

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Alcoa Oil Spill - Removal Polrep  
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region V

**Subject:** POLREP #6  
Final PolRep  
Alcoa Oil Spill  
Z5K9  
Lafayette, IN  
Latitude: 40.4033776 Longitude: -86.8613812

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**From:** Shelly Lam, On-Scene Coordinator

**Date:** 7/5/2011

**Reporting Period:** March 29 - July 1, 2011

1. Introduction

1.1 Background

<b>Site Number:</b>	Z5K9	<b>Contract Number:</b>	
<b>D.O. Number:</b>		<b>Action Memo Date:</b>	
<b>Response Authority:</b>	OPA	<b>Response Type:</b>	Emergency
<b>Response Lead:</b>	PRP	<b>Incident Category:</b>	Removal Action
<b>NPL Status:</b>	Non NPL	<b>Operable Unit:</b>	
<b>Mobilization Date:</b>	1/14/2011	<b>Start Date:</b>	1/14/2011
<b>Demob Date:</b>	4/1/2011	<b>Completion Date:</b>	7/1/2011
<b>CERCLIS ID:</b>		<b>RCRIS ID:</b>	
<b>ERNS No.:</b>		<b>State Notification:</b>	
<b>FPN#:</b>	E11507	<b>Reimbursable Account #:</b>	

1.1.1 Incident Category

Active production facility - oil spill

1.1.2 Site Description

1.1.2.1 Location

Alcoa is a producer of primary aluminum, fabricated aluminum, and alumina, located at 3131 Main Street in Lafayette, Tippecanoe County, Indiana. Site coordinates are 40.4033776 north latitude and 86.8613812 west longitude. The Site is a 172-acre facility located in an industrial and commercial area in Lafayette.

1.1.2.2 Description of Threat

On January 14, 2011, Alcoa reported to the National Response Center (NRC # 964751) a discharge of approximately 1,600 gallons of oily press water from their facility in Lafayette, Indiana. The discharge was due to a pipe failure and hose malfunction. Oil/water mixture discharged to the storm sewer and then

flowed for approximately one mile to an outfall on Elliott Ditch. Elliott Ditch is a perennial stream that discharges into Wea Creek before flowing to the Wabash River.

### **1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results**

Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) Shelly Lam and Indiana Department of Environmental Management (IDEM) OSC Greg Carter responded to the spill on January 14th. Both OSCs observed oil flowing from the outfall into Elliott Ditch. Oil flowed approximately one mile downstream to the 18th Street Bridge, where it was contained and recovered.

Twenty-two residences on private drinking water wells were identified within 200 feet of the impacted section of the ditch. The residents were notified of the spill and were provided temporary drinking water by Alcoa. Samples were collected from 21 residential wells.

Prior ecological assessments conducted by the EPA identified six endangered species in Elliott Ditch and Wea Creek. These species include the fanshell, ring pink, rough pigtoe, pyramid pigtoe, rabbitsfoot, and bluebreast darter. EPA notified the State Trustee and Department of the Interior.

Alcoa entered into a Consent Decree in 2002 with the EPA regarding historical releases of polychlorinated biphenyls (PCB). The consent decree required investigations of Elliott Ditch and Wea Creek. PCBs were detected in surface water, sediment, and fish tissue samples. The presence of elevated levels of PCBs in fish tissues prompted a Fish Advisory for these waterways.

## **2. Current Activities**

### **2.1 Operations Section**

#### **2.1.1 Narrative**

The Alcoa facility reported a spill of approximately 1,600 gallons of oily press water on January 14, 2011. The discharge was due to a pipe failure and hose malfunction. Oil/water mixture discharged to the storm sewer and then flowed for approximately one mile to an outfall on Elliott Ditch. Elliott Ditch is a perennial stream that discharges into Wea Creek before flowing to the Wabash River. EPA and IDEM observed oil flowing from the outfall into Elliott Ditch. The oil was emulsified and appeared milky white in color.

#### **2.1.2 Response Actions to Date**

Alcoa and their consultant, Anchor QEA, collected surface water and sediment samples from Elliott Ditch from March 29 - April 1, 2011. EPA's Superfund Technical Assessment and Response Team (START) contractor conducted oversight of sampling. The purpose of the sampling event was to determine if there was any residual contamination from the oil spill that had impacted Elliott Ditch and whether such contamination was a threat to human health and the environment. EPA and Alcoa had a conference call on July 1, 2011 to discuss the results of the sampling event.

Anchor QEA collected a total of 78 sediment samples (plus 4 blind samples) and a total of 21 surface water samples (plus 2 blind samples) at six sampling stations along Elliott Ditch. One station (Station 02) was upstream of the outfall while the remaining stations were downstream of the outfall.

The sediment and surface water samples were analyzed for PCBs (congeners), Volatile Organic Compounds (VOC), Semi-volatile Organic Compounds (SVOC), and Oil & Grease. In addition, the surface water samples were analyzed for total suspended solids (TSS). A summary of analytical results is provided below.

#### **Sediment Results**

Sediment results were compared to EPA's Regional Screening Levels (RSL) for protection of groundwater as there are a number of residents along the creek who use groundwater as a drinking water source.

- Total PCB congener concentrations ranged from 0.0519 to 16.1 mg/kg, and exceeded RSLs from stations 04, 05, 06, 07, and 09.
- VOC analytical results were either non-detect or below the RSL.
- Benzo(a)anthracene concentrations exceeded the RSL in samples from all the stations. Concentrations ranged from 212 to 3,800 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ).
- Benzo(a)pyrene concentrations exceeded the RSL in samples from all the stations. Concentrations ranged from 246 to 3,630  $\mu\text{g}/\text{kg}$ .
- Benzo(b)fluoranthene concentrations exceeded the RSL in samples from all the stations. Concentrations ranged from 204 to 5,130  $\mu\text{g}/\text{kg}$ .
- Benzo(k)fluoranthene concentrations exceeded the RSL in samples from stations 02, 05, and 09. Concentrations ranged from 369 to 2,800  $\mu\text{g}/\text{kg}$ .
- Dibenz(a,h)anthracene concentrations exceeded the RSL in three samples from stations 05 and 09. Concentrations ranged from 301 to 579  $\mu\text{g}/\text{kg}$ .
- The bis(2-chloroethyl)ether concentration exceeded the RSL of 210  $\mu\text{g}/\text{kg}$  in one sample from station 02. The concentration was 1,340  $\mu\text{g}/\text{kg}$ .
- Oil & Grease concentrations ranged from 87.1 to 6,650 milligrams per kilogram (mg/kg), and was detected in samples collected from all stations.

Based on these results, there appear to be background concentrations of PCBs and SVOCs above RSLs in the sediment in Elliott Ditch based on the results from the upstream sample location (Station 02). However, PCB and Oil & Grease concentrations appeared to increase downstream above background concentrations at Stations 7 and 4, respectively.

#### **Surface Water Results**

Surface water results were compared to Indiana Water Quality Standards (WQS).

- Total PCB congener concentrations exceeded the WQS of 0.79 nanograms per liter (ng/L) in samples from all the stations. Concentrations ranged from 13.356 to 30.019 ng/L.
- All VOC analytical results were non-detect.
- All SVOC analytical results were non-detect.
- Oil & Grease results ranged from 0.967 to 2.26 milligrams per liter (mg/L).
- TSS results ranged from non-detect to 10.8 mg/L.

**2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)**

On January 14, 2011, OSC Lam issued a Notice of Federal Interest to Alcoa representatives. Alcoa agreed to take voluntary action to contain the spill and conduct cleanup. Alcoa had previously entered into a Consent Decree in 2002 with EPA to conduct investigations along Elliott Ditch and Wea Creek related to historical PCB releases.

**2.1.4 Progress Metrics**

<b>Waste Stream</b>	<b>Medium</b>	<b>Quantity</b>	<b>Manifest #</b>	<b>Treatment</b>	<b>Disposal</b>
Oil/water mixture	Liquid	174,500 gallons	Not applicable (NA)	Returned to on-site treatment system	NA

**2.2 Planning Section**

**2.2.1 Anticipated Activities**

**2.2.1.1 Planned Response Activities**

Per an agreement between EPA and IDEM, EPA will refer the Site to IDEM's Site Investigations Section, and they will determine if further action is necessary regarding the oil spill. Alcoa will continue to work with EPA's Office of Water to address PCB contamination under their Consent Decree.

**2.2.1.2 Next Steps**

Residential well sampling oversight has been referred to IDEM's Office of Water Quality, Drinking Water Branch.

**2.2.2 Issues**

None

**2.3 Logistics Section**

NA

**2.4 Finance Section**

**2.4.1 Narrative**

OSC Lam requested \$25,000 from the Oil Spill Liability Trust Fund on January 14, 2011. OSC Thomas increased the funding to \$50,000 from the Oil Spill Liability Trust Fund on January 15, 2011. An additional \$25,000 was approved on January 18th, bring the total to \$75,000.

**Estimated Costs \***

	<b>Budgeted</b>	<b>Total To Date</b>	<b>Remaining</b>	<b>% Remaining</b>
<b>Extramural Costs</b>				
TAT/START	\$40,000.00	\$39,401.00	\$599.00	1.50%
USCG MSL	\$5,000.00	\$2,000.00	\$3,000.00	60.00%
<b>Intramural Costs</b>				
USEPA - Direct	\$20,000.00	\$0.00	\$20,000.00	100.00%
USEPA - InDirect	\$10,000.00	\$0.00	\$10,000.00	100.00%
<b>Total Site Costs</b>				
	\$75,000.00	\$41,401.00	\$33,599.00	44.80%

\* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

## **2.5 Other Command Staff**

### **2.5.1 Safety Officer**

Anchor QEA conducted operations in accordance with their site-specific Health and Safety Plan (HASP).

### **2.6 Liaison Officer**

NA

### **2.7 Information Officer**

#### **2.7.1 Public Information Officer**

NA

#### **2.7.2 Community Involvement Coordinator**

NA

## **3. Participating Entities**

### **3.1 Unified Command**

NA

### **3.2 Cooperating Agencies**

Agency for Toxic Substances and Disease Registry  
Department of Interior  
IDEM  
Indiana Department of Natural Resources  
Tippecanoe County Emergency Management Agency  
Tippecanoe County Health Department  
U.S. Fish & Wildlife

## **4. Personnel On Site**

1 START contractor  
Anchor QEA personnel

## **5. Definition of Terms**

EPA	Environmental Protection Agency
HASP	Health & Safety Plan
IDEM	Indiana Department of Environmental Management
mg/kg	milligrams per kilogram
NA	Not applicable
ng/L	nanograms per liter
NRC	National Response Center
OSC	On-Scene Coordinator
PCB	Polychlorinated Biphenyls
PRP	Potentially Responsible Party
RSL	Regional Screening Level
START	Superfund Technical Assessment and Response Team
SVOC	Semivolatile Organic Compounds
TSS	Total Suspended Solids

ug/kg      micrograms per kilogram

ug/L        micrograms per liter

VOC        Volatile Organic Compounds

WQS        Water Quality Standard

## **6. Additional sources of information**

### **6.1 Internet location of additional information/report**

For additional information, refer to [www.epaosc.org/alcoaoilspill](http://www.epaosc.org/alcoaoilspill).

### **6.2 Reporting Schedule**

No additional PolReps will be submitted.

## **7. Situational Reference Materials**

NA

POLREP #6 Last Updated 7/5/2011