table C-16.

D10.2 Assessment of the Unit 724.701

See Appendix D-40 for engineering assessments of the compactor in Building 42 and the shredder in Unit 24.

D10.3 Secondary Containment and Detection of Releases 724.701

D10.3.1

The compactor in Building 42 and the shredder in Unit 24 will both handle free liquids. Both units are equipped with secondary containment. Building 42 has a concrete floor and will have 3 inch high concrete curbs at each entrance. The floor and curbs will be sealed with a 3/16 inch coat of Protecto-Crete 900 vinyl ester coating, as manufactured by Dudick, Inc. or equivalent.

Unit 24 will be built with a concrete floor and six-inch curbs. The floor and curbs will be sealed with a 3/16 inch coat of Protecto-Crete 900 vinyl ester coating, as manufactured by Dudick, Inc. or equivalent.

Technical specifications for the Protecto-Crete system are included in Appendix D-10, Data Sheet #12.

D10.3.1.1

Building 42 has a floor volume of 24'8" x 38' x 3"/12" = 234 cubic feet

Volume occupied by ramps and steps:

Ramp @ overhead doors: 2 x (1/2 x 10' x 3' x 0.25') = 15 cubic feet
Steps at doors: (4' x 6' x 0.25') + (4' x 3' x 0.25') = 9 cubic feet
Allowance for pallets, roller conveyor and other misc. = 20 cubic feet

Total: 44 cubic feet

Net Volume = 190 cubic feet x 7.48 gallons/cubic foot = 1421 gallons

The building has a total storage capacity of 1378 gallons and 64 cubic feet or approximately 1857 gallons. The largest container is approximately 479 gallons. Therefore the required containment capacity is the larger of 138 gallons or 479 gallons. 1421 gallons is larger than 479 gallons.

Unit 24 containment capacity calculations are included on CHSI DWG. No. 4287. The largest container is Tk-414 with a capacity of 3490 gallons. The volume of the containment minus displacement by ramps and equipment leaves a net volume of 5239 gallons.

D10.3.1.2

Building 42 is located inside and protected from precipitation. A 3 inch curb protects Building 42 from run-on. The largest container of 479 gallons is less than the containment capacity of 1421 gallons.

Unit 24 is located indoors and protected from precipitation. A 6 inch curb protects Unit 24 from run-on. The largest container (Tk-414) of 3490 gallons is less than the containment capacity of 5239 gallons.

D10.3.1.3

The concrete floor and curbs of Building 42 are sealed with a 3/16 inch coating of Protecto-Crete 900, or equivalent to prevent the surrounding soil from coming in contact with any released waste. The paint wastes are compatible with the Protecto-Crete 900 coating as shown in the compatibility table in Appendix D-10, Data Sheet #2.

The concrete floor and curbs of Unit 24 are sealed with a 3/16 inch coating of Protecto-Crete 900, or equivalent to prevent the surrounding soil from coming in contact with any released waste. The shredded wastes are compatible with the Protecto-Crete 900 coating as shown in the compatibility table in Appendix D-10, Data Sheet #2.

D10.3.2

Building 42 has walls to prevent wind dispersion of waste during conveyance or residue produced from the compactor.

Unit 24 has walls to prevent wind dispersion of waste during conveyance or residue produced from the shredder.

D10.4 Assessment of the Operation of the Unit 724.701

CHSI has prepared an assessment of Potential Pathways of Exposure to Humans or Environmental Receptors for the compactor in Building 42 and the shredder in Unit 24. These are included in Appendix D-41. Both units must also comply with RCRA Air Subparts BB and CC for compliance with organic emissions. These demonstrate that the treatment technology is protective of public health and the environment in addition to being safe for the waste handler.

Air emission calculations and Subpart BB/CC requirements are included in Attachment D-43.

Table D-1: Container Management Areas

Type	Container Management	Waste Category	Number/Volume	Area	(See Note
I.	DRUM STORAGE AREAS (55-GALLON DRUMS, OR EQUIVALENT)				
A.	Existing Areas				
	Drum Storage Area (Unit G1)	Acidic – 1	192		
		Acidic – 2	96		
		Alkaline	192		
		Staging	72		
		Subtotal	552		
	Drum Storage Area (Unit R1)	Oxidizer	96		
		Reactive	96		
		Poisons	96		
		Flammable – 1	160		
		Flammable – 2	160		
		Staging (Inbound)	160		
		Subtotal	768		
	Drum Storage Expansion (Unit R2)	Oxidizer	96		
		Reactive	96		
		Poisons	96		
		Staging (outbound)	80		
		Subtotal	368		
	Lab Pack Pour Off Station (Unit F1)	Alkaline/Acids	8		
		Subtotal	8		
	Ignitable Container Management Building (Unit 26)	Ignitable/PCB	192		
		Subtotal	192		
	Container Handling Dock (Unit 61)	Staging	160		
		Subtotal	160		
	Container Management Building (Unit 25)	Alkaline/Poison	248*		
		Acids	136		
		Flammable	184		
		Truck Pad	88		
		Subtotal	656*		

(Continued)

Type	Container Management	Waste Category		Number/Volume	Area	(See Note 1)
B.	Approved/Not Yet Constructed Areas					
	Drum Storage Expansion (Unit R2)	Flammable –3		160		
			Subtotal	160		
	Lab Pack Repack & Consolidation Area (Unit U)	Acid/Alkaline		10		
		Other		25		
			Subtotal	35		
	Paint & Paint Related Material Processing Area (Unit 42)	Ignitable/Toxic		52		
		Debris		64CF		
			Subtotal	52+64CF		
	Shredding Operation (Unit 24)	Ignitable/Toxic		17		
		Debris		64CF		
			Subtotal	17+64CF		
	Metalwashing Operation (Unit 68)	Sludge		1		
				1		

C. Facility Total

---------- 2,969 55-Gallon Drums (163,295 Gallons Total), or Equivalent plus 128 Cu. Ft.*
*-With the lamp crusher in Unit 25, the maximum capacities are reduced to 73 (alkaline bay), 481 (Unit 25) and 2,794 plus 128 cu. Ft. (Total)

II Bulk Solids Storage Areas

A. Existing Storage Areas

Bulk container Storage Area (Unit Q1)	All Characteristic and listed wastes (except water-reactive solids)	Three (3) roll offs At 30 CY Per Unit (Or Equivalent)

(Continued)

Type	Container Management	Waste Category	Number/Volume	Area	(See Note 1)
	Bulk Solids Storage Pad (Unit B)	All Characteristic and listed wastes (except water-reactive solids)	Eight (8) roll offs At 30 CY Per Unit (Or Equivalent)		
B.	Approved/Not Yet Constructed Areas				
	Listed Waste Rolloff Storage (Unit Z1)	Listed waste treatment residuals (F- and K-Codes)	One (1) roll offs At 30 CY Per Unit (Or Equivalent)		
C.	Facility Total ---- Twelve (12) 30-Cubic Yard Rolloffs (360 Cubic Yards Total), or Equivalent				
III.	TRANSPORTATION UNIT CONTAINER STAGING/STORAGE AREAS (SEE NOTES 2 & 3)				
A.	Existing Areas				
	Truck Unloading Area & Bulking Area (Unit Q)	All hazardous and Non-Hazardous wastes	Three (3) Units		
	Truck Loading Dock (Unit V)	All Hazardous and Non-Hazardous wastes, except Bulk Ignitable liquids	Three (3) Units		
	Bulk Solids Storage Pad (Unit B)	All Hazardous and Non-Hazardous wastes except Hazardous waste in bulk Liquid	Eight (8) Units		
	Railcar Unloading Area (Unit 13)	Hazardous waste fuels (organic/ignitable), Including bulk ignitable Liquids	Two (2) railcars @ 30,000-gal each		
	Truck Staging Area (Unit 59)	All hazardous and Non-Hazardous waste, Including bulk ignitable Liquids	Three (3) Units		

(Continued)

'able D-1: Container Management Areas (Continued)

Type	Container Management	Waste Ca y	Number/Volume	Area
	Truck Staging Area (Unit C)	All hazardous and non-hazardous wastes, except Bulk ignitable liquids	Six (6) Units	
	Truck Unloading Platform (Unit 15)	Hazardous waste fuels (organic/ignitable), Including bulk ignitable Liquids	Two (2) Units	
	Container Handling Dock (Unit 61)	All hazardous and Non-Hazardous wastes, except Bulk ignitable liquids	Four (4) Units	
B.	Approved/Not Yet Constructed Areas			
	Truck to Truck Transfer Dock (Unit W)	All Hazardous and Non-Hazardous wastes, except Bulk ignitable liquids	Four (4) Units	
	Truck Loading/ Unloading Pad (Unit X)	All Hazardous and Non Hazardous wastes except Bulk Ignitable liquids	Two (2) Units	
	Truck Loading/Unloading Pad (Unit 69)	All hazardous and Non-hazardous wastes	Two (2) Units	
C.	Facility Total			
	----- Rail:	Two (2) railcars (60,000 gallons total), or equivalent		
	-----Highway:	Twenty-nine (29) units (208,800 gallons total), or equivalent		

Notes:

1. Typical waste codes/categories accepted and stored include, but are not limited to the following:

Acids	D004-D011, F006, F019, K002-K008, K031, K048-K052, K061, K062, K069, K084, K086, K100-K120, K106, P011, P012, U144-U146, U246
Alkaline	D002,D004-D011, F006,F019,K002-K008, K031, K048-K052, K061, K062, K069, K084, K086, K100-K120, K106, P011, P012, U144-U146, U246
Ignitable/Organic	Wastes which exhibit a flash point of less than 140 degree F halogenated and non-halogenated solvents, pure organics, and aqueous wastes containing organ D043, F001-F005, F020-F024, F026-F028, K001, K009-K030, K032-K043, K060, K073, K083, K085,K086, K051, K052,K093-K099,K103-K105, P004,I most U- Codes.

(Continued)

Oxidizer	D001
Poison/PCB	Waste poisons, acute toxics (F020-F023,F026,F027,and P-Codes), and PCB's.
Reactive	D003,F006, F007-F011, F012, F019, P013,P021, P029, P030, P063,P074, P098, P099, P014, P016, P006, P009, P042, P065, P112, P081, P122, U006, U223, U020, U023, U160, U033,U096, U133, U189, U205, U223,U234

2. Highway units can include box trucks, van trailers, flat beds, vacuum truck, and bulk transporters. However, for the purpose of calculating the facility's licensed hazardous waste storage capacity and secondary containment requirements. CHSI has adopted a worst-case approach and assumed that each "unit" is a 7,200-gallon bulk liquid transport vehicle.

3. CHSI notes that the 10-day in-transit storage and truck to truck transfer activities may be conducted in and of the RCRA-REGULATED designated staging/storage areas and in other transportation-related area throughout the facility without regard to location or number in accordance with hazardous waste transfer facility regulations at 35 IAC 724.101 (f) (9).

4. Due to secondary containment limitations, the bulk solids storage pad (Unit B) is not authorized for storage of bulk hazardous waste liquid transport vehicles. Box or van trailers carrying drummed liquids may be stored up to limit of 80 55-gallon drums (or equivalent) per vehicle. Drummed or bulk-solid containers may be stored up to a limit of 30 cubic yards per vehicle. Hazardous waste transporters stored in the bulk solids storage pad shall be counted towards the unit's authorized roll-off storage capacity. As a result, the six vehicles are not included in the facility's permitted transportation storage limit.

Table D-2: Tank Management Areas

Tank Management Area	Waste Category	Number/Volume	(See Note 1)
A. Existing Tank Storage Units			
Fuel Blending Operation (Unit 43)	Listed and Characteristic ignitable hazardous waste	1 dispersion tank @ 1,225 gal. 1 overflow tank @ 275 gallons Total capacity = 1,500 gallons	
Tank Farm (Unit 16)	Listed and Characteristic ignitable hazardous wastes, lean waters, PCB's	9 @ 12,800 gallons 1 @ 19,800 gallons Total capacity = 135,000 gallons	
B. Approved/ Not Yet Constructed Tank Storage Units			
Listed Waste Storage tanks (Uint Y)	Listed and Characteristic hazardous wastes	6 @ 11,025 gallons 2 @ 11,025 gallons Total capacity = 88,200 gallons	
Process Building No. 3 Listed Waste Treatment System (Unit Z)	Listed and Characteristic hazardous waste	1 Reactor @ 13,570 gallons 1 Lamella clarifier @ 1,200 gal. 1 Clarifier collection tank @ 4,100 gal. 1 Sludge Conditioning tk @ 3,700 gal. 2 Sand filters @ 750 gallons each 1 Backwash collection tank @ 1,270 gal. 1 Treated effluent tank @ 2,640 gallons 2 Carbon Adsorption units @ 1,300 gal. ea. Total capacity = 30,650 gallons	
Bulk Flammable Liquid Tankfarm (Unit 22)	Listed and Characteristic hazardous wastes	2 @ 10,558 gallons 1 @ 15,547 gallons 1 @ 6,136 gallons Total capacity = 42,799 gallons	
Shredding Operation (Unit 24)	Listed and Characteristic hazardous waste	1 @ 3490 gallons	
Metalwashing Operation (Unit 48)	Listed and Characteristic hazardous waste	1 @ 3730 gallons 1 @ 987 gallons Total capacity = 4,717 gallons	
C. Facility Total --- 306,356 gallons in Thirty-seven (37) tanks			

(Continued)

Notes:

1. Typical waste codes/categories accepted and stored include, but are not limited to, the following:

Acids	D002, D004-D011, F006, F019, K002-K008, K031, K048-K052, K061, K062, K069, K084, K086, K100-K120, K106, P011, P012, U144-U146, U246.
Alkalines	D002, D004-D011, F006, F019, K002-K008, K031, K048-K052, K061, K062, K069, K084, K086, K100-K120, K106,P011, P012,U144-U146, U246
Ignitable/Organic	Wastes which exhibit a flash point of less than 140 degree F, halogenated and non-halogenated solvents, pure organics, and aqueous wastes containing organic materials. Includes waste codes D001, D012-D043, F001-F005, F020-F024, F026-F028, K001, K009-K030, K032-K043, K060, K073, K083, K085, K086, K051, K052, K093-K099, K103-K105, P004,P005, P022, P037, P048, P050, P0 P059, and most U-Codes.
Oxidizer	D001
Poison/PCB	Waste poisons, acute toxics F020-F023, F026, F027, and P-codes), and PCB's.
Reactive	D003, F006, F007-F011, F012, F019, P013, P021, P029, P030, p063, P074,098, P099, P104, P106, P006, P009, P042, P065, P112, P081, P122, U006, U223, U020, U023, U160, U033, U096, U133, U189, U205, U223, U234.

Table D-3: Physical Data for Existing Tanks

Item	Quantity	Description	Capacity (gals)	Shape	Tank Size Diameter Height	pH	Design Code	Operating Capacity (gals)	Material of Construction	Internal Corrosive Protection	Year Built	Foundation Type	No.
	EXISTING CLEAN WATER ACT WASTEWATER TREATMENT SYSTEM (UNITS F, J, AND N)												
1	1	Receiving Tank	7000	Sloped Bottom Rectangular	22x10	3 to **8**	ACI	6000	Reinforced concrete	Data sheet 3	1980	Concrete	
3	1	Reactor	6000	Rectangular	13.5x8	10	NONE	5500	Carbon Steel	Data sheet 5	1980 Slab	Concrete	
8	3	Receiving Tanks	7000	Sloped Bottom	22x10	3 to **8**	ACI	6000	Reinforced Concrete	Data sheet 3	1980	Concrete	
10	1	Primary Storage Tank (Tank #2)	212000	Vertical Cylindrical	30	40	AWWA D-100	207000	Carbon Steel	Data sheet 4	1980	Concrete Ring filled w/oiled sand	
13	1	Mix Tank (Tank #4)	424000	Vertical Cylindrical	60	20	AWWA D-100	403000	Carbon Steel	Data sheet 4	1980	Concrete Ring filled w/oiled sand	
17	1	Chemical Treatment Unit	4800	Rectangular	9x8	11.5	None	4300	Carbon Steel	Data sheet 4	1980	Concrete Slab	
9	4	Gravitators (Clarifiers)	2450	Cyclindrical w/Cone Bottom	8	10.5	None	2300	Carbon Steel	Data sheet 4	1980	Concrete Slab	
0	1	Secondary Clarifier	6450	Rectangular	12x8	9	None	6100	Carbon Steel	Data sheet 4	1980	Concrete Slab	
2	1	Sludge Sump	13000	Sloped Bottom Rectangular	20x15	4 to **9**	ACI	11875	Carbon Steel	None	1980	Concrete	
4	1	Sludge Conditioning Tank (Tank #3)	212000	Vertical Cylindrical	30	40	AWWA D-100	200000	Carbon Steel	Data sheet 4	1980	Concrete Ring filled w/oiled sand	
9	1	Sludge Conditioning Tank	10400	Vertical Cylindrical	10.5	15.5	None	9750	Carbon Steel	None	Un-Known	Concrete Slab	
1	1	Effluent Discharg Tank (Tank #1)	188500	Vertical Cylindirical	40	20	AWWA D-100	180000	Carbon Steel	Data sheet 4	1980	Concrete Ring filled w/oiled sand	

(Continued)

ble D-3: Physical Data for Existing Tanks (Continued)

Item	Quantity	Description	Capacity (gals)	Shape	Tank Size Diameter Height	pH	Design Code	Operating Capacity (gals)	Material of Construction	Internal Corrosive Protection	Year Built	Foundation Type	No.
A. EXISTING CLEAN WATER ACT WASTEWATER TREATMENT SYSTEM (CONTINUED)													
2	1	Effluent Collection Tank	1050	Rectangular	5x4	7	None	900	Carbon Steel	Data sheet 4	1987	Concrete Slab	
9	1	Clarifier Collection Tank	1900	Vertical Cylindrical	6	9	None	1700	Carbon Steel	Data sheet 4	1987	Concrete Slab	
1	1	1st Secondary Treatment Tank	318	Vertical Cylindrical	3	6	None	265	Carbon Steel	Data sheet 4	1987	Concrete Slab	
2	1	2ND Secondary Treatment Tank	318	Vertical Cylindrical	3	6	None	265	Carbon Steel	Data sheet 4	1987	Steel Platform	
53	1	Flocculator Tank	880	Vertical Cylindrical	5	6	None	730	Carbon Steel	Data sheet 4	1987	Steel Platform	
63	1	Waste Storage Tank	5200	Vertical Cylindrical	8	14	ASTM 3299	4800	FRP	100 Mils Dow-411	1986	Concrete Slab	
B. EXISTING WASTE OIL STORAGE/TREATMENT SYSTEM (UNIT F2)													
8	2	Reactor Vessels	6000	Vertical Cylindrical	8	16	UL142	5600	Carbon Steel	None	1984	Concrete Slab	
59	2	Product Storage Tank	6000	Vertical Cylindrical	8	16	UL142	5600	Carbon Steel	None	1984	Concrete Slab	
C. APPROVED/NOT YET CONSTRUCTED SLUDGE CONDITIONING TANK (UNIT P)													
101	1	Sludge Conditioning	11780	Vertical Cylindrical	10	20	UL142	10000	Carbon Steel	Data	New	Concrete Slab	
D. APPROVED/NOT YET/CONSTRUCTED REACTOR VESSELS (INSIDE UNIT F)													
111	1	Reactor Vessel	13570	Cylindrical w/Dish Bottom	12	16	ASTM	12000	FRP	200 mil Derakan 470-36	New	Concrete Slab	

(Continued)

le D-3: Physical Data for Existing Tanks (Continued)

Item	Quantity	Description	Capacity (gals)	Shape	Tank Size Diameter Height	pH	Design Code	Operating Capacity (gals)	Material of Construction	Internal Corrosive Protection	Year Built	Foundation Type	No.
118	1	Reactor Vessel	8835	Cylindrical W/Dish Bottom	10	15	ASTM	8000	FRP	200 mil Deraken 470-36	New	Concrete Slab	

Notes:

1. Each piece of equipment, including tanks, with a specific function is given a unique "Item Number". Multiple equipment used for the same function is given the same number; hence,for the some Item Numbers, the quantity may be more than one. Tanks are identified by these numbers for ease of cross-reference with the equipment layout drawings and piping and instrumentation diagrams (PID's)

2. Refer to Appendix D-10 for manufacturer's literature and technical specifications for the coating material.

3. Tank is located inside building No. 1 and will be provided with an upgraded secondary containment system prior to 1995.

4. Outside storage tanks are erected on a concrete ring foundation. Within the ring, there is a 20-mil thick PVC liner bonded to the interior surface of the concrete wall. There is a 4-inch thick layer of oiled sand on top of the li The outside dike area, common to the four storage tanks, is also lined with a 20-mil thick PVC liner.

5. Sludge conditioning tank is located in Process Building 2; tank is exempt from RCRA secondary containment requirements.

Table Operating Data for Existing Tanks

Item No. No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inches)	Waste pH	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
A.	EXISTING CLEAN WATER ACT WASTEWATER TREATMENT SYSTEM (UNITS F, J AND H)											
1	1	Receiving Tank	Receive individual waste shipments, one at a time	AMB	ATM	ATM	Open Top	1 to 12	1.4	Gravity drain from trucks	Manual	Trench along the entire perimeter is provided for overflow collection.
8	3	Receiving Tank	Receive individual waste shipments, one at a time	AMB	ATM	ATM	Open Top	1 to 12	1.4	Gravity drain from trucks	Manual	Trench along the entire perimeter is provided for overflow collection.
3	1	Reactor	Batch pretreatment of strong and incompatible wastes	<140	0.25	To wet scrubber	14	1 to 1	1.2	Manually operated pump(s)	Manual	Overflow drain diverted to a sump
10	1	Primary Storage (Tank #2)	Mix and store compatible waste scrubber	AMB	ATM	To carbon	6	5 to 12	1.2	Manually operated pump(s)	Manual	Two independent high level alarms and a continuous level indicator.
13	1	Mix Tank (Tank #4)	Mix and store compatible wastes	AMB	ATM	To carbon scrubber	6	5 to 12	1.2	Manually operated pump(s)	Manual	Two independent high level alarms and a continuous level indicator.
17	1	Chemical Treatment Unit	Continuous flow, reagent mixing coagulation and flocculation	AMB	ATM	ATM	Open Top	7 to 10	1.2	Manually operated pump(s)	Manual	Constant level is maintained due to cascading flow to Clarifiers.
19	4	Gravitators (Clarifiers)	Precipitate flocculated metal hydroxides and solids	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.2	Gravity overflow from item #17	Manual	Continuous gravity overflow into secondary clarifier or collection tank
20	1	Secondary Clarifier (Clarifiers)	Precipitate flocculated metal hydroxides and solids	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.2	Gravity overflow from item #19	Manual	Float operated pump (#21) maintains level within preset range
22	1	Concrete Sludge Sump	Collection underflow from clarifiers	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.2	Gravity drain from #17, 19 & 20	Manual	Continuous removal by pump #23
24	1	Sludge Concentrator (Tank #3)	Sludge thickening & storage	AMB	ATM	ATM	10	8.5 to 12	1.25	Manually operated pump(s)	Manual	Two independent high level alarms and a continuous level indicator, separated waste continuously decanted.

(Continued)

Table Operating Data for Existing Tanks (Continued)

Item No. No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inches)	Waste pH	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
A.	EXISTING CLEAN WATER ACT WASTEWATER TREATMENT SYSTEM (UNITS F, J AND H) CONTINUED											
29	1	Sludge Conditioning for dewatering	Batch preparation of sludge	AMB	ATM	ATM	6	10 to 12	1.25	Manually operated pump(s)	Manual	High level alarm and continuous level indicator
31	1	Effluent Discharge (Tank #1)	Collection of treated water for a batch discharge	AMB	ATM	To carbon scrubber	6	8.5 to 10.5	1.1	Float operated pump (#21)	Manual	Two independent high alarms and a continuous level indicator
42	1	Effluent Collection Tank	Surge tank for the sewer discharge through force main	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.1	Gravity flow from parshall flume	Manual	Float operated pump (#44) maintains level within Preset range
49	1	Clarifier Colleciton Tank	Surge tank for secondary treatment feed	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.1	Gravity flow from clarifiers	Manual	Float operated pump (#50) maintains level within Preset range
51	1	1st Secondary Treatment Tank	Chemical mixing for metals precipitation	AMB*	ATM	ATM	Open Top	6 to 10.5	1.15	Float operated pump (#50)	Manual	Cascading outfall which maintains constant level
52	1	2ND Secondary Treatment Tank	Chemical mixing for metals precipitation	AMB	ATM	ATM	Open Top	6 to 10.5	1.15	Gravity flow from item #51	Manual	Cascading outfall which maintains constant level
53	1	Flocculator Tank	Flocculation of PPT for metals removal	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.15	Gravity flow from Item #52	Manual	Cascading outfall which maintains constant level
63	1	Waste Storage Tank	Storage of waste needing Pretreatment through reactor	AMB	ATM	ATM	3	2 to 10	1.1	Manually operated pump(s)	Manual	Mechanical level indicator and an overflow pipe to Containment dike
B.	EXISTING WASTE OIL STORAGE/TREATMENT SYSTEM (UNIT F2)											
58	2	Reactor Vessels	Oily waste treatment for demulsification	<140	ATM	To carbon scrubber	4	8 to 10	1.1	Manually operated pump(s)	Manual	Mechanical level indicator and an overflow pipe to containment dike
59	2	Product Storage Tanks	Storage of recovered oil and "cuff"	AMB	ATM	ATM	Open Top	1.5 to	1.2	Manually operated pump(s)	Manual	Mechanical level indicatc and overflow pipe to sludge sump

(Continued)

D-4: Operating Data for Existing Tanks (Continued)

Item No. No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inches)	Waste pH	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
C.	APPROVED/NOT YET CONSTRUCTED SLUDGE CONDITIONING TANK (UNIT P)											
101	1	Sludge Conditioning tank	Batch blending of sludge with chemicals prior to dewatering	AMB	ATM	ATM	4	8.5 to 12	1.25	Manually operated pump(s)	Manual	High level alarm, continuous level indicator, overflow to containment
D.	APPROVED/NOT YET CONSTRUCTED RACTOR VESSELS (INSIDE UNIT F)											
111	1	Reactor Vessel	Batch treatment of individual shipments or stored waste	<180	-0.25	To wet scrubber	8	0.5 to 12	1.25	Level controlled pump	Auto-matic	Continuous level indicator high level alarm draw and feed cut-off, pH/temp/ORP
118	1	Reactor Vessel	Batch Treatment of individual shipments or stored waste	80	-0.25	To wet-scrubber	8	0.5 to 12	1.25	Level controlled	Auto-matic	Continuous level indicator high level alarm draw and feed cut-off pH/temp/ORP controllers

Notes for Table D-4

1. Each piece of equipment, including tanks, with a specific function is given a unique "Item Number". Multiple equipment used for the same function is given the same number; hence, for some Item Numbers, the quantity may be more than one. Tanks are identified by these numbers for ease of cross-reference with the equipment layout drawings and piping and instrumentation diagrams (PID's)

2. Refer to Appendix D-10 for manufacturer's literature and technical specifications for the coating material.

le D-5: Physical Data for RCRA-Regulated Tanks

Item No.	Qua	Description	Capacity (Gals)	Shape	Tank Diameter	Height	Year Installed	Design Code	Operating Capacity (Gals)	Ma l of Construction	Internal Corrosion Protection	Foundation Type	Secondary Containment
A.	LISTED WASTE TREATMENT SYSTEM (UNIT Z)			APPROVED UNDER NOVENBER 1993 PART B PERMIT; NOT YET CONSTRUCTED									
123	1	Reactor Vessel	13570	Cylindrical w/dish bottom	12	16	New	ASTM	12,000	FRP	200-mil Derakan 470-36	Concrete Slab	Process Building #1 See drawing #4229 & 4230
137	1	Lamella Clarifier	1200	Rectangular	10x4	13	New	None	1100	Carbon Steel	Data Sheet 4	Concrete Slab	Process Building #1 See drawing #4229 & 4230
138	1	Clarifier Waste Collection Tank	4100	Vertical Cylindrical	8	11	New	UL 142	3300	Carbon Steel	Data Sheet 4	Concrete Slab	Process Building #3 See drawing #4229 & 4230
142	1	Sludge Conditioning Tank	3770	Vertical Cylindrical	8	10	New	UL 142	1000	Carbon Steel	Data Sheet 4	Concrete Slab	Process Building #3 See drawing #4229 & 4230
149	2	Sand Filters	750	Cylindrical w/dish bottom	4	8	New	None	470	Carbon Steel	None	Concrete Slab	Process Building #3 See drawing #4229 & 4230
150	1	Back Wash Collection Tank	1270	Vertical Cylindrical	6	6	New	UL 142	1000	Carbon Steel	Data Sheet 4	Concrete Slab	Process Building #3 See drawing #4229 & #4230
152	2	Carbon Adsorption	1300	Cylindrical w/dish bottom	5	9	New	None	880	Carbon Steel	None	Concrete Slab	Process Building #3 See drawing #4229 & #4230
153	1	Treated Effluent Tank	2640	Vertical Cylindrical	8	7	New	UL 142	2000	Carbon Steel	Data Sheet 4	Concrete Slab	Process Building #3 See drawing #4229 & #4230
B.	LISTED WASTE STORAGE TANKS (UNIT Y)			APPROVED UNDER NOVEMBER 1993 PART B PERMIT; NOT YET CONSTRUCTED									
121	6	Storage Tanks	11025	Cylindrical w/cone bottom	12	15	New	UL 142	8000	Carbon Steel	Data Sheet 4 Data Sheet 5	Concrete Slab	Common Dike for Group of Four – See Drawing #4216

(Continued)

Table [illegible]: Physical Data for RCRA-Regulated Tanks (Continued)

Item No.	Quantity	Description	Capacity (Gals)	Shape	Tank Size Diameter	Tank Size Height	Year Installed	Design Code	Operating Capacity (Gals)	Material of Construction	Internal Corrosion Protection	Foundation Type	Secondary Containment
155	2	Effluent Storage Tanks	11025	Cylindrical w/cone bottom	12	15	New	UL 142	8000	Carbon Steel	Data Sheet 4	Concrete Slab	Common Dike for Group of Four – See Drawing #4216
C.	HAZARDOUS WASTE FUELS BLENDING OPERATION (UNIT 43) APPROVED UNDER NOVEMBER 1993 PART B PERMIT; EXISTING												
161-21	1	Dispersion Tank	1225	Cylindrical w/dish bottom	6	5	New	UL 142	1130	Carbon Steel	None	Concrete Slab	Located in Fuels Blending Building See Drawing #4213
161-22	1	Overflow Tank	275	Cylindrical w/flat bottom	2.5	7.5	New	UL 142	240	Carbon Steel	None	Concrete Slab	Loacted in Fuels Blending Building See Drawing #4213
D.	LIQUID TANK FARM (UNIT 16) APPROVED UNDER THE NOVEMBER 1993 PART B PERMIT: EXISTING												
158	9	Storage Tank T101-107,109,110	12800	Cylindrical W/Cone Bottom	14'5"	17'6"	T101 = 1986 T102 = 1986 T103 = 1986 T104 = 1986 T105 = 1981 T106 = 1981 T107 = 1981 T109 = 1981 T110 = 1981	UL 142	12000	Carbon Steel	None	Concrete Slab	Individual Dikes See drawing #4215
159	1	Storage Tanks T112	19800	Vertical Cylindrical w/cone bottom	22'5"	25'6"	T112 = 1981	UL 142	19000	Carbon Steel	None	Concrete Slab	Individual dikes
E.	HAZARDOUS WASTE SHREDDING OPERATION (UNIT 24) APPROVED UNDER NOVEMBER 1993 PART B PERMIT: NOT YET CONSTRUCTED												
414	1	Hydropulpar Tank (Tank 414)	3490	Cylindrical w/Dish Bottom	9	6	UL 142	2500	Carbon Steel	None	New	Concrete Slab	Located in Unit 24 See Drawing 4287

(Continued)

Table : Physical Data for RCRA-Regulated Tanks (Continued)

Item No.	Quantity	Description	Capacity (Gals)	Shape	Tank Size Diameter	Tank Size Height	Year Installed	Design Code	Operating Capacity (Gals)	Material of Construction	Internal Corrosion Protection	Foundation Type	Secondary Containment
F.	METAL WASHING OPERATION (UNIT 68) APPROVED UNDER NOVEMBER 1993 PART B PERMIT: NOT YET CONSTRUCTED												
424	1	Metal wash Tank (Tank 424)	3730	Square w/Sloped Bottom	13.2x5.9	6.3	UL 142	3000	Carbon Steel	None	New	Concrete Slab	Located in Unit 68 See Drawing 4287
427	1	Rinse Tank (Tank 427)	987	Square w/Sloped Bottom	5.9x3.9	3.3	UL 142	950	Carbon Steel	None	New	Concrete Slab	Located in Unit 68 See Drawing 4287
G.	LIQUID TANK FARM (UNIT 22) APPROVED UNDER NOVEMBER 1993 PART B PERMIT: NOT YET CONSTRUCTED												
415, 416	2	Storage Tanks (Tanks 415,416)	10558	Cylindrical w/Dish Bottom	10.5	15.5	UL 142	10000	Carbon Steel	None	New	Concrete slab	Individual Dikes See Drawing 4291
417	1	Storage Tank (Tanks 417)	15547	Cylindrical w/Sloped Bottom	10.5	24	UL 142	15000	Carbon Steel	None	1988	Concrete Slab	Individual Dikes See Drawing 4291
418	1	Storage Tank (Tank 418)	6136	Cylindrical w/Dish Bottom	7	20.75	UL 142	6000	Carbon Steel	None	New	Concrete Slab	Individual Dikes See Drawing 4291

1. Each piece of equipment, including tanks, with a specific function is given a unique "Item Number". Multiple equipment used for the same function is given the same number; hence, for some Item Numbers, the quantity may be more than one. Tanks are identified by these numbers for ease of cross reference with the equipment layout drawings and piping and instrumentation diagrams (PID's).
2. Refer to Appendix D-10 for manufacturer's literature and technical specifications for the coating material.
3. Details of the design and containment capacity for the secondary containment system for each tank are provided in the design drawings specified in the Table.
4. The Professional Engineering certification for the tanks listed int the Table includes all the ancillary tank system components such as pipe, pumps, and augers.
5. Minimum tank thickness calculations for each item listed on the table are presented in Appendix D-28, which is herein, incorporated by reference.
6. Tank thickness values for the Ignitable Bulk Liquid Storage Tanks (Unit 16) are summarized in Table D-10.

Table D-6: Operating Data for Proposed Tanks

No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inch.)	Waste pH Range	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
LISTED WASTE TREATMENT SYSTEM (UNIT Z) APPROVED UNDER NIVEMBER 1993 PART B PERMIT; NOT YET CONSTRUCTED												
23	1	Reactor Vessel	Batch treatment of listed wastes	<180	-0.25	To wet Scrubber	8	0.5 to 12	1.25	Manually operated pump(s)	Automatic operated	Continuous level indicator, high level alarm, draw and feed cut-off, pH/temp./ORP controllers.
37	1	Lamella Clarifier	Separation of solids & liquids after batch treatment	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.2	Manual-on, Auto-off pump (136)	Manual	Outfall cascades into tank (138)
38	1	Clarifier Waste Collection Tank	Collection-gravity overflow of treated waste from clarifier	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.2	Gravity flow from clarifier (137)	Manual	Float operated pump (140) maintains preset level in the tank
42	1	Sludge Conditioning Tank	Batch mixing of additives t sludge, prior to dewatering	AMB	ATM	ATM	4	8.5 to 12.5	1.25	Timer & Level controlled pump (139)	Automatic	Continuous level indicator and high level alarm
49	2	Sand Filters	Solids Removal	AMB	ATM	ATM	75 PSI	0.5 to 12	1.25	Manually operated pumps	Manual	Hydraulic loading controlled by pressure controller
50	1	Backwash collection Tank	Collection of sand filter Backwash waste	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.05	Timer & pressure controlled city water	Automatic	High level alarm, float operated pump (151) maintains preset level
52	2	Carbon Adsorption	Organic removal	AMB	ATM	ATM	75 PSI	0.5 to 12	1.25	Manually operated pumps	Manual	Hydraulic loading controlled by pressure controller on sand filter unit
53	1	Treated Effluent Tank	Collection of treated effluent form polishing system	AMB	ATM	ATM	Open Top	8.5 to 10.5	1.05	Gravity overflow from carbon units	Manual	High level alarm, float operate pump (154) maintains preset level

(Continued)

T D-6: Operating for Proposed Tanks (Continued)

No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inch.)	Waste pH Range	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
.	LISTED WASTE STORAGE TANKS (UNIT Y) APPROVED UNDER NOVEMBER 1993 PART B PERMIT; NOT YET CONSTRUCTED											
21	6	Storage Tanks	Storage of listed/segregated wastes	AMB	ATM	ATM	4	0.5 to 12	1.25	Manually operated pump(s)	Manual	High level alarm continuous level indicator, overflow to secondary containment
55	2	Effluent Storage Tanks	Storage of treated waste prior to batch discharge	AMB	ATM	ATM	4	8.5 to 10.5	1.05	Manually operated pump(s0	Manual	High level alarm continuous level indicator, overflow to secondary containment
.	HAZARDOUS WASTE FUELS BLENDING OPERATIONS (UNIT 43) APPROVED UNDER NOVEMBER 1993 PART B PERMIT; EXISTING											
61-21	1	Dispersion Tank	Blending of fuels	<120	ATM	Emer-gency	6	4 to 10	1.75	Auto-on/Auto-off	Auto	Continuous overoverflow,high temperature alarms, nitrogen Blanketing, emergency vent to atmosphere, automatic carbon dioxide fire suppression.
61-22	1	Overflow Tank	Blending of fuels	<120	ATM	To Dispersion Tank	2	4 to 10	1.75	Auto-on/Auto-off	Auto	High temperature alarms, nitrogen blanketing, emergency vent to atmosphere, automatic carbon dioxide fire suppression through dispersion tank.
.	TANK FARM (UNIT 16) APPROVED UNDER THE NOVEMBER 1993 PART B PERMIT: EXISTING											
58	9	Storage Tanks	Ignitable waste storage T101 & 107: Acidic waters, Organic lean waters, and/or Hazardous waste fuels T102 & 110: Polychlorinated Biphenyl's (PCB's) T103-103, & 109: Hazardous waste fuels	AMB	2	Carbon Beds	3 Con-servation	4 to 10	1.2	Manually activated pumps (157,160, 167)	Manual/ Automatic	Continuous level indicator, two high level alarms, nitrogen blanketing, conservation vent to carbon beds and an emergency vent.

(Continued)

Table D-6: Operating for Proposed Tanks (Continued)

No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inch.)	pH Range	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
59	1	Storage Tanks	Blended ignitable waste storage T112: Neutral pH waters, organic Lean waters, and/or hazardous waste fuels	AMB	2	Carbon Beds	3 Conservation	4 to 10	1.2	Manually activated pumps (162)	Manual/ Automatic	Continuous level indicator, two high level alarms, nitrogen blanketing, conservation vent to carbon beds and an emergency vent
.	HAZARDOUS WASTE SHREDDING OPERATION (UNIT 24) APPROVED UNDER NOVEMBER 1993 PART B PERMIT; NOT YET CONSTRUCTED											
14	1	Hydropulpar Tank (Tank 414)	Blending of Fuels	200	ATM	Emergency	8	4 to 10	1.75	Auto-on/ Quto-off	Automatic	High temperature alarms, nitrogen purge, emergency vent to atmosphere, automatic carbon dioxide fire protection
.	METALWASHING OPERATION (UNIT 68) APPROVED UNDER NOVEMBER 1993 PART B PERMIT; NOT YET CONSTRUCTED											
24	1	Metalwashing Tank (Tank 424)	Washing of metal	200	10	Emergency	3	4 to 10	2.0	Auto-on/ Auto-off	Automatic	Nitrogen blanket, emergency vent to atmosphere, hoppers vent to carbon beds, high level alarm
27	1	Rinse Tank (Tank 427)	Rinsing of metal	200	10	Vent	1	4 to 10	2.0	Auto-on/ Auto-off	Automatic	High level alarm
.	LIQUID TANK FARM (UNIT 22) APPROVED UNDER NOVEMBER 1993 PART B PERMIT; NOT YET CONSTRUCTED											
15, 416	2	Storage Tanks (Units 415, 416)	Ignitable waste storage and Diluent	AMB	2	Carbon Beds	4 Conservation	4 to 10	1.2	Manually activated pumps	Manual/ Automatic	Continuous level indicator, two high level alarm, nitrogen blanketing, conservation vent to carbon beds and an emergency vent
17	1	Storage Tank (Tank 417)	Ignitable waste storage and Diluent	AMB	2	Carbon Beds	4 Conservation	4 to 10	1.2	Manually activated pumps	Manual/ Automatic	Continuous level indicator, two high level alarm, nitrogen blanketing, conservation vent to carbon beds and an emergency vents

(Continued)

Table D-6: Operating for Proposed Tanks (Continued)

No.	Quantity	Description	Primary Use	Operating Temp (o F)	Operating Pressure (in. water)	Tank Vent Type	Tank Vent Size (inch.)	Waste pH Range	Waste Max Specific Gravity	Feed System	Safety Cutoff	Remarks
18	1	Storage Tanks (Tank 418)	Chlorinated Solvents	AMB	2	Carbon Beds	3 Con-servation	4 to 10	1.2	Manually activated pumps	Manual/ Automatic	Continuous level indicator, two high level alarm, nitrogen blanketing, conservation vent to carbon beds and an emergency vent

Notes:
1. Each piece of equipment, including tanks, with a specific function is given a unique "Item Number". Multiple equipment used for the same function is given the same number. Hence, for same Item Number, the quantity may be more than one. Tanks are identified by these number for ease of cross-references with the equipment layout drawings and piping and Instrumentation diagrams (PID's).
2. The professional Engineering certification for the tanks listed in the Table includes all ancillary tank system components such as pipelines, pumps and augers.
3. Liquid level monitors in the listed waste tank farm and the ignitable bulk liquid tank farm shall be of continuous microwave-type design.

(a, b)
Table D-7: General Container Information

Typical General Description	Construction Materials	Dimensions	Usable Volume	Dot Spec	Liner
Removable Head	Low carbon, open Hearth electric or Stainless steel	Not Specified	5, 10, 15, 33, 110 gallon capacity	5	None
Open Head	Low carbon, open Hearth or electric Steel	Not Specified	5, 10 , 15, 33, 110 gallon capacity	58	None
Cylindrical Steel Over pack	Low carbon, open hearth or electric Steel	Not Specified	220 kilograms or 110 gallons	60	None
Removable Head	Low carbon, open Hearth or electric Steel	Not Specified	5, 10, 30, 55, gallon capacity	17C	None
Single Trip Convex Head	Low Carbon hearth or electric	Not Specified	5, 10, 30, 55, gallon capacity	17E	None
Single Trip Removable Head	Low Carbon open hearth or electric	Not Specified	5, 10, 30, 55 gallon capacity	17H	None
Fiber Drum	Fiberboard	Not Specified	400 Pounds	21C	None
Fiber Drum Overpack	Fiberboard	Not Specified	600 Pounds	21P	None
Metal Portable Tanks	Steel seamless or Welded	Not Specified	110-660 Gallons	51	None

Table D-7: General Container Information (Continued)

Typical General Description	Construciton Materials	Dimensions	Usable Volume	Dot Spec	Liner
Metal Portable Tanks	Steel Seamless or Welded	Not Specified	110-660 Gallons	56	None
Metal Portable Tanks	Steel Seamless or Welded	Not Specified	110-660 Gallons	57	None
Steel Portable Tanks	ASME Code Steel	Not Specified	110-1,800 Gallon	57	None
Steel Portable Tanks	Carbon or alloy Steel with minimum Elongation of 20%or greater	Not Specified	110 Gallons or greater	IM 101	None
Steel Portable Tanks	Carbon or alloy steel with minimum Elongation of 20% or greater	Not Specified	110 Gallons or greater	IM 102	None
Glass Carboys	Glass	Not Specified	6.5 Gallons	1A	None
Glass Carboys	Glass	Not Specified	6.5 Gallons	10	None
Glass Carboys	Glass	Not Specified	6.5 Gallons	1M	None
Glass Carboys	Glass	Not Specified	6.5 Gallons	1X	None
Rolloff Containers	Carbon Steel	Not Specified	30 Cubic Yards/ 30,000 pounds	Exempt	Polyethelene

Notes:

(a) The facility also accepts various DOT – exempt packaging. These exempt packaging include, but are not limited to steel Overpacks, fiberboard overpacks, 5 gallon plastic containers, 30 gallon plastic kiln packs and 2,400 pound capacity cardboard/wood reinforced boxes.

(b) See Tables D-1 and D-2 for a listing of waste groups, container type(s) and maximum number of containers and tanks manag in each container storage area at CHCI.

Table D-8: List of Reagents Used in Waste Treatment Processes

1. Treatment Reagents - - Listed and Non-Listed Waste Streams

Polymers (various)	Flocculating agents
Demulsifiers (various)	Demulsification agents
Antifoams (various)	Defoamers
Sodium Hydroxide	Neutralization, precipitation
Lime	Neutralization, precipitation
Aluminum Sulfate	Neutralization, coagulation, precipitation
Ferric Chloride, oxidation , catalyst	Neutralization, coagulation, precipitation
Sodium Sulfide	Precipitation
Hydrochloric Acid	Neutralization
Hydrogen Peroxide	Oxidation
Potassium Permanganate	Oxidation
Sodium Bisulfite	Metabisulfite reduction
Soda Ash	Neutralization, precipitation
Organosulfides (e.g.diethyldithiocarbamate Diethyltrithiocarbamate, trimecaptos-triazine Trisodium salts)	Precipitaion
Inert Filter Aids (e.g. perlite, kaolin, diatomaceous earth)	Dewatering
Sodium Hypochlorite	Oxidation
Sodium Borohydride	Reduction
Ferrous Sulfide	Precipitation, coagulation, oxidation catalyst
Calcium Carbonate	Precipitation
Ferrous Chloride	Reduction
Ferrous Sulfide	Precipitation
Sodium Bicarbonate	Precipitation
Activated carbon	Adsorption
Hazardous Wastes (Various)	Neutralization, coagulation, oxidation catalyst, Precipitation, reduction

2. Stabilization Reagents

Ferric Chloride
Aluminum Sulfate
Portland Cement
Ferrous Sulfate
Calcium Oxide
Calcium Hydroxide
Sodium Sulfide
Fly Ash
Kiln Dust
Calcium Carbonate
Sodium Silicate
Hazardous Wastes

Table D-9: Container Handling Activities and Equipment

Container Storage Area	Activity	Location / Typical Equipment
Ignitable Container Management Building (Unit 26)	Sampling – Containers	Inside drum pumping station and drum storage bay, using appropriate hand tools (e.g., thief, trier scoop, coliwasa)
	Decanting – Container to Tanks	Inside drum pumping station, using decicated hard pipe and pumping system to tank farm.
	Container to Vehicle	Inside drum pumping station, using dedicated Hard pipe and pumping system to tank farm Unloading area, or using vacuum truck parked Inside Building 26.
	LP Pour-offs	Inside drum pumping station, using a 55-gallon Container to commingle the compatible wastes.
	LP Consolidation	Inside consolidation station, using gondolas or a 55-gallon or smaller container to sort and repack Small bottles, jars, etc. of compatible wastes.
Container Management Building (Unit 25)	Sampling – Container	Drum storage bays or inside the consolidation Station in the storage bay (one each of aids, alkaline, poisons) using appropriate hand tools (e.g., thief, trier scoop, coliwasa).
	Decanting - Container to Container	Inside the consolidation station, using portable Pumps or manual means (e.g., dumping, pouring).
	Container to Vehicle	Inside the consolidation station using flexible Hose connected to vacuum truck parked inside Building 25.
	Solids Bulking	Inside the consolidation station or in the storage bays, using mechanical or manual means to lift the container and then dump it into an appropriate DOT-Approved container, such as a rolloff or box.
	LP Pour-offs	Inside the consolidation station, using a 55-gallon Container to commingle the compatible wastes.
	LP Consolidation	Inside consolidation station, using a 55-gallon or Smaller container to sort and repack small bottles, jars, etc. of compatible wastes.

(Continued)

Table D-9: Container Handling Activities and Equipment (Continued)

Container Storage Area	Activity	Location / Typical Equipment
Container Handling Dock (Unit 61)	Sampling – Containers	On the dock, using appropriate hand tools (e.g. thief, trier scoop, coliwasa).
	Decanting – Container To container	On the dock using portable pumps or manual means (e.g., dumping, pouring).
	Container to vehicle vehicle	On the dock using flexible hose connected to vacuum truck parked inside Truck Pad (Unit 26)
	Solids bulking	One the dock, using mechanical or manual means to lift the container and then dump it into an appropriate DOT- approved container, such as a flex bin on the dock or a rolloff parked in the Truck Pad (Unit 62)
Drum Storage Area (Unit G2)	Sampling – Containers	Inside drum storage bay using appropriate hand tools (e.g., thief trier scoop, coliwasa)
	L/P Consolidation	Inside consolidation station, using gondolas or 55-Gallon or smaller containers to sort and repack small Bottles, jars, etc. of compatible wastes.
Rail Unloading Area (Unit 13)	Sampling – Vehicles	Inside rail storage area using appropriate hand tools (e.g. thief, trier scoop, coliwasa).
	Decanting – Vehicle	Inside rail storage area or between rail storage and Truck Unloading Platform (Unit 15) using vacuum Tankers, centrifugal tank farm pumps, or portable Pumps
	Vehicle to Tanks/Tanks To vehicle	Between rail storage area and Flammable Tank Farm using centrifugal tank farm pumps, or portable pumps.
	Containers to vehicle	Between Truck Unloading Platform and rail storage Area using centrifugal tank farm pumps or portable pumps.
	Vehicle to Container	Inside rail storage area using mechanical or manual Means to remove heels.

(Continued)

Table D-9: Container Handling Activities and Equipment (Continued)

Container Storage Area	Activity	Location / Typical Equipment
Transportation Vehicle Storage Areas (Units Q, V, W, 62)	Sampling – Containers	Inside storage areas using appropriate hand tools (e.g., thief, trier scoop, coliwasa).
	Vehicles	Inside storage areas using appropriate hand tools(e.g., thief, trier scoop, coliwasa).
	Decanting - Tanker to container (heels)	Inside storage areas using mechanical or or manual means to remove heels
	Container to Container	Inside storage areas using vacuum tankers, portable pumps or solids consolidation by Mechanical or manual
	Container to Vehicle	Inside storage areas using vacuum tankers portable pumps or solids consolidation by Mechanical or manual means.
	Tanker to Tanker Transfer	Inside storage areas using vacuum trucks or portable pumps
Transportation Vehicle Storage Areas (Units B, C, X, 59)	Sampling - Containers	Inside storage areas using appropriate hand tools (e.g., thief, trier scoop, coliwasa).
	Vehicles	Inside storage areas using appropriate hand Tools (e.g., thief, trier scoop, coliwasa).
	Decanting - Tanker To Container (heels0	Inside storage areas using mechanical or manual means to remove heels
	Tanker to Tank (X only)	Between Truck loading/Unloading Pad and Listed Waste tank farm or Process Building # 3 using Centrifugal or portable pumps
	Tanker to Tanker Transfer (not 8)	Inside storage areas using vacuum trucks or portable pumps.

(Continued)

Table D-9: Container Handling Activities and Equipment (Continued)

Container Storage Area	Activity	Location / Typical Equipment
Drum Storage Area (Unit R1)	Sampling - Containers	Inside drum storage bays using appropriate hand tools. (e.g., thief, trier scoop, coliwasa).
	Decanting - Container to Container	Inside staging area using portable pumps or manual means
	- Container to Vehicle Vehicle to Container	Between Unit R1 staging area and adjacent Unit Q using vacuum tankers, portable pumps or manual Means
	Solids bulking	Inside staging area using mechanical or manual Means to lift the container and then dump it into An appropriate DOT-approved container, such as a Flex bin on the dock or a roll off parked in Unit Q.
	Compacting	Inside staging area using compactor
Truck Unloading Platform (Unit 15	Sampling - Containers	Inside the truck bay using appropriate hand tools (e.g., thief, trier, scoop, coliwasa).
	- Vehicles	Inside the truck bay using appropriate hand tools (e.g., thief, trier, scoop, colwasa).
	Decanting - Vehicle to Vehicle	Inside Truck Unloading Platform or between Truck unloading platform and rail storage area (Unit 13) Using vacuum tankers, centrifugal tank farm pumps, or portable pumps.
	- Vehicle to tank/ Tank to vehicle	between the truck unloading platform and flammable tank farm using vacuum tankers, centrifugal tank farm pumps or portable pumps
	- Container to vehicle Vehicle to container	inside truck unloading platform or between truck unloading platform and rail storage area using Vacuum tanker, centrifugal tank farm pumps, or Portable pumps; or mechanical or manual means To remove heels
	- Container to Tank	Between truck unloading platform and flammable Tank farm using centrifugal tank farm pumps or Portable pumps
	- Container to container	Inside truck unloading platform using centrifugal Tank farm pumps, portable pumps or manual means

(Continued)

Table D-9: Container Handling Activities and Equipment (Continued)

Container Storage Area	Activity	Location / Typical Equipment
Drum Storage Area Expansion (Unit R2)	Sampling - Containers	Inside the drum storage bays using appropriate hand tools (e.g. thief, trier scoop, coliwasa)
	Decanting - Container to container	Inside staging area using portable pumps or manual means
	- Container to vehicle/ vehicle to Container	Between staging area and adjacent Unit V using vacuum tankers, portable pumps, or manual means
	- Solids bulking	On the dock, using mechanical or manual means to lift the container and then dump it into an appropriat DOT container, such as a flex bin on the dock or a roll-off parked in Unit V.
Truck to Truck Transfer of In-Transit Vehicles (All hazardous & non-hazardous transportation-related areas)	Sampling - Containers	Inside contained area using appropriate hand tools (e.g., thief, trier scoop, coliwasa).
	- Vehicles	Inside contained area using appropriate hand tools (e.g. thief, trier scoop, coliwasa).
	Truck to truck transfer - Tankers	Inside contained areas suing vacuum tankers or portable pumps.
	- Containers	Inside transportation areas and in conjunction with docks to transfer containers by manual means.

(Continued)

Table D-9: Container Handling Activities and Equipment (Continued)

Container Storage Area	Activity	Location / Typical Equipment
Truck to Truck Transfer (All hazardous & non-hazardous transportation Related areas)	Sampling – containers	Inside contained area using appropriate hand tools (e.g., thief, trier scoop, coliwasa)
	Vehicles	Inside contained area using appropriate hand tools (e.g. thief, trier scoop, coliwasa).
	Truck to truck transfer Tankers	Inside contained areas using vacuum tankers or portable pumps
	Containers	Inside transportation areas and in conjunction With docks to transfer containers by manual means.
Lab Pack Pour-Off Station (Process Building 1) (Unit F1)	LP Pour-offs	Inside the pour-off hood using the reactor or a 55-gallon cintainer to commingle compatible wastes
Building 25 Truck Pad	Sampling Containers	Inside the ttruck bay using appropriate hand tools (Unit (e.g. thief, trier scoop, coliwasa)
Truck loading/ Unloading Pad (Unit 69)	Sampling containers	Inside the truck bay using appropriate hand tools (e.g. thief, trier scoop, coliwasa).
	Vehicles	Inside the truck bya using appropriate hand tools (e.g. thief, trier scoop, coliwasa).
	Decanting - Vehicle to Vehicle	Inside the truck bay using vacuum tankers, centrifugal tank farm pumps or portable pumps.
	Vehicle to tank/ Tank to Vehicle	Between the Truck Loading/Unloading Pad and Bulk Flammable Tank farm (Unit 22) using vacuum Tankers centrifugal tank farm pumps or portable Pumps.
	Container to Vehicle/ Vehicle to Container	Inside the truck bay using vacuum tankers, centrifugal tank farm pumps, or portable pumps; or mechanical Or manual means to remove heels.
	Container to Tank	Between the Truck Loading/Unloading Pad and Bulk Flammable Tank farm using centrifugal tank farm Pumps or portable pumps
	Container to container	Inside the truck bay using centrifugal tank farm pumps portable pumps or manual means
	Solids Bulking	Inside the truck bay using mechanical or manual means to lift the container and then dump it into an Appropriate DOT-approved container, such as a flex bin or roll off in Unit 69.