# 130 Liberty Street

# New York, New York

# Supplemental Investigation Summary Report

## Preliminary Waste Characterization Sampling Summary Results

Prepared for:
**Lower Manhattan Development Corporation**
One Liberty Plaza, 20th Floor, New York, NY 10006

LMDC
Lower Manhattan Development Corporation

Prepared By:

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**February 10, 2005**

# 1.0 INTRODUCTION

TRC Environmental Corporation (TRC) was contracted and authorized by the Lower Manhattan Development Corporation (LMDC) to conduct a *Supplemental Investigation* (SI) of previously inaccessible spaces in the building located at 130 Liberty Street (the Building). The intent of the SI is to address the additional sampling recommendations presented in The Louis Berger Group, Inc. (Berger) *Initial Building Characterization Report* dated September 14, 2004. This Summary Report presents the results of the preliminary characterization of anticipated waste streams generated during Phase I Deconstruction Activities.

## 1.1 Background

The Building is located across the street and south of the WTC site and is a former office building comprised of 40 stories and approximately 1.5 million square feet. The massive debris generated from the collapse of the South Tower of the WTC broke approximately 1,500 windows, curtain wall, and structural components creating a gash (Gash Area) in the Building's exterior exposing portions of the interior north side of the Building between the 7$^{th}$ and 24$^{th}$ floors. The debris demolished the plaza in front of the Building, exposing the basement and subbasement (Basement A and Basement B) areas and ruptured a diesel fuel tank in the basement, the contents of which burned. The Gash Area and broken windows exposed the interior of the Building to the elements.

As a result of the collapse of the World Trade Center (WTC) on September 11, 2001, a combination of soot, dust, dirt, debris, and contaminants settled in and on the Building. See the *Initial Building Characterization Report* for additional background information.

## 1.2 Scope of Work

In the *Initial Building Characterization Report*, Berger identified areas that were inaccessible during their investigation including the following locations:

- Curtain Wall Cavity
- Cell Systems within Floors
- Interstitial Spaces within Interior Walls and Column Cavities
- Inside Vertical Shafts
- Exterior Building Surfaces

In addition, Berger recommended performing preliminary waste characterization.

This supplemental investigation summary presents the results of preliminary waste characterization performed by TRC within the Building. Supplemental investigations regarding curtain wall cavity, cell systems within floors, heating, ventilation, and air conditioning (HVAC) ductwork, interstitial spaces within interior walls and column cavities, inside vertical shafts, exterior building surfaces, fireproofing, and visual inspection of the Building for mold and asbestos containing building materials (ACBM) are addressed in separate summaries.

As part of the supplemental investigation, TRC collected the following samples:

| COPC | Asbestos | Lead | Silica | Dioxin | PAH | MMVF |
|---|---|---|---|---|---|---|
| Total Samples | 126 | 106 | 35 | 55 | 55 | 27 |

TRC collected fourteen representative samples of dust and anticipated waste streams for analysis to provide a preliminary determination if dust/waste materials meet the criteria for characterization as a hazardous waste. Samples were collected on November 15, 2004 and were analyzed for Toxicity Characteristic Leaching Protocol (TCLP) and Resource Conservation and Recovery Act (RCRA) characteristics.

## 1.3 Purpose and Objectives

This SI summary presents the results of dust and anticipated building waste stream characterization to provide a preliminary assessment of the potential requirements for waste disposal during Phase I Deconstruction Activities.

The SI of previously inaccessible areas is intended to assist in determining what measures and protocols may be required in support of the 130 Liberty Street cleaning and deconstruction plan. In particular, the results of the SI are intended to provide reference information allowing for informed decisions to be made regarding appropriate cleaning and deconstruction methods. These decisions include the development and implementation of engineering controls to contain the work zone (i.e., to ensure no exposure to the surrounding community during the cleaning and deconstruction) and appropriate methods for the disposal or recycling of materials generated by the cleaning and deconstruction activities. Using the available characterization results, LMDC, its consultants, and the selected deconstruction contractor can develop and implement appropriate deconstruction protocols and safety precautions for the cleaning and deconstruction process to ensure the health and safety of workers and the surrounding community.

# 2.0 METHODOLOGY

This section presents the methodologies implemented for the dust and waste stream characterization within the Building. These tasks were implemented in accordance with the *Sampling Analysis and Quality Assurance Project Plan* (SAQAPP) developed by TRC dated November 15, 2004.

TRC collected representative bulk samples from dust, fireproofing, gypsum board, carpeting, and ceiling tile from ten different floors within the Building.

Samples were collected and analyzed via full parameter TCLP United States Environmental Protection Agency (USEPA) Test Methods for Evaluating Solid Wastes (SW 846) per the following methods:

- 8260B for volatile organic compounds (VOCs)
- 8270C for semi-volatile organic compounds (SVOCs)
- 6010B and 7470A for metals
- 8082 for polychlorinated biphenyls (PCBs)
- 8081A for pesticides
- 8151 for herbicides
- 9040B for RCRA characteristic corrosivity
- CHAP 7 for RCRA characteristics ignitability and reactivity

Samples were properly labeled as per the SAQAPP and delivered to Accutest Laboratories, located in Dayton, New Jersey, an independent laboratory certified under the New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP # 10983).

# 3.0 RESULTS

Fourteen representative composite bulk dust and anticipated waste stream samples were collected on various floors of the Building as detailed below. Samples were divided by Zone, as described in the *Initial Building Characterization Report*. Zones 2 and 3 apply to TRC's study and are defined as follows:

> Zone 2: Office space located at or below the 24th Floor that may have been subjected to dust entering the Building through the Gash, HVAC system (and possibly circulated through the HVAC system), vertical shafts, or broken windows.
>
> Zone 3: Office space located above the 24th Floor that may have been impacted by dust distributed through the HVAC system, vertical shafts, or broken windows.

| Sample ID | Floor | Sample Material | Zone |
|---|---|---|---|
| GM-WC-BULK-05-DUST-002 | 5 | Dust | 2 |
| KD-WC-BULK-08-FIREPROOFING-002 | 8 | Fireproofing | 2 |
| GM-WC-BULK-12-FIREPROOFING-001 | 12 | Fireproofing | 2 |
| GM-WC-BULK-18-B1(GYPSUM BP)-001 | 18 | Gypsum Board | 2 |
| GM-WC-BULK-CARPET-101 | 18 | Carpeting | 2 |
| GM-WC-BULK-18-CLGTILE-002 | 18 | Ceiling Tile | 2 |
| GM-WC-BULK-39-GYPSUM BD-002 | 39 | Gypsum Board | 3 |
| GM-WC-BULK-39-CARPET-002 | 39 | Carpeting | 3 |
| GM-WC-BULK-39-CEILINGTILE-001 | 39 | Ceiling Tile | 3 |
| GM-WC-BULK-40-DUST-001 | 40 | Dust | 3 |
| GM-WC-BULK-02-DUST-003 | 2 | Dust | 2 |
| GM-WC-BULK-01-DUST-004 | 1 | Dust | 2 |
| GM-WC-BULK-MEZ-DUST-005 | Mezzanine | Dust | 2 |
| GM-WC-BULK-BA-DUST-006 | Basement | Dust | 2 |

Sampling and analysis included six composite dust, two fireproofing, two carpet, two ceiling tiles, and two gypsum board samples.

## 3.1 TCLP

All TCLP samples results are presented in Tables 1 through 5. Results were compared to 40 CFR 261.24 Maximum Concentration of Contaminants for the Toxicity Characteristics. Of the fourteen samples collected, no pesticides or herbicides were detected. One VOC was detected in sample GM-WC-BULK-01-DUST-004, which had a benzene reading of 0.0101 milligrams per liter (mg/L), well below the 40 CFR 261.24 benzene standard of 0.5 mg/L. Also, one SVOC was detected in sample GM-WC-

BULK-40-DUST-001, which had a pentachlorophenol reading of 0.076 milligrams per liter (mg/L), well below the 40 CFR 261.24 pentachlorophenol standard of 100 mg/L. Of the metals, cadmium, chromium, and mercury were detected in eleven out of fourteen samples. Of these eleven most were at least one order of magnitude lower than the maximum concentration; however, there was one exceedance of the maximum concentration. Sample GM-WC-BULK-40-DUST-001 had a cadmium exceedance of 6.2 mg/L. This sample was of dust located on the mechanical 40$^{th}$ floor within the Building.

## 3.2 RCRA Characteristics

All RCRA Characteristic results are provided in Table 6. Results were compared to 40 CFR 261 parts 21 through 23. In addition, the cyanide and sulfide reactivity results were compared to SW 846 Chapter 7, Characteristics Introduction and Regulatory Definitions Interim Guidance Values. The RCRA Characteristic sample results did not exhibit the characteristics of reactivity, ignitability, or corrosivity.

## 3.3 Data Validation Summary

A limited data validation was performed on all samples in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99-008* (October 1999) and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (July 2002). These guidelines were modified to accommodate the non-Contract Laboratory Program (CLP) methodologies and specific requirements outlines in the SAQAPP.

In general, the data appear to be valid as reported and may be used for decision-making purposes. Potential uncertainty exists for the corrosivity results in all samples and potential low bias exists for reactive cyanide and reactive sulfide results in all samples due to a holding time exceedance. Potential uncertainty exists for the 2-butanone and/or 2,4-D results in select samples due to calibration nonconformances. Potential low bias exists for the mercury results in samples GM-WC-Bulk-Carpet-101 and GM-WC-Bulk-39-Carpet-002 due to low recovery in the matrix spike analysis. Potential uncertainty exists for the cadmium results in samples GM-WC-Bulk-Carpet-101 and GM-WC-Bulk-39-Carpet-002 due to high recovery in the quantitation limit standard and a serial dilution nonconformance. Potential uncertainty exists for the chromium results in samples GM-WC-Bulk-39-CeilingTile-001 and GM-WC-Bulk-18-CLGTile-002 due to serial dilution nonconformances. These qualifications have minor impacts on the data usability since the affected results were significantly below the project action levels.

## 4.0 FINDINGS

Results of the 14 samples were compared to criteria provided in 40 CFR 261 parts 21 through 24 and SW 846 Chapter 7. None of the 14 samples collected exceed the criteria provided in 40 CFR 261 parts 21 through 23 or SW 846 Chapter 7. None of the eight building material samples exceeded Maximum Concentration of Contamination for the Toxicity Characteristics provided in 40 CFR 261.24. One of the six dust samples collected on the 40$^{th}$ floor exhibited levels of cadmium that exceeded 40 CFR 261.24. This sample exceeded the cadmium maximum concentration of 1.0 mg/L with a result of 6.2 mg/L.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the preliminary waste characterization sampling and testing performed for this Supplemental Investigation revealed levels of contaminants that should be addressed in connection with the deconstruction of the Building. One of the six dust samples exhibited levels of cadmium that exceeded criteria provided in 40 CFR 261.24. As concentration of contaminants in the dust are highly variable the potential exists that dust and dust-impacted waste streams generated could exceed TCLP for metals. Therefore, additional waste characterization is warranted both pre-waste stream generation and as waste is being generated prior to transportation and disposal.

# 6.0 REFERENCES

*Initial Building Characterization Study Report, 130 Liberty Street, New York, New York.* The Louis Berger Group, Inc., September 14, 2004.

*Sampling, Analysis, and Quality Assurance Project Plan, Supplement Investigation of 130 Liberty Street, New York, New York.* TRC Environmental Corp., November 15, 2004.

*Supplemental Investigation Summary Report HVAC Distribution Duct Sampling Summary Results, 130 Liberty Street, New York, New York.* TRC Environmental Corp., December 17, 2004

Supplemental Investigation
Preliminary Waste Characterization Sampling
LMDC
130 Liberty Street
New York, New York
February 10, 2005

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Table 1
Preliminary Waste Characterization Sampling
Volatile Organic Compounds, Toxicity Characteristic Leaching Protocol (SW 846 8260B)

Anticipated Waste Streams Sample Results
LMDC
130 Liberty Street
February 10, 2005

| VOC (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-05-DUST-002 N83650-1 15-Nov-04 | KD-WC-BULK-08-FIREPROOFING-002 N83650-2 15-Nov-04 | GM-WC-BULK-12-FIREPROOFING-001 N83650-3 15-Nov-04 | GM-WC-BULK-18-B1(GYPSUM BP)-001 N83650-4 15-Nov-04 | GM-WC-BULK-CARPET-101 N83650-5 15-Nov-04 | GM-WC-BULK-18-CLGTILE-002 N83650-6 15-Nov-04 | GM-WC-BULK-39-GYPSUM BD-002 N83650-7 15-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 0.7 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| 1,2-Dichloroethane | 0.5 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| 1,4-Dichlorobenzene | 7.5 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| 2-Butanone (MEK) | 200 | < 0.05 | < 0.05 | < 0.05 J | < 0.2 J | < 0.2 J | < 0.05 J | < 0.1 J |
| Benzene | 0.5 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| Carbon tetrachloride | 0.5 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| Chlorobenzene | 100 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| Chloroform | 6 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| Tetrachloroethene | 0.7 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| Trichloroethene | 0.5 | < 0.005 | < 0.005 | < 0.005 | < 0.02 | < 0.02 | < 0.005 | < 0.01 |
| Vinyl chloride | 0.2 | < 0.025 | < 0.025 | < 0.025 | < 0.1 | < 0.1 | < 0.025 | < 0.05 |

| VOC (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-39-CARPET-002 N83650-8 15-Nov-04 | GM-WC-BULK-39-CEILINGTILE-001 N83650-9 15-Nov-04 | GM-WC-BULK-40-DUST-001 N83650-10 15-Nov-04 | GM-WC-BULK-02-DUST-003 N83650-11 15-Nov-04 | GM-WC-BULK-01-DUST-004 N83650-12 16-Nov-04 | GM-WC-BULK-MEZ-DUST-005 N83650-13 16-Nov-04 | GM-WC-BULK-BA-DUST-006 N83650-14 16-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 0.7 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 1,2-Dichloroethane | 0.5 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 1,4-Dichlorobenzene | 7.5 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 2-Butanone (MEK) | 200 | < 0.2 J | < 0.05 J | < 0.1 J | < 0.05 J | < 0.05 J | < 0.05 J | < 0.05 J |
| Benzene | 0.5 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | 0.0101 | < 0.005 | < 0.005 |
| Carbon tetrachloride | 0.5 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Chlorobenzene | 100 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Chloroform | 6 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Tetrachloroethene | 0.7 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Trichloroethene | 0.5 | < 0.02 | < 0.005 | < 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Vinyl chloride | 0.2 | < 0.1 | < 0.025 | < 0.05 | < 0.025 | < 0.025 | < 0.025 | < 0.025 |

mg/L - Milligrams per liter
J - Value is an estimate.

Table 2
Preliminary Waste Characterization Sampling
Semi-Volatile Organic Compounds, Toxicity Characteristic Leaching Protocol (SW 846 8270C)

Anticipated Waste Streams Sample Results
LMDC
130 Liberty Street
February 10, 2005

| SVOC (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-05-DUST-002 N83650-1 15-Nov-04 | KD-WC-BULK-08-FIREPROOFING-002 N83650-2 15-Nov-04 | GM-WC-BULK-12-FIREPROOFING-001 N83650-3 15-Nov-04 | GM-WC-BULK-18-B1(GYPSUM BP)-001 N83650-4 15-Nov-04 | GM-WC-BULK-CARPET-101 N83650-5 15-Nov-04 | GM-WC-BULK-18-CLGTILE-002 N83650-6 15-Nov-04 | GM-WC-BULK-39-GYPSUM BD-002 N83650-7 15-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| 2-Methylphenol | -- | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 3&4-Methylphenol | -- | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pentachlorophenol | 100 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| 2,4,5-Trichlorophenol | 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | 2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | 7.5 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 2,4-Dinitrotoluene | 0.13 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Hexachlorobenzene | 0.13 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Hexachlorobutadiene | 0.5 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Hexachloroethane | 3 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene | 2 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Pyridine | 5 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |

| SVOC (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-39-CARPET-002 N83650-8 15-Nov-04 | GM-WC-BULK-39-CEILINGTILE-001 N83650-9 15-Nov-04 | GM-WC-BULK-40-DUST-001 N83650-10 15-Nov-04 | GM-WC-BULK-02-DUST-003 N83650-11 15-Nov-04 | GM-WC-BULK-01-DUST-004 N83650-12 16-Nov-04 | GM-WC-BULK-MEZ-DUST-005 N83650-13 16-Nov-04 | GM-WC-BULK-BA-DUST-006 N83650-14 16-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| 2-Methylphenol | -- | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 3&4-Methylphenol | -- | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Pentachlorophenol | 100 | < 0.2 | < 0.2 | 0.076 J | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| 2,4,5-Trichlorophenol | 400 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | 2 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | 7.5 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| 2,4-Dinitrotoluene | 0.13 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Hexachlorobenzene | 0.13 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Hexachlorobutadiene | 0.5 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Hexachloroethane | 3 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene | 2 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Pyridine | 5 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |

mg/L - Milligrams per liter
J - Value is an estimate.



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Table 3
Preliminary Waste Characterization Sampling
Metals, Toxicity Characteristic Leaching Protocol (SW 846 6010B and 7470A)

Anticipated Waste Streams Sample Results
LMDC
130 Liberty Street
February 10, 2005

| Metals (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-05-DUST-002 N83650-1 15-Nov-04 | KD-WC-BULK-08-FIREPROOFING-002 N83650-2 15-Nov-04 | GM-WC-BULK-12-FIREPROOFING-001 N83650-3 15-Nov-04 | GM-WC-BULK-18-B1(GYPSUM BP)-001 N83650-4 15-Nov-04 | GM-WC-BULK-CARPET-101 N83650-5 15-Nov-04 | GM-WC-BULK-18-CLGTILE-002 N83650-6 15-Nov-04 | GM-WC-BULK-39-GYPSUM BD-002 N83650-7 15-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Barium | 100 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Cadmium | 1 | 0.2 | < 0.005 | < 0.005 | < 0.005 | 0.006 J | < 0.005 | < 0.005 |
| Chromium | 5 | 0.09 | < 0.01 | < 0.01 | 0.016 | 0.011 | 0.03 J | < 0.01 |
| Lead | 5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Selenium | 1 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Silver | 5 | < 0.015 | < 0.015 | < 0.015 | < 0.015 | < 0.015 | < 0.015 | < 0.015 |
| Mercury | 0.2 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 J | < 0.0002 | < 0.0002 |

| Metals (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-39-CARPET-002 N83650-8 15-Nov-04 | GM-WC-BULK-39-CEILINGTILE-001 N83650-9 15-Nov-04 | GM-WC-BULK-40-DUST-001 N83650-10 15-Nov-04 | GM-WC-BULK-02-DUST-003 N83650-11 15-Nov-04 | GM-WC-BULK-01-DUST-004 N83650-12 16-Nov-04 | GM-WC-BULK-MEZ-DUST-005 N83650-13 16-Nov-04 | GM-WC-BULK-BA-DUST-006 N83650-14 16-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Arsenic | 5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Barium | 100 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Cadmium | 1 | 0.0052 J | < 0.005 | **6.2** | 0.021 | 0.038 | 0.034 | 0.025 |
| Chromium | 5 | < 0.01 | 0.014 J | < 0.01 | 0.069 | < 0.01 | < 0.01 | 0.061 |
| Lead | 5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Selenium | 1 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Silver | 5 | < 0.015 | < 0.015 | < 0.015 | < 0.015 | < 0.015 | < 0.015 | < 0.015 |
| Mercury | 0.2 | < 0.0002 J | 0.00023 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |

mg/L - Milligrams per liter
J - Value is an estimate.

Table 4
Preliminary Waste Characterization Sampling
Pesticides, Toxicity Characteristic Leaching Protocol (SW 846 8081A)

Anticipated Waste Streams Sample Results
LMDC
130 Liberty Street
February 10, 2005

| Pesticides (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-05-DUST-002 N83650-1 15-Nov-04 | KD-WC-BULK-08-FIREPROOFING-002 N83650-2 15-Nov-04 | GM-WC-BULK-12-FIREPROOFING-001 N83650-3 15-Nov-04 | GM-WC-BULK-18-B1(GYPSUM BP)-001 N83650-4 15-Nov-04 | GM-WC-BULK-CARPET-101 N83650-5 15-Nov-04 | GM-WC-BULK-18-CLGTILE-002 N83650-6 15-Nov-04 | GM-WC-BULK-39-GYPSUM BD-002 N83650-7 15-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Sample ID / Lab ID / Date | | | | | | | | |
| gamma-BHC (Lindane) | 0.4 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Chlordane | 0.03 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Endrin | 0.02 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Heptachlor | 0.008 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Heptachlor epoxide | 0.008 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Methoxychlor | 10 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 |
| Toxaphene | 0.5 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 |

| Pesticides (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-39-CARPET-002 N83650-8 15-Nov-04 | GM-WC-BULK-39-CEILINGTILE-001 N83650-9 15-Nov-04 | GM-WC-BULK-40-DUST-001 N83650-10 15-Nov-04 | GM-WC-BULK-02-DUST-003 N83650-11 15-Nov-04 | GM-WC-BULK-01-DUST-004 N83650-12 16-Nov-04 | GM-WC-BULK-MEZ-DUST-005 N83650-13 16-Nov-04 | GM-WC-BULK-BA-DUST-006 N83650-14 16-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Sample ID / Lab ID / Date | | | | | | | | |
| gamma-BHC (Lindane) | 0.4 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Chlordane | 0.03 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| Endrin | 0.02 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Heptachlor | 0.008 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Heptachlor epoxide | 0.008 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 | < 0.0002 |
| Methoxychlor | 10 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 | < 0.0005 |
| Toxaphene | 0.5 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 | < 0.0025 |

mg/L - Milligrams per liter
J - Value is an estimate.

Table 5
Preliminary Waste Characterization Sampling
Herbicides, Toxicity Characteristic Leaching Protocol (SW 846 8151)

Anticipated Waste Streams Sample Results
LMDC
130 Liberty Street
February 10, 2005

| Herbicides (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-05-DUST-002 N83650-1 15-Nov-04 | KD-WC-BULK-08-FIREPROOFING-002 N83650-2 15-Nov-04 | GM-WC-BULK-12-FIREPROOFING-001 N83650-3 15-Nov-04 | GM-WC-BULK-18-B1(GYPSUM BP)-001 N83650-4 15-Nov-04 | GM-WC-BULK-CARPET-101 N83650-5 15-Nov-04 | GM-WC-BULK-18-CLGTILE-002 N83650-6 15-Nov-04 | GM-WC-BULK-39-GYPSUM BD-002 N83650-7 15-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Sample ID / Lab ID / Date | | | | | | | | |
| 2,4-D | 10 | < 0.005 J | < 0.005 J | < 0.005 J | < 0.005 J | < 0.005 | < 0.005 J | < 0.005 |
| 2,4,5-TP (Silvex) | 1 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 |

| Herbicides (mg/L) | Toxicity Regulatory Level (mg/L) | GM-WC-BULK-39-CARPET-002 N83650-8 15-Nov-04 | GM-WC-BULK-39-CEILINGTILE-001 N83650-9 15-Nov-04 | GM-WC-BULK-40-DUST-001 N83650-10 15-Nov-04 | GM-WC-BULK-02-DUST-003 N83650-11 15-Nov-04 | GM-WC-BULK-01-DUST-004 N83650-12 16-Nov-04 | GM-WC-BULK-MEZ-DUST-005 N83650-13 16-Nov-04 | GM-WC-BULK-BA-DUST-006 N83650-14 16-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Sample ID / Lab ID / Date | | | | | | | | |
| 2,4-D | 10 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 |
| 2,4,5-TP (Silvex) | 1 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 | < 0.0015 |

mg/L - Milligrams per liter
J - Value is an estimate.

Table 6
Preliminary Waste Characterization Sampling
Resource Conservation and Recovery Act Characteristics (SW 846 CHAP7, 7.3.4.2, 7.3.4.2, and 9040B)

Anticipated Waste Streams Sample Results
LMDC
130 Liberty Street
February 10, 2005

| RCRA | Toxicity Regulatory Level | Sample ID / Lab ID / Date: GM-WC-BULK-05-DUST-002 / N83650-1 / 15-Nov-04 | KD-WC-BULK-08-FIREPROOFING-002 / N83650-2 / 15-Nov-04 | GM-WC-BULK-12-FIREPROOFING-001 / N83650-3 / 15-Nov-04 | GM-WC-BULK-18-B1(GYPSUM BP)-001 / N83650-4 / 15-Nov-04 | GM-WC-BULK-CARPET-101 / N83650-5 / 15-Nov-04 | GM-WC-BULK-18-CLGTILE-002 / N83650-6 / 15-Nov-04 | GM-WC-BULK-39-GYPSUM BD-002 / N83650-7 / 15-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Ignitability/Flashpoint (Deg. F) | <140 | > 200 | > 200 | > 200 | > 200 | > 200 | > 200 | > 200 |
| Cyanide Reactivity (mg/kg) | 250 | < 10 J | < 10 J | < 5 J | < 5 J | < 5 J | < 5 J | < 5 J |
| Sulfide Reactivity (mg/kg) | 500 | < 100 J | < 100 J | < 50 J | < 50 J | < 50 J | < 50 J | < 50 J |
| Corrosivity as pH | 2-12.5 | 7.14 NC J | 7.17 NC J | 7.84 NC J | 7.47 NC J | 8.45 NC J | 8.27 NC J | 7.70 NC J |

| RCRA | Toxicity Regulatory Level | Sample ID / Lab ID / Date: GM-WC-BULK-39-CARPET-002 / N83650-8 / 15-Nov-04 | GM-WC-BULK-39-CEILINGTILE-001 / N83650-9 / 15-Nov-04 | GM-WC-BULK-40-DUST-001 / N83650-10 / 15-Nov-04 | GM-WC-BULK-02-DUST-003 / N83650-11 / 15-Nov-04 | GM-WC-BULK-01-DUST-004 / N83650-12 / 16-Nov-04 | GM-WC-BULK-MEZ DUST-005 / N83650-13 / 16-Nov-04 | GM-WC-BULK-BA-DUST-006 / N83650-14 / 16-Nov-04 |
|---|---|---|---|---|---|---|---|---|
| Ignitability/Flashpoint (Deg. F) | <140 | > 200 | > 200 | > 200 | > 200 | > 200 | > 200 | > 200 |
| Cyanide Reactivity (mg/kg) | 250 | < 5 J | < 5 J | < 5 J | < 6.6 J | < 5.4 J | < 5 J | < 5.6 J |
| Sulfide Reactivity (mg/kg) | 500 | < 50 J | < 50 J | < 50 J | 79.7 J | 65.3 J | < 50 J | < 56 J |
| Corrosivity as pH | 2-12.5 | 6.63 NC J | 8.66 NC J | 7.44 NC J | 8.24 NC J | 7.86 NC J | 7.89 NC J | 8.40 NC J |

mg/kg - Milligrams per kilogram (parts per million)
NC - Non-corrosive
J - Value is an estimate.