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Mr. Reinhard Knerr, Paducah Site Lead
Portsmouth/Paducah Project Office
U.S. Department of Energy
P.O. Box 1410
Paducah, Kentucky 42002-1410

Dear Mr. Knerr:

DE-AC30-10CC40020: Deliverable No. 170—*Uranium Enrichment Toxic Substances Control Act Federal Facilities Compliance Agreement Quarterly Progress Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, April 1 through June 30, 2012, PAD-SO-0044/V2*

Enclosed is the *Uranium Enrichment Toxic Substances Control Act Federal Facilities Compliance Agreement Quarterly Progress Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, April 1 through June 30, 2012, PAD-SO-0044/V2* (UE TSCA FFCA). U.S. Department of Energy formatting comment received by e-mail August 3, 2012, instructing LATA Environmental Services of Kentucky, LLC, to check font on the identified flow rate for the third sample has been incorporated.

This final UE TSCA FFCA Quarterly Progress Report is a shelf document that is required to be available for U.S. Environmental Protection Agency inspection. The information within this report will be included in the 2012 UE TSCA FFCA Annual Compliance Report.

If you have any questions, please contact Ed King at (270) 441-5152.

Sincerely,

LATA Environmental Services of Kentucky, LLC

A handwritten signature in black ink, appearing to read "MJD", is written over the name and title of Mark J. Duff.

Mark J. Duff
Paducah Project Manager

Enclosure

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**Uranium Enrichment
Toxic Substances Control Act
Federal Facilities Compliance Agreement
Quarterly Progress Report for the
Paducah Gaseous Diffusion Plant, Paducah, Kentucky
April 1 through June 30, 2012**



This document is approved for public release per review by:


LATA Kentucky Classification Support

8-6-2012
Date

**Uranium Enrichment
Toxic Substances Control Act
Federal Facilities Compliance Agreement
Quarterly Progress Report for the
Paducah Gaseous Diffusion Plant, Paducah, Kentucky
April 1 through June 30, 2012**

Date Issued—August 2012

Prepared for the
U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

LATA ENVIRONMENTAL SERVICES OF KENTUCKY, LLC
managing the
Environmental Remediation Activities at the
Paducah Gaseous Diffusion Plant
under contract DE-AC30-10CC40020

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ACRONYMS

BEJ	best engineering judgment
<i>CFR</i>	<i>Code of Federal Regulations</i>
CY	calendar year
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FFCA	Federal Facilities Compliance Agreement
NESHAP	National Emission Standard for Hazardous Air Pollutants
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
TSCA	Toxic Substances Control Act
UE	uranium enrichment

1. INTRODUCTION

The Uranium Enrichment (UE) Toxic Substances Control Act (TSCA) Federal Facilities Compliance Agreement (FFCA) signed by U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) on February 20, 1992, and modified in 1997, requires quarterly reports that summarize progress toward completing polychlorinated biphenyl (PCB)-related compliance measures. These measures include troughing, air sampling, process lubrication oil removal, spill cleanup, and disposal. The quarterly reports will be maintained at the DOE Site Office and available to EPA, upon request, 45 days following the end of the quarter. The quarterly reports are required to be included in DOE's Annual Compliance Agreement Report. The following summaries satisfy the UE TSCA FFCA quarterly reporting requirements for April 1 through June 30, 2012.

2. INTERIM MEASURES

2.1 AIR SAMPLING

2.1.1 Requirements

Attachment I, Section 1 (D), of the UE TSCA FFCA states the following:

Air Sampling – Consistent with DOE's monitoring at the facilities, PCB air sampling will be continued in process buildings with motor exhaust systems. At least 5 samples will be taken per process building per year. For each of these buildings, samples will be taken quarterly every calendar year, at least 30 days apart, with an additional set of samples taken sometime during the year. For each periodic (annual) air monitoring activity in a building, there are two kinds of sampling sites: best engineering judgment (BEJ) selected sites and randomly selected sites. The same BEJ sites may be selected for more than one monitoring period. The randomly selected sites shall be different from the BEJ sites and shall be newly selected for each periodic monitoring activity according to the attached guidance provided in the appended "Selection of Random Sampling Sites." It would be a rare coincidence for the same randomly selected location in the same building to be sampled in more than one periodic monitoring activity. DOE shall report quarterly to the EPA any PCB concentrations greater than 0.5 micrograms per cubic meter measured from any air-monitoring sampler at any location. Upon receipt of any such measurement data, EPA will contact DOE to address further monitoring requirements and any other required actions. Should EPA conclude that air sampling results produced pursuant to this Agreement so warrant, EPA and DOE shall meet and shall agree upon additional protective measures to be taken by DOE.

2.1.2 Work Completion Date

Work must be complete one year after facility shutdown.

2.1.3 Activity for this Quarter

The UE TSCA FFCA requires that PCB air sampling be conducted in process buildings with motor exhaust duct ventilation systems. These buildings include the C-331, C-333, C-335, and C-337 process buildings at the Paducah facility. At least five samples are required to be taken per building per year; at least one of the five samples will be taken at a BEJ selected site, with the remainder of the sites to be selected randomly. For each of the buildings, the samples must be taken quarterly every calendar year (CY), at least 30 days apart. DOE is required to report quarterly to EPA any PCB concentrations greater than $0.5 \mu\text{g}/\text{m}^3$ measured from any air-monitoring sampler at any location.

Air samples for the second quarter were collected April 10, 2012. The results of all the samples collected for the second quarter of CY 2012 are shown in Table 1. The quarterly sample sets were obtained more than 30 days apart, as required. The sampling was conducted as described in National Institute for Occupational Safety and Health 5503. The volumes and flow rates, as noted, were necessary to achieve the detection limit required by the UE TSCA FFCA. All samples met the required detection limit and sample results did not exceed the UE TSCA FFCA reporting level of $0.5 \mu\text{g}/\text{m}^3$.

Table 1. Second Quarter CY 2012 TSCA FFCA Air Sampling Results

Sample Numbers	Sample Date	Building	Floor	Sample Coordinates	Method of Selection	Results* ($\mu\text{g}/\text{m}^3$)	Pump Flow Rate (liters/minute)	Air Volume Sampled (liters)
PCB12-AIR-03-01	04/10/12	C-331	CELL	4, 54 S of C-19	Random	PCBs not detected above laboratory reporting limits	1.01	537
PCB 12-AI R-03-02	04/10/12	C-333	CELL	125,73 NW of Wa-25	Random	PCBs not detected above laboratory reporting limits	1.01	532
PCB 12-AI R-03-03	04/10/12	C-333	GROUND	W of P-19	BEJ	PCBs not detected above laboratory reporting limits	1.02	538
PCB12-AIR-03-04	04/10/12	C-335	CELL	24, 76 N of K-26	Random	PCBs not detected above laboratory reporting limits	1.01	536
PCB 12-AI R-03-05	04/10/12	C-337	CELL	14, 134 SE of D-4	Random	PCBs not detected above laboratory reporting limits	1.01	550

*Limit of detection $0.01 \mu\text{g}/\text{m}^3$

3. COMPLIANCE MEASURES

3.1 PROCESS LUBRICATION OIL REMOVAL

Section 3.1 does not apply to Paducah Gaseous Diffusion Plant.

3.2 SPILL CLEANUP

3.2.1 Requirements

Attachment I, Section 2 (C), of the UE TSCA FFCA states the following:

Spill Cleanup – PCBs and PCB contaminated oil that may leak onto building floors shall be cleaned up in accordance with the EPA Spill Cleanup Policy. For spills >500 parts per million (ppm) PCBs, this shall consist of cleanup to 10 µg PCB/100 cm² with 95% confidence, based on the statistical sampling approach set forth in Attachment III, which shall be used within the spill area to verify cleanup to appropriate levels or, alternatively, to 100 µg PCB/100 cm² with 95% confidence, based on the statistical sampling approach set forth in Attachment III, which shall be used within the spill area to verify cleanup to appropriate levels followed by application of an appropriate sealant, such as a 2-layered epoxy type paint. All spill cleanups will be initiated within 24 hours of discovery, excluding historic spills which are defined as PCB stains resulting from spills which have occurred prior to the effective date of this Agreement. Historic spills may be left in place until demolition of the facility, provided public access to the facility is restricted to prevent unauthorized entry. In the event that a new spill should occur on a historic spill site, and the appropriate standard specified above cannot be met after best efforts to meet the standard are made, DOE may request that EPA consider the efforts DOE has made and classify the spill area as a historic spill for purposes of the cleanup under this Agreement.

3.2.2 Work Completion Date

None listed.

3.2.3 Activity for this Quarter

Twenty-three gasket spill sites were pending post-cleanup verification at the beginning of this reporting period. Three gasket spills to building floors were identified during the reporting period. No gasket spill sites were closed during this reporting period by verification sampling data. Twenty-six gasket spill sites were pending post-cleanup verification at the end of this reporting period. PCB spill cleanup progress for CY 2012 is illustrated in Figure 1.

All PCB spills identified were high concentration PCB spills (i.e., from a source of 500 ppm or greater in PCB concentration). Cleanup of each identified spill site was initiated within 24 hours, in accordance with the UE TSCA FFCA. Clearly visible signs have been posted at each spill site advising personnel to avoid the area in order to minimize the spread of contamination and the potential for human exposure. The DOE remediation contractor maintains the cleanup documentation, and the records are available for inspection.

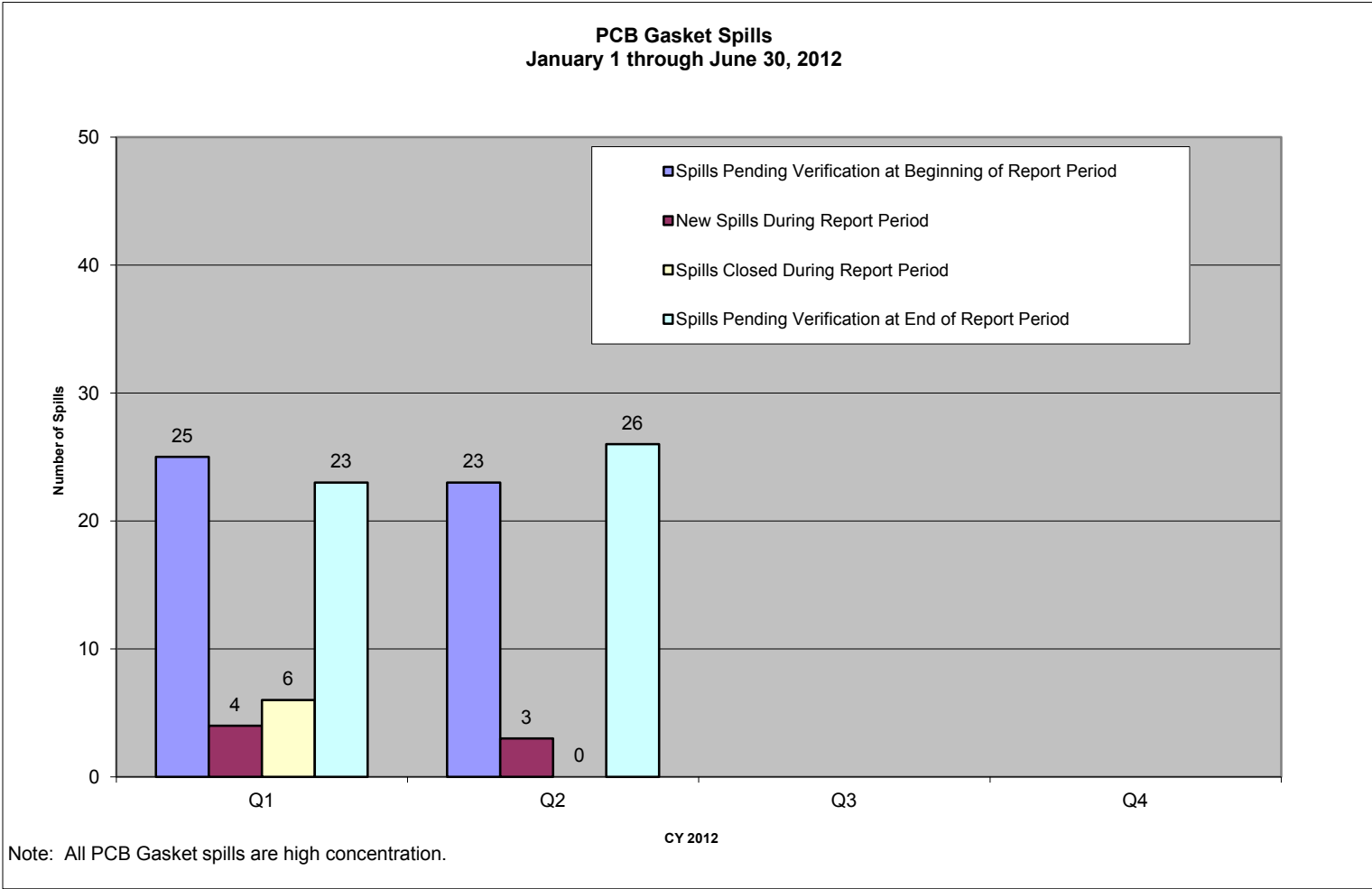


Figure 1. Quarterly Summary of PCB Gasket Spills

3.3 ELECTRICAL CABLES AND ASSOCIATED EQUIPMENT

3.3.1 Requirements

Attachment I, Section 2 (F), of the UE TSCA FFCA states the following:

Electrical Cables and Associated Equipment – PCB contaminated electrical cables and associated equipment shall be removed from the facilities upon decommissioning, unless they require maintenance, servicing or replacement during plant operations, or gasket removal. If maintained or serviced, the cables, cable trays, and associated equipment shall be removed or cleaned up to 10 µg PCB/100 cm² or 100 µg PCB/100 cm² with 95% confidence followed by application of appropriate sealant.

3.3.2 Work Completion Date

Work must be complete upon demolition.

3.3.3 Activity for this Quarter

No Requests for Disposal forms for cables, cable trays, and associated equipment were received, and no maintenance activities were performed during the second quarter of CY 2012.

3.4 DISPOSAL

3.4.1 Requirements

Attachment I, Section 2 (G) of the UE TSCA FFCA states the following:

Disposal – All waste PCBs, PCB Items and ventilation ducts (and associated flanges), electrical cables and associated equipment contaminated with PCBs which were not decontaminated pursuant to Sections 2(C), 2(E), and 2(F) of this Attachment, shall be disposed of in accordance with 40 *CFR* § 761.60. All waste PCBs and PCB Items contaminated with hazardous waste and/or asbestos shall be disposed of in accordance with TSCA, NESHAP [National Emission Standard for Hazardous Air Pollutants] and RCRA [Resource Conservation and Recovery Act] requirements, and/or alternate disposal methods approved by EPA.

3.4.2 Work Completion Date

- Nonradioactive PCBs and PCB Items—within one year after the date the materials were placed into storage for disposal in accordance with Section 2(D) of the attachment of the UE TSCA FFCA.
- Co-contaminated, radioactive PCBs, and PCB items stored for disposal—within 10 years of work initiation date for materials already in storage; 2016, or within 10 years of storage, whichever date is earlier, for materials placed into storage after the effective date of the UE TSCA FFCA.
- Ventilation gaskets, ductwork and flanges, electrical cable, associated equipment, and historic spill material—2016, or within 10 years of work initiation date, whichever date is earlier.

3.4.3 Activity for this Quarter

During the second quarter CY 2012, 373 kg of PCB waste was shipped off-site for disposal on one manifest, and forty-one Certificates of Disposal were received. The PCB waste disposal summary for this reporting period is shown in Table 2. Waste generated as a result of site cleanup and operations are included in this report including Comprehensive Environmental Response, Compensation, and Liability Act waste, which is provided for information only and is intended to show progress toward removal of PCBs at Paducah.

**Table 2. PCB Waste Shipped Off-Site Disposal Activities:
Waste Shipped Off-Site and Certificates of Disposal Received
April 1 through June 30, 2012**

PCB Item Count	Description	Weight (kg)	Earliest Date Removed from Service	Date Shipped	Manifest	Shipment No.	Disposal Location	Disposal Method	Disposal Date	CD Rec'd
1	Sealand	11,494	6/28/1990	7/18/2008	001754634JJK	9036-17-0002	EnergySolutions	Landfill	3/20/2012	4/19/2012
1	Sealand of PCB Contaminated Materials; Split with 8007-06-0872	9450	6/22/1990	7/22/2008	001754635JJK	9036-17-0003	EnergySolutions	Landfill	3/20/2012	4/19/2012
1	Sealand of PCB Contaminated Materials	10,762	11/5/1990	7/22/2008	001754636JJK	9036-17-0004	EnergySolutions	Landfill	3/20/2012	4/19/2012
6	ST-90 Boxes	7963	7/14/1999	7/25/2008	001754637JJK	9036-17-0005	EnergySolutions	Landfill	3/20/2012	4/19/2012
2	Sealands (Drums of PCB Contaminated Materials)	10,913	9/12/1990	7/29/2008	001754638JJK	9036-17-0006	EnergySolutions	Landfill	3/20/2012	4/19/2012
1	Sealand (Drums of PCB Contaminated Materials)	9752	6/28/1990	7/29/2008	001754639JJK	9036-17-0007	EnergySolutions	Landfill	3/20/2012	4/19/2012
2	Sealands w/PCB (Capacitors & Ballasts)	12,857	9/27/1989	12/5/2008	001754669JJK	9036-17-0009	EnergySolutions	Landfill	3/20/2012	4/19/2012
1	Sealand of Transformers, Capacitors, Ballasts	9290	06/21/06	09/05/2009	001754773JJK	9306-17-0011	EnergySolutions	Landfill	3/20/2012	4/19/2012
1	Sealand of Transformers and Crushed Drums	3447	12/11/09	12/18/09	001754913JJK	9306-17-0013	EnergySolutions	Landfill	3/20/2012	4/19/2012
1	Intermodal of PCB Debris - LATR-003	1941	6/25/2010	8/20/2010	001754993JJK	6228-13-0002	EnergySolutions	Landfill	10/7/2010	6/28/2012
2	Intermodals of PCB Debris - LATR-002	10,279	5/11/10	8/27/2010	001754991JJK	6228-13-0001	EnergySolutions	Landfill	10/7/2010	6/28/2012
1	Intermodal of MLLW/TSCA Waste - LATR-009	4500	8/19/10	9/24/2010	001754996JJK	9501-15-0001	EnergySolutions	Landfill	12/9/2010	6/28/2012
1	Intermodal of PCB/LLW - LATR-011	5425	7/9/10	10/8/2010	001754998JJK	6228-15-0001	EnergySolutions	Landfill	12/2/2010	6/28/2012
7	Intermodals of PCB/LLW - LATR-011	34,709	7/16/10	10/8/2010	001754997JJK	6228-13-0003	EnergySolutions	Landfill	12/2/2010	6/28/2012
1	Intermodal of PCB/LLW-LATR-014	2268	09/09/10	12/10/10	006841504JJK	6228-13-004	EnergySolutions	Landfill	4/11/2011	6/28/2012
2	Intermodals of PCB/Asbestos Debris - LATR-015	13,807	7/12/10	1/31/2011	006841505JJK	6228-13-0005U	EnergySolutions	Landfill	5/5/2011	6/28/2012
1	CATDOG#3 Drum of PCB/LLW Debris	111	6/17/10	3/28/2011	006841521JJK	6228-15-0002	EnergySolutions	Landfill	6/16/2011	6/28/2012
2	CATDOG#3 Drums of PCB Waste for Treatment	66	6/23/10	3/28/2011	006841520JJK	9501-17-0001	EnergySolutions	Landfill	7/22/2011	6/28/2012

**Table 2. PCB Waste Shipped Off-Site Disposal Activities:
Waste Shipped Off-Site and Certificates of Disposal Received
April 1 through June 30, 2012 (Continued)**

PCB Item Count	Description	Weight (kg)	Earliest Date Removed from Service	Date Shipped	Manifest	Shipment No.	Disposal Location	Disposal Method	Disposal Date	CD Rec'd
8	LATA Kentucky CATDOG#4 Drums of PCB Ballasts Formally 9501-17-0002	1535	1/10/01	5/31/2011	006841532JJK	6228-15-0006	EnergySolutions	Landfill	6/22/2011	6/6/2012
7	LATA Kentucky CATDOG#4 ST-90s of PCB Debris	10,623	3/11/11	5/31/2011	006841536JJK	6228-15-0005U	EnergySolutions	Landfill	6/22/2011	6/6/2012
1	LATA Kentucky CATDOG#4 Drum of PCB Solids	21	6/1/01	5/31/2011	006841533JJK	6228-15-0004	EnergySolutions	Landfill	6/22/2011	6/6/2012
9	LATA Kentucky CATDOG#4 Drums of LLW/PCB Bulk Product for Treatment. Formally 9501-07-0004	795	8/16/2010	5/31/2011	006847530JJK	9501-15-0003	EnergySolutions	Landfill	5/1/2012	6/28/2012
3	ST-90s of RCRA/TSCA Debris	2789	9/7/10	6/10/2011	006841540JJK	9501-02-0004U	EnergySolutions	Landfill	6/27/2011	6/28/2012
1	Intermodal of PCB/LLW Waste - LATR-021	5461	11/17/10	6/17/2011	006841537JJK	6228-15-0003U	EnergySolutions	Landfill	9/25/2011	6/28/2012
7	Intermodal of PCB/LLW - LATR-022	36,296	4/20/11	6/29/2011	006841542JJK	6228-15-0007U	EnergySolutions	Landfill	9/27/2011	6/28/2012
3	Intermodals of PCB/LLW Waste - LATR-023	11,566	4/13/11	7/14/2011	006841544JJK	6228-13-0006U	EnergySolutions	Landfill	9/26/2011	6/28/2012
5	Intermodals of PCB/LLW Waste - LATR-023	19,722	5/16/11	7/14/2011	006841543JJK	6228-15-0008U	EnergySolutions	Landfill	9/2/2011	6/28/2012
1	ST-90 of PCB Debris	522	7/16/10	7/26/2011	006841547JJK	6228-15-0009	EnergySolutions	Landfill	8/30/2011	6/28/2012
1	ST-90 of PCB Debris	1700	3/24/11	7/29/2011	006841552JJK	6228-15-0010	EnergySolutions	Landfill	8/30/2011	6/28/2012
1	ST-90 of PCB/LLW	414	4/3/11	8/26/2011	006841554JJK	6228-15-0011U	EnergySolutions	Landfill	9/27/2011	6/28/2012
2	Intermodals of PCB Remediation Debris	8582	7/18/11	9/16/2011	006841569JJK	6228-15-0012U	EnergySolutions	Landfill	9/26/2011	6/28/2012
1	Intermodal of PCB Remediation Debris	2540	8/9/11	9/16/2011	006841570JJK	6228-15-0013U	EnergySolutions	Landfill	9/27/2011	6/28/2012
14	Drums PCB Ballasts and Debris-CATDOG #5	1679	1/7/10	9/30/2011	006841590JJK	6228-15-0015	EnergySolutions	Landfill	10/19/2011	6/28/2012
6	Drums Hazardous Waste Liquids, Waste Flammable Liquids, and Waste Corrosive Liquids	389	3/12/2003	2/15/2012	006841597JJK	DSSI-12-016	DSSI	Alternate Thermal Treatment	3/15/2012 3/15/2012 3/23/2012 3/23/2012	4/19/2012 3/26/2012 4/18/2012 4/19/2012
2	Drums RCRA Hazardous PCB Solids	17	5/29/2003	2/15/2012	006841599JJK	DSSI-12-015	DSSI	Alternate Thermal Treatment	3/15/2012 3/15/2012	4/19/2012 3/26/2012
7	Six ST-90s and one Sealand of PCB Contaminated Debris	9158	5/28/08	3/23/2012	006841602JJK	6228-15-0016	EnergySolutions	Landfill	3/29/2012	6/28/2012

**Table 2. PCB Waste Shipped Off-Site Disposal Activities:
Waste Shipped Off-Site and Certificates of Disposal Received
April 1 through June 30, 2012 (Continued)**

PCB Item Count	Description	Weight (kg)	Earliest Date Removed from Service	Date Shipped	Manifest	Shipment No.	Disposal Location	Disposal Method	Disposal Date	CD Rec'd
2	Drums of PCB/LLW Debris	373	8/12/11	5/15/2012	006841604JJK	6228-15-0017	EnergySolutions	Landfill	5/21/2012	6/28/2012

CD = Certificate of Disposal

DSSI/Perma-Fix = Diversified Scientific Services, Inc./Perma-Fix

LLW = low level waste

PCB = polychlorinated biphenyl

PPE = personal protective equipment

All PCB waste listed is PCB/radioactive waste.

Weights and volumes are taken from the Uniform Hazardous Waste Manifests.

Summary of Waste Disposal Activities for CY 2012 Second Quarter

Total Items Shipped for Treatment/Disposal:	2 Items (1 manifest)
Total Volume Shipped for Treatment/Disposal:	15 ft³
Total Weight Shipped for Treatment/Disposal:	373 kg
Total Items Disposed of:	115 Items (41 CDs: 273,216 kg; 44,521 ft³)