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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

CO NOV13 1:42PM

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, July 1 through September 30, 2012, PAD-SO-0044/V3**

Reference: Letter from R. Seifert to M. Duff, "Comments on Uranium Enrichment Toxic Substances Control Act Federal Facilities Compliance Agreement Quarterly Progress Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, July 1 through September 30, 2012," PPPO-02-1709509-13, dated November 1, 2012

Enclosed is the *Uranium Enrichment Toxic Substances Control Act Federal Facilities Compliance Agreement Quarterly Progress Report for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, July 1 through September 30, 2012, PAD-SO-0044/V3 (UE TSCA FFCA)*. U.S. Department of Energy formatting comments received per the referenced letter have 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

Mark J. Duff  
Paducah Project Manager

Enclosure

cc:

DMC, Kevil

e-copy:

[kim.crenshaw@lex.doe.gov](mailto:kim.crenshaw@lex.doe.gov)

[rachel.blumenfeld@lex.doe.gov](mailto:rachel.blumenfeld@lex.doe.gov)

[reinhard.knerr@lex.doe.gov](mailto:reinhard.knerr@lex.doe.gov)


[rob.seifert@lex.doe.gov](mailto:rob.seifert@lex.doe.gov)

[william.creech@lex.doe.gov](mailto:william.creech@lex.doe.gov)

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



This document is approved for public release per review by:

  
\_\_\_\_\_  
LATA Kentucky Classification Support

11-8-2012  
Date

**PAD-SO-0044/V3**

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

Date Issued—November 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 July 1 through September 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 third quarter were collected July 10, 2012. The results of all the samples collected for the third 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. Third 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-04-01	07/10/12	C-331	CELL	22, 48 S of J-17	Random	PCBs not detected above laboratory reporting limits	1.03	539
PCB12-AIR-04-02	07/10/12	C-333	CELL	68, 92 SW of Mb-18	Random	PCBs not detected above laboratory reporting limits	1.05	547
PCB12-AIR-04-03	07/10/12	C-335	GROUND	18, 6 At H-3	Random	PCBs not detected above laboratory reporting limits	1.08	559
PCB12-AIR-04-04	07/10/12	C-335	GROUND	At C-22	BEJ	PCBs not detected above laboratory reporting limits	1.07	554
PCB12-AIR-04-05	07/10/12	C-337	GROUND	78, 36 At Na-37	Random	PCBs not detected above laboratory reporting limits	1.00	552

\* 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 cm<sup>2</sup> 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 cm<sup>2</sup> 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-six gasket spill sites were pending post-cleanup verification at the beginning of this reporting period. Five gasket spills to building floors were identified during the reporting period. Eight gasket spill sites were closed during this reporting period by verifying sampling data. Twenty-three 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.

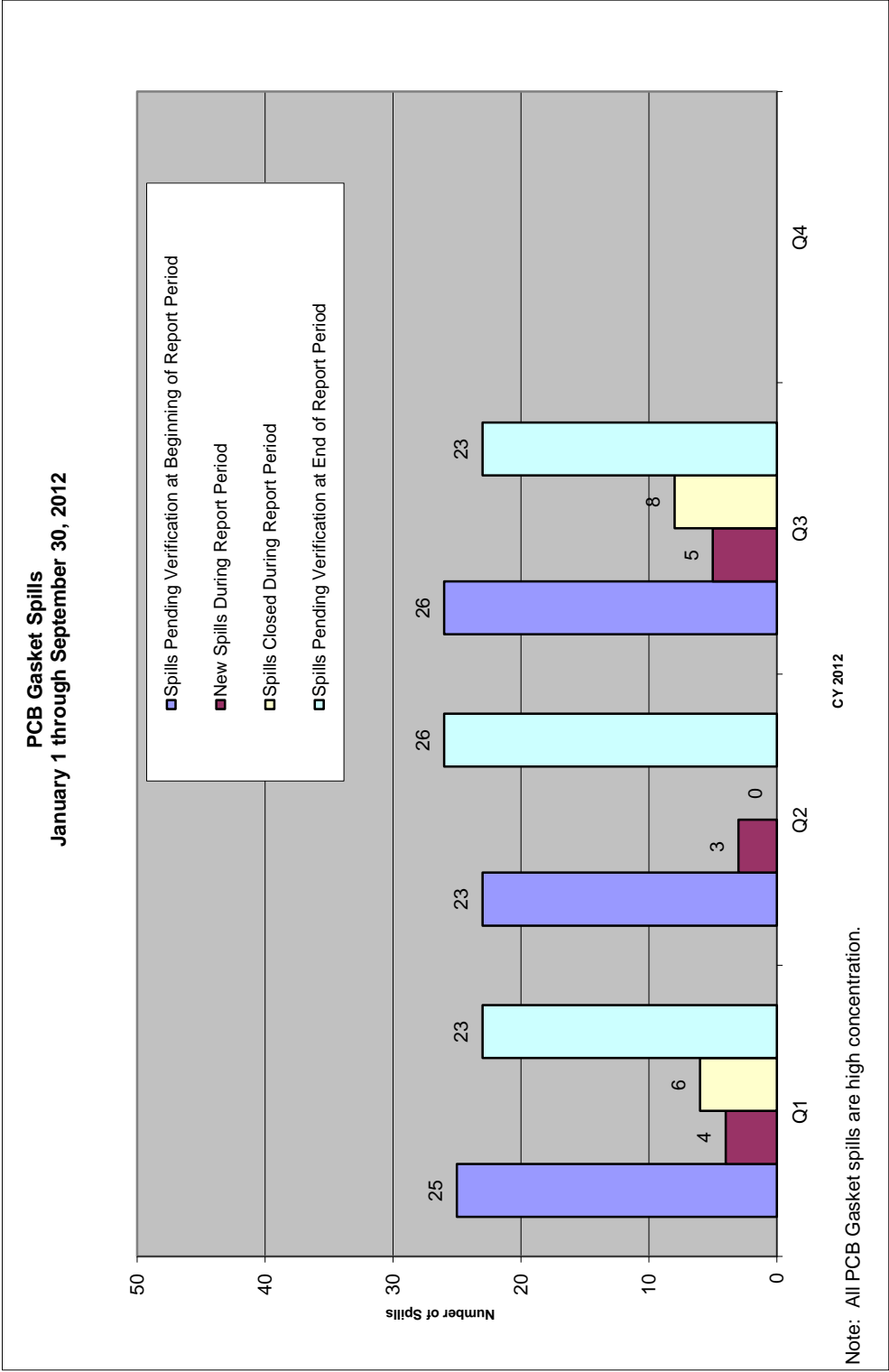


Figure 1. Quarterly Summary of PCB Gasket Spills

### **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  $\mu\text{g}$  PCB/100  $\text{cm}^2$  or 100  $\mu\text{g}$  PCB/100  $\text{cm}^2$  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 third 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 third quarter CY 2012, 27,699 kg (15,655 kg from PGDP and 12,044 from Toxco Inc.) of PCB waste was shipped for disposal on ten manifests (eight manifests from PGDP and two manifests from Toxco), and eight 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  
July 1 through September 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 No. of Items Disposed
5	PCB ballasts, ductwork with gaskets, RFD 118418-01, 118650-01, 118650-02	2686	12/8/2004	3/28/2011	006841518JJK	9501-02-0002	EnergySolutions	Landfill	6/9/2011	7/10/2012
1	Bearing, motors, gear boxes, pipe, PPE, pallets	1,780	6/21/2011	9/16/2011	006841571JJK	6228-15-0014U	EnergySolutions	Landfill	9/27/2011	7/10/2012 5
24	17 Drums and 7 boxes of PCB capacitors for decontamination and disposal	13356	10/13/2009	2/7/2012	<i>See Note 1</i>	TOX1004	Toxco	Research and Development for PCB Disposal	<i>See Note 2</i>	<i>See Note 2</i> 1
5 1	<b>DISPOSAL:</b>	11943		7/19/2012	001866653GBF 001866654GBF		Chemical Waste Management, Inc	Landfill	8/8/2012	8/14/2012
<i>See Note 2</i>		87		7/31/2012	005669359FLE					
8	PCB contaminated light fixtures from USEC originally in RFD 119355 and PCB contaminated capacitors from USEC light fixtures originally in RFD 119355 PCB transformers and PCB transformer oil	3493	3/29/2011	7/31/2012	005671977FLE	005671977FLE	Clean Harbors Coffeyville, KS	Decon/Metal Reclamation, Dechlorination and Incineration, Decommission	8/31/2012 9/1/2012	9/20/2012
1	PCB secondary bushings (2), one per crate, repackaged into one cargo box	3756	3/29/2011	8/17/2012	004851086FLE	NA	Clean Harbors Coffeyville, KS	Decommission	9/19/2012	9/20/2012 8
7	RCRA/TSCA liquid sample returns with flashpoints below 140 degrees Fahrenheit, PCB vent duct oil/water from trough draining	889	8/17/2011	8/31/2012	006841607JJK	DSSI-12-098	DSSI/Perma-Fix	Alternate Thermal Treatment		1

**Table 2. PCB Waste Shipped Off-Site Disposal Activities:  
Waste Shipped Off-Site and Certificates of Disposal Received  
July 1 through September 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 No. of Items Disposed
1	PCB mixed waste debris, PPE, plastic buckets, concrete rubble, plastic, paper, brush, absorbents	2059	9/20/2011	9/14/2012	006841614JJK	PDL12011	NNSS	Landfill	9/18/2012 9/25/2012	1
4	PCB debris, PPE, plastic buckets, concrete rubble, plastic, paper, brush, absorbents	4638	11/15/2011	9/24/2012	006841619JJK	PDL12014	NNSS	Landfill	9/27/2012	4
6	PCB debris, PCB door closers (drained), PCB transformers—no oil, PCB ballast/capacitor, lab waste—filter paper, plastic, boiling chips, gauze, PPE, PCB labels, empty sample bottles	503	5/20/2003	9/28/2012	006841610JJK	6228-15-0018	EnergySolutions			
3	Solid sample returns	230	12/18/2002	9/28/2012	006841611JJK	9501-02-0009	EnergySolutions			
<b>38</b>	<b>Total Shipped</b>	<b>27,699</b>								<b>8</b>
	<b>Total Disposed</b>	<b>18,513</b>								<b>21</b>

CD = Certificate of Disposal  
DSSI/Perma-Fix = Diversified Scientific Services, Inc./Perma-Fix  
LLW = low-level waste  
NNSS = Nevada National Security Site, formerly Nevada Test Site (NTS) facility in Mercury, Nevada  
PCB = polychlorinated biphenyl  
PPE = personal protective equipment  
RCRA = Resource Conservation and Recovery Act  
USEC = United States Enrichment Corporation

All PCB waste listed is PCB/radioactive waste.  
Weights and volumes are taken from the Uniform Hazardous Waste Manifests.

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

**Summary of Waste Disposal Activities for CY 2012 Third Quarter**

<b>Total Items Shipped for Treatment/Disposal:</b>	<b>38 Items [10 manifests (8 manifests from PGDP and 2 manifests from Toxco)]</b>
<b>Total Volume Shipped for Treatment/Disposal:</b>	<b>1181 ft<sup>3</sup> (see Note 3)</b>
<b>Total Weight Shipped for Treatment/Disposal:</b>	<b>27,699 kg (15,655 kg from PGDP and 12,044 from Toxco)</b>
<b>Total Items Disposed of per CDs Received:</b>	<b>21 Items (8 CDs: 18,513 kg; 1,585 ft<sup>3</sup>)</b>

**Notes:**

<sup>1</sup> Bill of Lading shipment for R&D for PCBs under 40 CFR § 761.60(j).

<sup>2</sup> Capacitors were repackaged into six containers and shipped by Toxco to CWM on 7/19/2012 under manifests 001866653GBF and 001866654GBF. Received signed manifests with management codes on 08/06/2012.

<sup>3</sup> Toxco Hazardous Waste Manifest 001866654GBF and Chemical Waste Management, Inc., Certificate of Disposal do not provide volume shipped or disposed of.