Five-Year Review Report

For The
Palmetto Recycling Superfund Site
Columbia, Richland County, South Carolina

June 2004

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	United States Environmental Protection Agency
EW	Extraction Well
CFR	Code of Federal Regulations
ESD	Explanation of Significant Difference
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MW	Monitoring Well
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SDWA	Safe Drinking Water Act
SCDHEC	South Carolina Department of Health and Environmental Control
VOC	Volatile Organic Compound

Executive Summary

The Palmetto Recycling Site is located about 8 miles north of Columbia, South Carolina, in rural Richland County. The site is positioned between U.S. Routes 321 and 21 on the north side of Koon Store Road (State Road S-40-61). The Site occupies approximately 1.5 acres.

Palmetto Recycling, Inc. purchased the property in 1979 for the purpose of operating a battery recycling company. From 1979 to 1983, the facility was involved in the reclamation of lead from batteries. A below-grade fiberglass collection sump received wastewater contaminated with sulfuric acid from various plant operations. A study conducted by SCDHEC identified elevated concentrations of lead and iron in the groundwater samples collected next to the sump. The investigation also revealed the presence of elevated concentrations of lead in on-site soils.

On March 30, 1995, EPA issued a Record of Decision that selected a remedy of excavation of contaminated surface soil (one foot) that exceeded the remediation goal of 400 ppm for lead. The excavated area was backfilled with clean soil. The Record of Decision also required groundwater monitoring to confirm that the remedy was effective at protecting human health and the environment.

The cleanup levels established in the Record of Decision for soil have been met. In addition, current groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 parts per billion (ppb). The Site was deleted from the NPL on October 13, 2000.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Palmetto Recycling		
EPA ID: SCD037398120		
Region: 4	**State:** SC	**City/County:** Columbia / Richland County
SITE STATUS		
NPL status: ☐ Final X Deleted ☐ Other (specify)		
Remediation status (choose all that apply): ☐ Under Construction ☐ Operating X Complete		
Multiple OUs? ☐ YES X NO	**Construction completion date:** 02 / 03 / 1999	
Has site been put into reuse? ☐ YES X NO		
REVIEW STATUS		
Lead agency: X EPA ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name: Yvonne Jones		
Author title: Remedial Project Manager	**Author affiliation:** U.S. EPA, Region 4	
Review period: 02 / 18 / 2004 to 04 / 19 / 2004		
Date(s) of site inspection: 04 / 14 / 2004		
Type of review: ☐ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-Lead X Regional Discretion ☐ Statutory Review		
Review number: x 1 (first) ☐ 2 (second) ☐ 3 (third) ☐ Other (specify)		
Triggering action: ☐ Actual RA On-site Construction at OU # ☐ Actual RA Start at OU# X Construction Completion ☐ Previous Five-Year Review Report ☐ Other (specify)		
Triggering action date: 02 / 03 / 1999		
Due date: 02 / 03 / 2004		

Five-Year Review Summary Form, cont'd.

Issues:

No issues have come to light that calls into question the protectiveness of the remedy.

Recommendations and Follow-up Actions:

No further action at this Site is recommended at this time.

Protectiveness Statement(s):

All immediate threats at the Site have been addressed, and the remedy is protective of human health and the environment.

Long-term Protectiveness:

The cleanup goals established in the Record of Decision for soil have been met. The long-term protectiveness of the remedial action was verified by continued monitoring of groundwater to confirm that the remedy was effective at protecting human health and the environment. Current groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 parts per billion (ppb).

Section 1. Introduction

The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to further evaluate and address them as necessary.

The Agency is preparing this Five-Year Review report pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The EPA-Region 4 in conjunction with SCDHEC conducted the five-year review of the remedy implemented at the Palmetto Recycling Superfund Site in Columbia, South Carolina. This review was conducted for the Site from February 2004 through April 2004. This report documents the results of the review.

This is the first five-year review for the Palmetto Recycling Site. As required by the ROD and at the request of SCDHEC, a five-year review is being conducted to assess the continued effectiveness of the remedial action and to summarize the data obtained from groundwater monitoring.

Section 2. Site Chronology

Table 1 - Chronology of Site Events

Event	Date
Palmetto Recycling, Inc. purchases the property for the purpose of operating a battery recycling company	1979
Palmetto Recycling involved in the reclamation of lead from batteries	1979 to 1983
SCDHEC denies applications by Palmetto Recycling, Inc. to operate a hazardous waste facility and to transport hazardous wastes	1981
Palmetto Recycling files for bankruptcy	02/11/1983
10,800 gallons of contaminated water is collected by Bryson Industries Services and taken to Alternate Energy Resources	04/25/1984
100 drums containing liquid caustic waste are removed from the Site	1984
A total of 365 tons of soils removed from various areas on-site and placed in off-site landfills	1985 and 1986
EPA conducts a Preliminary Assessment	1986
The Palmetto Recycling Site added to the NPL	07/1987
EPA conducts Remedial Investigation field activities at the Site	04/1993 to 06/ 1993; 03/1994 to 07/ 1994
EPA issues a Record of Decision	03/30/1995
Consent Decree is signed between the United States and Lucent Technologies, Inc.	05/1997
Remedial Design for the specific remedial actions is approved	04/1998
Several components of the Remedial Design are implemented	11/1998 - 01/1999
Approximately 947 cubic yards of soil is excavated down to one-foot and removed from the Site and backfilled with clean material	01/12/1999 - 02/03/1999
Remedial Action Final inspection	02/17/1999
Final Close-Out Report issued	07/21/1999
The Site is deleted from the NPL	10/13/2000

Section 3. Background

The Palmetto Recycling Site is located about 8 miles north of Columbia, South Carolina, in rural Richland County. The site is positioned between U.S. Routes 321 and 21 on the north side of Koon Store Road (State Road S-40-61). It occupies approximately 1.5 acres and is bounded by Koon Store Road to the south, an unnamed dirt road (and farther removed, Dry Fork Creek) to the east, an unnamed tributary of Dry Fork Creek to the north, and a residence to the west (EPA, 1995).

A. Physical Characteristics

The Site is situated in the Piedmont Physiographic Province and the Carolina Slate Belt Geologic Province of South Carolina. The Carolina Slate Belt is part of an extensive group of metamorphosed, volcanic, and sedimentary rocks occurring along the southeast edge of the Piedmont Province from Georgia to Virginia. In the vicinity of the site, these rocks consist of meta-argillite, phyllite, volcanic tuff and volcanic flows of the Asbill Pond Formation. Most of these rocks are mantled by residual soil that is developed through in-situ weathering of fractured or jointed metamorphic rocks.

Lithologic evaluation of split-spoon and core samples (limited to the upper 84 feet of materials) was conducted with field descriptions and geotechnical tests. Lithologic evaluation of split-spoon samples showed soils and saprolite were composed of varying combinations of gravel, sand, silt, and clay. The dominant lithologies were clay and silt, the primary constituents of argillite. Sands were typically fine-grained. Soil colors included red, yellow, gray, brown, and green.

The initial assessment of hydrogeological conditions at the Site was conducted by SCDHEC. Groundwater data collected during this assessment consisted of water table measurements collected from five monitoring wells. Results of the measurements indicated the depth to groundwater was 5 to 11 feet below ground surface. Water table contours indicate the direction of groundwater is southeast toward Dry Fork Creek (EPA, 1995).

B. History of Contamination and Response Action

Palmetto Recycling, Inc. purchased the property on Koon Store Road in 1979 for the purpose of operating a battery recycling company. From 1979 to 1983, the facility was involved in the reclamation of lead from batteries. It is unknown what activities occurred onsite prior to 1979. A collection sump received wastewater contaminated with sulfuric acid from various plant operations. The sump was a below-grade fiberglass tank in an unlined pit. Specific neutralization process details are unknown, but at some point, Palmetto Recycling started discharging wastewater of unknown composition to the local sewer system. In addition, a former employee reported that during operations, liquid wastes were dumped north of the site, outside the fenced area.

After discharging wastewater for an unknown period of time, Palmetto Recycling attempted to obtain a discharge permit. In 1981, the South Carolina Department of Health and Environmental Control (SCDHEC) denied applications by Palmetto Recycling, Inc. to operate a hazardous waste facility and to transport hazardous wastes. After this attempt, some waste liquids were sent offsite to an acid recycler and some were disposed of onsite. It is not known if these wastes were neutralized before shipment or onsite disposal. The quantities are also unknown. Plastic battery cases and lead plates were eventually sold to other companies as reusable materials. A study conducted by SCDHEC identified elevated concentrations of lead and iron in the groundwater samples collected next to the sump. High levels of lead, barium, and chromium were found in sediment from the unnamed stream that runs north of the Site. The investigation also revealed the presence of elevated concentrations of lead in on-site soils. SCDHEC noted the presence of a five-foot deep, unlined acid pit containing 1,800 gallons of acid waste at the Site, as well as 100 drums of caustic waste and an unstable pile of battery casings.

On February 11, 1983, Palmetto Recycling filed for bankruptcy and Ryan Hovis was appointed trustee. In 1984, workers removing equipment from the Site destroyed a section of the roof that covered the on-site wastewater collection sump. The wastewater consisted of lead oxide and sulfuric acid from the wash process. As a result of this incident, sump water percolated through soils adjacent to the pit area. To address immediate health and environmental risks posed by the Site, three removal actions have occurred at the Site. On April 25, 1984, 10,800 gallons of contaminated water were collected by Bryson Industries Services and taken to Alternate Energy Resources. Later in 1984, approximately 100 drums containing liquid caustic waste were removed from the Site. On October 2, 1985, SCDHEC authorized Future Fuel Development, Inc., to remove site soils contaminated with lead and chromium. A total of 365 tons of soils were removed from various areas on-site and placed in off-site landfills during 1985 and 1986.

In 1986, EPA conducted a Preliminary Assessment of the Site. EPA proposed the Site for inclusion on the National Priorities List (NPL) in January 1987. The Palmetto Recycling Site was formally added to the NPL in July 1987.

In 1992, EPA negotiated with parties it had identified as Potentially Responsible Parties (PRPs) for the Site to conduct a Remedial Investigation/Feasibility Study (RI/FS). An agreement was not reached between EPA and the parties. Therefore, EPA conducted RI Field activities at the Site from April 1993 through June 1993 and from March 1994 through July 1994 (EPA, 1995).

In May 1997, a Consent Decree was signed between the United States and one PRP. EPA and the South Carolina Department of Health and Environmental Control approved a Remedial Design for the specific remedial actions in April 1998. From November 1998 through January 1999, several components of the Remedial Action were implemented, which included verification sampling and analysis, monitoring well abandonment, a structural inspection, an asbestos survey analysis, approval of backfill material and permitting activities. The verification sample test results, together with previous RI and Remedial Design (on-site and residential) test results, were used to further refine excavation boundaries and confirm that residential properties were not contaminated. Sample results showed that lead levels in the adjacent residential yard

were below 400 ppm. Based on this data, revised (reduced) excavation boundaries were approved by EPA and SCDHEC on December 24, 1998. Between January 11, 1999 and February 3, 1999, a total of 363 drums of Investigation Derived Waste (IDW) were appropriately segregated, characterized and removed off-site to a RCRA qualifying facility. In addition, approximately 6,500 gallons of liquid IDW were removed off-site to a qualifying publicly owned treatment works (Direct, 2000).

EPA and SCDHEC found that the remedy significantly reduced the release of contaminants to the environment and continues to provide adequate protection to human health. Consequently, the Site was deleted from the NPL October 13, 2000.

Section 4. Remedial Actions

As a result of the Baseline Risk Assessment, EPA determined that remediation of surface soil would be required for the protection of human health and the environment. The remediation level of 400 ppm for lead is designed to protect children from developing lead blood levels above 10 µg/dl. The Baseline Risk Assessment concluded that the subsurface soils, the surface water, and the sediments at the Site were not media of concern.

A. Remedy Selection

On March 30, 1995, EPA issued a Record of Decision that selected the following remedy:

SURFACE SOIL - SOURCE CONTROL

- Excavate contaminated surface soil that exceeds the remediation level of 400 ppm for lead and verification sampling;
- Backfill the excavated area with clean soil and establish a vegetative cover to minimize undue surface water runoff and minimize erosion;
- Transport soil exceeding the Land Disposal Restriction (LDR) of 5 ppm for lead using the Toxicity Characteristic Leaching Procedure (TCLP) test to a RCRA Subtitle C Facility. Transport soil not exceeding the 5 ppm LDR to a Subtitle D solid waste landfill.

SITE MONITORING

- Monitor groundwater on an annual basis for at least five years to evaluate the Site progress.

ADDITIONAL SAMPLING

- Collect additional confirmation samples from the adjacent residential yards and from the dirt road that borders the Site to the east to confirm the absence of soil contamination. (EPA, 1995).

B. Remedy Implementation

Soil excavation activities began on January 12, 1999. Approximately 947 cubic yards of soil were excavated down to one-foot and removed from the Site. After excavation was completed in each area, a post-excavation survey was performed to verify removal of the top one-foot of soil. Excavated soil and sediment were transported to and disposed at a qualifying Resource Conservation and Recovery Act (RCRA) facility. Backfilling the Site with clean soil provided further assurance that the Site no longer poses any threats to human health or the environment. Construction activities concluded on February 3, 1999.

Although contaminants were no longer impacting the groundwater at the Site, the Record of Decision required groundwater monitoring to confirm that the remedy was effective at protecting human health and the environment (Direct, 2000).

C. Operation and Maintenance

The cleanup goals established in the Record of Decision for soil have been met. In addition, groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 parts per billion (ppb). The concentration levels detected during groundwater monitoring range from non-detect to 3.2 ppb (Direct, 2000). Operation and maintenance cost information is not currently available.

Section 5. Progress Since the Last Five-Year Review

This is the first Five Year Review for this Site.

Section 6. Five-Year Review Process

A. Administrative Components

SCDHEC initiated the five-year review in February 2004. The components of this Five-Year review consist of community involvement, data/document review, site inspection, and interviews, as summarized below.

B. Community Involvement

Activities involving the community in the Five-Year review were initiated with a notice that was sent to the local newspaper stating that a Five-Year review was to be conducted. This notice was

posted in The State Newspaper on April 11, 2004. A copy of the public notice is provided in Attachment G of this report.

Within thirty (30) calendar days of the report finalization, a notice will be published in The State Newspaper announcing that the Five-Year Review report for the Palmetto Recycling Superfund site is complete, and that the results of the review and the report are available to the public at the Northeast Regional Library (7490 Parklane Road, Columbia, SC 29223; Ph: 803-736-6575). This report will also be placed in the Administrative file at both the EPA Region 4 and SCDHEC offices.

C. Document Review / Data Review

This Five-Year review consisted of a review of relevant documents including O&M records and monitoring data (See Attachment I).

The cleanup levels established in the Record of Decision for soil have been met. Approximately 947 cubic yards of soil were excavated down to one-foot and removed from the Site. Confirmation was conducted verify the removal of the top one-foot of soil. Excavated soil and sediment were transported to and disposed at a qualifying Resource Conservation and Recovery Act (RCRA) facility. Backfilling the Site with clean fill provided further assurance that the Site no longer poses any threats to human health or the environment. Construction activities concluded on February 3, 1999. In addition, groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 parts per billion (ppb). The concentration levels detected during groundwater monitoring range from non-detect to 3.2 ppb.

D. Site Inspection

Inspection at the Site was conducted on April 14, 2004. The purpose of the inspection was to assess the protectiveness of the remedy, including the protectiveness of the wells. Representatives from SCDHEC Bureau of Land and Waste Management participated in this site inspection. The site inspection included walking the Site and inspecting groundwater monitoring wells. No significant protectiveness issues were identified.

The Site inspection check form and site photographs are provided in the Attachment J.

E. Interviews

Interviews were conducted with various parties connected to the site. Yvonne Jones (RPM, EPA Region 4) was interviewed on April 12, 2004. An interview with the SCDHEC project Manager, Mihir Mehta, was also conducted during the site inspection on April 14, 2004. Monitoring well

placement, current uses of the properties surrounding the Site, and potential future use of the Palmetto Recycling Site were discussed with the SCDHEC project manager during the site inspection. These interviews also discussed the information presented in the document review section of this report. Information presented in the Site Inspection Check List also resulted from the interviews conducted. The interview documentation form is in Attachment G.

Section 7. Technical Assessment

A. Question A: Is the remedy functioning as intended by the decision documents?

The review of documents, ARARs, and the results of the site inspection indicate that the remedy is functioning as intended by the ROD.

B. Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

The exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection are still valid.

C. Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that calls into question the protectiveness of the remedy.

Technical Assessment Summary:

According to the data reviewed, the site inspection, and the interviews, the remedy is functioning as intended by the ROD. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. There have been no changes to the exposure assumptions, toxicity data, cleanup levels, or remedial action objectives (RAOs) used at the time of the remedy selection. There is no other information that calls into question the protectiveness of the remedy.

Section 8. Issues

No issues have come to light that calls into question the protectiveness of the remedy.

Section 9. Recommendations and Follow-Up Actions

No further action at this Site is recommended at this time.

Section 10. Protectiveness Statement

The remedy is protective of human health and the environment under current conditions. Monitoring data indicate that the remedy is functioning as required to achieve protectiveness of human health and the environment.

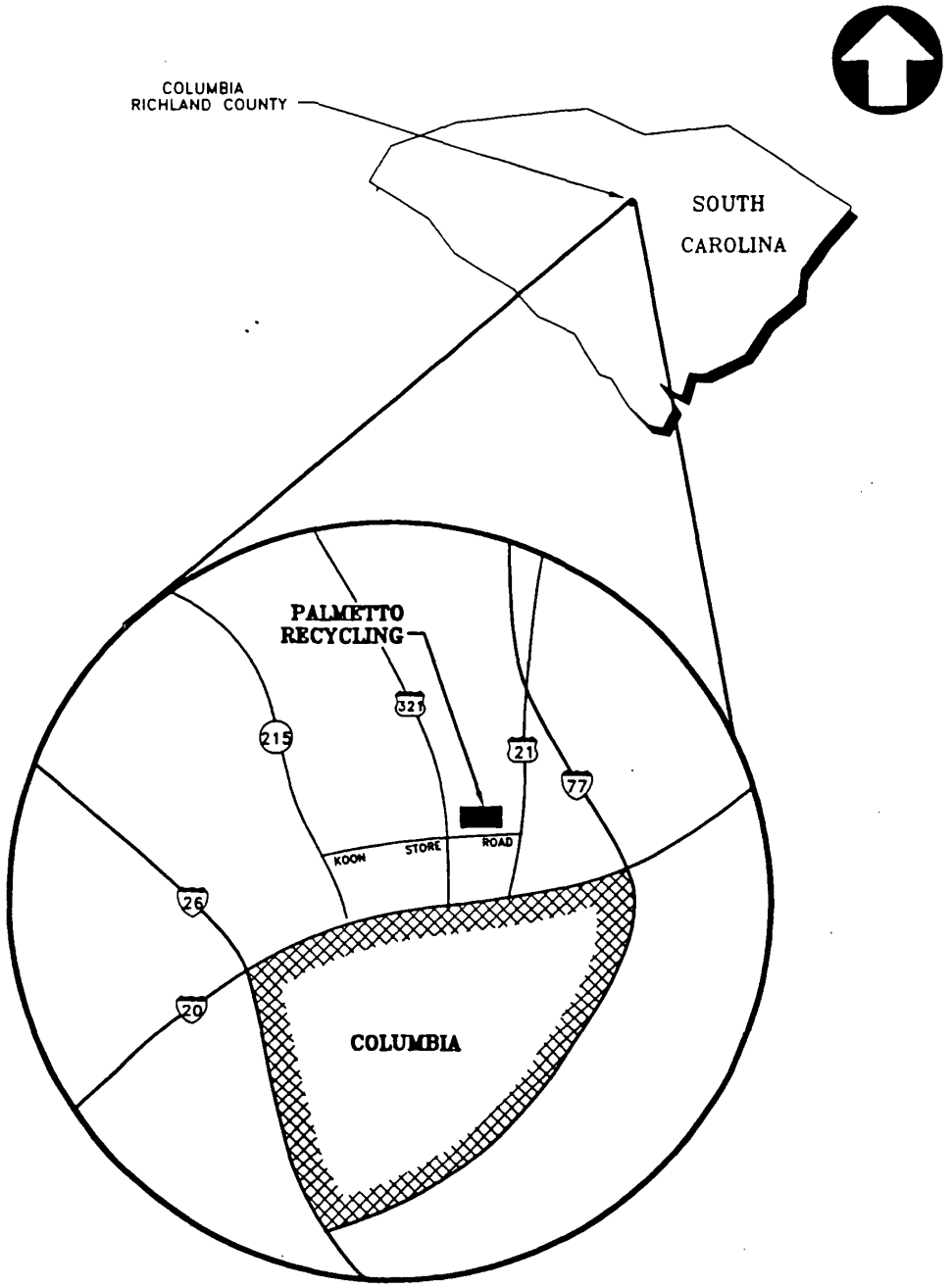
Section 11. Next Review

The cleanup levels established in the ROD for soil have been met. In addition, current groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 ppb. The concentration levels detected during groundwater monitoring range from non-detect to 3.2 ppb. As required by the ROD and at the request of SCDHEC, a five-year review was conducted to assess the continued effectiveness of the remedial action and to summarize the data obtained from groundwater monitoring. Another five-year review for the Palmetto Recycling Superfund Site is not required.

ATTACHMENT A

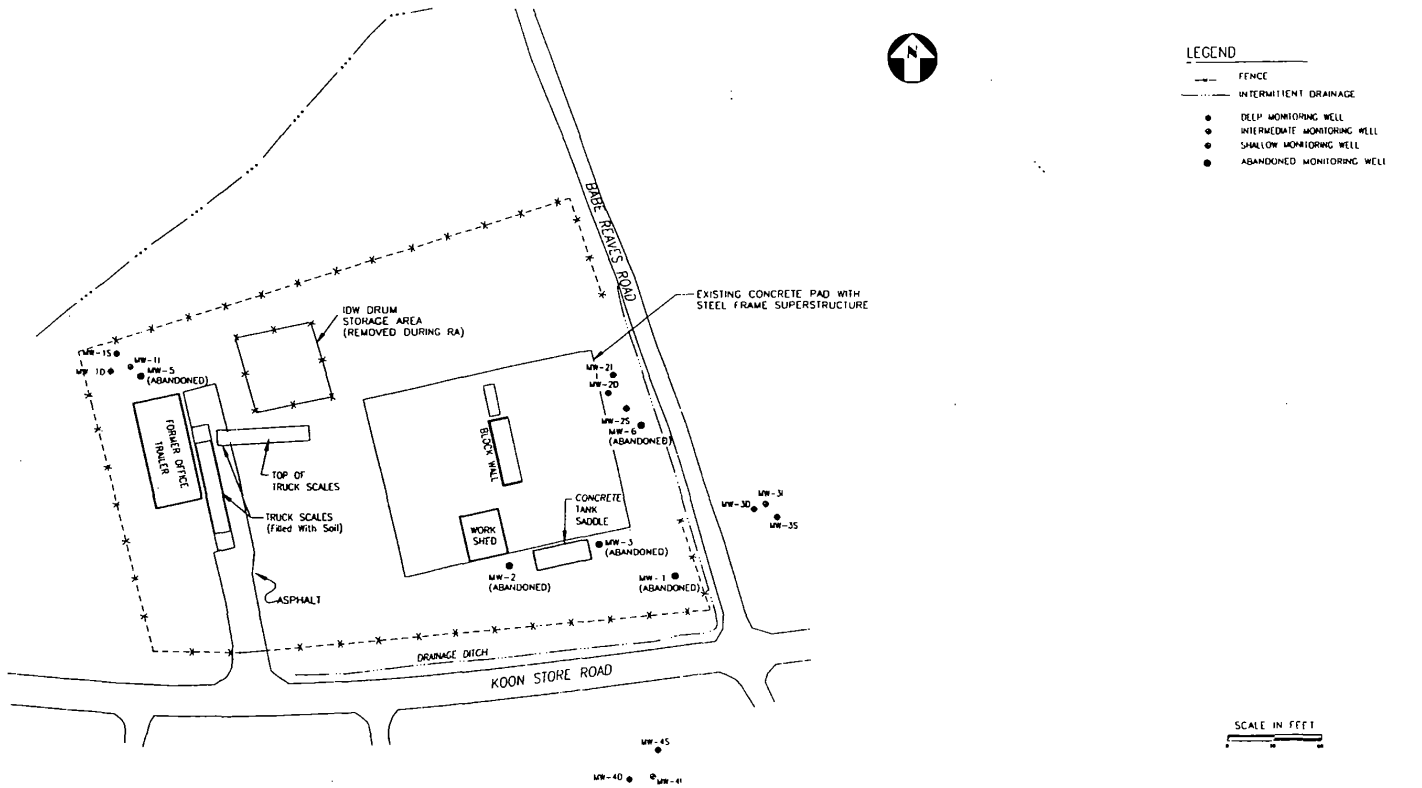
Site Location Maps

G: \att\palmetto\remd\rev\sitemap.dwg 4/20/99 8:39 am



SOURCE: RI/FS REPORT, CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION PALMETTO RECYCLING SITE RICHLAND COUNTY, SOUTH CAROLINA	LAW ENGINEERING AND ENVIRONMENTAL SERVICES	SITE LOCATION MAP JOB NO. 41-2603-02 FIGURE 1



IDW - RI INVESTIGATIVE DERIVED WASTE
SOURCE OF BASE MAP: RI/FS REPORT CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION-PALMETTO RECYCLING SITE

RICHLAND COUNTY, SC

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

SITE LAYOUT AND WELL LOCATION MAP

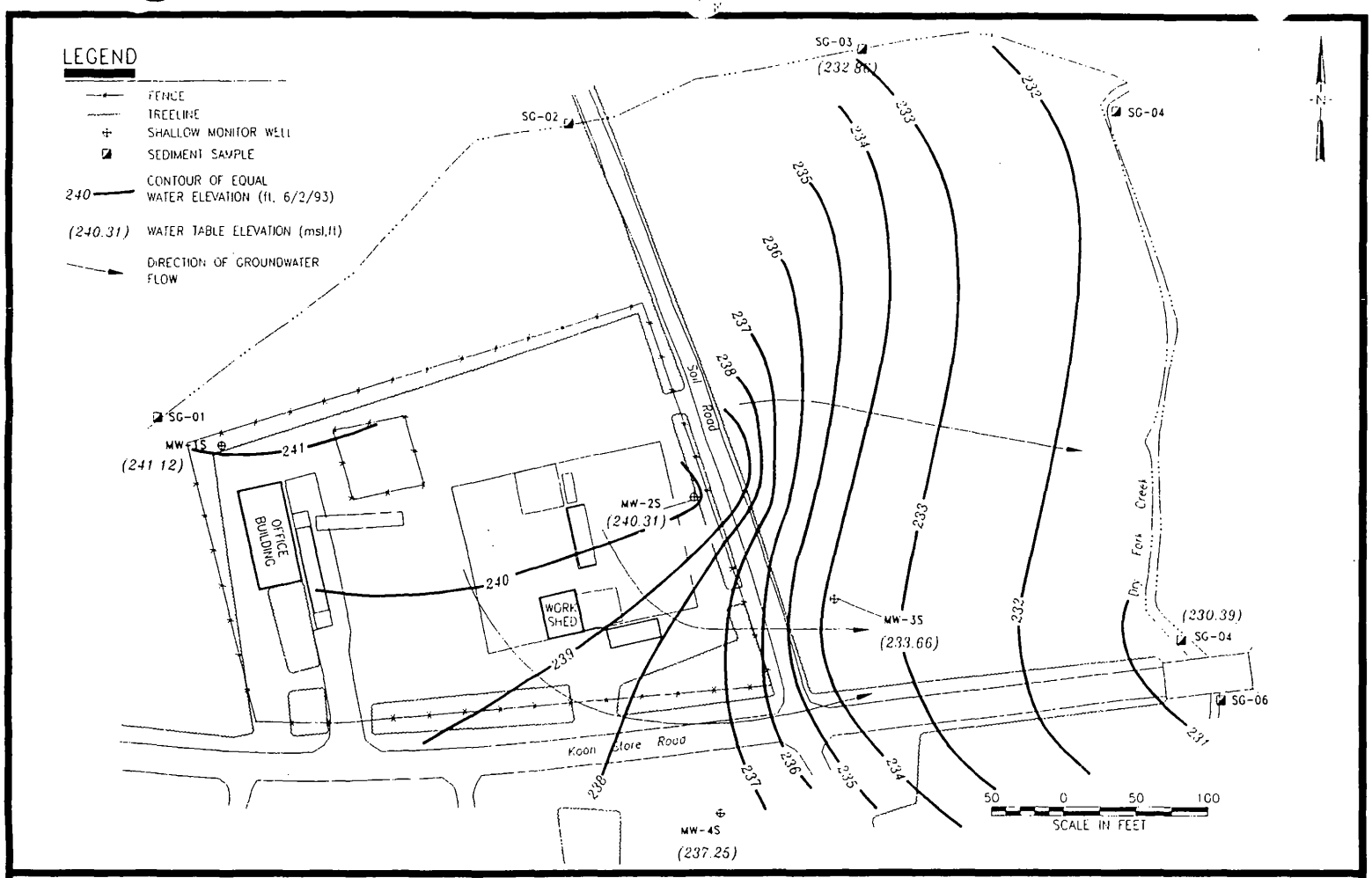
AS SHOWN

41-2603-02

FIGURE 2

ATTACHMENT B

Groundwater Flow Patterns



CDM FPC ARCS IV

POTENTIOMETRIC SURFACE MAP OF SHALLOW WATER BEARING ZONE

PALMETTO RECYCLING

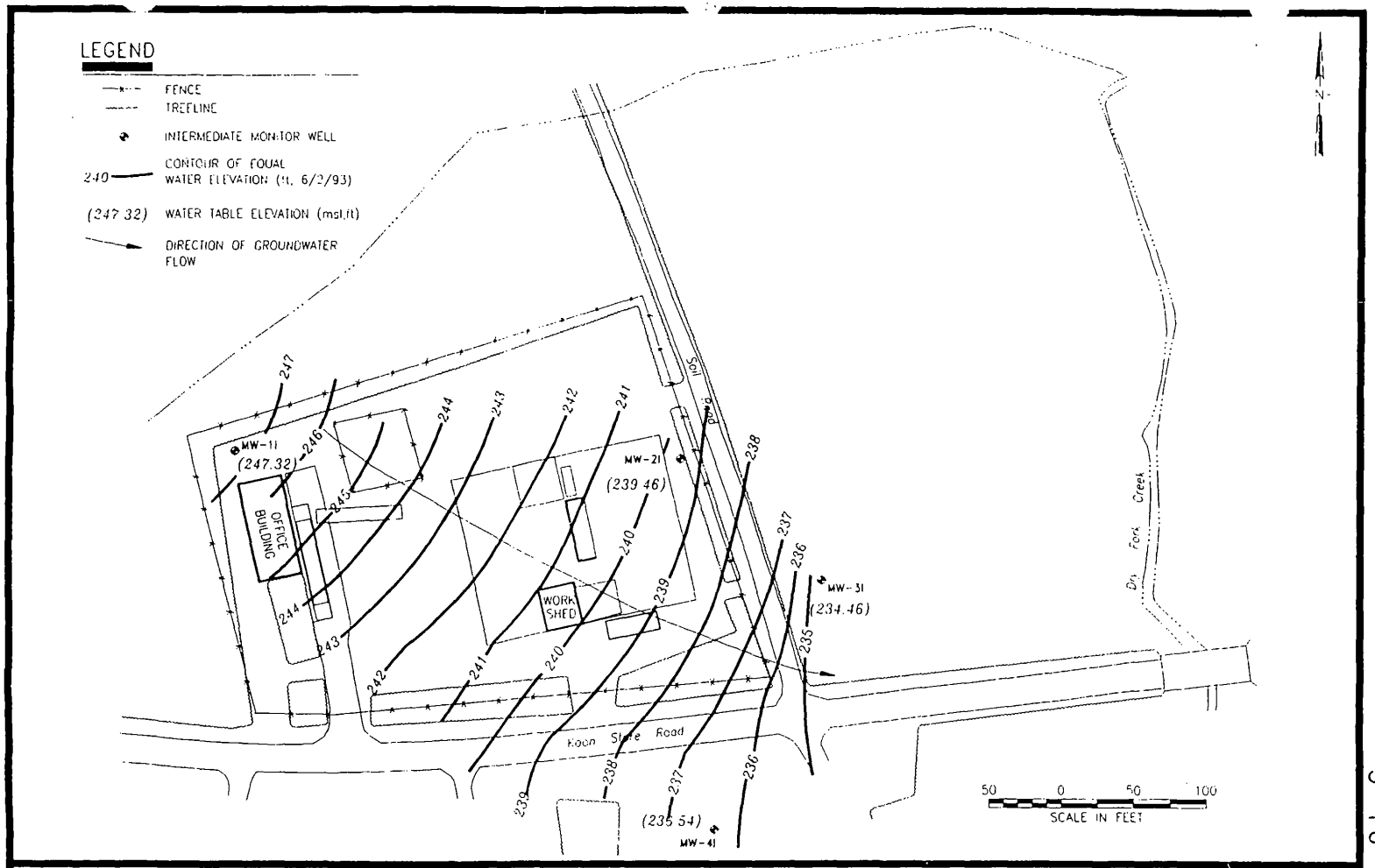
COLUMBIA, SOUTH CAROLINA

FIGURE No. 1

CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

A825/27JAN94/100

3 10 0056



CDM FPC ARCS IV

POTENTIOMETRIC SURFACE MAP OF INTERMEDIATE WATER BEARING ZONE

PALMETTO RECYCLING

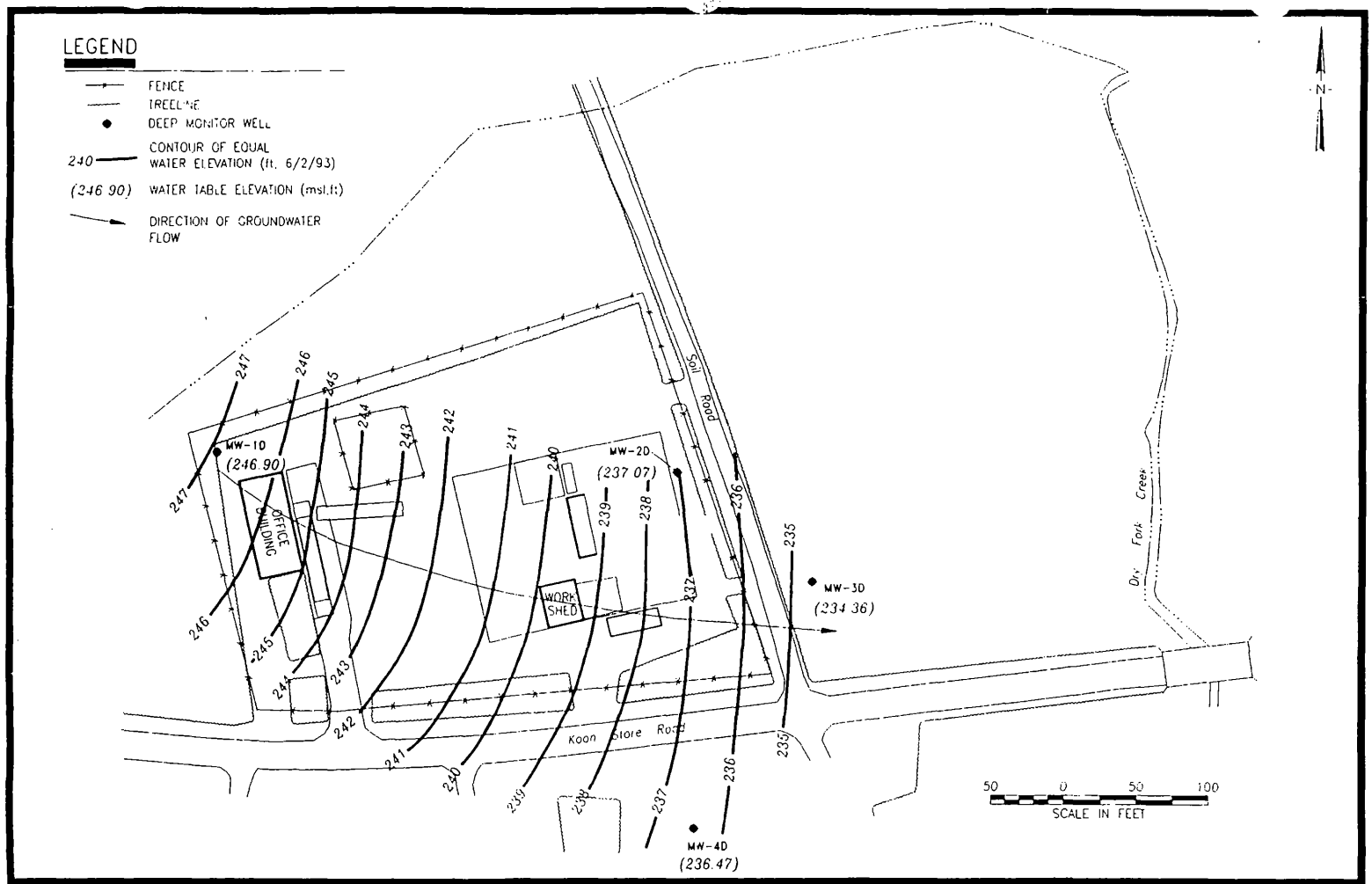
COLUMBIA, SOUTH CAROLINA

FIGURE No. 2

CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

A826/27JAN94/100

3 10 0057



CDM FPC ARCS IV

POTENTIOMETRIC SURFACE MAP OF DEEP WATER BEARING ZONE

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE No. 3

CDM FEDERAL PROGRAMS CORPORATION
a subsidiary of Camp Dresser & McKee Inc.

A827/27JAN94/100

3 10 0058

ATTACHMENT C

Constituents Found in Soil Before Remediation

Table 1: Previous Surface Soil Sample Results for Lead [1]

Sample Location	Lead Concentration (ppm)
SS-01	15.1
SS-02	160
SS-03	140
SS-04	1,500
SS-05	580
SS-06	29
SS-07	37
SS-08	410
D1	630
D2	6,400
D3	65
D4	59
D5	160
D6	190
D7	380
D8	110
PR-01	670
PR-02	6.9J
PR-03	22J
PR-04	6.3J
PR-05	160J
PR-06[2]	14J
PR-07[2]	300J
PR-08	120J

Notes:

(1) Results from Table 3-5 of the RI/FS, November 16, 1994.
(2) For duplicate and split samples, this table reports the highest value detected at each location.
J - Denotes estimated value.

Prepared by/Date: CMH 12/2/96
Checked by/Date: AMM 12/4/96

Table 1: Total Lead Analytical Results for Surface Soil Samples
Remedial Action - Verification Samples

Sample Identification	Sample Date	Detection Limit (ppm)	Lead Concentration (ppm)
RAS-101	17-Nov-98	1.65	116
RAS-102	17-Nov-98	1.69	128
RAS-103	18-Nov-98	1.42	82.2
RAS-104	17-Nov-98	1.69	58.0
RAS-105	17-Nov-98	1.56	72.2
RAS-106	18-Nov-98	1.69	17.7
RAS-107	17-Nov-98	1.64	70.1
RAS-108	18-Nov-98	1.59	152
RAS-109	17-Nov-98	8.26	916
RAS-110	17-Nov-98	1.59	240
RAS-111	17-Nov-98	1.54	301
RAS-112	18-Nov-98	1.50	542
RAS-113	18-Nov-98	1.59	433
RAS-114	17-Nov-98	1.72	633
RAS-115	17-Nov-98	1.75	108
RAS-116	17-Nov-98	1.64	54.8
RAS-117	17-Nov-98	1.74	185
RAS-118	18-Nov-98	8.40	1320
RAS-119	17-Nov-98	1.59	131
RAS-120	18-Nov-98	1.68	38.9
RAS-121*	17-Nov-98	1.61	14.7
RAS-122*	17-Nov-98	1.71	111
RAS-123	18-Nov-98	1.67	232
RAS-201	5-Jan-99	1.72	264
RAS-202	5-Jan-99	1.69	222

Note:
Lead analyzed by SW-846, Method 6010.
Total lead results for all three equipment blanks were non-detect.
ppm – parts per million

*RAS-122 is a field duplicate of RAS-104 (Table 2) and
RAS-123 is a field duplicate of RAS-108 (Table 2).

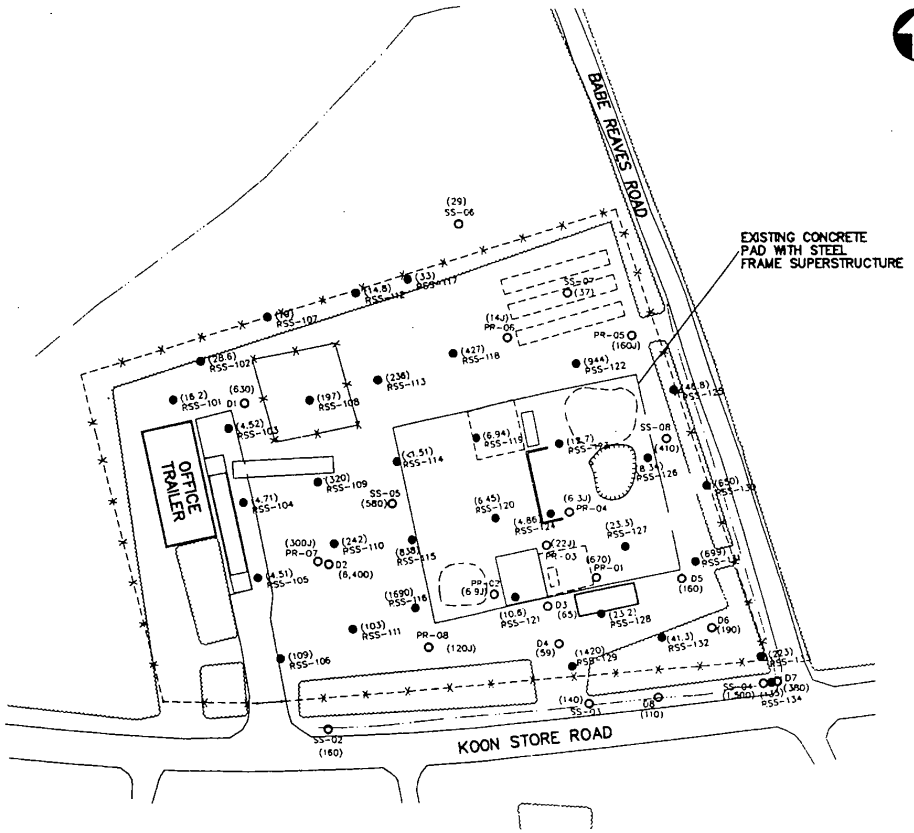
Prepared By: ACW 12/14/98
Checked By: CED 4/22/99

Table 2: Field Duplicate Results for Surface Soil Samples
Remedial Action - Verification Samples

Sample Identification	Sample Date	Detection Limit (ppm)	Lead Concentration (ppm)	Field Duplicate Identification	Detection Limit (ppm)	Lead Concentration (ppm)
RAS-104	17-Nov-98	1.69	58	RAS-122	1.71	111
RAS-108	18-Nov-98	1.59	152	RAS-123	1.67	232

Note:
Lead analyzed by SW-846, Method 6010
ppm – parts per million

Prepared By: ACW 12/14/98
Checked By: CED 4/22/99



LEGEND

- FENCE
- TREE LINE
- PREVIOUS SITE FEATURE
- (197) LEAD CONCENTRATION (IN PPM)
- PREVIOUS SURFACE SOIL SAMPLE LOCATIONS
- RI SURFACE SOIL SAMPLE LOCATIONS
- J ESTIMATED VALUE

SCALE IN FEET

0 30 60

NOTE:

* RI SAMPLES WERE COLLECTED BELOW THE CONCRETE FOUNDATION WHEN SAMPLING AT THE EXISTING CONCRETE FOUNDATION
RI SAMPLES WERE COLLECTED FROM SEDIMENT ABOVE THE FOUNDATION WHEN SAMPLING AT THE EXISTING CONCRETE FOUNDATION.
SOURCE OF RI DATA: RI/FS REPORT CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

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REV	DATE	BY	DESCRIPTION	REV	DATE	BY	DESCRIPTION

DESIGNED AMM
DRAWN SPK
CHECKED CED
IN CHARGE FKM

PALMETTO RECYCLING SITE

RICHLAND COUNTY, SC

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

SURFACE SOIL SAMPLING LOCATIONS AND LEAD ANALYTICAL RESULTS

SCALE: SEE SCALE

CONTRACT: 41-2603-02

ATTACHMENT D

Excavation Verification Survey (Horizontal and Vertical Extent of Excavation)

U.S. EPA Region IV

SDMS

Unscannable Material Target Sheet

DocID: 10114965 Site ID: SCD037398120

Site Name: Palmetto Recycling, Inc.

Nature of Material:

Map:	✓	Computer Disks:	
Photos:		CD-ROM:	
Blueprints:		Oversized Report:	
Slides:		Log Book:	

Other (describe): ATTACHMENT D

Amount of material: 1# Oversized Map

Please contact the appropriate Records Center to view the material.

ATTACHMENT E

Constituents Found in Groundwater Before Remediation

Results from Table 5-3 of the RI/FS, November 16, 1994

Table 1

STATISTICAL SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Constituent	BACKGROUND SAMPLES			NON-BACKGROUND SAMPLES	
	Background Concentration Range (μg/L)	Average Background Concentration (μg/L)	Baseline Concentration (μg/L)	Concentration Range (μg/L)	Frequency (out of 11)
Inorganics					
Arsenic	ND(2 - 15)	0	0	ND(2) - 38	2
Barium	11 - 50	32	64	14 - 82	11
Cobalt	ND(8) - 22	9	18	ND(4) - 25	3
Chromium	ND(2) - 9.8	5.2	10	ND(2) - 25	6
Copper	ND(3) - 18	10	20	ND(2) - 29	2
Molybdenum	ND(2) - 3.5	1.8	3.6	ND(2) - 3.1	1 (out of 3)
Nickel	ND(30) - 5,300	898	1,796	ND(20) - 79	8
Lead	ND(1) - 9.3	4.4	8.8	ND(1) - 19	5
Strontium	47 - 78	58	116	17 - 71	3 (out of 3)
Titanium	ND(2) - 68	30	60	ND(2) - 10	1 (out of 3)
Vanadium	ND(2) - 14	6.4	13	ND(2) - 3	1
Yttrium	ND(2) - 5.8	3.0	6.0	ND(2)	0 (out of 3)
Zinc	9.1 - 120	57	114	ND(20) - 180	10
Mercury	ND(0.10 - 0.2)	0	0	ND(0.10) - 0.26	1
Aluminum	ND(50) - 13,000	4,285	8,570	ND(90) - 20,000	8
Manganese	530 - 1,800	852	1,704	290 - 1,600	11
Calcium	3,200 - 6,800	4,950	9,900	750 - 20,000	11
Magnesium	2,800 - 4,800	3,867	7,734	1,400 - 12,000	11
Iron	6,000 - 28,000	11,367	22,734	4,600 - 44,000	11
Sodium	6,700 - 16,000	12,283	24,566	3,200 - 42,000	11
Potassium	ND(400) - 630	2,282	4,564	ND(400) - 4,300	3
Volatile Organics					
Chloroform	ND(10)	0	0	ND(10) - 6	1 (out of 9)
Carbon disulfide	ND(10) - 3	4.33	8.66	ND(10) - 7	1 (out of 9)
Methyl ethyl ketone	ND(10)	0	0	ND(10) - 9	1 (out of 9)
Semi-volatile organics					
Bis(2-ethylhexyl)phthalate	ND(10) - 36	15.33	30.66	ND(10)	0 (out of 9)

Baseline concentration = background concentration multiplied by a factor of 2.
ND() = Not detected. The number in parenthesis is the sample quantitation limit.

Results from Table 5-4 of the RI/FS, November 16, 1994

Table 2

GROUNDWATER SAMPLING SUMMARY
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

	MW-01S Round 1	MW-01S Round 2	MW-01I Round 1	MW-01I Round 2	MW-01D Round 1	MW-01D Round 2	MW-02S Round 1	MW-02S Round 1 (DUP)	MW-02I Round 1	MW-02I Round 2	MW-02D Round 1
VOLATILE ORGANICS											
Chloroform	10U	NA	10U	NA	10U	NA	NA	10U	10U	NA	10U
Carbon disulfide	10U	NA	3J	NA	10U	NA	NA	10U	10U	NA	10U
Methyl ethyl ketone	10U	NA	10U	NA	10U	NA	NA	10U	10U	NA	10U
SEMI-VOLATILE ORGANICS											
Bis(2-ethylhexyl)phthalate	10U	NA	36	NA	10U	NA	NA	10U	10U	NA	10U
METALS											
Arsenic	2U	15U	2U	15U	4U	15U	NA	6U	38	15U	5U
Barium	26	46	11	50	29	30	NA	32	75	14	31
Cobalt	8U	8.1	20U	22	10U	4.9	NA	30U	40U	14	20U
Chromium	8	4.6	6	9.8	3U	2.0U	NA	3U	17	6.0	3U
Copper	20U	14	30U	18	3U	2.4	NA	20U	30U	4.6	3U
Molybdenum	NA	2.0U	NA	3.5	NA	2.0U	NA	NA	NA	3.1	NA
Nickel	30U	12	5300	40	30U	8.4	NA	30U	79	30	27
Lead	7	6.8	3U	9.3	2U	1U	NA	5U	15	3.5	3U
Strontium	NA	78	NA	47	NA	50	NA	NA	NA	17	NA
Titanium	NA	20	NA	68	NA	2.0U	NA	NA	NA	10	NA
Vanadium	20U	9.6	4U	14	4U	2.0U	NA	3U	30U	3.0	3U
Yttrium	NA	5.8	NA	2.3	NA	2.0U	NA	NA	NA	2.0U	NA
Zinc	77	51	26	120	59	9.1	NA	67	180	28	20U
Mercury	0.10U	0.2U	0.10U	0.2U	0.10U	0.2U	NA	0.10U	0.10U	0.2U	0.10U
Aluminum	4100	13000	440	8100	50U	42	NA	1600	8400	1800	360U
Manganese	530	550	950	1800	660	620	NA	560	1600	970	600
Calcium	3700	3200	4400	5300	6800	6300	NA	750	9200	3900	20000
Magnesium	2800	3400	3700	4800	4400	4100	NA	1400	6500	4300	3800
Iron	12000	9400	6700	28000	6000	6100	NA	6700	44000	7900	7200
Sodium	6700	16000	11000	12000	14000	14000	NA	5800	3200	3200	10000
Potassium	2800U	560	1800U	630	20000U	400U	NA	2400U	4300U	400U	3200U

Concentrations presented in ug/l

NA Not analyzed
J Estimated value
U Material was anlayzed for but not detected. The number is the minimum quantitation limit.
UJ Material was analyzed for but not detected. The number is estimated for the minimum quantitation limit.

MW - Monitor well
S - Shallow
I - Intermediate
D - Deep

3 10 0119

Results from Table 5-4 of the RI/FS, November 16, 1994

Table 2(continued)

GROUNDWATER SAMPLING SUMMARY
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

	MW-03S Round 1	MW-03I Round 1	MW-03I Round 2	MW-03I Round 2 (DUP)	MW-03D Round 1	MW-03D Round 1 (DUP)	MW-04S Round 1	MW-04I Round 1	MW-04D Round 1
VOLATILE ORGANICS									
Chloroform	10U	***6J***	NA	NA	10U	10U	10U	10U	10U
Carbon disulfide	10U	***7J***	NA	NA	10U	10U	10U	10U	10U
Methyl ethyl ketone	10U	10U	NA	NA	10U	10U	10U	10U	***9J***
SEMI-VOLATILE ORGANICS									
Bis(2-ethylhexyl)phthalate	10U	10U	NA	NA	10U	10U	10U	10U	10U
METALS									
Arsenic	***19***	7U	15U	15U	4U	4U	2U	5U	4U
Barium	***60***	***48***	***20***	***21***	***52***	***53***	***70***	***42***	***82***
Cobalt	50U	40U	***25***	***24***	10U	20U	20U	20U	4U
Chromium	***25***	***4***	2.0U	2.0U	3U	3U	***8***	***3***	3U
Copper	***29***	4U	2.0U	2.0U	3U	3U	20U	3U	2.7U
Molybdenum	NA	NA	2.0U	2.0U	NA	NA	NA	NA	NA
Nickel	***69***	***62***	***26***	***26***	40U	30U	***56***	***46***	20U
Lead	***11***	***19***	1.0U	1.0U	3U	2U	***5***	2U	2U
Strontium	NA	NA	***69***	***71***	NA	NA	NA	NA	NA
Titanium	NA	NA	2.0U	2.0U	NA	NA	NA	NA	NA
Vanadium	30U	***3U***	2.0U	2.0U	3U	3U	20U	3U	3U
Yttrium	NA	NA	2.0U	2.0U	NA	NA	NA	NA	NA
Zinc	***160***	***86***	***37***	***39***	***27***	***25***	***45***	***30***	***24***
Mercury	0.10U	0.10U	0.2U	0.2U	0.10U	0.10U	0.10U	***0.26***	0.10U
Aluminum	***20000***	***6500***	***170***	***150***	130U	110U	***5100***	***500***	90U
Manganese	***1100***	***1600***	***1300***	***1300***	***620***	***620***	***290***	***760***	***430***
Calcium	***4000***	***11000***	***5400***	***5500***	***12000***	***12000***	***2600***	***5500***	***13000***
Magnesium	***12000***	***7400***	***5200***	***5300***	***8300***	***8300***	***4000***	***4600***	***8100***
Iron	***42000***	***18000***	***10000***	***10000***	***7100***	***7100***	***16000***	***12000***	***4600***
Sodium	***12000***	***42000***	***13000***	***14000***	***12000***	***12000***	***8700***	***8300***	***11000***
Potassium	***4300***	4700U	***740***	***490***	2700U	3000U	2700U	2400U	2700U

Concentrations presented in ug/l

NA - Not analyzed
J - Estimated value
U - Material was anlayzed for but not detected. The number is the minimum quantitation limit.
UJ - Material was analyzed for but not detected. The number is estimated for the minimum quantitation limit.

MW - Monitor well
S - Shallow
I - Intermediate
D - Deep

3 10 0120

ATTACHMENT F

Constituents Found in Groundwater After Remediation

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4, SCIENCE and ECOSYSTEM SUPPORT DIVISION
ATHENS, GEORGIA 30605-2720

4SES-EI JAN 18 2000

MEMORANDUM

SUBJECT: Palmetto Recycling Site Data
Columbia, South Carolina
SESD Project Number: 00-0013

FROM: Tim Simpson, Environmental Scientist
Hazardous Waste Section

THRU: Archie Lee, Chief
Hazardous Waste Section

TO: Yvonne Jones, RPM
North Site Management Branch
Waste Management Division

Attached are the analytical results for the groundwater samples collected on November 11, 1999 at the Palmetto Recycling Site in Columbia, South Carolina. The results indicated that that mercury (1.9J ug/l) was detected in one sample (PR04SMW). If you have any questions, please call me at (706) 355-8736.

Attachment

Received 1-12-00

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 01/11/2000

Subject: Results of METALS Inorganic Chemistry Section Sample Analysis
00-0013 Palmetto Recycling
SC

From: Guthrie, Diane DM

To: Simpson, Tim

CC: WMD/NSMB

Thru: QA Office

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

December 13, 1999

INORGANIC DATA QUALIFIERS REPORT

Case Number: 27547
Project Number: 00-0013
Site: Palmetto Recycling, Columbia, SC

Sample No.	Element	Flag	Reason
558	Sb	J	Matrix spike recovery = 73.3%
	Cr	U	Baseline instability in cal blanks
	Mn	J	Matrix spike recovery = 149%
	Hg	J	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
559	Al	U	Positives in cal blanks
	Sb	J	Matrix spike recovery = 73.3%
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
560	Sb	J	Matrix spike recovery = 73.3%
	Cu	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
561	Sb	J	Matrix spike recovery = 73.3%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
	Tl	U	Baseline instability in cal blanks
562	Sb	J	Matrix spike recovery = 73.3%
	Fe	U	Positives in cal blanks
	Hg	R	Blind spike recovery < action limit
	K	UJ	Serial dilution per cent difference = 52.1%
			Positives in cal blanks
563	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cr	U	Baseline instability in cal blanks
	Cu	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
564	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cr	U	Baseline instability in cal blanks
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
	Ag	U	Baseline instability in cal blanks

December 13, 1999

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 27547
Project Number: 00-0013
Site: Palmetto Recycling, Columbia, SC

Sample No.	Element	Flag	Reason
565	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Ba	U	Positives in cal blanks
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
566	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
567	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
568	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
569	Al	U	Positives in cal blanks
	Sb	J	Matrix spike recovery = 73.3%
	As	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cd	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Cu	U	% RSD > 20% for ICP multiple exposures and result > IDL, but < CRDL
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
570	Sb	J	Matrix spike recovery = 73.3%
	Ba	U	Positives in cal blanks
	Cr	U	Baseline instability in cal blanks
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
	V	U	Baseline instability in cal blanks

December 13, 1999

INORGANIC DATA QUALIFIERS REPORT (continued)

Case Number: 27547
Project Number: 00-0013
Site: Palmetto Recycling, Columbia, SC

Sample No.	Element	Flag	Reason
571	Al	U	Positives in cal blanks
	Sb	J	Matrix spike recovery = 73.3%
	Cr	U	Baseline instability in cal blanks
	Fe	U	Positives in cal blanks
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%
572	Al	U	Positives in cal blanks
	Sb	J	Matrix spike recovery = 73.3%
	Mn	J	Matrix spike recovery = 149%
	Hg	R	Blind spike recovery < action limit
	K	J	Serial dilution per cent difference = 52.1%

Sample 558 [redacted]000 Project: 00-0013 [redacted]

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF Case No: 27547

Id/Station: PR04SMW / MD No: RR98 Inorg Contractor: SENTIN

Media: GROUNDWATER

Produced by: Guthrie, Diane [redacted]

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 15:40

Ending:

RESULTS	UNITS	ANALYTE
320	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
20	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
2600U	UG/L	CALCIUM
0.40U	UG/L	CHROMIUM
3.5	UG/L	COBALT
2.4	UG/L	COPPER
1100	UG/L	IRON
1.2	UG/L	LEAD
2400	UG/L	MAGNESIUM
140J	UG/L	MANGANESE
1.9J	UG/L	TOTAL MERCURY
13	UG/L	NICKEL
200J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
7700	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
14	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

ETALS SAMPLE ANALYSIS EPA - REGION IV SESD, ATHENS, GA

Sample 559 [redacted] 2000 Project: 00-0013 [redacted] Produced by: Guthrie, Diane [redacted]

METALS SCAN

Requestor:

Facility: Palmetto Recycling , SC

Project Leader: TSIMPSON

Program: SSF Case No: 27547

Beginning: 11/02/1999 10:30

Id/Station: PR04IMW / MD No: RR99 Inorg Contractor: SENTIN

Ending:

Media: GROUNDWATER

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
42	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
4800	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
8.4	UG/L	COBALT
0.50U	UG/L	COPPER
9300	UG/L	IRON
1.1U	UG/L	LEAD
4000	UG/L	MAGNESIUM
650J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
18	UG/L	NICKEL
250J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
7200	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
13U	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

METALS SAMPLE ANALYSIS . EPA - REGION IV SESD, ATHENS, GA Production Date: 01/11/2000 15:55

Sample 560 2000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR04DMW /

Media: GROUNDWATER

Case No: 27547

MD No: RS00

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 15:45

Ending:

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
65	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
7400	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
3.0	UG/L	COBALT
1.0U	UG/L	COPPER
4000	UG/L	IRON
1.1U	UG/L	LEAD
5700	UG/L	MAGNESIUM
310J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
6.2	UG/L	NICKEL
330J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
7200	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
17	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 561 [redacted]000 Project: 00-0013
METALS SCAN
Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PRTUBMW /
Media: GROUNDWATER

Case No: 27547
MD No: RS01
Inorg Contractor: SENTIN

Produced by: Guthrie, Diane
Requestor:
Project Leader: TSIMPSON
Beginning: 11/02/1999 08:20
Ending:

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
0.80U	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
2600U	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
0.60U	UG/L	COBALT
0.50U	UG/L	COPPER
19U	UG/L	IRON
1.1U	UG/L	LEAD
39U	UG/L	MAGNESIUM
2.4U	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
1.3U	UG/L	NICKEL
3.2UJ	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
160U	UG/L	SODIUM
2.8U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
13U	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 562 [illegible]000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PRPB1MW /

Media: GROUNDWATER

Case No: 27547

MD No: RS02

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 16:10

Ending:

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
0.80U	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
2600U	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
0.60U	UG/L	COBALT
0.50U	UG/L	COPPER
60U	UG/L	IRON
1.1U	UG/L	LEAD
39U	UG/L	MAGNESIUM
2.4U	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
1.3U	UG/L	NICKEL
13UJ	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
160U	UG/L	SODIUM
2.2U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
17	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 563 [redacted] 2000 Project: 00-0013 [redacted] Produced by: Guthrie, Diane [redacted]
METALS SCAN
Requestor:
Facility: Palmetto Recycling , SC
Project Leader: TSIMPSON
Program: SSF Case No: 27547
Beginning: 11/01/1999 15:30
Id/Station: PR01DMW / MD No: RR88 Inorg Contractor: SENTIN
Ending:
Media: GROUNDWATER

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
4.7U	UG/L	ARSENIC
34	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
5200	UG/L	CALCIUM
0.80U	UG/L	CHROMIUM
8.8	UG/L	COBALT
0.80U	UG/L	COPPER
6800	UG/L	IRON
3.2	UG/L	LEAD
3600	UG/L	MAGNESIUM
660J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
12	UG/L	NICKEL
290J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
11000	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
28	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 564[redacted]2000 Project: 00-0013 [redacted] Produced by: Guthrie, Diane [redacted]
METALS SCAN Requestor:
Project Leader: TSIMPSON
Facility: Palmetto Recycling , SC Beginning: 11/01/1999 17:00
Program: SSF Case No: 27547 Ending:
Id/Station: PR01IMW / MD No: RR89 Inorg Contractor: SENTIN
Media: GROUNDWATER

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
4.4U	UG/L	ARSENIC
18	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
5000	UG/L	CALCIUM
1.2U	UG/L	CHROMIUM
11	UG/L	COBALT
0.50U	UG/L	COPPER
8800	UG/L	IRON
1.1U	UG/L	LEAD
4000	UG/L	MAGNESIUM
1200J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
23	UG/L	NICKEL
270J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.80U	UG/L	SILVER
9500	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
38	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

ETALS SAMPLE ANALYSIS EPA - REGION IV [illegible]

Sample 565 [illegible]000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR03IMW /

Media: GROUNDWATER

Case No: 27547

MD No: RR90

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 10:20

Ending:

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
3.2U	UG/L	ARSENIC
6.3U	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
3200	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
13	UG/L	COBALT
0.50U	UG/L	COPPER
8200	UG/L	IRON
1.1U	UG/L	LEAD
3900	UG/L	MAGNESIUM
940J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
22	UG/L	NICKEL
610J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
6300	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
39	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 566 2000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR3IDMW /

Media: GROUNDWATER

Case No: 27547

MD No: RR91

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 10:20

Ending:

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
3.9U	UG/L	ARSENIC
8.1	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
3800	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
16	UG/L	COBALT
0.50U	UG/L	COPPER
9700	UG/L	IRON
1.1U	UG/L	LEAD
4600	UG/L	MAGNESIUM
1100J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
27	UG/L	NICKEL
700J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
7100	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
45	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 567 [redacted]000 Project: 00-0013 [redacted] Produced by: Guthrie, Diane [redacted]
METALS SCAN
Requestor:
Project Leader: TSIMPSON
Facility: Palmetto Recycling , SC
Beginning: 11/02/1999 11:30
Program: SSF Case No: 27547
Ending:
Id/Station: PR02DMW / MD No: RR92 Inorg Contractor: SENTIN
Media: GROUNDWATER

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
3.7U	UG/L	ARSENIC
27	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
5100	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
7.4	UG/L	COBALT
0.50U	UG/L	COPPER
12000	UG/L	IRON
1.1U	UG/L	LEAD
3300	UG/L	MAGNESIUM
770J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
16	UG/L	NICKEL
360J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
8700	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
13U	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 568 [redacted] 2000 Project: 00-0013 [redacted] Produced by: Guthrie, Diane [redacted]
METALS SCAN
Requestor:
Facility: Palmetto Recycling , SC
Project Leader: TSIMPSON
Program: SSF Case No: 27547
Beginning: 11/02/1999 11:50
Id/Station: PR03DMW / MD No: RR93 Inorg Contractor: SENTIN
Ending:
Media: GROUNDWATER

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.3U	UG/L	ARSENIC
60	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
12000	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
7.0	UG/L	COBALT
0.50U	UG/L	COPPER
7300	UG/L	IRON
1.1U	UG/L	LEAD
8500	UG/L	MAGNESIUM
610J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
16	UG/L	NICKEL
430J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
10000	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
13U	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 569 2000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF Case No: 27547

Id/Station: PR03SMW / MD No: RR94 Inorg Contractor: SENTIN

Media: GROUNDWATER

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 12:20

Ending:

RESULTS	UNITS	ANALYTE
190U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
3.0U	UG/L	ARSENIC
14	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.40U	UG/L	CADMIUM
2600U	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
5.5	UG/L	COBALT
0.50U	UG/L	COPPER
690	UG/L	IRON
1.1U	UG/L	LEAD
910	UG/L	MAGNESIUM
110J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
3.8	UG/L	NICKEL
380J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
5000	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
18	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 570 2000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR01SMW /

Media: GROUNDWATER

Case No: 27547

MD No: RR95

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 14:20

Ending:

RESULTS	UNITS	ANALYTE
940	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
1.7U	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
2600U	UG/L	CALCIUM
1.2U	UG/L	CHROMIUM
2.8	UG/L	COBALT
3.3	UG/L	COPPER
2600	UG/L	IRON
1.1U	UG/L	LEAD
1800	UG/L	MAGNESIUM
260J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
9.9	UG/L	NICKEL
270J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
6100	UG/L	SODIUM
2.1U	UG/L	THALLIUM
1.1U	UG/L	VANADIUM
37	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 571 [illegible]000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR02SMW /

Media: GROUNDWATER

Case No: 27547

MD No: RR96

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 11:00

Ending:

RESULTS	UNITS	ANALYTE
110U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
2.2U	UG/L	ARSENIC
24	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
2600U	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
7.1	UG/L	COBALT
2.9	UG/L	COPPER
150U	UG/L	IRON
1.1U	UG/L	LEAD
990	UG/L	MAGNESIUM
180J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
13	UG/L	NICKEL
170J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
5800	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
45	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 572 2000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR02IMW /

Media: GROUNDWATER

Case No: 27547

MD No: RR97

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 16:05

Ending:

RESULTS	UNITS	ANALYTE
53U	UG/L	ALUMINUM
2.1UJ	UG/L	ANTIMONY
4.1	UG/L	ARSENIC
9.0	UG/L	BARIUM
0.10U	UG/L	BERYLLIUM
0.30U	UG/L	CADMIUM
3600	UG/L	CALCIUM
0.30U	UG/L	CHROMIUM
15	UG/L	COBALT
0.50U	UG/L	COPPER
11000	UG/L	IRON
1.1U	UG/L	LEAD
4100	UG/L	MAGNESIUM
910J	UG/L	MANGANESE
0.10UR	UG/L	TOTAL MERCURY
34	UG/L	NICKEL
180J	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
8000	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
40	UG/L	ZINC
NA	UG/L	CYANIDE

YANIDE ANALYSIS NOT REQUESTED

-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

METALS SAMPLE ANALYSIS EPA - REGION IV SE[illegible] ATHENS, GA Production Date: 01/11/[illegible] 3:35

Sample 57[illegible] 2000 Project: 00-0013

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: QA009PES /

Media: WATSPK

Case No: 27547

MD No: RR87

Inorg Contractor: SENTIN

Produced by: Guthrie, Diane

Requestor:

Project Leader: TSIMPSON

Beginning: 11/02/1999 14:00

Ending:

0015542

RESULTS	UNITS	ANALYTE
35U	UG/L	ALUMINUM
2.1U	UG/L	ANTIMONY
21	UG/L	ARSENIC
0.80U	UG/L	BARIUM
17	UG/L	BERYLLIUM
8.4	UG/L	CADMIUM
2600U	UG/L	CALCIUM
18	UG/L	CHROMIUM
89	UG/L	COBALT
2.7	UG/L	COPPER
75	UG/L	IRON
1.1U	UG/L	LEAD
39U	UG/L	MAGNESIUM
2.4U	UG/L	MANGANESE
1.4	UG/L	TOTAL MERCURY
1.3U	UG/L	NICKEL
29	UG/L	POTASSIUM
1.8U	UG/L	SELENIUM
0.40U	UG/L	SILVER
160U	UG/L	SODIUM
2.1U	UG/L	THALLIUM
0.50U	UG/L	VANADIUM
600	UG/L	ZINC
NA	UG/L	CYANIDE

CYANIDE ANALYSIS NOT REQUESTED

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4, SCIENCE and ECOSYSTEM SUPPORT DIVISION
ATHENS, GEORGIA 30605-2720

4SESD-EIB MAY 0 9 2000

MEMORANDUM

SUBJECT: Palmetto Recycling Site Data
Columbia, South Carolina
SESD Project Number: 00-0256

FROM: Tim Simpson, Environmental Scientist
Superfund and Air Section

THRU: Archie Lee, Chief
Superfund and Air Section

TO: Yvonne Jones, RPM
North Site Management Branch
Waste Management Division

Attached are the analytical results for the groundwater samples collected on the week of March 20, 2000 at the Palmetto Recycling Site in Columbia, South Carolina. The results indicated that mercury (0.35 UG/L) was detected in one sample (PR04S). This is the same well that contained low levels of mercury in the November 1999 sampling event. If you have any questions, please call me at 706-355-8736.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 05/04/2000

Subject: Results of METALS Sample Analysis
00-0256 Palmetto Recycling
SC

From: White, Terri Terri White

To: Simpson, Tim

CC: SESD/EIB/HWS

Thru: Scifres, Jenny
Chief, Inorganic Chemistry Section
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

METALS SAMPLE[illegible]LYSIS EPA - REGION IV SE[illegible]THENS, GA Production Date: 05/04/2[illegible]:07

Sample 4228 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: QAEB1 /
Media: EQUIPMENT RINSE BLANK

Produced by: White, Terri
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 12:45
Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.0U	UG/L	ARSENIC
NA	UG/L	BORON
1.0U	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
1.0U	UG/L	COBALT
5.0U	UG/L	CHROMIUM
1.0U	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
1.0U	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
1.0U	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
1.0U	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
40U	UG/L	ALUMINUM
2.0U	UG/L	MANGANESE
0.40U	MG/L	CALCIUM
0.020U	MG/L	MAGNESIUM
0.040U	MG/L	IRON
0.20U	MG/L	SODIUM
0.020U	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms:. 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4232 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR01I /
Media: GROUNDWATER

Produced by: White, Terri
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 14:10
Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.1	UG/L	ARSENIC
NA	UG/L	BORON
21	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
12	UG/L	COBALT
5.0U	UG/L	CHROMIUM
1.0U	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
23	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
30	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
1.0U	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
40U	UG/L	ALUMINUM
1300	UG/L	MANGANESE
4.7	MG/L	CALCIUM
3.9	MG/L	MAGNESIUM
10	MG/L	IRON
10	MG/L	SODIUM
0.21	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4229 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR01S /

Media: GROUNDWATER

Produced by: White, Terri

Requestor:

Project Leader: TSIMPSON

Beginning: 03/20/2000 13:25

Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.0U	UG/L	ARSENIC
NA	UG/L	BORON
4.0	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
1.0U	UG/L	COBALT
5.0U	UG/L	CHROMIUM
2.1	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
8.3	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
5.9	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
1.9	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
300	UG/L	ALUMINUM
24	UG/L	MANGANESE
1.6	MG/L	CALCIUM
2.4	MG/L	MAGNESIUM
0.63	MG/L	IRON
7.9	MG/L	SODIUM
0.19	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane .

Sample 4231 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR03S /
Media: GROUNDWATER

Produced by: White, Terri
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 14:00
Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.4	UG/L	ARSENIC
NA	UG/L	BORON
16	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.52	UG/L	CADMIUM
7.5	UG/L	COBALT
5.0U	UG/L	CHROMIUM
2.2	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
5.8	UG/L	NICKEL
1.2	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
6.0	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
2.0	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.2	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
570	UG/L	ALUMINUM
130	UG/L	MANGANESE
0.66	MG/L	CALCIUM
1.0	MG/L	MAGNESIUM
1.3	MG/L	IRON
6.8	MG/L	SODIUM
0.34	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

METALS SAMPL[illegible]ALYSIS EPA - REGION IV S[illegible]THENS, GA Production Date: 05/04/[illegible]5:07

Sample 4230 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR02S /

Media: GROUNDWATER

Produced by: White, Terri

Requestor:

Project Leader: TSIMPSON

Beginning: 03/20/2000 13:40

Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.0U	UG/L	ARSENIC
NA	UG/L	BORON
29	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
8.4	UG/L	COBALT
5.0U	UG/L	CHROMIUM
4.7	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
15	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
3.8	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
1.0U	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
91	UG/L	ALUMINUM
170J	UG/L	MANGANESE
0.40U	MG/L	CALCIUM
1.0	MG/L	MAGNESIUM
0.062A	MG/L	IRON
7.1J	MG/L	SODIUM
0.13	MG/L	POTASSIUM

QC RESULTS FOR MANGANESE AND SODIUM ARE ABOVE ACCEPTABLE LIMITS

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

METALS SAMPLE[illegible]LYSIS EPA - REGION IV SE[illegible]THENS, GA Production Date: 05/04/2[illegible]5:07

Sample 4233 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR04S /
Media: GROUNDWATER

Produced by: White, Terri
Requestor:
Project Leader: TSIMPSON
Beginning: 03/21/2000 10:40
Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
2.8	UG/L	ARSENIC
NA	UG/L	BORON
26	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
5.0	UG/L	COBALT
5.0U	UG/L	CHROMIUM
4.0	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
16	UG/L	NICKEL
1.5	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
7.6	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
5.7	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
3.6	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.35	UG/L	TOTAL MERCURY
1400	UG/L	ALUMINUM
170	UG/L	MANGANESE
1.6	MG/L	CALCIUM
2.7	MG/L	MAGNESIUM
2.9	MG/L	IRON
10	MG/L	SODIUM
0.53	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

METALS SAMPLE ANALYSIS EPA - REGION IV SE THENS, GA Production Date: 05/04/2 :07

Sample 4234 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC

Program: SSF

Id/Station: PR041 /

Media: GROUNDWATER

Produced by: White, Terri

Requestor:

Project Leader: TSIMPSON

Beginning: 03/21/2000 10:23

Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.9	UG/L	ARSENIC
NA	UG/L	BORON
46	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
12	UG/L	COBALT
5.0U	UG/L	CHROMIUM
1.0U	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
23	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
40	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
1.0U	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
40U	UG/L	ALUMINUM
890	UG/L	MANGANESE
5.3	MG/L	CALCIUM
4.5	MG/L	MAGNESIUM
12	MG/L	IRON
9.2	MG/L	SODIUM
0.24	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

METALS SAMPL[illegible]LYSIS EPA - REGION IV S[illegible]THENS, GA Production Date: 05/04/2[illegible]5:07

Sample 4235 FY 2000 Project: 00-0256

METALS SCAN

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: QAPRE /
Media: PRESERVATIVE BLANK

Produced by: White, Terri
Requestor:
Project Leader: TSIMPSON
Beginning: 03/21/2000 10:34
Ending:

RESULTS	UNITS	ANALYTE
1.0U	UG/L	SILVER
1.0U	UG/L	ARSENIC
NA	UG/L	BORON
1.0U	UG/L	BARIUM
0.50U	UG/L	BERYLLIUM
0.50U	UG/L	CADMIUM
1.0U	UG/L	COBALT
5.0U	UG/L	CHROMIUM
1.0U	UG/L	COPPER
0.50U	UG/L	MOLYBDENUM
1.0U	UG/L	NICKEL
1.0U	UG/L	LEAD
0.50U	UG/L	ANTIMONY
2.0U	UG/L	SELENIUM
1.0U	UG/L	TIN
1.0U	UG/L	STRONTIUM
NA	UG/L	TELLURIUM
1.0U	UG/L	TITANIUM
0.50U	UG/L	THALLIUM
1.0U	UG/L	VANADIUM
1.0U	UG/L	YTTRIUM
50U	UG/L	ZINC
NA	UG/L	ZIRCONIUM
0.20U	UG/L	TOTAL MERCURY
40U	UG/L	ALUMINUM
2.0U	UG/L	MANGANESE
0.40U	MG/L	CALCIUM
0.020U	MG/L	MAGNESIUM
0.092	MG/L	IRON
0.20U	MG/L	SODIUM
0.020U	MG/L	POTASSIUM

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

MEMORANDUM

Date: 03/28/2000

Subject: Results of CLASSICALS/NUTRIENTS Sample Analysis
00-0256 Palmetto Recycling
SC

From: Thomason, John

To: Simpson, Tim

CC: SESD/EIB/HWS

Thru: Scifres, Jenny
Chief, Inorganic Chemistry Section
Analytical Support Branch

Attached are the results of analysis of samples collected as part of the subject project. If you have any questions, please contact me.

ATTACHMENT

Sample 4229 FY 2000 Project: 00-0256

SPECIFIED TESTS

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR01S /
Media: GROUNDWATER

Produced by: Thomason, John
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 13:25
Ending:

RESULTS	UNITS	ANALYTE
4.7A	MG/L	CHLORIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

CLASSICALS/NUT[illegible]TS SAMPLE ANALYSIS EPA - REGION IV SE[illegible]HENS, GA Production Date: 03/28/2[illegible]:53

Sample 4230 FY 2000 Project: 00-0256

SPECIFIED TESTS

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR02S /
Media: GROUNDWATER

Produced by: Thomason, John
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 13:40
Ending:

RESULTS	UNITS	ANALYTE
7.9	MG/L	CHLORIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane .

CLASSICALS/NUT[illegible]NTS SAMPLE ANALYSIS EPA - REGION IV SE[illegible]THENS, GA Production Date: 03/28/2[illegible]5:53

Sample 4231 [illegible]Y 2000 Project: 00-0256

SPECIFIED TESTS

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR03S /
Media: GROUNDWATER

Produced by: Thomason, John
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 14:00
Ending:

RESULTS	UNITS	ANALYTE
3.5	MG/L	CHLORIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4232 FY 2000 Project: 00-0256

SPECIFIED TESTS

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR01I /
Media: GROUNDWATER

Produced by: Thomason, John
Requestor:
Project Leader: TSIMPSON
Beginning: 03/20/2000 14:10
Ending:

RESULTS	UNITS	ANALYTE
2.8	MG/L	CHLORIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

Sample 4233 FY 2000 Project: 00-0256

SPECIFIED TESTS

Facility: Palmetto Recycling , SC
Program: SSF
Id/Station: PR04S /
Media: GROUNDWATER

Produced by: Thomason, John
Requestor:
Project Leader: TSIMPSON
Beginning: 03/21/2000 10:40
Ending:

RESULTS	UNITS	ANALYTE
9.5	MG/L	CHLORIDE

A-average value. NA-not analyzed. NAI-interferences. J-estimated value. N-presumptive evidence of presence of material.
K-actual value is known to be less than value given. L-actual value is known to be greater than value given. U-material was analyzed for but not detected. the number is the minimum quantitation limit.
R-qc indicates that data unusable. compound may or may not be present. resampling and reanalysis is necessary for verification.
C-confirmed by gcms: 1.when no value is reported, see chlordane constituents 2.constituents or metabolites of technical chlordane

LAWGIBB GROUP

February 16, 2001

Ms. Yvonne Jones
North Superfund Site Management
Region IV, USEPA
61 Forsyth Street
Atlanta, GA 30303-3104

Subject: **Annual Ground-Water Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies, Inc., Morristown, New Jersey
LAW Project 41-2603-02

Dear Ms. Jones:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to submit three copies of the Annual Ground-Water and Analysis Report on behalf of Lucent Technologies Inc. (Lucent). We are pleased to report that lead was not detected in any of the well samples.

Should you have any questions or comments concerning the enclosures, please contact Cynthia Draper at (770) 421-3565.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Cynthia E. Draper, P.E,
Senior Engineer

Frederick K. Marotte, P.E.
Principal

cc: Steve Oberkrom

LAW Engineering and Environmental Services, Inc.
3200 Town Point Drive, NW, Suite 100 • Kennesaw, GA 30144
770-421-3400

LAWGIBB GROUP

February 16, 2001

Mr. Steve Oberkrom
Environmental Liabilities Manager
Lucent Technologies, Inc.
777 North Blue Parkway
Lees- Summit, MO 64086

Subject: **Annual Ground-Water Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies, Inc., Morristown, New Jersey
LAW Project 41-2603-02

Dear Mr. Oberkrom:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to provide this report for the sampling and analysis of ground water from the ground-water monitoring wells at the Palmetto Recycling Site (Site) located in Columbia, South Carolina (Figure 1). The ground-water sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999) to be conducted annually for a five year period following the completion of the RA excavation and removal activities. This report summarizes the field procedures and the laboratory results of the second annual sampling event.

Regulatory Status

As required by the Record of Decision (ROD, 1995), surface soils with concentrations above 400 ppm were excavated from the Site and the area was backfilled (January 1999 through February 1999). A pre-final inspection of the Site by the USEPA and SCDHEC was held in February 1999 and confirmed that the RA activities had been completed. The USEPA removed the Site from the National Priority List (NPL) in October 2000.

LAW Engineering and Environmental Services, Inc.
3200 Town Point Drive, NW, Suite 100 • Kennesaw, GA 30144
770-421-3400

In accordance with the Remedial Action Plan for future Site monitoring, the ROD required that the ground water be sampled and analyzed annually for total lead for a five-year period. The first annual ground-water monitoring event, led by the EPA, was completed in November 1999. Lead concentrations in all ground-water samples were below the Federal Maximum Contaminant Level (MCL) for drinking water. The results of the second annual monitoring event, conducted by Lucent, are provided herein.

Field Procedures

The authorized field work was conducted from October 30, 2000 through November 2, 2000 and included sampling twelve monitoring wells (MW-1S, I, D, MW-2S, I, D, MW-3S, I, D, and MW-4S, I, D) for analysis of total and dissolved lead (EPA Method 6010). The monitoring well locations are provided on Figure 2.

All field equipment was inspected, decontaminated, and calibrated prior to the sampling of each well. Prior to purging of each well, the ground water depth was measured and documented. The wells were then purged using a low-flow purging technique until three well volumes were removed. After the removal of three well volumes, the wells were sampled and the liquid analyzed by a certified laboratory for dissolved and total lead. Due to slow recharge (0.25 gallon/hour), MW-1I and MW-2I had only one to two well volumes purged prior to sampling. The purged water was drummed and temporarily stored on Site. The water will be transported to and treated by AMBAC International upon their approval.

Laboratory Results

The laboratory analytical results and sample date are listed in the following table. The laboratory analytical results reports are attached.

Ground-Water Analytical Results for the Palmetto Recycling Site

Monitoring Well	Date	Total Lead (mg/l)	Dissolved Lead (mg/l)
MW-1S	11/01/00	ND	ND
MW-1I	11/02/00	ND	ND
MW-1D	10/31/00	ND	ND
MW-2S	10/30/00	ND	ND
MW-2I	11/02/00	ND	ND

Ground-Water Analytical Results for the Palmetto Recycling Site (Continued)

Well	Date	Total Lead	Dissolved Lead
MW-2D	11/01/00	ND	ND
MW-3S	10/31/00	ND	ND
MW-3I	10/31/00	ND	ND
MW-3D	10/30/00	ND	ND
*MW-13D (DUP)	10/30/00	ND	ND
MW-4S	10/31/00	ND	ND
MW-4I	10/31/00	ND	ND
*MW-14I (DUP)	10/31/00	ND	ND
MW-4D	11/01/00	ND	ND
Rinse Blank I	10/30/00	ND	ND
Rinse Blank II	10/31/00	ND	ND
Rinse Blank III	11/1/00	ND	ND

ND = concentrations not detected above the 0.005 mg/L detection limit.
*MW-13D is the field duplicate of MW-3D.
*MW-14I is the field duplicate of MW-4I.

Lead was not detected in the ground-water samples above the detection limit. These results are consistent with the results from the previous ground-water sampling events conducted by the USEPA.

Should you have any comments or questions on the ground-water sampling results, please call Cynthia E. Draper at (770) 421-3565. We appreciate this opportunity to provide continued services to Lucent.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Cynthia E. Draper

Cynthia E. Draper, P.E.
Senior Engineer

Frederick K. Marotte

Frederick K. Marotte, P.E.
Principal

Attachments

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S0-07475
Received: 31 OCT 00
Reported: 13 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-260302

Project: Palmetto Recycling
Sampled By: Client
Code: 104401113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
07475-1	MW-2S	10-30-00/16:25
07475-2	MW-3D	10-30-00/15:50
07475-3	MW-13D	10-30-00/12:00
07475-4	Rinse Blank 1	10-30-00/16:10

PARAMETER	07475-1	07475-2	07475-3	07475-4
Lead (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1
Prep Date	11.01.00	11.01.00	11.01.00	11.01.00
Analysis Date	11.02.00	11.02.00	11.02.00	11.02.00
Batch ID	1101L	1101L	1101L	1101L
Lead, Dissolved (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1
Prep Date	11.01.00	11.01.00	11.01.00	11.01.00
Analysis Date	11.02.00	11.02.00	11.02.00	11.02.00
Batch ID	1101L	1101L	1101L	1101L

SEVERN TRENT SERVICES
STL Savannah
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LOG NO: S0-07475
Received: 31 OCT 00
Reported: 13 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-260302

Project: Palmetto Recycling
Sampled By: Client
Code: 104401113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
7475-5	Method Blank	
7475-6	Lab Control Standard % Recovery	

PARAMETER	07475-5	07475-6
Lead (6010), mg/l	<0.0050	94 %
Dilution Factor	1	1
Prep Date	11.01.00	11.01.00
Analysis Date	11.02.00	11.02.00
Batch ID	1101L	1101L
Lead, Dissolved (6010), mg/l	<0.0050	94 %
Dilution Factor	1	1
Prep Date	11.01.00	11.01.00
Analysis Date	11.02.00	11.02.00
Batch ID	1101L	1101L

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Gloria D. Fulwood

Gloria D. Fulwood, Project Manager

Final Page Of Report

SEVERN TRENT SERVICES
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LOG NO: S0-07494
Received: 01 NOV 00
Reported: 15 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 105401116

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
07494-1	MW-1D	10-31-00/16:00
07494-2	Rinse Blank 2	10-31-00/15:35
07494-3	MW-14I	10-31-00/12:00
07494-4	MW-3S	10-31-00/12:00
07494-5	MW-4S	10-31-00/14:00

PARAMETER	07494-1	07494-2	07494-3	07494-4	07494-5
Lead (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1	1
Prep Date	11.02.00	11.02.00	11.02.00	11.02.00	11.02.00
Analysis Date	11.03.00	11.03.00	11.03.00	11.03.00	11.03.00
Batch ID	1102H	1102H	1102H	1102H	1102H
Lead, Dissolved (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1	1
Prep Date	11.02.00	11.02.00	11.02.00	11.02.00	11.02.00
Analysis Date	11.03.00	11.03.00	11.03.00	11.03.00	11.03.00
Batch ID	1102H	1102H	1102H	1102H	1102H

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STL Savannah

LOG NO: S0-07494
Received: 01 NOV 00
Reported: 15 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 105401116

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
07494-6	MW-3I	10-31-00/15:00
07494-7	MW-4I	10-31-00/16:50

PARAMETER	07494-6	07494-7
Lead (6010), mg/l	<0.0050	<0.0050
Dilution Factor	1	1
Prep Date	11.02.00	11.02.00
Analysis Date	11.03.00	11.03.00
Batch ID	1102H	1102H
Lead, Dissolved (6010), mg/l	<0.0050	<0.0050
Dilution Factor	1	1
Prep Date	11.02.00	11.02.00
Analysis Date	11.03.00	11.03.00
Batch ID	1102H	1102H

SEVERN TRENT SERVICES
STL Savannah
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LOG NO: S0-07494
Received: 01 NOV 00
Reported: 15 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 105401116

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
07494-8	Method Blank	
07494-9	Lab Control Standard % Recovery	
07494-10	LCS Accuracy Control Limit (%R)	

PARAMETER	07494-8	07494-9	07494-10
Lead (6010), mg/l	<0.0050	92 %	75-125 %
Dilution Factor	1	1	---
Prep Date	11.02.00	11.02.00	---
Analysis Date	11.03.00	11.03.00	---
Batch ID	1102H	1102H	---
Lead, Dissolved (6010), mg/l	<0.0050	92 %	75-125 %
Dilution Factor	1	1	---
Prep Date	11.02.00	11.02.00	---
Analysis Date	11.03.00	11.03.00	---
Batch ID	1102H	1102H	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.
SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III.

Gloria D. Fulwood

Gloria D. Fulwood, Project Manager

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SEVERN TRENT SERVICES
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LOG NO: S0-07519
Received: 02 NOV 00
Reported: 14 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 154601114

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
7519-1	MW-1S	11-01-00
7519-2	MW-2D	11-01-00
7519-3	MW-4D	11-01-00
7519-4	Rinse Blank III	11-01-00

PARAMETER	07519-1	07519-2	07519-3	07519-4
Lead (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1
Prep Date	11.03.00	11.03.00	11.03.00	11.03.00
Analysis Date	11.06.00	11.06.00	11.06.00	11.06.00
Batch ID	1103G	1103G	1103G	1103G
Lead, Dissolved (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1
Prep Date	11.03.00	11.03.00	11.03.00	11.03.00
Analysis Date	11.06.00	11.06.00	11.06.00	11.06.00
Batch ID	1103G	1103G	1103G	1103G

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STL Savannah

LOG NO: S0-07519
Received: 02 NOV 00
Reported: 14 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 154601114

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
07519-5	Method Blank	
07519-6	Lab Control Standard % Recovery	
07519-7	LCS Accuracy Control Limit (%R)	

PARAMETER	07519-5	07519-6	07519-7
Lead (6010), mg/l	<0.0050	100 %	75-125 %
Dilution Factor	1	1	---
Prep Date	11.03.00	11.03.00	---
Analysis Date	11.06.00	11.06.00	---
Batch ID	1103G	1103G	---
Lead, Dissolved (6010), mg/l	<0.0050	100 %	75-125 %
Dilution Factor	1	1	---
Prep Date	11.03.00	11.03.00	---
Analysis Date	11.06.00	11.06.00	---
Batch ID	1103G	1103G	---

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LOG NO: S0-07519
Received: 02 NOV 00
Reported: 14 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 154601114

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
7519-8	Matrix Spike Result	
7519-9	Matrix Spike % Recovery	
7519-10	Matrix Spike Duplicate Result	
7519-11	Matrix Spike Duplicate % Recovery	
7519-12	MS Accuracy Advisory Limit (%R)	

PARAMETER	07519-8	07519-9	07519-10	07519-11	07519-12
Lead (6010), mg/l	0.470	94 %	0.474	95 %	75-125 %
Dilution Factor	1	1	1	1	---
Prep Date	11.03.00	11.03.00	11.03.00	11.03.00	---
Analysis Date	11.06.00	11.06.00	11.06.00	11.06.00	---
Batch ID	1103G	1103G	1103G	1103G	---
Lead, Dissolved (6010), mg/l	0.487	97 %	0.494	99 %	75-125 %
Dilution Factor	1	1	1	1	---
Prep Date	11.03.00	11.03.00	11.03.00	11.03.00	---
Analysis Date	11.06.00	11.06.00	11.06.00	11.06.00	---
Batch ID	1103G	1103G	1103G	1103G	---

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LOG NO: S0-07519
Received: 02 NOV 00
Reported: 14 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 154601114

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
07519-13	Precision (%RPD) MS/MSD	

PARAMETER	07519-13
Lead (6010), %	1.1 %
Lead, Dissolved (6010), %	2.0 %

SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III.

Gloria D. Fulwood

Gloria D. Fulwood, Project Manager

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SEVERN TRENT SERVICES
STL Savannah
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LOG NO: S0-07570
Received: 03 NOV 00
Reported: 15 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 105401116

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
07570-1	MW1-I	11-02-00
07570-2	MW2-I	11-02-00

PARAMETER	07570-1	07570-2
Lead (6010), mg/l	<0.0050	<0.0050
Dilution Factor	1	1
Prep Date	11.06.00	11.06.00
Analysis Date	11.08.00	11.08.00
Batch ID	1106L	1106L
Lead, Dissolved (6010), mg/l	<0.0050	<0.0050
Dilution Factor	1	1
Prep Date	11.06.00	11.06.00
Analysis Date	11.08.00	11.08.00
Batch ID	1106L	1106L

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S0-07570
Received: 03 NOV 00
Reported: 15 NOV 00

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 105401116

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
07570-3	Method Blank	
07570-4	Lab Control Standard % Recovery	
07570-5	LCS Accuracy Control Limit (%R)	

PARAMETER	07570-3	07570-4	07570-5
Lead (6010), mg/l	<0.0050	89 %	75-125 %
Dilution Factor	1	1	---
Prep Date	11.06.00	11.06.00	---
Analysis Date	11.07.00	11.07.00	---
Batch ID	1106L	1106L	---
Lead, Dissolved (6010), mg/l	<0.0050	89 %	75-125 %
Dilution Factor	1	1	---
Prep Date	11.06.00	11.06.00	---
Analysis Date	11.07.00	11.07.00	---
Batch ID	1106L	1106L	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.
SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III.

Gloria D. Fulwood

Gloria D. Fulwood, Project Manager

Final Page Of Report

Savannah Laboratories
a division of Severn Trent Laboratories, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
6712 Benjamin Rd., Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC
STL (LAB) PROJECT MANAGER: Gloria Fullwood	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770 421 3400	CLIENT FAX: 770 421 3498
CLIENT NAME: LAW	CLIENT EMAIL:	
CLIENT ADDRESS: 3200 Town Point Dr, Kennesaw, GA 30144		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSES: 6010 Total lead; 6010 Dissolved lead

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	6010 Total lead	6010 Dissolved lead	REMARKS
11-2-00		MW1-I		X				1	1	
11-2-00		MW2-I		X				1	1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
C. Vaughn	10/26/00		[signature]	11-2-00	1300			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:
K Conner	11/3/00	850	YES / NO		00-07570	

ORIGINAL

Savannah Laboratories
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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
6712 Benjamin Rd., Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770 421 3400	CLIENT FAX: 770 421 3456
CLIENT NAME: Law Environmental	CLIENT EMAIL:	
CLIENT ADDRESS: 3200 Town Point Dr N.W. Suite 100		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	REQUIRED ANALYSES: 6010 Total Pb	6010 Dissolved Pb	REMARKS
								NUMBER OF CONTAINERS SUBMITTED		
11-1		MW-1S						1	1	
11-1		MW-2D						1	1	
11-1		MW-4D						1	1	
11-1		MW-2D MS						1	1	
11-1		MW-2D MSD						1	1	
11-1		Rinse Blank III						1	1	
	NOTE:	For unpreserved samples: Please filter + preserve immediately upon arrival!								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
			[signature]	11-1	6:15 p.m			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:
K Conney	11/2/00	850	YES / NO		SO-07519	

ORIGINAL

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

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900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
6712 Benjamin Rd., Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER: 7	CONTRACT NO.:	STANDARD REPORT DELIVERY ○ DATE DUE
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770/421-3400	CLIENT FAX: 770/421-3486	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT NAME: LAW	CLIENT EMAIL:		
CLIENT ADDRESS: 3200 Town Point Dr, Kennesaw, GA 30144			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
COMPANY CONTRACTING THIS WORK (if applicable):			

REQUIRED ANALYSES

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	6010 Total Lead (HNO3)	6010 Dissolved lead (1)								REMARKS
10/31/00	16:00	MW-1D		X				1	1								
10/31/00	15:35	Rinse Blank 2		X				1	1								
10/31/00	12:00	MW-14I		X				1	1								
	NOTE:	For unpreserved samples - Please filter + preserve immediately upon receipt!															

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
C. Vargas	10/26/00		Parker Baggett	10/30/00	17:35			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:
[signature]	11/1/00	9:00	YES / NO		30-07494	

ORIGINAL

Savannah Laboratories
A division of Severn Trent Laboratories, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
6712 Benjamin Rd., Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770/421-3400	CLIENT FAX: 770/421-3486
CLIENT NAME: LAW	CLIENT EMAIL:	
CLIENT ADDRESS: 3200 Town Point Dr. Kennesaw, GA 30144		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	6010 Total Lead (HNO3)	6010 Dissolved Lead	REMARKS
10/31/00	12:00	MW-3 S		X				1	1	
10/31/00	14:00	MW-4 S		X				1	1	
10/31/00	15:00	MW-3 I		X				1	1	
10/31/00	16:50	MW-4 I		X				1	1	
	NOTE:	For unpreserved samples - Please filter + preserve immediately upon receipt!								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
C. Vangin	10/26/00		[signature]	10-31	5:20pm			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:
[signature]	11/1/00	9:00	YES / NO		SO-0794	

ORIGINAL

Savannah Laboratories
A division of Severn Trent Laboratories, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404
2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (850) 878-3994 Fax: (850) 878-9504
900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
6712 Benjamin Rd., Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER:	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ○ DATE DUE
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770/421-3400	CLIENT FAX: 770/421-3486	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT NAME: LAW Environmental	CLIENT EMAIL:		
CLIENT ADDRESS: 3200 Town Point Dr. Kennesaw, GA 30144			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
COMPANY CONTRACTING THIS WORK (if applicable):			

REQUIRED ANALYSES

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	Lead (Dissolved 6010	~~Dissolved~~ Lead 6010 HNO_3								REMARKS
10/30/00	16:25	MW-2S		X				1	1								
10/30/00	15:50	MW-3D		X				1	1								
10/30/00	12:00	MW-13D		X				1	1								
10/30/00	16:10	Rinse Blank 1		X				1	1								

NUMBER OF CONTAINERS SUBMITTED

* Note: For unpreserved dissolved Lead samples please filter and preserve IMMEDIATELY UPON RECEIPT! Thank you.

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
C. Vargas	10/26/00		Parker Boggett	10/30/00	17:15			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:
F Swafford	10/31/00	9:10	YES NO		5007475	

ORIGINAL

LAWGIBB GROUP

FILE COPY

4652 4466 1284

February 5, 2002

Ms. Yvonne Jones
North Superfund Site Management
Region IV, USEPA
61 Forsyth Street
Atlanta, GA 30303-3104

Subject: **Annual Ground-Water Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies, Inc.
LAW Project 41-2603-02

Dear Ms. Jones:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to provide the enclosed report for the sampling and analysis of ground water from the ground-water monitoring wells at the Palmetto Recycling Site (Site) located in Columbia, South Carolina. The ground-water sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999). The ground-water sampling is to be conducted annually for a five-year period following the completion of the RA excavation and removal activities in 1999. This report summarizes the field procedures and the laboratory results of the third annual sampling event.

The results of the third annual sampling event are provided in the enclosed report and show that lead was not detected in any of the ground-water samples. The analytical results for lead for this sampling event and the previous events indicate that the lead concentrations in the groundwater samples are below drinking water standards.

Should you have any comments or questions on the ground-water sampling results, please call Cynthia E. Draper at (770) 421-3565 or Joe Chikowski at (732) 793-3531.

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Cynthia E. Draper, P.E.
Senior Engineer

Frederick K. Marotte, P.E.
Principal

Attachments
cc: Joe Chikowski

LAW Engineering and Environmental Services, Inc.
3200 Town Point Drive NW Suite 100 • Kennesaw, GA 30144
770-421-3400 • Fax 770-421-3486

LAWGIBB GROUP

February 4, 2002

4652 4466 1295

Mr. Joe Chikowski
25 East Pelican Way
Ocean Beach, Unit III
Lavallette, NJ 08735

Subject: **Annual Ground-Water Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies
LAW Project No.: 41-2603-02

Dear Mr. Chikowski:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to provide this report for the sampling and analysis of ground water from the ground-water monitoring wells at the Palmetto Recycling Site (Site) located in Columbia, South Carolina (Figure 1). The ground-water sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999). The ground-water sampling is to be conducted annually for a five-year period following the completion of the RA excavation and removal activities in 1999. This report summarizes the field procedures and the laboratory results of the third annual sampling event.

Regulatory Status

As required by the Record of Decision (ROD, 1995), surface soils with concentrations above 400 ppm were excavated from the Site and the area was backfilled (January 1999 through February 1999). A pre-final inspection of the Site by the USEPA and SCDHEC was held in February 1999 and confirmed that the RA activities had been completed. The USEPA removed the Site from the National Priority List (NPL) in October 2000.

LAW Engineering and Environmental Services, Inc.
3200 Town Point Drive NW Suite 100 • Kennesaw, GA 30144
770-421-3400 • Fax 770-421-3486

In accordance with the Remedial Action Plan for future Site monitoring, the ROD required that the ground water be sampled and analyzed annually for total lead for a five-year period. The first annual ground-water monitoring event, led by the EPA, was completed in November 1999 and the second annual ground-water monitoring event, led by Lucent, was completed in October 2000. Lead concentrations in all ground-water samples for both sampling events were below the Federal Maximum Contaminant Level (MCL) for drinking water. The results of the third annual monitoring event, conducted by Lucent, are provided herein.

Field Procedures

The fieldwork was conducted from December 3, 2001 through December 5, 2001 and included sampling eleven monitoring wells (MW-1S, I, D, MW-2S, D, MW-3S, I, D, and MW-4S, I, D) for analysis of total and dissolved lead (EPA Method 6010). Due to slow recharge at MW-2I and an appearance of a high level of turbidity, approval was obtained from Yvonne Jones of the USEPA to return on the following week with a different pump, capable of a greater lift, to obtain a sample from MW-2I. Yvonne Jones of the USEPA reported that she informed Jim Bowman of the SCDHEC of the field adjustment. The monitoring well locations are provided on Figure 2.

All field equipment was inspected, decontaminated, and calibrated prior to the sampling of each well. Prior to purging of each well, the ground-water depth was measured and documented. All wells except MW-2I were then purged using a low-flow purging technique using a peristaltic pump until three well volumes were removed. After the removal of three well volumes, the wells were sampled and the liquid analyzed by a certified laboratory for dissolved and total lead. Due to slow recharge (0.25 gallon/4 hour) at MW-2I, the well was purged dry using a Teflon bailer, on December 5, 2001. After the well was allowed to recharge, a sample was collected and sent to the laboratory. Yvonne Jones of the USEPA was notified of the appearance of high turbidity in this sample and the laboratory was notified to put the sample analysis on hold. At this time, verbal approval was obtained from Yvonne Jones at the USEPA to return to the site the following week with more suitable sampling equipment. On Monday December 10, 2001 MW-2I was purged dry using a Grundfos Redi-Flo3 Submersible Pump. The well was then allowed to recharge to approximately its original water level and the sample was collected on Tuesday, December 11, 2001. The sample collected from MW-2I on December 11, 2001, contained less turbidity then than the previous sample sent to the laboratory for analysis. The December 5, 2001 sample for MW-2I was

not analyzed and discarded appropriately. This procedure was verbally approved by Yvonne Jones of the USEPA and communicated to the SCDHEC. The December 11 sample for MW-2I was analyzed for lead.

Laboratory Results

The laboratory analytical results and sample date are listed in the following table and the laboratory analytical result reports are attached.

Ground-Water Analytical Results for the Palmetto Recycling Site

Monitoring Well	Sample Date	Total Lead (mg/l)	Dissolved Lead (mg/l)
MW-1S	12/04/01	ND	ND
MW-1I	12/04/01	ND	ND
MW-1D	12/04/01	ND	ND
MW-2S	12/04/01	ND	ND
MW-2I	12/11/01	ND	ND
MW-2D	12/04/01	ND	ND
MW-12D*	12/04/01	ND	ND
MW-3S	12/04/01	ND	ND
MW-3I	12/05/01	ND	ND
MW-13I*	12/05/01	ND	ND
MW-3D	12/05/01	ND	ND
MW-4S	12/05/01	ND	ND
MW-4I	12/05/01	ND	ND
MW-4D	12/05/01	ND	ND
Rinse Blank	12/05/01	ND	ND

ND = concentrations not detected above the 0.005 mg/L detection limit.
*MW-12D is the field duplicate of MW-2D.
*MW-13I is the field duplicate of MW-3I.

Lead was not detected in the ground-water samples above the detection limit. These results are consistent with the results from the previous ground-water sampling events conducted by the USEPA and Lucent.

Should you have any comments or questions on the ground-water sampling results, please call Cynthia E. Draper at (770) 421-3565. We appreciate this opportunity to provide continued services to Lucent.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

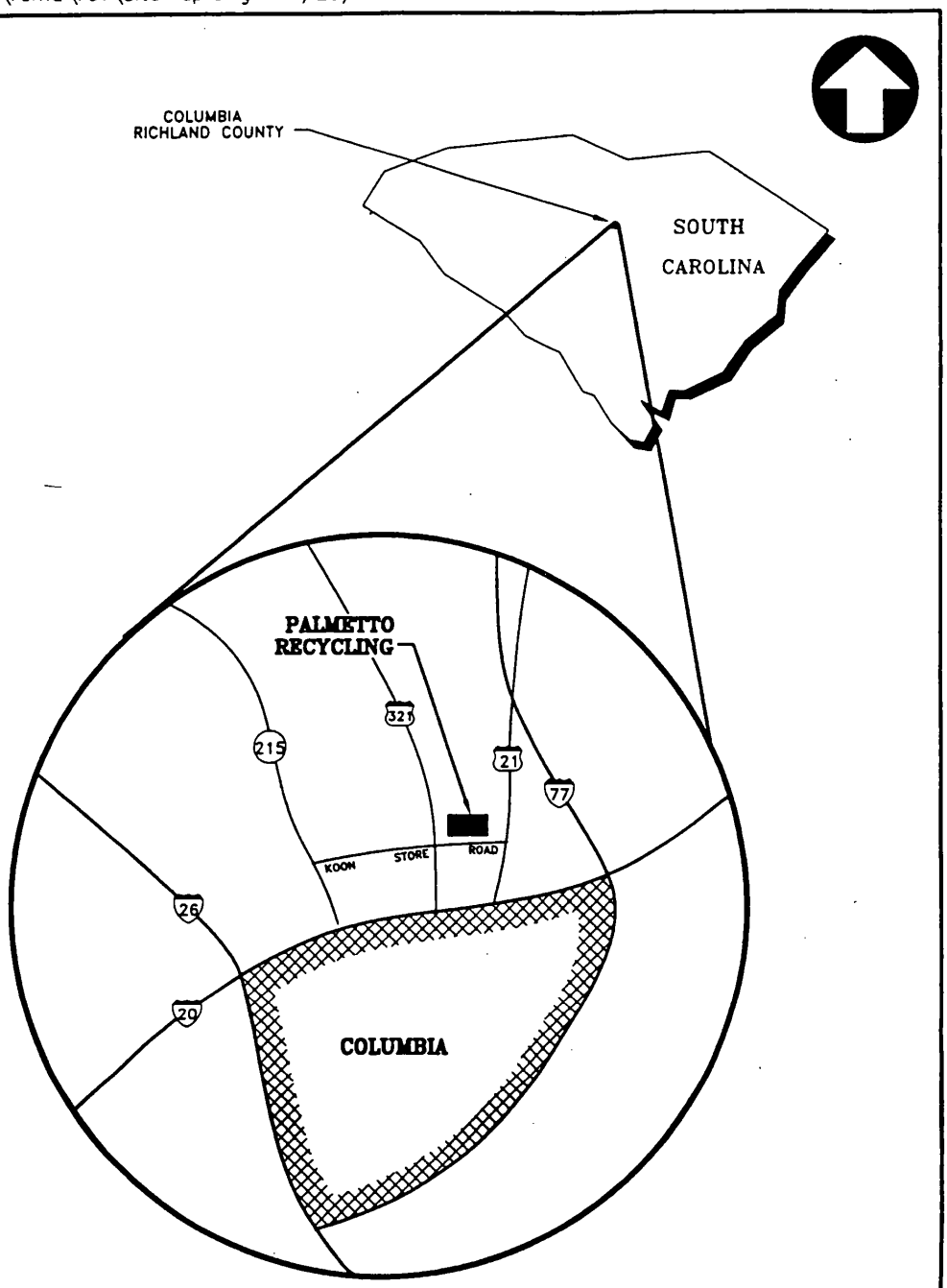
Cynthia E. Draper, P.E.
Senior Engineer

Frederick K. Marotte, P.E.
Principal

Attachments

ATTACHMENTS

G:\att\palmetto\remd\rev\sitemap.dwg 4/20/99 8:39 am



SOURCE: RI/FS REPORT, CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION PALMETTO RECYCLING SITE RICHLAND COUNTY, SOUTH CAROLINA	LAW ENGINEERING AND ENVIRONMENTAL SERVICES	SITE LOCATION MAP JOB NO. 41-2603-02 FIGURE 1

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S1-18062
Received: 12 DEC 01
Reported: 20 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 152011220

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
62-1	MW2I	12-11-01/11:20

AMETER	18062-1
d (6010), mg/l	<0.0050
lution Factor	1
ep Date	12.13.01
alysis Date	12.15.01
tch ID	1213I
d, (Dissolved) (6010), mg/l	<0.0050
lution Factor	1
ep Date	12.13.01
alysis Date	12.15.01
atch ID	1213H

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SEVERN TRENT SERVICES

STL Savannah

LOG NO: S1-18062
Received: 12 DEC 01
Reported: 20 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 152011220

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
2-2	Method Blank	
2-3	Lab Control Standard % Recovery	
2-4	LCS Accuracy Control Limit (%R)	

METER	18062-2	18062-3	18062-4
l (6010), mg/l	<0.0050	103 %	75-125 %
ution Factor	1	1	---
ep Date	12.13.01	12.13.01	---
lysis Date	12.15.01	12.15.01	---
ch ID	1213I	1213I	---
d, (Dissolved) (6010), mg/l	<0.0050	106 %	75-125 %
lution Factor	1	1	---
ep Date	12.13.01	12.13.01	---
alysis Date	12.15.01	12.15.01	---
tch ID	1213H	1213H	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Gloria D. Fulwood

ria D. Fulwood, Project Manager

Final Page Of Report

SEVERN TRENT SERVICES

STL Savannah

5102 LaRoche Avenue
Savannah, GA 31404
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: Palmetto Reg	PROJECT NO.: 41260302	PROJECT LOCATION (STATE)	PAGE / OF
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY — DATE DUE
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) — DATE DUE
CLIENT NAME	CLIENT E-MAIL		
CLIENT ADDRESS: 3200 Town Pt Dr Suite 100 Kennesaw GA 30144			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
COMPANY CONTRACTING THIS WORK (if applicable)			

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: 6010 Total Lead; 6010 Dissolved Pb; HNO3; HNO3 PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	6010 Total Lead	6010 Dissolved Pb									REMARKS
12/11/01	1120	MW 2I						X	X									
~~12/11/01~~	~~1120~~	~~MW 2I~~ TW						~~X~~	~~X~~ TW									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
			[signature]	12/11/01	1230			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	12-12-01	9:14	YES ✓ NO		51-18062	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

RECEIVED 12-17-01

LOG NO: S1-17845
Received: 05 DEC 01
Reported: 13 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 095211213

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
15-1	MW1I	12-04-01/08:20
15-2	MW2D	12-04-01/11:00
15-3	MW12D	12-04-01/12:00
15-4	MW2S	12-04-01/16:20
15-5	MW1S	12-04-01/14:50

AMETER	17845-1	17845-2	17845-3	17845-4	17845-5
d (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
lution Factor	1	1	1	1	1
p Date	12.06.01	12.06.01	12.06.01	12.06.01	12.06.01
alysis Date	12.10.01	12.10.01	12.10.01	12.10.01	12.10.01
tch ID	1206K	1206K	1206K	1206K	1206K
d, (Dissolved) (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
lution Factor	1	1	1	1	1
ep Date	12.07.01	12.07.01	12.07.01	12.07.01	12.07.01
alysis Date	12.11.01	12.11.01	12.11.01	12.11.01	12.11.01
tch ID	1207G	1207G	1207G	1207G	1207G

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S1-17845
Received: 05 DEC 01
Reported: 13 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 095211213

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
45-6	MW1D	12-04-01/13:10
45-7	MW3S	12-04-01/16:30

AMETER	17845-6	17845-7
d (6010), mg/l	<0.0050	<0.0050
lution Factor	1	1
ep Date	12.06.01	12.06.01
alysis Date	12.10.01	12.10.01
tch ID	1206K	1206K
d, (Dissolved) (6010), mg/l	<0.0050	<0.0050
lution Factor	1	1
ep Date	12.07.01	12.07.01
alysis Date	12.11.01	12.11.01
tch ID	1207G	1207G

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S1-17845
Received: 05 DEC 01
Reported: 13 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 095211213

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
45-8	Method Blank	
45-9	Lab Control Standard % Recovery	
45-10	LCS Accuracy Control Limit (%R)	

AMETER	17845-8	17845-9	17845-10
d (6010), mg/l	<0.0050	110 %	75-125 %
lution Factor	1	1	---
ep Date	12.06.01	12.06.01	---
alysis Date	12.09.01	12.09.01	---
tch ID	1206K	1206K	---
d, (Dissolved) (6010), mg/l	<0.0050	104 %	75-125 %
lution Factor	1	1	---
ep Date	12.07.01	12.07.01	---
alysis Date	12.11.01	12.11.01	---
tch ID	1207G	1207G	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

oria D. Fulwood, Project Manager

Final Page Of Report

SEVERN TRENT SERVICES

STL Savannah

5102 LaRoche Avenue
Savannah, GA 31404
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC	PAGE / OF
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ◯ DATE DUE
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770 421 3400	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE
CLIENT NAME: LAW	CLIENT E-MAIL		
CLIENT ADDRESS: 3200 Town Point Dr. Suite 100 Kennesaw GA 30144			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
COMPANY CONTRACTING THIS WORK (if applicable)			

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	6010 Total Lead HNO3	6010 Dissolved Lead HNO2								REMARKS
12/4/01	0820	MW1I		X				X	X								
12/4/01	1100	MW2D		X				X	X								
12/4/01	1200	MW12D		X				X	X								
12/4/01	1620	MW2S		X				X	✓								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
			[signature]	12/4/01	1730			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	12/05/01	0945	YES ✓ NO ◯		5117845	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

TRENT SERVICES

STL Savannah

Savannah, GA 31404 Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
Palmetto Recycling	41-2603-02	SC		

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Gloria Fulwood		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Cynthia Draper	770 421 3400	770 421 3486

CLIENT NAME: LAW

CLIENT E-MAIL:

CLIENT ADDRESS: 3200 Town Point Dr, Suite 100 Kennesaw, GA 30144

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ◯ DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	6010 Total Lead (HNO3)	6010 Dissolved Lead (HNO3)								REMARKS
								PRESERVATIVE									
								NUMBER OF CONTAINERS SUBMITTED									
12/4/01	1450	MW 15		X				X	X								
12/4/01	1310	MW 1D		X				X	X								
12/4/01	1630	MW 35		X				X	X								
~~12/4/01~~	~~0823~~	~~MW 1E~~ (TLN)		X				X	X								on other chain

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
				12/4/01	1730			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
	12/05/01	0945	YES ✓ NO ◯		51 17845	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S1-17912
Received: 06 DEC 01
Reported: 14 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

RECEIVED 12-18-01

Project: Palmetto Recycling
Sampled By: Client
Code: 154411214

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
2-1	MW-4S	12-05-01/08:10
2-2	MW-4I	12-05-01/11:20
2-3	MW-4D	12-05-01/15:30
2-4	Equipment Blank	12-05-01/13:00
2-5	MW-3D	12-05-01/14:00

METER	17912-1	17912-2	17912-3	17912-4	17912-5
i (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
ution Factor	1	1	1	1	1
ep Date	12.07.01	12.07.01	12.07.01	12.07.01	12.07.01
alysis Date	12.10.01	12.10.01	12.10.01	12.10.01	12.10.01
tch ID	1207H	1207H	1207H	1207H	1207H
d, (Dissolved) (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
lution Factor	1	1	1	1	1
ep Date	12.07.01	12.07.01	12.07.01	12.07.01	12.07.01
alysis Date	12.11.01	12.11.01	12.11.01	12.11.01	12.11.01
tch ID	1207K	1207K	1207K	1207K	1207K

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S1-17912
Received: 06 DEC 01
Reported: 14 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 154411214

REPORT OF RESULTS

NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
12-6	MW-3I	12-05-01/10:10
12-7	MW-13I	12-05-01/10:10

AMETER	17912-6	17912-7
d (6010), mg/l	<0.0050	<0.0050
lution Factor	1	1
ep Date	12.07.01	12.07.01
alysis Date	12.10.01	12.10.01
tch ID	1207H	1207H
d, (Dissolved) (6010), mg/l	<0.0050	<0.0050
lution Factor	1	1
ep Date	12.07.01	12.07.01
alysis Date	12.11.01	12.11.01
tch ID	1207K	1207K

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S1-17912
Received: 06 DEC 01
Reported: 14 DEC 01

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-2603-02

Project: Palmetto Recycling
Sampled By: Client
Code: 154411214

REPORT OF RESULTS

; NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
)12-9	Method Blank	
)12-10	Lab Control Standard % Recovery	
)12-11	LCS Accuracy Control Limit (%R)	

RAMETER	17912-9	17912-10	17912-11
ıd (6010), mg/l	<0.0050	105 %	75-125 %
ilution Factor	1	1	---
rep Date	12.07.01	12.07.01	---
ıalysis Date	12.10.01	12.10.01	---
tch ID	1207H	1207H	---
ad, (Dissolved) (6010), mg/l	<0.0050	104 %	75-125 %
ilution Factor	1	1	---
rep Date	12.07.01	12.07.01	---
nalysis Date	12.11.01	12.11.01	---
atch ID	1207K	1207K	---

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Gloria D. Fulwood

oria D. Fulwood, Project Manager

Final Page Of Report

STL Savannah is a part of Severn Trent Laboratories, Inc.

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

5102 LaRoche Avenue
Savannah, GA 31404

Phone: (912) 354-7858
Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2403-02	PROJECT LOCATION (STATE): SC	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ● DATE DUE:
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770 421 3400	CLIENT FAX: 770 421 3480	EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE:
CLIENT NAME: LAW	CLIENT E-MAIL:		
CLIENT ADDRESS: 4200 Town Point Dr, Suite 100, Kennesaw, GA 30144			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
COMPANY CONTRACTING THIS WORK (if applicable)			

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	6010 Total Lead (HNO3)	6010 Dissolved Lead (HNO3)	6010 Dissolved Lead (None)	6010 Total Lead (None)						REMARKS
2/5/01	0810	MW-4S		X				X	X								
↓	1120	MW-4I		↓				X	X								
	1530	MW-4D						X	X								
	1300	Equipment Blank						~~X~~		X	X					X	For Dissolved Lead Laboratory Filter

2 SAMPLES for Equipment Blank only SENT IN UNPRESERVED BOTTLES
PLEASE FILTER DISSOLVED + PRESERVE
DISSOLVED + TOTAL w/in 24 HOURS
Please call Laura N. at
770 421 3341 if you have any questions

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
			Chris Williams	12/5/01	1800			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
Karl A Fell	12/6/01	0945	YES ✓ NO ◯		5117912	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

STL Savannah

5102 LaRoche Avenue
Savannah, GA 31404
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: Palmetto Recycling	PROJECT NO.: 41-2603-02	PROJECT LOCATION (STATE): SC	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Gloria Fulwood	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ● DATE DUE
CLIENT (SITE) PM: Cynthia Draper	CLIENT PHONE: 770 421 3400	CLIENT FAX: 770-421 3480	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT NAME: LAW	CLIENT E-MAIL:		
CLIENT ADDRESS: 3200 Town Point Dr Suite 100 Kennesaw GA 30144			
COMPANY CONTRACTING THIS WORK (if applicable):			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	6010 Total Lead HNO3	6010 Dissolved Lead HNO3	6010 Dissolved Lead None								REMARKS
12/5/01	1400	MW-3D		X				X	X									
↓	1010	MW-3I		↓				X	X									
	1010	MW-13I						X	X									
	1730	MW-2I ☆						X	~~X~~	X							☆	For Dissolved Lead Laboratory Filter!

☆ Dissolved Lead sent in unprescrived bottle for MW2I
Please filter + preserve w/in 24 hours.

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
			Chris Williams	12/5/01	1800			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
F Swafford	12/6/01	9:45	YES ✓ NO ○		5117912	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

MACTEC

December 2, 2002

Ms. Yvonne Jones
North Superfund Site Management
Region IV, USEPA
61 Forsyth Street
Atlanta, GA 30303-3104

Subject: **2002 Annual Groundwater Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies, Inc.
MACTEC Project 41-2603-02

Dear Ms. Jones:

MACTEC Engineering and Consulting, Inc. is pleased to provide the enclosed report for the sampling and analysis of groundwater from the groundwater monitoring wells at the Palmetto Recycling Site (Site) in Columbia, South Carolina. The groundwater sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999) and the "2002 Annual Groundwater Sampling Event" letter issued by the USEPA in September 2002, allowing for a reduction of sampling locations (Attachment A). Groundwater sampling will be conducted annually for a five-year period following the completion of the remedial action excavation and removal activities in 1999. This report summarizes the field procedures and the laboratory results of the Fourth Annual Sampling Event.

The results of the Fourth Annual Sampling Event are provided in the enclosed report showing that lead was not detected in any of the groundwater samples. The analytical results for lead for this sampling event and the previous events indicate that the lead concentrations in the groundwater samples are below drinking water standards.

Should you have any comments or questions on the groundwater sampling results, please call Taura Nichols at (770) 421-3341 or Joe Chikowski at (732) 793-3531.

MACTEC Engineering and Consulting, Inc.

Taura Nichols
Project Engineer

Frederick K. Marotte, P.E.
Principal Engineer

Attachments
cc: Joe Chikowski

MACTEC Engineering and Consulting, Inc.
3200 Town Point Drive NW; Suite 100
Kennesaw, GA 30144
770-421-3400 • Fax: 770-421-3486

MACTEC

November 21, 2002

Mr. Joe Chikowski
25 East Pelican Way
Ocean Beach, Unit III
Lavallette, NJ 08735

Subject: **2002 Annual Groundwater Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies
MACTEC Project No.: 41-2603-02

Dear Mr. Chikowski:

MACTEC Engineering and Consulting, Inc. is pleased to provide this report for the sampling and analysis of groundwater from the groundwater monitoring wells at the Palmetto Recycling Site (Site) in Columbia, South Carolina (Figure 1). The groundwater sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999) and the "2002 Annual Groundwater Sampling Event" letter issued by the United States Environmental Protection Agency (USEPA) in September 2002, allowing for a reduction of sampling locations (Attachment A). Groundwater sampling will be conducted annually for a five-year period following the completion of the remedial action (RA) excavation and removal activities in 1999. This report summarizes the field procedures and the laboratory results of the Fourth Annual Sampling Event.

Regulatory Status

As required by the Record of Decision (ROD, 1995), surface soils with lead concentrations above 400 ppm were excavated from the Site and the area was backfilled (January 1999 through February 1999). A pre-final inspection of the Site by the USEPA and South Carolina Department of Health and Environmental Control was held in February 1999 and confirmed that the RA activities had been completed. The USEPA removed the Site from the National Priority List (NPL) in October 2000.

MACTEC Engineering and Consulting, Inc.
3200 Town Point Drive NW, Suite 100
Kennesaw, GA 30144
770-421-3400 • Fax: 770-421-3486

In accordance with the Remedial Action Plan for future Site monitoring, the ROD required that the groundwater be sampled and analyzed annually for total lead over a five-year period. The First Annual Groundwater Monitoring Event, led by the EPA, was completed in November 1999. The Second and Third Annual Groundwater Monitoring Events, led by Lucent, were completed in October 2000 and December 2001, respectively. Lead concentrations in all Groundwater samples for the sampling events were below the Federal Maximum Contaminant Level (MCL) for drinking water. The results of the Fourth Annual Monitoring Event, conducted by Lucent, are provided herein.

After the third sampling event, Lucent proposed to discontinue the 2002 and 2003 Annual Groundwater Sampling Events, because lead has not been detected (above drinking water standards) in the groundwater monitoring wells sampled during the Remedial Action activities. Although this request was denied, EPA allowed Lucent to reduce the monitoring well locations from twelve to eight during the 2002 Annual Groundwater Sampling Event, as long as these locations included MW-1S, MW-3S, D, and MW-4S. The letter from EPA is provided as Attachment A.

Field Procedures

The fieldwork was conducted from October 28, 2002 through October 30, 2002 and included sampling eight monitoring wells (MW-1S, I, MW-3S, I, D, and MW-4S, I, D) for analysis of total and dissolved lead (EPA Method 6010). The monitoring well locations are provided on Figure 2.

All field equipment was inspected, decontaminated, and calibrated prior to sampling each well. Before purging each well, the Groundwater depth was measured and documented. All wells were then purged using a low-flow purging technique with a peristaltic pump until three well volumes were removed. After the removal of three well volumes, the wells were sampled, and the groundwater sample was analyzed by a certified laboratory for dissolved and total lead. Due to high turbidity, the first sample from MW-1S (collected on October 28, 2002) was not analyzed and subsequently discarded appropriately. A second sample, which was analyzed, was collected the following day, after the well had recharged and the turbidity decreased. Also, MW-1I was only partially purged on October 28, 2002. The last ten gallons were not purged due to nightfall. Yvonne Jones of the USEPA was notified and concurred that purging of MW-1I could be continued and sampled the following day.

Laboratory Results

The laboratory analytical results and sample date are listed in the following table and the laboratory analytical result reports are provided as Attachment B.

Groundwater Analytical Results for the Palmetto Recycling Site

Monitoring Well	Sample Date	Total Lead (mg/l)	Dissolved Lead (mg/l)
MW-1S	10/29/02	ND	ND
MW-1I	10/29/02	ND	ND
MW-3S	10/30/02	ND	ND
MW-3I	10/30/02	ND	ND
MW-3D	10/30/02	ND	ND
MW-4S	10/29/02	ND	ND
MW-4I	10/29/02	ND	ND
MW-4D	10/29/02	ND	ND

ND = concentrations not detected above the 0.005 mg/L detection limit

Lead was not detected in the groundwater samples above the detection limit. These results are consistent with the results from the previous groundwater sampling events conducted by the USEPA and Lucent.

Should you have any comments or questions on the groundwater sampling results, please call Taura Nichols at (770) 421-3341. We appreciate this opportunity to provide continued services to Lucent.

Sincerely,

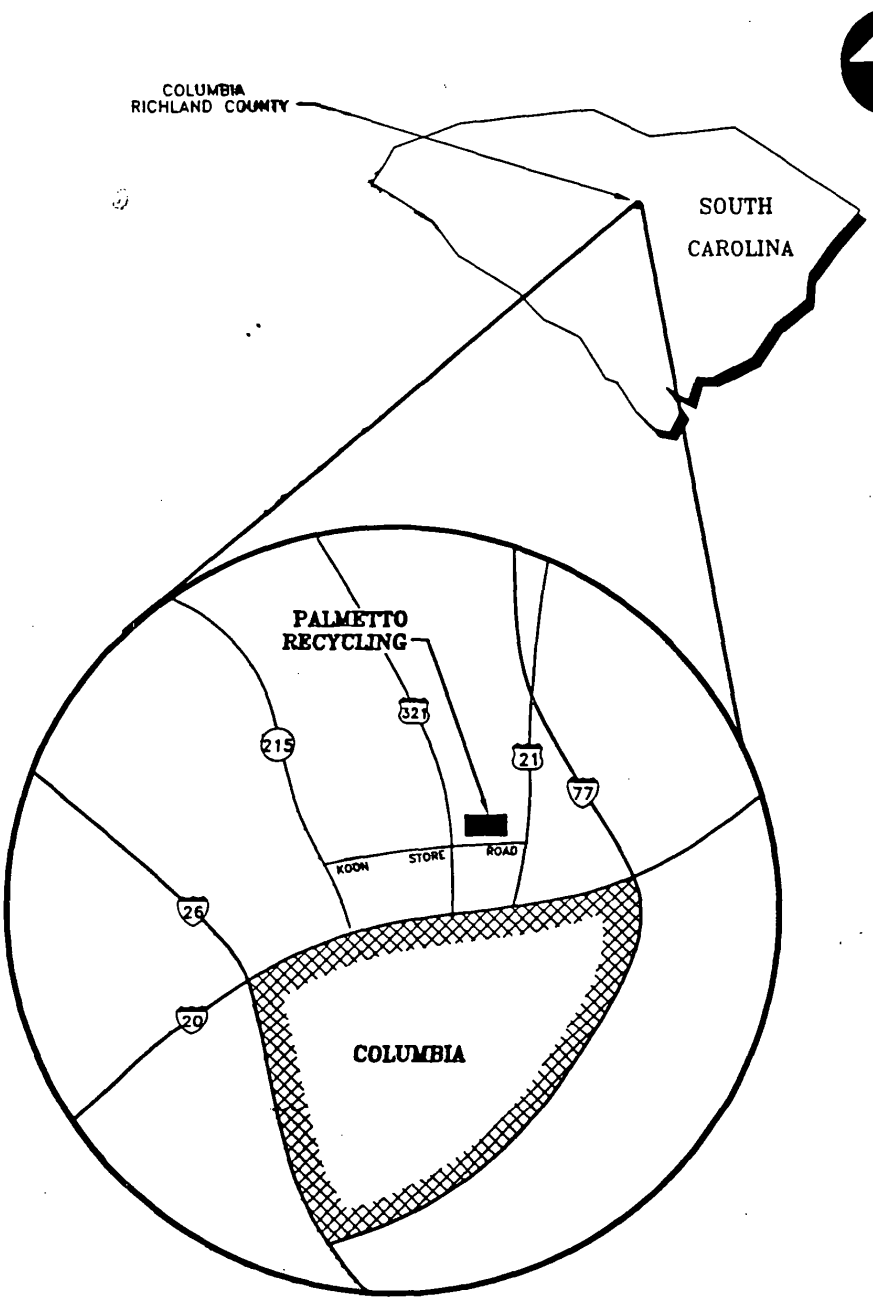
MACTEC Engineering and Consulting, Inc.

Taura Nichols
Project Engineer

Frederick K. Marotte, P.E.
Principal Engineer

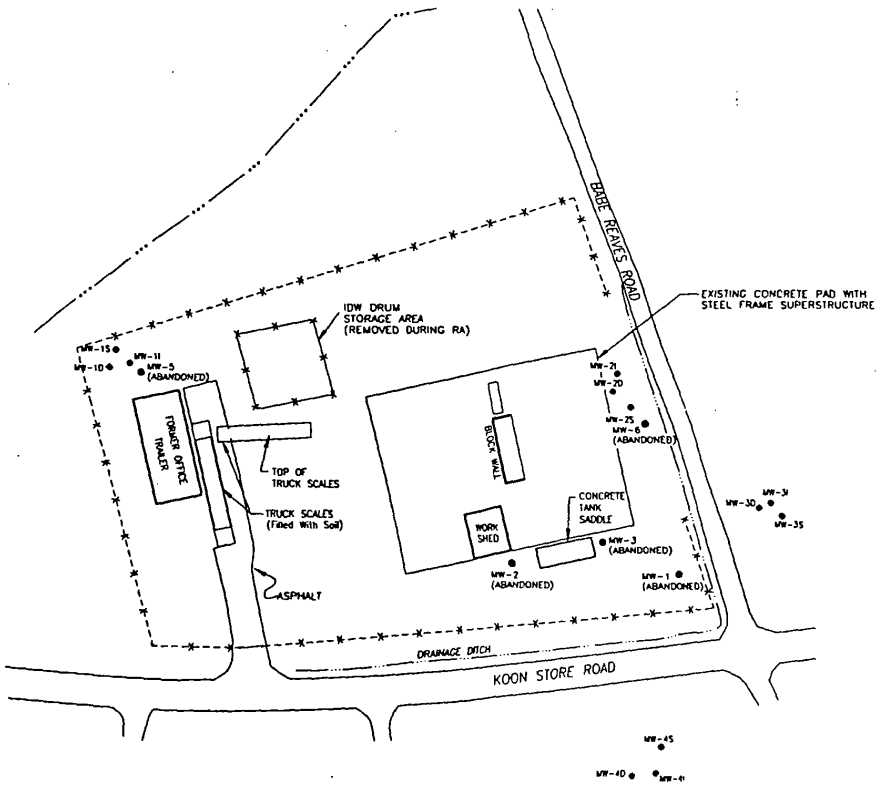
FIGURES

G: \ott\palmetto\remd\rev\sitemap.dwg 4/20/99 8:39 am



SOURCE: RI/FS REPORT, CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION PALMETTO RECYCLING SITE RICHLAND COUNTY, SOUTH CAROLINA	LAW ENGINEERING AND ENVIRONMENTAL SERVICES	SITE LOCATION MAP JOB NO. 41-2603-02 FIGURE 1



LEGEND

- FENCE
- INTERMITTENT DRAINAGE
- DEEP MONITORING WELL
- INTERMEDIATE MONITORING WELL
- SHALLOW MONITORING WELL
- ABANDONED MONITORING WELL

SCALE IN FEET

IDW - INVESTIGATIVE DERIVED WASTE
SOURCE OF BASE MAP: RI/FS REPORT CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION-PALMETTO RECYCLING SITE	SITE LAYOUT AND WELL LOCATION MAP
RICHLAND COUNTY, SC	
LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.	
SCALE: AS SHOWN	
CONTRACT: 41-2603-02	
FIGURE 2	

ATTACHMENT A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

61 Forsyth Street, S.W.
Atlanta, Georgia 30303

September 20, 2002

Ms. Taura Nichols
Project Coordinator
Shaw Engineering & Environmental Services
3200 Town Point Drive, Suite 100
Kennesaw, Georgia 30144

Subject 2002 Annual Groundwater Sampling Event
Palmetto Recycling Site, Richland County, Columbia, South Carolina

Dear Ms. Nichols:

The U.S. Environmental Protection Agency (EPA) has reviewed the results of the groundwater samples collected during the 1999, 2000 and 2001 Annual Groundwater Sampling Events and *Lucent's Proposal to Discontinue the 2002 & 2003 Annual Groundwater Sampling Events at the Palmetto Recycling Site dated April 29, 2002.* At this time, EPA can not grant the discontinuation of the 2002 and 2003 Annual Groundwater Sampling Events. However, EPA will allow Lucent to reduce the monitoring well locations from twelve to eight during the 2002 Annual Groundwater Sampling Event. The eight monitoring well locations shall include MW-1S, MW-3S, MW-3D & MW-4S. If the results of the 2002 Annual Groundwater Sampling Event are consistent (below the MCL) with the results of previous annual groundwater sampling events, EPA will allow Lucent to further reduce sampling points from eight to four for the 2003 Annual Groundwater Sampling Event. In addition, Lucent has the option to conduct the 2003 Annual Groundwater Sampling Event 6 months upon completion of the 2002 Annual Groundwater Sampling Event.

Should you have any questions regarding this matter, please feel free to contact me at 404-562-8793. EPA looks forward to continuing our cooperative working relationship with Lucent.

Sincerely,

Yvonne O. Jones

cc: Mihir Mehta, SCDHEC

ATTACHMENT B

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S2-47832
Received: 31 OCT 02
Reported: 12 NOV 02

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-260302

Project: Palmetto Recycling
Sampled By: Client
Code: 141621112

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
47832-1	MW-4S	10-29-02/10:55
47832-2	MW-1S	10-29-02/12:30
47832-3	MW-1I	10-29-02/15:45
47832-4	MW-4I	10-29-02/15:45
47832-5	MW-4D	10-29-02/17:00

PARAMETER	47832-1	47832-2	47832-3	47832-4	47832-5
Lead (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1	1
Prep Date	11.05.02	11.05.02	11.05.02	11.05.02	11.05.02
Analysis Date	11.06.02	11.06.02	11.06.02	11.06.02	11.06.02
Batch ID	1105K	1105K	1105K	1105K	1105K
Lead, (Dissolved) (6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1	1
Prep Date	11.01.02	11.01.02	11.01.02	11.01.02	11.01.02
Analysis Date	11.05.02	11.05.02	11.05.02	11.05.02	11.05.02
Batch ID	1101J	1101J	1101J	1101J	1101J

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S2-47832
Received: 31 OCT 02
Reported: 12 NOV 02

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-260302

Project: Palmetto Recycling
Sampled By: Client
Code: 141621112

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED
47832-6	MW-3I	10-30-02/11:32
47832-7	MW-3S	10-30-02/11:45
47832-8	MW-3D	10-30-02/13:30

PARAMETER	47832-6	47832-7	47832-8
Lead (6010), mg/l	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1
Prep Date	11.05.02	11.05.02	11.05.02
Analysis Date	11.06.02	11.06.02	11.06.02
Batch ID	1105K	1105K	1105K
Lead, (Dissolved) (6010), mg/l	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1
Prep Date	11.01.02	11.01.02	11.01.02
Analysis Date	11.05.02	11.05.02	11.05.02
Batch ID	1101J	1101J	1101J

SEVERN TRENT SERVICES
STL Savannah
5102 LaRoche Avenue • Savannah, GA 31404 • Tel: 912 354 7858 • Fax: 912 352 0165 • www.stl-inc.com

LOG NO: S2-47832
Received: 31 OCT 02
Reported: 12 NOV 02

Ms. Tara Nichols
Law Engineering and Environmental Services/Remediation Group
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144

Requisition: 41-260302

Project: Palmetto Recycling
Sampled By: Client
Code: 141621112

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
47832-9	Method Blank	
47832-10	Lab Control Standard % Recovery	

PARAMETER	47832-9	47832-10
Lead (6010), mg/l	<0.0050	105 %
Dilution Factor	1	1
Prep Date	11.05.02	11.05.02
Analysis Date	11.06.02	11.06.02
Batch ID	1105K	1105K
Lead, (Dissolved) (6010), mg/l	<0.0050	105 %
Dilution Factor	1	1
Prep Date	11.01.02	11.01.02
Analysis Date	11.05.02	11.05.02
Batch ID	1101J	1101J

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.
SC CERT #98001001

SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III.

Gloria D. Fulwood, Project Manager

Final Page Of Report

Serial Number ...

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
Palmetto Recycling	41-2603-02	SC		

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Gloria Fulwood		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Cynthia Draper	770-421-3400	770-421-3486

CLIENT NAME	CLIENT E-MAIL
MACTec / LAW	

CLIENT ADDRESS: 3200 Town Point Dr. Suite 100 Kennesaw, GA 30144

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ◯
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	6010 Total/Lead	6010 Dissolved/Lead									REMARKS
								PRESERVATIVE										
								NUMBER OF CONTAINERS SUBMITTED										
10/29/02	1055	MW-4S		X				1	1									
10/29/02	1230	MW-1S		X				1	1									
10/29/02	1545	MW-1I		X				1	1									
10/29/02	1545	MW-4I		X				1	1									
10/29/02	1700	MW-4D		X				1	1									
10/30/02	1132	MW-3I		X				1	1									
10/30/02	1145	MW-3S		X				1	1									
10/30/02	1330	MW-3D		X				1	1									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Shanna Cahill	10/30/02	1400			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	10/31/02	0901	YES ◯ NO ◯		S247832	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

MACTEC

December 8, 2003

Ms. Yvonne Jones
North Superfund Site Management
Region IV, USEPA
61 Forsyth Street
Atlanta, GA 30303-3104

Subject: **2003 Annual Groundwater Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies
MACTEC Project 41-2603-02

Dear Ms. Jones:

MACTEC Engineering and Consulting, Inc. is pleased to provide the enclosed report for the Fifth Annual Sampling Event at the Palmetto Recycling Site in Columbia, South Carolina. Groundwater sampling was conducted annually for a five-year period following the completion of the remedial action excavation and removal activities in 1999. This report summarizes the field procedures and the laboratory results of the Fifth Annual Sampling Event. The groundwater sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999) and the "2002 Annual Groundwater Sampling Event" letter issued by the USEPA in September 2002, allowing for a reduction in the number of samples collected.

The results of the Fifth Annual Sampling Event are provided in the enclosed report and show that lead was not detected above the detection limit of 0.005 mg/l in the groundwater samples. The analytical results for lead for this sampling event and the four previous events indicate that the lead concentrations in the groundwater samples were below the Federal MCLs for drinking water (0.015 mg/l). In accordance with the Remedial Action Plan for future Site monitoring, the ROD required that groundwater be sampled and analyzed annually for total lead for five years. Since the lead concentrations in groundwater have consistently remained below MCLs, Lucent requests the discontinuation of the annual groundwater sampling events as specified in the ROD. It is our understanding that the USEPA plans on conducting a Five-Year Review for this site. If you need assistance preparing the Five-Year Review, please let us know if we may be of assistance.

MACTEC Engineering and Consulting
3200 Town Point Drive NW, Suite 100 • Kennesaw, GA 30144
770-421-3400 • Fax: 770-421-3486

Should you have any comments or questions on the groundwater sampling results, please call Cynthia Draper or Taura Nichols at (770) 421-3400 of Mactec or Steve Oberkrom of Lucent at (816) 246-7108.

MACTEC ENGINEERING AND CONSULTING, INC.

Frederick K. Marotte, P.E.
Principal

Cynthia Draper
Project Manager

BY WITH PERMISSION

Taura Nichols
Project Engineer

Attachments

cc: Steve Oberkrom
Mihir Mehta

MACTEC

December 8, 2003

Mr. Steve Oberkrom
1067 N.W. Highpoint Drive
Lee's Summit, Missouri 64081

Subject: **2003 Annual Groundwater Sampling and Analysis Report**
Palmetto Recycling Site, Columbia, South Carolina
Lucent Technologies
MACTEC Project No.: 41-2603-02

Dear Mr. Oberkrom:

MACTEC Engineering and Consulting, Inc. is pleased to provide this report for the sampling and analysis of groundwater from the groundwater monitoring wells at the Palmetto Recycling Site (Site) in Columbia, South Carolina (Figure 1). The groundwater sampling and analysis procedures were performed in general accordance with the Remedial Action Work Plan (Revised June 2, 1999) and the "2002 Annual Groundwater Sampling Event" letter issued by the United States Environmental Protection Agency (USEPA) in September 2002, allowing for a reduction of sampling locations. Groundwater sampling was conducted annually for a five-year period following the completion of the remedial action (RA) excavation and removal activities in 1999. This report summarizes the field procedures and the laboratory results of the Fifth Annual Sampling Event.

Regulatory Status

As required by the Record of Decision (ROD, 1995), surface soils with lead concentrations above 400 ppm were excavated from the Site and the area was backfilled (January 1999 through February 1999). A pre-final inspection of the Site by the USEPA and South Carolina Department of Health and Environmental Control (SCDHEC) was held in February 1999 and confirmed that the RA activities had been completed. The USEPA removed the Site from the National Priority List (NPL) in October 2000.

In accordance with the Remedial Action Plan for future Site monitoring, the ROD required that the groundwater be sampled and analyzed annually for total lead over a five-year period. The First Annual Groundwater Monitoring Event, led by the EPA, was completed in November 1999. The Second, Third

MACTEC Engineering and Consulting
3200 Town Point Drive NW, Suite 100 • Kennesaw, GA 30144
770-421-3400 • Fax: 770-421-3486

and Fourth Annual Groundwater Monitoring Events, led by Lucent, were completed in October 2000, December 2001, and October 2002, respectively. Lead concentrations in all groundwater samples for the sampling events were below the Federal Maximum Contaminant Level (MCL) for drinking water. The results of the Fifth Annual Monitoring Event, conducted by Lucent, are provided herein.

Field Procedures

The fieldwork conducted on October 23, 2003 included sampling four monitoring wells (MW-1S, MW-3S, MW-3D, and MW-4S) for analysis of total and dissolved lead (EPA Method 6010). The monitoring well locations are provided on Figure 2.

Field equipment was inspected, decontaminated, and calibrated prior to sampling each well. Before purging of each well, the groundwater depth was measured and documented. Wells were then purged using a low-flow purging technique with a peristaltic pump until three well volumes were removed. After the removal of three well volumes, the wells were sampled, and the groundwater samples were analyzed by a certified laboratory for dissolved and total lead. Due to increased turbidity (>10 NTU) at monitoring well MW-4S, more than four well volumes were purged in this well. This well was sampled with a turbidity of 20 NTU. The USEPA and SCDHEC were on-site to supervise the groundwater sampling.

Laboratory Results

The laboratory analytical results and sample data are listed in the following table and the laboratory analytical report is provided as Attachment A.

Groundwater Analytical Results for the Palmetto Recycling Site

Monitoring Well	Sample Date	Total Lead (mg/l)	Dissolved Lead (mg/l)
MW-1S	10/23/03	ND	ND
MW-3S	10/23/03	ND	ND
MW-3D	10/23/03	ND	ND
MW-4S	10/23/03	ND	ND

ND = concentrations not detected above the 0.005 mg/L detection limit.

Lead was not detected in the groundwater samples above the detection limit nor was it detected above the MCL for drinking water (0.015 mg/L). These results are consistent with the results from the previous groundwater sampling events conducted by the USEPA and Lucent.

Should you have any comments or questions on the groundwater sampling results, please call Taura Nichols at (770) 421-3341 or Cynthia Draper at (770) 421-3565. We appreciate this opportunity to provide continued services to Lucent.

Sincerely,

MACTEC ENGINEERING AND CONSULTING, INC.

Frederick K. Marotte, P.E.
Principal

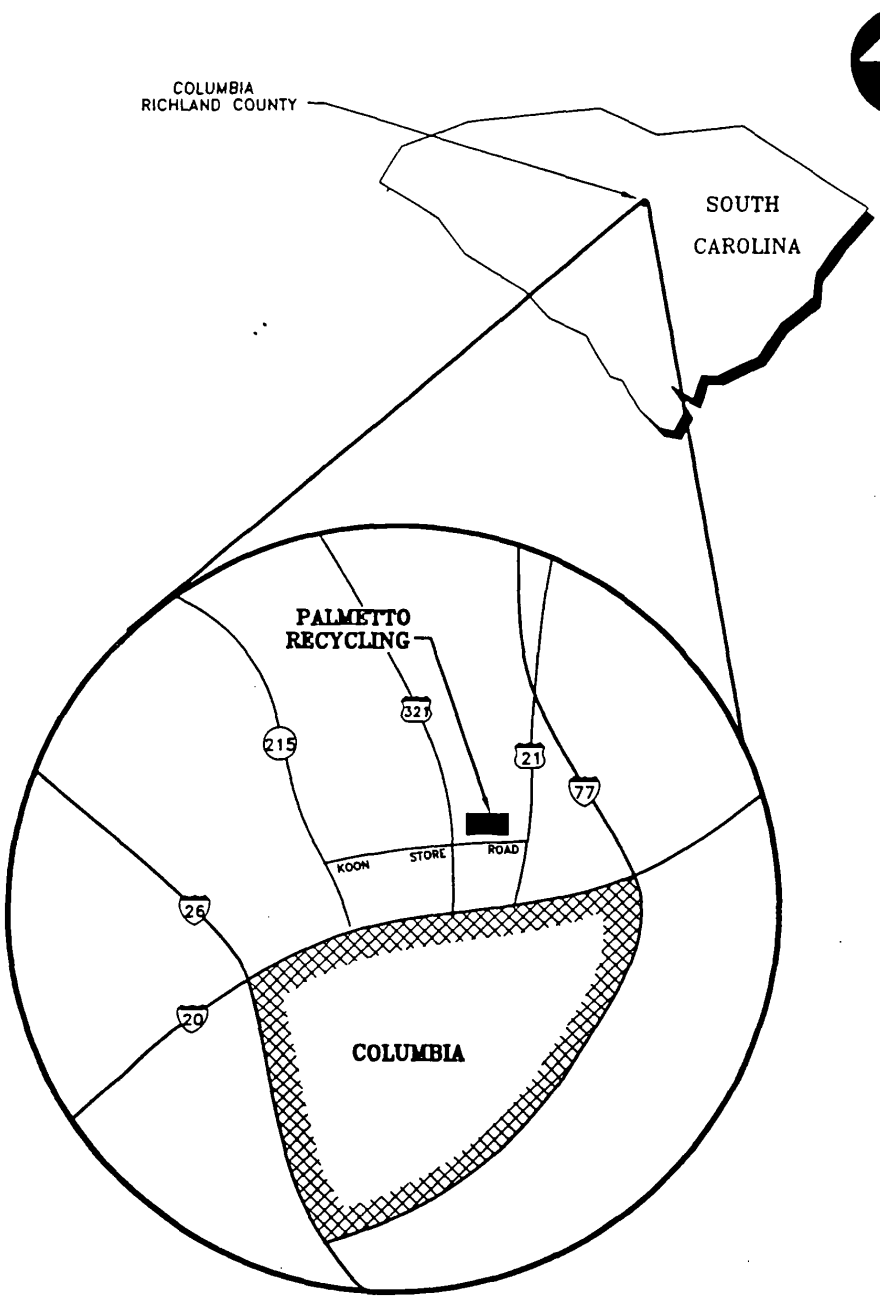
Cynthia Draper
Project Manager

BY WITH PERMISSION

Taura Nichols
Project Engineer

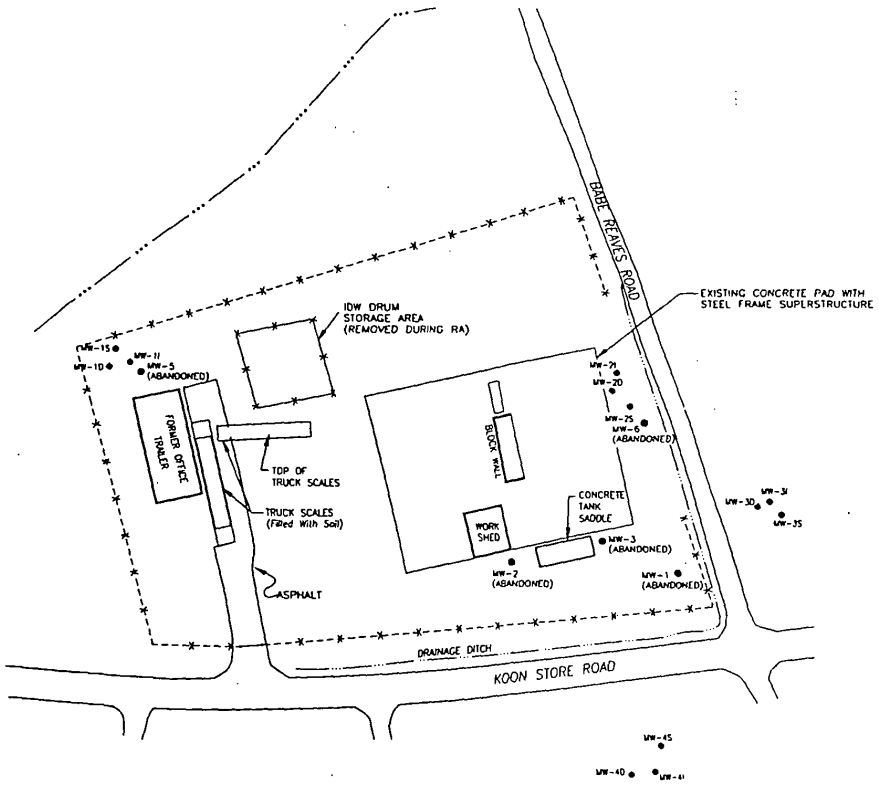
FIGURES

G:\att\palmetto\remd\rev\sitemap.dwg 4/20/99 8:39 am



SOURCE: RI/FS REPORT, CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION PALMETTO RECYCLING SITE RICHLAND COUNTY, SOUTH CAROLINA	LAW ENGINEERING AND ENVIRONMENTAL SERVICES	SITE LOCATION MAP JOB NO. 41-2603-02 FIGURE 1



LEGEND

- FENCE
- INTERMITTENT DRAINAGE
- DEEP MONITORING WELL
- INTERMEDIATE MONITORING WELL
- SHALLOW MONITORING WELL
- ABANDONED MONITORING WELL

SCALE IN FEET

IDW - RI INVESTIGATIVE DERIVED WASTE
SOURCE OF BASE MAP: RI/FS REPORT CDM FEDERAL PROGRAMS CORP., NOVEMBER 1994

REMEDIAL ACTION-PALMETTO RECYCLING SITE

RICHLAND COUNTY, SC

I.AW

SITE LAYOUT AND WELL LOCATION MAP

AS SHOWN

41-2603-02

FIGURE 2

ATTACHMENT A

SEVERN TRENT STL

STL Savannah 5102 LaRoche Avenue - Savannah GA 31404 Telephone:(912) 354-7858 Fax:(912) 351-3673

Analytical Report

RECEIVED 11/10/03

For: Ms. Tara Nichols
MACTEC Engineering and Consulting
3200 Town Point Drive, Suite 100
Kennesaw, GA 30144
CC:

Order Number: S388609
SDG Number:
Client Project ID:
Project: Palmetto Recycling
Report Date: 11/07/2003
Sampled By: Client
Sample Received Date: 10/27/2003
Requisition Number: 41-260302
Purchase Order:

Gloria D. Fulwood

Gloria D. Fulwood, Project Manager
gfulwood@stl-inc.com

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

STL Savannah 5102 LaRoche Avenue - Savannah GA 31404 Telephone:(912) 354-7858 Fax:(912) 351-3673

Sample Summary

Order: S388609
Date Received: 10/27/2003

Client: MACTEC Engineering and Consulting
Project: Palmetto Recycling

Client Sample ID	Lab Sample ID	Matrix	Date Sampled
Equipment Blank	S388609*1	Liquid	10/23/2003 14:40
MW-1S	S388609*2	Liquid	10/23/2003 12:30
MW-3S	S388609*3	Liquid	10/23/2003 10:30
MW-3D	S388609*4	Liquid	10/23/2003 14:30
MW-3D DUP	S388609*5	Liquid	10/23/2003 14:30
MW-4S	S388609*6	Liquid	10/23/2003 17:27

STL Savannah 5102 LaRoche Avenue - Savannah GA 31404 Telephone:(912) 354-7858 Fax:(912) 351-3673

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
88609-1	Equipment Blank	Liquid	10/27/03	10/23/03 14:40	
88609-2	MW-1S	Liquid	10/27/03	10/23/03 12:30	
88609-3	MW-3S	Liquid	10/27/03	10/23/03 10:30	
88609-4	MW-3D	Liquid	10/27/03	10/23/03 14:30	
88609-5	MW-3D DUP	Liquid	10/27/03	10/23/03 14:30	

Parameter	Units	Lab Sample IDs 88609-1	88609-2	88609-3	88609-4	88609-5
Lead (6010)						
Lead	mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor		1	1	1	1	1
Prep Date		10/28/03	10/28/03	10/28/03	10/28/03	10/28/03
Analysis Date		10/29/03	10/29/03	10/29/03	10/29/03	10/29/03
Batch ID		1028I	1028I	1028I	1028I	1028I
Lead, (Dissolved) (6010)						
Lead, (Dissolved)	mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor		1	1	1	1	1
Prep Date		10/28/03	10/28/03	10/28/03	10/28/03	10/28/03
Analysis Date		10/29/03	10/29/03	10/29/03	10/29/03	10/29/03
Batch ID		1028I	1028I	1028I	1028I	1028I

STL Savannah 5102 LaRoche Avenue - Savannah GA 31404 Telephone:(912) 354-7858 Fax:(912) 351-3673

Analytical Data Report

Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
88609-6	MW-4S	Liquid	10/27/03	10/23/03 17:27	

Lab Sample IDs

Parameter	Units	88609-6
Lead (6010)		
Lead	mg/l	<0.0050
Dilution Factor		1
Prep Date		10/28/03
Analysis Date		10/29/03
Batch ID		1028I
Lead, (Dissolved) (6010)		
Lead, (Dissolved)	mg/l	<0.0050
Dilution Factor		1
Prep Date		10/28/03
Analysis Date		10/29/03
Batch ID		1028I

STL Savannah 5102 LaRoche Avenue - Savannah GA 31404 Telephone:(912) 354-7858 Fax:(912) 351-3673

Analytical Data Report

Lab Sample ID	Description	Matrix	Date Received	Date Sampled	SDG#
88609-7	Method Blank	Liquid	10/27/03		
88609-8	Lab Control Standard % Recovery	Liquid	10/27/03		

Parameter	Units	Lab Sample IDs 88609-7	88609-8
Lead (6010)			
Lead	mg/l	<0.0050	101 %
Dilution Factor		1	1
Prep Date		10/28/03	10/28/03
Analysis Date		10/29/03	10/29/03
Batch ID		1028I	1028I
Lead, (Dissolved) (6010)			
Lead, (Dissolved)	mg/l	<0.0050	101 %
Dilution Factor		1	1
Prep Date		10/28/03	10/28/03
Analysis Date		10/29/03	10/29/03
Batch ID		1028I	1028I

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.
SC CERT #98001001

SW-846, Test Methods for Evaluating Solid Waste, Third Edition, September 1986, and Updates I, II, IIA, IIB, and III.

Serial Number 19417

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

SEVERN TRENT **STL**

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Palmetto Recycling	41260302-2	SC

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Gloria Fulwood		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Laura Nichols	770 421 3341	770-421-3486

CLIENT NAME	CLIENT E-MAIL
Lucent Technologies	lnichols@mactec.com

CLIENT ADDRESS: MACTEC 3200 Town Point Dr Suite 100 Kennesaw GA 30144

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE ___ OF ___

STANDARD REPORT DELIVERY ○
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE): AQUEOUS (WATER), SOLID OR SEMISOLID, AIR, NONAQUEOUS LIQUID (OIL, SOLVENT,...)

REQUIRED ANALYSIS: 6010 Total Lead; 6010 Dissolved Lead

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	6010 Total Lead (11/23)	6010 Dissolved Lead (11/23)	REMARKS
10/23/03	1440	Equipment Blank	X	X	X	
10/23/03	1230	MW-1S	X	X	X	
10/23/03	1030	MW-3S	X	X	X	
10/23/03	1430	MW-3D	X	X	X	
10/23/03	1430	MW-3D DUP	X	X	X	
10/23/03	1727	MW-4S	X	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	10/24/03		[signature]	10/24/03	1200			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	10/27/03	9:00	YES ○ NO ○		53886009	

STL8240-680 (12/02)

ATTACHMENT G

Copies of Newspaper Notice – Community Involvement

And

Interview Documentation Form

The U.S. Environmental Protection Agency (EPA) Region 4 and the South Carolina Department of Health and Environmental Control (DHEC) announce the commencement of a Five-Year Review for the Palmetto Recycling Superfund Site in Columbia, Richland County, South Carolina. Five Year Reviews are intended to evaluate the protectiveness of cleanup actions taken at Superfund sites. EPA issued a Record of Decision (ROD) in March 30, 1995, which selected excavation and off-site disposal of all soil contaminated with lead above the concentration level of 400 ppm. In addition, the ROD required the collection of additional confirmation samples from adjacent residential yards and from Babe Reaves Road to confirm the absence or presence of soil contamination through off-site migration. The ROD also required groundwater monitoring to confirm that the remedy was effective at protecting human health and the environment. This is the first Five-Year Review for this Site.

SCDHEC and EPA anticipate that this Five-Year review will be completed by April 2004, and the report will be available for public review or copying at the Northeast Regional Library, 7490 Parklane Road, Columbia, SC 29223.

For further information please contact:
Keisha D. Long
Federal and Drycleaning Remediation Section
Bureau of Land and Waste Management-SCDHEC
8901 Farrow Road
Columbia SC, 29203
Ph: (803) 896-4073
Fax: (803) 896-4292
E-Mail:
longkd@dhec.sc.gov
OR
Yvonne O. Jones
Remedial Project Manager
US Environmental Protection Agency, Region IV
Waste Management Division
61 Forsyth Street, 11th Floor
Atlanta, GA 30303
Ph: (404) 562-8793
E-Mail:
jones.yvonneO@epa.gov
32594

THE STATE-RECORD CO., INC.
Columbia, South Carolina
publisher of
The State

RECEIVED
APR 20 2004
DIVISION OF SITE ASSESSMENT & REMEDIATION

STATE OF SOUTH CAROLINA
COUNTY OF RICHLAND

Personally appeared before me, Peggy Lawrence, Advertising Sales Support Manager of THE STATE, and makes oath that the advertisement,

Notice – Five year review for Palmetto Recycling Superfund Site, Columbia, SC

was inserted in THE STATE, a daily newspaper of general circulation published in the City of Columbia, State and County aforesaid, in the issues of

April 11, 2004

Peggy Lawrence

Subscribed and sworn to before me

on this day April 15, 2004

Evelyn F. Hessman Notary Public

My commission expires
March 10, 2013

"Errors- the liability of the publisher on account of errors in or omissions from any advertisement will in no way exceed the amount of the charge for the space occupied by the item in error, and then only for the first incorrect insertion."

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review.

Name	Title/Position	Organization	Date
Yvonne Jones	Remedial Project Mgr	EPA-Region 4	04-12-2004
Mihir Mehta, P.E.	Environmental Engr	SCDHEC-BLWM	04-14-2004

ATTACHMENT H

Applicable or Relevant & Appropriate Requirements Review

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

MEMORANDUM

To: Keisha Long, Project Manager
Federal and Dry Cleaning Remediation Section
Division of Site Assessment and Remediation
Bureau of Land and Waste Management

From: Gregory C. Simones, P.G., Risk Assessor
Federal Facility Agreement Section
Division of Site Assessment and Remediation
Bureau of Land and Waste Management

Date: March 29, 2004

Re: Palmetto Recycling Site
Columbia, Richland County, South Carolina

Review of Cleanup Levels

The above referenced document has been reviewed as it relates to Risk Assessment Guidance for Superfund (RAGS), EPA Region IV Supplemental Guidance to RAGS, and the EPA Comprehensive Five-Year Review Guidance (Appendix G).

The following comments were generated from the review of this document. If you should have any questions, please contact me at (803) 896-4081.

Per your request (electronic, 03/25/04), I have reviewed the Soil Cleanup Goal for lead listed in the ROD (Table 4, Page 18) against current resources readily available through the Internet. The question, "Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?", from the five-year review guidance is used for this portion of the review.

Recommendations Regarding Remedial Levels for Chemicals in Site Soil

1) Lead - Yes, still valid; The remediation level of 400 mg/kg was based on the 1994 OSWER Directive 9355.4-12. The current soil remediation level is unchanged according to the 2001 Final Rule for Lead, "Identification of Dangerous Levels of Lead" on page 1211, Section II.F.3.

Therefore, it is recommended that no changes to the reviewed remediation levels be made.

Selected References

1) ATSDR, 2003, 1999 ToxProfile for Lead.

2) Federal Register, January 5, 2001, USEPA, 40 CFR Part 745, Lead; Identification of Dangerous Levels of Lead; Final Rule, Vol. 66, No. 4, pp. 1205-1240. http://www.epa.gov/lead/403_final.pdf.

3) USEPA, 2004, IRIS.

4) USEPA, August 2003, Superfund Lead-Contaminated Residential Sites Handbook, OSWER No. 9285.7-50, http://www.epa.gov/superfund/programs/lead/products/handbook.pdf.

5) USEPA, June 2001, Comprehensive Five-Year Review Guidance –Appendix G, EPA 540-R-01-007, OSWER No. 9355.7-03B-P.

6) USEPA, March 1995, Record of Decision, Palmetto Recycling, Inc., Columbia, SC, EPA/ROD/R04-95/223, http://www.epa.gov/superfund/sites/rods/fulltext/r0495223.pdf.

ATTACHMENT I

List of Documents Reviewed

List of Documents Reviewed

1. "2002 Groundwater Sampling and Analysis Report, Palmetto Recycling Site, Columbia, South Carolina," Mactec, December 2, 2002.

2. "2003 Groundwater Sampling and Analysis Report, Palmetto Recycling Site, Columbia, South Carolina," Mactec, December 8, 2003.

3. "Annual Ground-Water Sampling and Analysis Report, Palmetto Recycling Site, Columbia, South Carolina," LawGibb Group, February 5, 2002.

4. ATSDR, 2003, 1999 ToxProfile for Lead.

5. "Direct Final Deletion of the Palmetto Recycling Site from the National Priorities List," EPA Region IV, July 2000.

6. "EPA Superfund Record of Decision: Palmetto Recycling, Inc, EPA ID: SCD037398120, OU 01, Columbia, SC", March 30, 1995.

7. Federal Register, January 5, 2001, USEPA, 40 CFR Part 745, Lead; Identification of Dangerous Levels of Lead; Final Rule, Vol. 66, No. 4, pp. 1205-1240. http://www.epa.gov/lead/403_final.pdf.

8. "Final Close Out Report for the Palmetto Recycling Superfund Site, Columbia, Richland County, South Carolina," EPA Region IV (July 1999).

9. "Final Construction/Remedial Action Report for the Palmetto Recycling Site," LawGibb Group, May 6, 1999 (Revised July 13, 1999).

10. "Palmetto Recycling Site Data," EPA Region IV Science and Ecosystem Support Division, January 18, 2000.

11. "Palmetto Recycling Site Data," EPA Region IV Science and Ecosystem Support Division, May 9, 2000.

12. "Palmetto Superfund Site, Field Survey 11/18/98, Asbestos Survey in Office Building and Sample Results," LawGibb Group, December 8, 1998.

13. "Transmittal of Draft Remedial Investigation (RI), Palmetto Recycling Superfund Site," CDM-FPC, Inc., February 1994.

14. USEPA, June 2001, Comprehensive Five-Year Review Guidance –Appendix G, EPA 540-R-01-007, OSWER No. 9355.7-03B-P.

15. USEPA, 2003, List of Drinking Water Contaminants and MCLs, 10 pp.

16. USEPA, August 2003, Superfund Lead-Contaminated Residential Sites Handbook, OSWER No. 9285.7-50, http://www.epa.gov/superfund/programs/lead/products/handbook.pdf.

17. USEPA, 2004, IRIS.

ATTACHMENT J

Site Inspection Check Form and Photographs

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Palmetto Recycling	**Date of inspection: 04/14/2004**
Location and Region: Columbia, SC; Region 4	**EPA ID: SCD037398120**
Agency, office, or company leading the five-year review: SCDHEC	**Weather/temperature: 62°; Partly cloudy**

Remedy Includes: (Check all that apply)

- ▯ Landfill cover/containment
- ▯ Access controls
- ▯ Institutional controls
- ▯ Groundwater pump and treatment
- ▯ Surface water collection and treatment
- ▯▯Other__Excavation/Soil cover_____
- ▯ Monitored natural attenuation
- ▯ Groundwater containment
- ▯ Vertical barrier walls

Attachments: ▯ Inspection team roster attached ▯ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _Yvonne Jones_____ ___RPM_____ __04/12/2004
   Name Title Date
   Interviewed ▯ at site ▯ at office ▯▯by phone Phone no. 404-562-8793_
   Problems, suggestions; ▯ Report attached _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed ▯ at site ▯ at office ▯ by phone Phone no. _____
   Problems, suggestions; ▯ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency __SCDHEC_____
Contact __Keisha D. Long_____ Environmental Engr Assoc _____ 803-896-4073
Name Title Date Phone no.
Problems; suggestions; ▯ Report attached _____

Agency _SCDHEC_____
Contact __Mihir Mehta, P.E._____ Environmental Engr 04/12/2004 803-896-4088
Name Title Date Phone no.
Problems; suggestions; ▯ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ▯ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ▯ Report attached _____

4. **Other interviews** (optional) ▯ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - ☐ O&M manual ☐ Readily available ☐ Up to date ☐N/A
   - ☐ As-built drawings ☐ Readily available ☐ Up to date ☐N/A
   - ☐ Maintenance logs ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** ☐ Readily available ☐ Up to date ☐N/A
   - ☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

3. **O&M and OSHA Training Records** ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit ☐ Readily available ☐ Up to date ☐N/A
   - ☐ Effluent discharge ☐ Readily available ☐ Up to date ☐N/A
   - ☐ Waste disposal, POTW ☐ Readily available ☐ Up to date ☐N/A
   - ☐ Other permits_____ ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

5. **Gas Generation Records** ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

6. **Settlement Monument Records** ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

7. **Groundwater Monitoring Records** ☐ Readily available ☐☐Up to date ☐N/A

   Remarks_____

8. **Leachate Extraction Records** ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

9. **Discharge Compliance Records**
   - ☐ Air ☐ Readily available ☐ Up to date ☐N/A
   - ☐ Water (effluent) ☐ Readily available ☐ Up to date ☐N/A

   Remarks_____

10. **Daily Access/Security Logs** ☐ Readily available ☐ Up to date ☐N/A

    Remarks_____

IV. O&M COSTS

1. **O&M Organization**
   ▯ State in-house ▯ Contractor for State
   ▯▯PRP in-house ▯ Contractor for PRP
   ▯ Federal Facility in-house▯ Contractor for Federal Facility
   ▯ Other_____
   _____

2. **O&M Cost Records**
   ▯ Readily available ▯ Up to date
   ▯ Funding mechanism/agreement in place
   Original O&M cost estimate_____ ▯ Breakdown attached

   Total annual cost by year for review period if available

   From_____ To_____ _____ ▯ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ ▯ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ ▯ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ ▯ Breakdown attached
   Date Date Total cost
   From_____ To_____ _____ ▯ Breakdown attached
   Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: _____
   _____
   _____
   _____
   _____
   _____

V. ACCESS AND INSTITUTIONAL CONTROLS ▯ Applicable ▯▯ N/A

A. Fencing

1. **Fencing damaged** ▯ Location shown on site map ▯ Gates secured ▯N/A
   Remarks_____
   _____

B. Other Access Restrictions

1. **Signs and other security measures** ▯ Location shown on site map ▯N/A
   Remarks_____
   _____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☐N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☐N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____
Frequency _____
Responsible party/agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ☐N/A
Reports are verified by the lead agency ☐ Yes ☐ No ☐N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐N/A
Violations have been reported ☐ Yes ☐ No ☐N/A
Other problems or suggestions: ☐ Report attached

_____
_____
_____
_____

2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☐N/A
Remarks_____
_____
_____

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☐No vandalism evident
Remarks_____
_____

2. **Land use changes on site** ☐N/A
Remarks_____
_____

3. **Land use changes off site** ☐N/A
Remarks_____
_____

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☐Roads adequate ☐ N/A
Remarks_____
_____

B. Other Site Conditions

Remarks _____

VII. LANDFILL COVERS ▯ Applicable ▯N/A

VIII. VERTICAL BARRIER WALLS ▯ Applicable ▯N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ▯Applicable ▯N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ▯ Applicable ▯N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
▯ Good condition ▯ All required wells properly operating ▯ Needs Maintenance ▯ N/A
Remarks_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
▯ Good condition ▯ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
▯ Readily available ▯ Good condition ▯ Requires upgrade ▯ Needs to be provided
Remarks_____

B. Surface Water Collection Structures, Pumps, and Pipelines ▯ Applicable ▯N/A

1. **Collection Structures, Pumps, and Electrical**
▯ Good condition ▯ Needs Maintenance
Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
▯ Good condition ▯ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
▯ Readily available ▯ Good condition ▯ Requires upgrade ▯ Needs to be provided
Remarks_____

C. Treatment System ▯ Applicable ▯N/A

1. **Treatment Train** (Check components that apply)
   ▯ Metals removal ▯ Oil/water separation ▯ Bioremediation
   ▯ Air stripping ▯ Carbon adsorbers
   ▯ Filters_____
   ▯ Additive (*e.g.*, chelation agent, flocculent)_____
   ▯ Others_____
   ▯ Good condition ▯ Needs Maintenance
   ▯ Sampling ports properly marked and functional
   ▯ Sampling/maintenance log displayed and up to date
   ▯ Equipment properly identified
   ▯ Quantity of groundwater treated annually_____
   ▯ Quantity of surface water treated annually_____
   Remarks_____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ▯ N/A ▯ Good condition ▯ Needs Maintenance
   Remarks_____

3. **Tanks, Vaults, Storage Vessels**
   ▯ N/A ▯ Good condition ▯ Proper secondary containment ▯ Needs Maintenance
   Remarks_____

4. **Discharge Structure and Appurtenances**
   ▯ N/A ▯ Good condition ▯ Needs Maintenance
   Remarks_____

5. **Treatment Building(s)**
   ▯ N/A ▯ Good condition (esp. roof and doorways) ▯ Needs repair
   ▯ Chemicals and equipment properly stored
   Remarks_____

6. **Monitoring Wells** (pump and treatment remedy)
   ▯ Properly secured/locked ▯ Functioning ▯ Routinely sampled ▯ Good condition
   ▯ All required wells located ▯ Needs Maintenance ▯ N/A
   Remarks_____

D. Monitoring Data

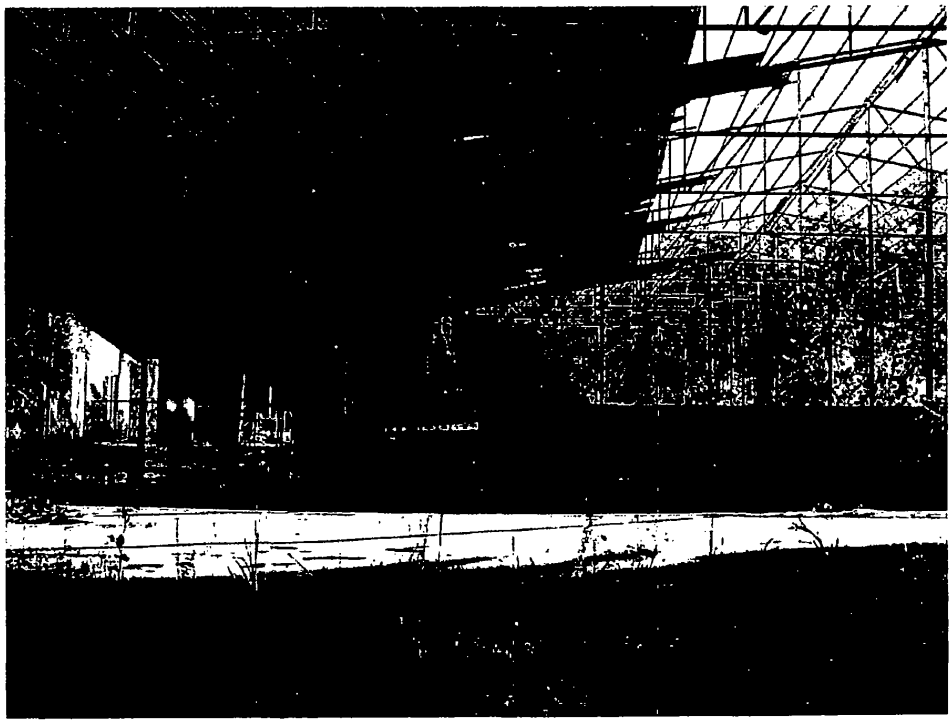
1. Monitoring Data
   ▯Is routinely submitted on time ▯ Is of acceptable quality

2. Monitoring data suggests: No plume onsite
   ▯ Groundwater plume is effectively contained ▯ Contaminant concentrations are declining

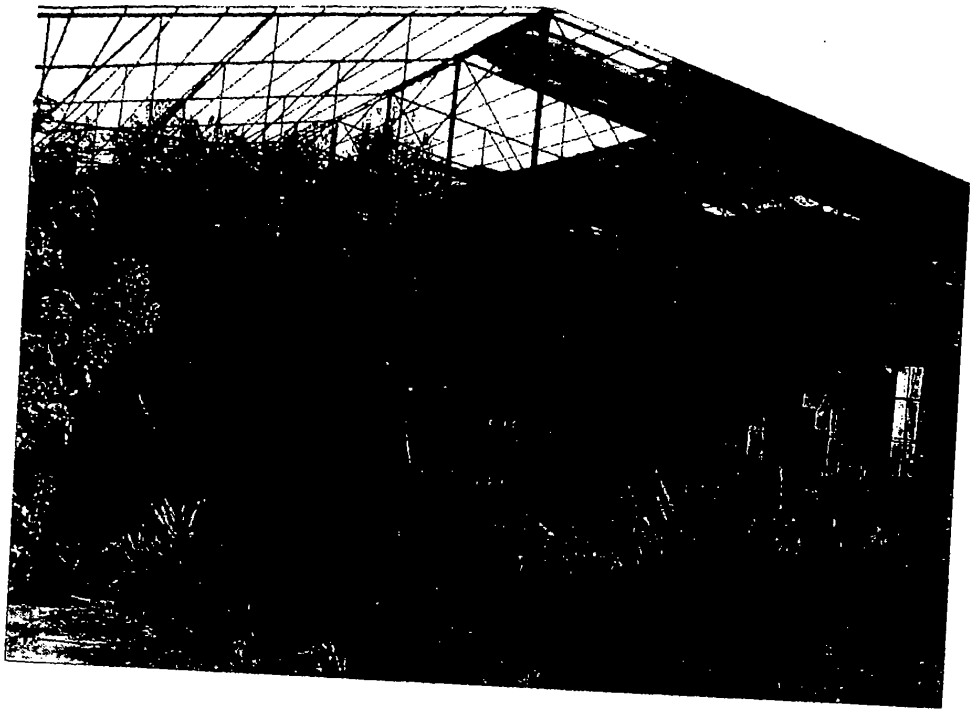
D. Monitored Natural Attenuation			
1.	**Monitoring Wells** (natural attenuation remedy) ☐ Properly secured/locked ☐Functioning ☐Routinely sampled ☐Good condition ☐All required wells located ☐ Needs Maintenance ☐ N/A Remarks_____		

X. OTHER REMEDIES
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS	
A.	**Implementation of the Remedy**
	The cleanup goals established in the Record of Decision for soil have been met. The long-term protectiveness of the remedial action (excavation/soil cover) was verified by continued monitoring of groundwater to confirm that the remedy was effective at protecting human health and the environment. Current groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 parts per billion (ppb).
B.	**Adequacy of O&M**
	Current groundwater monitoring indicates that the groundwater concentrations for lead are below the health-based level of 15 parts per billion (ppb).
C.	**Early Indicators of Potential Remedy Problems**
	Not Applicable
D.	**Opportunities for Optimization**
	Not Applicable



Shell of the Palmetto Recycling, Inc. building. Koon Store Road is to the left



Shell of the Palmetto Recycling, Inc. building. Koon Store Road is to the right

Residence across the street (Koon Store Road) from the Site

Monitoring wells at the Site