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Transmitted Via Federal Express

January 17, 2005

Ms. Patricia Simmons Pierre
Project Manager
Central New York Remediation Section – USEPA Region 2
290 Broadway, 20th Floor
New York, NY 10007-1866

Re: Pollution Abatement Services Superfund Site - Fourth Operable Unit
Oswego, New York
Annual Progress Report
BBL Project #: 0364.36444 #11

Dear Ms. Simmons Pierre:

On behalf of Niagara Mohawk, a National Grid Company and General Motors Corporation (the Settling Defendants), please find enclosed two copies (one bound and one unbound) of the seventh Annual Progress Report for work activities performed during 2004 in connection with the fourth operable unit (OU4) at the Pollution Abatement Services (PAS) Superfund Site located in Oswego, New York. The Annual Progress Report has been prepared in accordance with the requirements outlined in Section X of the Consent Decree for OU4 between the USEPA and the Settling Defendants. That Consent Decree was lodged by the Court on December 15, 1998.

Please feel free to call me at (315) 446-2570 (ext. 290) if you have any questions regarding the enclosed.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

M. Cathy Geraci
Associate

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Enclosures

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cc: Chief, New York/Caribbean Superfund Branch, Office of Regional Counsel, United States Environmental Protection Agency, Region 2 -- Attention: PAS Superfund Site Attorney
Chief Environmental Enforcement Section, Environment and Natural Resources Division, United States Department of Justice, Re: DOJ # 90-11-2-2A
Director, Division of Hazardous Waste Remediation, New York State Department of Environmental Conservation -- Attention: PAS Site Project Manager
Mr. Daniel Geraghty, New York State Department of Health
William J. Holzhauer, Esq., Niagara Mohawk, a National Grid Company
Mr. James F. Morgan, Niagara Mohawk, a National Grid Company
Mr. James F. Hartnett, General Motors Corporation
R. William Stephens, Esq., Stephens & Stephens
James M. Nuss, P.E., L.S.P., Blasland, Bouck & Lee, Inc.
Mr. David K. Rigg, Blasland, Bouck & Lee, Inc.

REPORT

Annual Progress Report

Pollution Abatement Services
Superfund Site
Oswego, New York

January 2005

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Pollution Abatement Services Superfund Site
Oswego, New York
Fourth Operable Unit

Annual Progress Report
Period Covered: January 1, 2004 - December 31, 2004

Presented herein is the seventh Annual Progress Report for the fourth operable unit (OU4) at the Pollution Abatement Services (PAS) Superfund Site (the Site) located in Oswego, New York. This progress report has been prepared in accordance with the requirements set forth in Section X of the OU4 Consent Decree lodged by the Court on December 15, 1998 between the United States Environmental Protection Agency (USEPA), and Niagara Mohawk, a National Grid Company (Niagara Mohawk) and General Motors Corporation (the Settling Defendants). The activities conducted pursuant to the requirements of the OU4 Consent Decree for the year 2004 are summarized below. The previous (sixth) Annual Progress Report was submitted to the USEPA on November 26, 2003 (BBL, 2003d) and covered the period from January 1, 2003 through December 31, 2003.

In accordance with the requirements set forth in the OU4 Consent Decree and the September 1997 Record of Decision (ROD) for OU4 (USEPA, 1997), the August 1999 *PCB Long-Term Monitoring Plan* (Plan) was developed by Blasland, Bouck & Lee, Inc. (BBL) (BBL, 1999a). BBL is the USEPA-approved Supervising Contractor identified in the OU4 Consent Decree. The Plan provides a detailed description of the requirements, methods, and procedures for monitoring the polychlorinated biphenyl (PCB) levels in the sediments and biota (fish) in the creeks and wetlands adjacent to the Site. The Plan was approved by the USEPA in a July 22, 1999 letter (USEPA, 1999a).

The monitoring activities identified in the Plan include sampling of surficial sediments (0 to 3 inch), subsurface sediments (3 to 6 inch and 6 to 12 inch), suspended sediment (trap), and biota (fish). In the third Annual Progress Report (BBL, 2000), BBL proposed that subsurface sediment samples not be collected in the future, and that future long-term monitoring events include the continued collection of surficial sediment, sediment trap, and fish samples in accordance with the Plan. USEPA approved this modification to the Plan on May 30, 2001, as documented in BBL's May 31, 2001 letter to the USEPA (BBL, 2001a).

I. Actions Taken Toward Compliance with the Consent Decree

During this reporting period, the sixth round of annual PCB monitoring activities was completed. The monitoring activities were conducted in accordance with the USEPA-approved Plan, as modified in May 2001. The monitoring activities included collecting surficial sediment, sediment trap, and fish samples at the five specified locations in White Creek and Wine Creek. A description of the monitoring and a summary of results obtained are presented in Attachment 1. The references cited herein are also listed in Attachment 1.

II. Analytical Results and Data Generated

The analytical results/data that have been generated during this reporting period, and in association with the OU4 Consent Decree, are solely related to completing the sixth year of annual monitoring identified in the Plan. As previously stated, the monitoring activities included sediment, sediment trap, and biota sampling. Laboratory analysis of sediment included PCBs and total organic carbon (TOC), and laboratory analysis of biota included PCBs and percent lipids. A summary of that data is presented in Attachment 1. Two complete copies of the analytical data and validated data reports associated with the sixth year of annual monitoring were submitted to the USEPA (Ms. Patricia Simmons Pierre, USEPA Project Manager) on November 11, 2004 (BBL, 2004).

III. Plans and Reports and other Deliverables Completed or Submitted

In addition to this annual progress report, the only other submittal to the USEPA during this reporting period was the November 11, 2004 submittal, providing two complete copies of the analytical data and validated data reports associated with the sixth year of annual PCB monitoring.

IV. Planned Activities for 2005

In accordance with the Plan and the USEPA-approved modification to that Plan, the seventh annual sediment and biota monitoring event will be conducted during the late spring/early summer (i.e., May through July) 2005. The sediment and biota sampling activities for the year 2005 will be similar to previous years, and will include collecting and analyzing surficial sediment, sediment trap, and biota samples from the same five specified locations in White Creek and Wine Creek. In accordance with Paragraph 20 of the OU4 Consent Decree, the Settling Defendants will notify the USEPA not less than 21 days in advance of the annual monitoring event to be conducted during the year 2005.

The reporting requirements for the seventh annual monitoring event to be followed by the Settling Defendants will be consistent with those identified in the Plan, and the USEPA-approved modification to the schedule for submitting the annual progress reports identified in a November 23, 1999 letter to Niagara Mohawk from the USEPA (USEPA, 1999b).

V. Delays Encountered or Anticipated

No delays were encountered during 2004, and no delays are anticipated during 2005.

VI. Modifications to Plans or Schedules

There were no modifications to the Plan and/or associated schedules during 2004.

VII. Actions Taken in Support of the Community Relations Plan

In accordance with the requirements of the OU4 Consent Decree, the Settling Defendants will, upon notice by the USEPA, participate in the Community Relations Plan developed by the USEPA. To date, the USEPA has not requested any participation by the Settling Defendants. Accordingly, no actions have been taken by the Settling Defendants in support of the USEPA's Community Relations Plan.

Pollution Abatement Services Superfund Site
Oswego, New York
Fourth Operable Unit

Annual Progress Report
Period Covered: January 1, 2004 - December 31, 2004

Attachment 1 - PCB Long-Term Monitoring Data Report

1. Introduction

This attachment to the *Annual Progress Report* provides a summary of the polychlorinated biphenyl (PCB) long-term monitoring data collected in 2004 at the Pollution Abatement Services (PAS) Superfund Site (the Site) located in Oswego, New York. This attachment describes the sixth year of annual monitoring data collected under the United States Environmental Protection Agency (USEPA)-approved *PCB Long-Term Monitoring Plan* (Plan) for the fourth operable unit (OU4) of the PAS Site [Blasland, Bouck & Lee, Inc. (BBL), 1999a] and the USEPA-approved modification to that Plan (BBL, 2001a). The annual monitoring described in the Plan is in response to the Consent Decree lodged by the Court on December 15, 1998 (USEPA, 1998), and the September 30, 1997 *Record of Decision* (ROD) for OU4 (USEPA, 1997). The ROD presents the remedial action selected by the USEPA to address the PCBs detected in the sediments of White and Wine Creeks and the adjacent wetlands. The USEPA-selected remedy presented in the OU4 ROD is long-term annual monitoring of PCB levels in sediments and fish in White and Wine Creeks and the adjacent wetlands.

As documented in the PAS OU4 Consent Decree (USEPA, 1998), the 1996 Phase 2 Supplemental Pre-Remedial Design Study (SPRDS) concluded that although the Site was a source of PCBs before the construction of the containment facility in 1986, the Site is not a present source of PCBs for sediments in White and Wine Creeks or the adjacent wetlands, and that other potential upstream sources of PCBs exist. Additionally, previous PCB sediment monitoring data, collected prior to 1996, indicate that the associated risk levels were relatively low and that there had been an overall decline in PCB concentrations in the creeks (USEPA, 1998).

2. Overview of the PCB Long-Term Monitoring Activities

The PCB long-term monitoring activities for the Site identified in the Plan include collecting surficial sediment (0 to 3 inch), subsurface sediment (3 to 6 inch and 6 to 12 inch), suspended sediment (trap), and biota (fish) samples. In the third Annual Progress Report (BBL, 2000), BBL proposed that subsurface sediment samples not be collected in the future, and that future long-term monitoring events include the continued collection of surficial sediment, sediment trap, and fish samples in accordance with the Plan. USEPA approved this modification to the Plan on May 30, 2001 (BBL, 2001a). The results of the first 5 years of the long-term monitoring program, together with the relevant conclusions, were presented to the USEPA in the previous *Annual Progress Reports* (BBL, 1999b; 2000; 2001b; 2003a; 2003d) and the Five-Year Data Review Report (BBL, 2003c). The data and conclusions presented in these reports are summarized below.

- Surficial sediment PCB concentrations in White and Wine Creeks were low. Maximum PCB concentrations were 0.17 milligrams per kilogram (mg/kg) in 1999, 0.015 mg/kg in 2000, 1.8 mg/kg in 2001, 3.1 mg/kg in 2002, and 0.45 mg/kg in 2003.

- PCB concentrations were also typically low in the suspended sediment (trap) samples. Maximum PCB concentrations were 1.2 mg/kg in 1999, 1.1 mg/kg in 2000, 1.4 mg/kg in 2001, 0.96 mg/kg in 2002, and 0.32 mg/kg in 2003.

- PCBs were also detected in fish tissue samples collected during the first five rounds of the long-term monitoring program. Maximum PCB concentrations were 0.52 mg/kg in 1999, 3.9 mg/kg in 2000, 3.4 mg/kg in 2001, 1.7 mg/kg in 2002, and 2.0 mg/kg in 2003.

The results of the first five years of the long-term monitoring program confirm the USEPA (1998) conclusion that sediment PCB concentrations have decreased since the previous rounds of sampling that were conducted prior to 1996.

3. 2004 PCB Long-Term Monitoring Activities

The monitoring activities conducted by BBL during the sixth annual (2004) PCB long-term monitoring event included:

- Sampling of surficial (0 to 3 inch) sediments in White and Wine Creeks and the adjacent wetland areas, at locations upstream, adjacent to, and downstream of the Site;

- Installing and sampling of sediment traps upstream, adjacent to, and downstream of the Site; and

- Fish sampling.

As identified in the OU4 ROD and Consent Decree, data generated from the PCB long-term monitoring program is used to monitor PCB concentrations in sediments and biota of White and Wine Creeks and the adjacent wetlands.

3.1 Methods

This section identifies the sampling locations and describes the methods that were used for the surficial sediment, sediment trap, and biota sampling, and the laboratory analyses. The methods employed followed the procedures outlined in the Plan.

3.1.1 Sample Locations

The Plan identified the collection of co-located sediment, sediment trap, and biota samples from five locations in White and Wine Creeks and the adjacent wetlands. The sample locations were identified by the 8-foot sections of iron pipe which were driven into the bank during the 1999 sampling round. These locations were determined based on the results of a probing exercise conducted by BBL in 1999 to locate prime sediment depositional areas, and have been sampled during each of the six annual sampling events. These locations (shown on Figure 1) are identified below.

Location 1: Upstream (east) of the Site, in White Creek, near historical sample location SS-1.

Location 2: Adjacent to and northeast of the Site, in White Creek, in the vicinity of Phase 2 SPRDS sample location White 11A.

Location 3: Adjacent to and north of the Site, in White Creek, approximately 50 feet downstream of historical sample location SS-3.

Location 4: North of the Site in White Creek, in the vicinity of Phase 2 SPRDS sample location White 12B.

Location 5: Downstream (northwest) of the Site, and downstream of the confluence of White and Wine Creeks, in the vicinity of historical sample location SS-4A.

3.1.2 Sediment Sampling

BBL conducted the sediment sampling on May 27, 2004. Mr. John Strang, a representative from the New York State Department of Environmental Conservation (NYSDEC), provided oversight during the sediment sampling. Surficial sediment samples were collected at each of the aforementioned locations from 0 to 3 inches using a stainless steel corer. At each sample location, the corer was pushed into the sediment, and slowly pulled out. The top three inches of the sediment cores were extracted from the stainless steel tube onto an aluminum pan using a brass push rod. The sediment samples were homogenized and placed in the appropriate sampling jars for shipment to the laboratory, in accordance with procedures identified in the Plan.

3.1.3 Sediment Traps

Sediment traps were placed by BBL at each of the five sediment sampling locations described above on May 27, 2004. The sediment traps consisted of pre-cleaned sample jars placed in stainless steel pans. The traps were monitored periodically by BBL for the collection of deposited sediment. Sediment samples from the traps were retrieved by BBL from all locations on June 22, 2004 and placed in the appropriate sampling jars for shipment to the laboratory, in accordance with the procedures identified in the Plan.

3.1.4 Biota Sampling

Electrofishing of White and Wine Creeks was conducted on May 27, 2004 by BBL. Mr. John Strang (NYSDEC) provided oversight during the May 27 biota sampling. The objective of the electrofishing, as identified in the Plan, was to collect three composite fish samples from each location. The target species were minnows (e.g., creek chubs, fathead minnows, bluntnose minnows) and/or sticklebacks. Three complete samples of creek chubs were collected from the most downstream location (Location 5, in Wine Creek). Various combinations of brook sticklebacks, and creek chubs were collected from the four locations in White Creek.

The biota sampling was conducted using a backpack electrofishing unit. Following collection, the appropriate target fish were placed in labeled Ziploc®-type bags, and stored on ice prior to sample processing. Sample processing included dividing the fish into three composite samples per location. Individual fish lengths, numbers of individuals per sample, and total sample weight were recorded. The samples were then wrapped and shipped to the analytical laboratory, in accordance with the procedures detailed in the Plan.

3.1.5 Laboratory Analyses

Laboratory analyses of sediments included PCBs and total organic carbon (TOC), in accordance with the requirements in the Plan. The sediment analyses were performed by Buck Laboratories (Cortland, New York). However, due to equipment malfunction at Buck Laboratories, Upstate Laboratories (East Syracuse, New York) analyzed sediment trap TOC concentrations and forwarded analytical results to Buck Laboratories. The sediment and sediment trap samples were analyzed for PCBs using USEPA SW-846 Method 8082 (USEPA, 1986), as referenced in the current NYSDEC Analytical Services Protocol (ASP), and for TOC using USEPA Region 2's Lloyd Kahn Method (USEPA, 1988) and/or a comparable method. The biota samples were analyzed by EnChem Inc. (Green Bay, Wisconsin) for PCBs using USEPA SW-846 Method 8082, as referenced in the current NYSDEC ASP, and for percent lipids using standard gravimetric techniques. As specified in the OU4 Consent Decree (Paragraph 21), two copies of the validated PCB analytical results, as well as TOC and percent lipids data, were submitted to the USEPA with a November 11, 2004 letter to Ms. Patricia Simmons Pierre, Project Manager (BBL, 2004).

3.2 2004 Results

This section presents the results obtained during the sixth year of the long-term PCB monitoring program.

3.2.1 Sediment Sampling Results

Analytical results for surficial sediment samples are presented in Table 1 and shown on Figure 1. PCBs were detected in four of the five surficial sediment samples at concentrations up to 0.30 mg/kg (Location 3). PCBs were not detected at a concentration exceeding the associated laboratory quantitation limits in the surficial sediment sample collected from upstream Location 1 (PAS-SS-101). Surficial sediment TOC concentrations ranged from approximately 1.0% (PAS-SS-101) to 2.8% (PAS-SS-201).

3.2.2 Sediment Trap Sampling Results

Analytical results for sediment trap samples from the sixth year of the PCB long-term monitoring program are presented in Table 2 and shown on Figure 1. PCBs were detected in four of the five sediment trap samples, at concentrations ranging from 0.40 mg/kg (PAS-ST-201, PAS-ST-301 and PAS-ST-501) to 1.7 mg/kg (PAS-ST-401). PCBs were not detected at a concentration exceeding the associated laboratory quantitation limits from the trap sample collected from upstream Location 1 (PAS-ST-101). Sediment trap TOC concentrations ranged from approximately 3.6% (PAS-ST-101) to 18.3% (PAS-ST-301).

3.2.3 Biota Sampling Results

Analytical results for biota samples are presented in Table 3 and shown on Figure 2. PCBs were detected in each of the biota samples (including the upstream location). PCB concentrations were lowest for samples collected from upstream Location 1 (0.45 to 0.96 mg/kg), and highest for samples collected from Locations 2 and 3 (0.91 to 2.8 mg/kg). The arithmetic mean for all of the biota samples collected in 2004 is 1.27 mg/kg. Lipid content was higher for creek chubs (5.02% to 7.11%) than for sticklebacks (1.27% to 4.4%).

3.2.4 Discussion

The 2004 PCB data are generally consistent with the previous five rounds of monitoring data. Consistent with previous data, PCBs were not detected in surficial sediment and sediment trap samples from the upstream location. For surficial sediment, the maximum detected PCB concentration in 2004 (0.30 mg/kg) was lower than the maximum detected concentration in 2003 (0.45 mg/kg), 2002 (3.1 mg/kg), and 2001 (1.8 mg/kg). For sediment traps, the maximum detected PCB concentration in 2004 (1.7 mg/kg) was slightly higher but consistent with previous detections (overall maximum concentration of 1.4 mg/kg detected in 2001). For fish, the PCB concentrations in the 2004 samples are only slightly higher than 2003 results and below maximum detected concentrations in previous years.

One objective of the long-term monitoring program, as specified in the OU4 Consent Decree, is to periodically evaluate potential ecological risks. Previously, a quantitative evaluation of ecological risks was presented in Appendix B of the *Focused Feasibility Study* (ENVIRON, 1997). According to the food web model used in the ecological risk assessment, an assumed fish total PCB concentration of 1.0 mg/kg resulted in hazard quotients (HQs) of 0.82 for mink and 0.67 for green heron, and an assumed fish total PCB concentration of 2.0 mg/kg resulted in HQs of 1.70 for mink and 1.39 for green heron. From a risk perspective, HQ values less than 1 represent minimal ecological risk, HQ values between 1 and 10 are considered to represent a level of risk that potentially may be manifested as effects on some individual organisms, and HQ values greater than 10 may be indicative of potential risk at the population level.

All but one of the 2003 fish PCB concentrations are below 2.0 mg/kg (sample PAS-BS-314 from Location 3 had a concentration of 2.8 mg/kg) (Table 3). Using the assumptions presented by ENVIRON in its risk assessment that was included in the *Focused Feasibility Study*, the arithmetic mean PCB concentration (1.27 mg/kg) of the 2004 fish samples would result in HQ values less than those generated using an assumed fish PCB concentration of 2.0 mg/kg. Given the fact that the HQ values based on arithmetic mean of the 2004 data would be approximately equal to 1, it is unlikely that population-level ecological effects are occurring at the Site.

4. Summary

In 2004, surficial sediment, suspended sediment, and biota were collected as part of the PCB long-term monitoring program for OU4 of the Site. The data collected in 2004 indicate the following:

- PCBs were detected in four out of five surficial sediment samples from White and Wine Creeks. The maximum PCB concentration (0.30 mg/kg) is lower than the previous three years.

- PCBs were detected in four out of five sediment trap samples. The maximum concentration (1.7 mg/kg) is slightly higher than previous monitoring data.

- PCBs were detected in fish samples from all five locations. In general, fish PCB concentrations appear higher than those detected in 2002 and 2003, but lower than the concentrations detected in 2000 and 2001.

- Based on the results of a previous site-specific ecological risk assessment (ENVIRON, 1997), fish PCB concentrations in White and Wine Creeks do not represent a significant ecological risk because the HQ value would be approximately equal to 1 based on the 2004 data.

According to the Plan and the USEPA-approved modification to that Plan, the schedule for monitoring activities in the year 2005 involves collecting another round of surficial sediment, sediment trap, and biota samples. Results of the future monitoring rounds along with the existing historical data and the results of the six previous rounds of sampling will be used to: 1) monitor PCB concentrations in sediments and biota of White and Wine Creeks and the adjacent wetlands; and 2) confirm that PCB concentrations continue to decline over time.

5. References

Blasland, Bouck & Lee, Inc. (BBL). 1999a. *PCB Long-Term Monitoring Plan.* August 1999. Syracuse, NY.

BBL. 1999b. *Annual Progress Report, Period Covered: April 17, 1999 - December 31, 1999.* Letter from M. Cathy Geraci of BBL to the U.S. Environmental Protection Agency (USEPA) Chief, Central New York Remediation Section. December 20, 1999.

BBL. 2000. *Annual Progress Report, Period Covered: January 1, 2000 - December 31, 2000.* Letter from M. Cathy Geraci of BBL to the USEPA Chief, Central New York Remediation Section. December 1, 2000.

BBL. 2001a. Letter from M. Cathy Geraci of BBL to Patricia Simmons of the USEPA. May 31, 2001.

BBL. 2001b. *Annual Progress Report, Period Covered: January 1, 2001 - December 31, 2001.* Letter from M. Cathy Geraci of BBL to Patricia Simmons Pierre of the USEPA. December 17, 2001.

BBL. 2003a. *Annual Progress Report, Period Covered: January 1, 2002 – December 31, 2002.* Letter from M. Cathy Geraci of BBL to Patricia Simmons Pierre of the USEPA. January 30, 2003.

BBL. 2003b. Letter from M. Cathy Geraci to Patricia Simmons Pierre of the USEPA. October 17, 2003.

BBL. 2003c. *Five-Year Data Review Report – Pollution Abatement Services Superfund Site – Operable Unit 4.* November 2003.

BBL. 2003d. *Annual Progress Report, Period Covered: January 1, 2003 – December 31, 2003.* Letter from M. Cathy Geraci to Patricia Simmons Pierre of the USEPA. November 2003.

BBL. 2004. Letter from M. Cathy Geraci to Patricia Simmons Pierre of the USEPA. November 11, 2004.

ENVIRON. 1997. *Final Focused Feasibility Study for PCB-Impacted Sediments in the Vicinity of the PAS Superfund Site, Oswego, New York.* Arlington, VA. August 20, 1997.

USEPA. 1986. *Test Methods for Evaluating Solid Waste.* SW-846. Third Edition. Office of Solid Waste and Emergency Response, Washington, DC. November 1986.

USEPA. 1988. *Determination of Total Organic Carbon in Sediment (Lloyd Kahn Method).* USEPA Region 2, Environmental Services Division. Edison, NJ. July 27, 1988.

USEPA. 1997. *Record of Decision - Operable Unit 4 - Pollution Abatement Services, Oswego, New York.* USEPA Region 2. New York, NY. September 1997.

USEPA. 1998. *Pollution Abatement Services Superfund Site Operable Unit 4 Consent Decree.* USEPA Region 2. New York, NY. December 15, 1998.

USEPA. 1999a. Letter from Patricia Simmons of USEPA to M. Cathy Geraci of BBL approving the *PCB Long-Term Monitoring Plan.* July 22, 1999.

USEPA. 1999b. Letter from Carol Berns of USEPA to William Weiss, Esq., of Niagara Mohawk regarding annual report submittal schedule. November 23, 1999.

Table 1

Pollution Abatement Services Superfund Site
Operable Unit 4
Oswego, New York
PCB Long-Term Monitoring Program Report

Surficial Sediment Sample Results for PCBs and TOC (2004)

Location	Sample Identification	Total PCB Concentration (mg/kg)	TOC (mg/kg)
1	PAS-SS-101	ND (0.084)	9,700 J
2	PAS-SS-201	0.054 J	27,500 J
3	PAS-SS-301	0.300	18,600 J
4	PAS-SS-401	0.076 J [0.085 J]	14,400 J [27,100 J]
5	PAS-SS-501	0.085 J	14,900 J

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. on May 27, 2004.
2. Samples were analyzed for PCBs using the USEPA SW-846 Method 8082 and for total organic carbon (TOC) using USEPA Region 2's Lloyd Kahn Method.
3. ND = Not detected. Each PCB Aroclor was not detected above the laboratory quantitation limit shown in parentheses.
4. Duplicate results in brackets.
5. J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
6. All samples collected from the 0- to 3-inch interval.
7. Total PCB concentrations represent total Aroclors.

Table 2

Pollution Abatement Services Superfund Site
Operable Unit 4
Oswego, New York
PCB Long-Term Monitoring Program Report

Sediment Trap Sample Results for PCBs and TOC (2004)

Location	Sample Identification	Total PCB Concentration (mg/kg)	TOC (mg/kg)
1	PAS-ST-101	ND (1.00)	35,500 J
2	PAS-ST-201	0.40 J	151,000 J
3	PAS-ST-301	0.40 J	183,000 J
4	PAS-ST-401	1.70 J [1.00 J]	103,000 J [36,000 J]
5	PAS-ST-501	0.40 J	90,000 J

Notes:

1. Sediment traps were placed by Blasland, Bouck & Lee, Inc. on May 27, 2004, and trap sediment samples were collected on June 22, 2004.
2. Samples were analyzed for PCBs using the USEPA SW-846 Method 8082 and for total organic carbon (TOC) using a method comparable to USEPA Region 2's Lloyd Kahn Method.
3. ND = Not detected. Each PCB Aroclor was not detected above the laboratory quantitation limit shown in parentheses.
4. Duplicate results in brackets.
5. J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
6. Total PCB concentrations represent total Aroclors.

Table 3

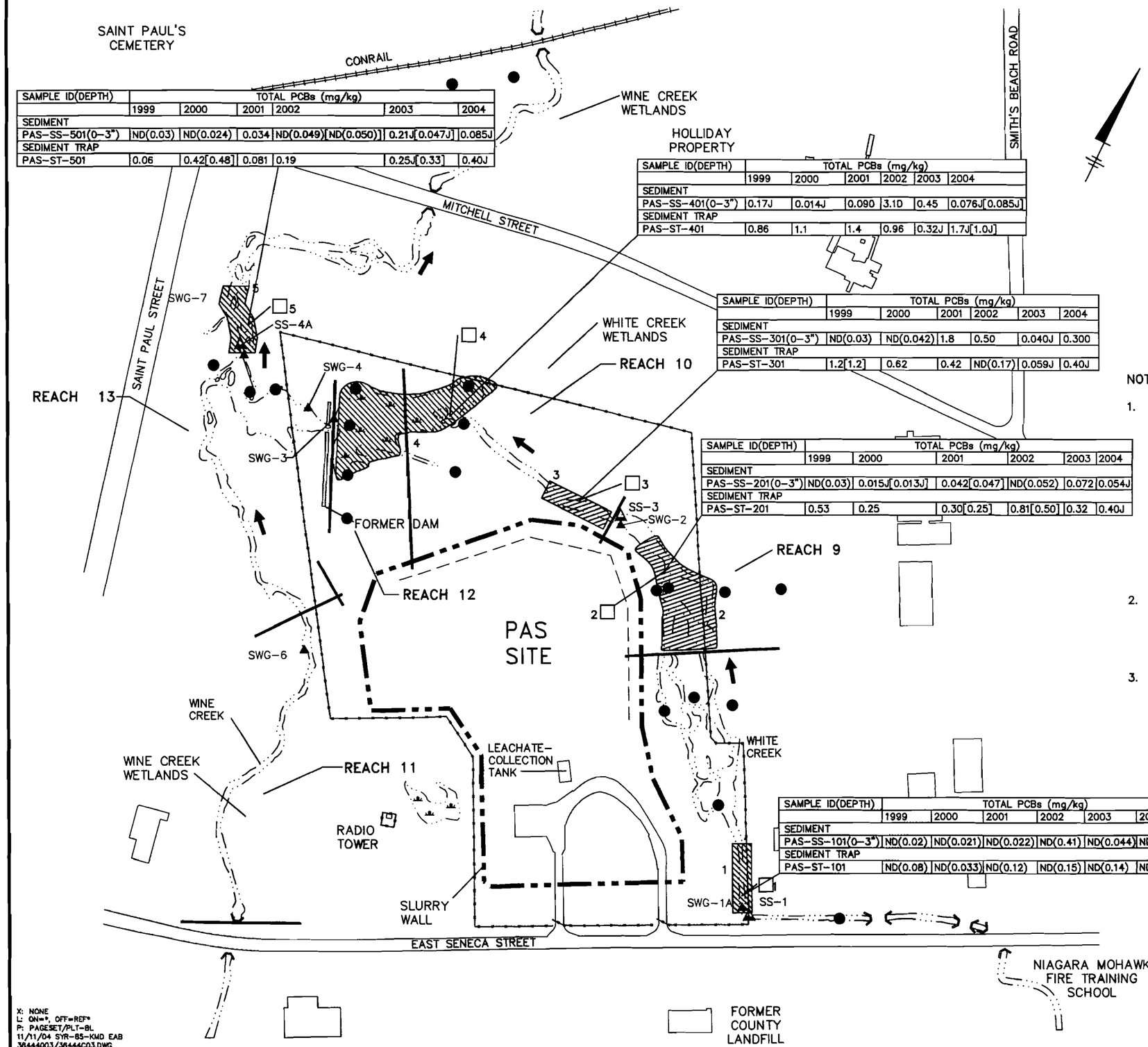
Pollution Abatement Services Superfund Site
Operable Unit 4
Oswego, New York
PCB Long-Term Monitoring Program Report

Biota Sample Results for PCBs and Percent Lipids (2004)

Location	Sample Identification	Species	No. of Individuals per Sample	Length Range (cm)	Total Sample Weight (g)	Lipid (%)	Total PCB Concentration (mg/kg)
1	PAS-BS-116	Brook Stickleback	12	3.8 - 5.0	10.5	1.91	0.53
	PAS-BS-117	Brook Stickleback	12	4.3 - 5.5	13.2	1.27	0.45
	PAS-BS-118	Creek Chub	9	3.8 - 5.8	12.0	5.16	0.96
2	PAS-BS-213	Brook Stickleback	29	3.5 - 5.4	26.7	3.68	1.4
	PAS-BS-214	Brook Stickleback	28	3.5 - 5.2	24.5	4.44	0.91
	PAS-BS-215	Creek Chub	13	4.0 - 6.2	18.2	5.14	1.8
3	PAS-BS-313	Brook Stickleback	16	3.5 - 4.8	11.8	1.76	0.99
	PAS-BS-314	Brook Stickleback	16	3.5 - 5.3	12.3	3.34	2.8
	PAS-BS-315	Brook Stickleback	21	3.2 - 4.0	10.1	3.73	1.1
4	PAS-BS-413	Creek Chub	17	4.6 - 7.0	31.2	5.38	1.5
	PAS-BS-414	Creek Chub	25	3.8 - 5.2	28.5	5.02	1.3
	PAS-BS-415	Brook Stickleback	30	3.3 - 5.6	30.4	3.54	1.7
5	PAS-BS-516	Creek Chub	13	4.2 -6.0	21.9	7.11	1.3
	PAS-BS-517	Creek Chub	6	6.4 - 8.4	28.9	5.88	1.2
	PAS-BS-518	Creek Chub	12	7.8 - 9.6	105.3	6.50	1.1
						Arithmetic Mean	1.27

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. (BBL) on May 28, 2004 (Locations 1-5).
2. Samples were analyzed for PCBs using the USEPA SW-846 Method 8020 and for percent lipids using gravimetric techniques.
3. Total PCB concentrations represent total Aroclors.



SAMPLE ID(DEPTH)	TOTAL PCBs (mg/kg)					
	1999	2000	2001	2002	2003	2004
SEDIMENT						
PAS-SS-501(0-3")	ND(0.03)	ND(0.024)	0.034	ND(0.049)[ND(0.050)]	0.21J[0.047J]	0.085J
SEDIMENT TRAP						
PAS-ST-501	0.06	0.42[0.48]	0.081	0.19	0.25J[0.33]	0.40J

SAMPLE ID(DEPTH)	TOTAL PCBs (mg/kg)					
	1999	2000	2001	2002	2003	2004
SEDIMENT						
PAS-SS-401(0-3")	0.17J	0.014J	0.090	3.1D	0.45	0.076J[0.085J]
SEDIMENT TRAP						
PAS-ST-401	0.86	1.1	1.4	0.96	0.32J	1.7J[1.0J]

SAMPLE ID(DEPTH)	TOTAL PCBs (mg/kg)					
	1999	2000	2001	2002	2003	2004
SEDIMENT						
PAS-SS-301(0-3")	ND(0.03)	ND(0.042)	1.8	0.50	0.040J	0.300
SEDIMENT TRAP						
PAS-ST-301	1.2[1.2]	0.62	0.42	ND(0.17)	0.059J	0.40J

SAMPLE ID(DEPTH)	TOTAL PCBs (mg/kg)					
	1999	2000	2001	2002	2003	2004
SEDIMENT						
PAS-SS-201(0-3")	ND(0.03)	0.015J[0.013J]	0.042[0.047]	ND(0.052)	0.072	0.054J
SEDIMENT TRAP						
PAS-ST-201	0.53	0.25	0.30[0.25]	0.81[0.50]	0.32	0.40J

SAMPLE ID(DEPTH)	TOTAL PCBs (mg/kg)					
	1999	2000	2001	2002	2003	2004
SEDIMENT						
PAS-SS-101(0-3")	ND(0.02)	ND(0.021)	ND(0.022)	ND(0.41)	ND(0.044)	ND(0.084)
SEDIMENT TRAP						
PAS-ST-101	ND(0.08)	ND(0.033)	ND(0.12)	ND(0.15)	ND(0.14)	ND(1.00)

LEGEND

- APPROXIMATE LONG-TERM MONITORING FISH SAMPLING LOCATION
- APPROXIMATE LONG-TERM MONITORING SEDIMENT SAMPLING LOCATION
- APPROXIMATE PREVIOUS SEDIMENT SAMPLING LOCATION
- APPROXIMATE STREAM GAUGE LOCATION
- APPROXIMATE SPRDS PHASE II SEDIMENT SAMPLING LOCATION
- FENCE (SITE BOUNDARY)
- SLURRY WALL
- APPROXIMATE LOCATION OF SUBSURFACE LEACHATE COLLECTION TRENCH
- LAND AREAS SUBJECT TO FREQUENT, SHALLOW INUNDATION
- WETLAND AREAS DELINEATED BY MENZIE-CURA & ASSOCIATES, INC. (AUGUST 1992)
- REACH BOUNDARY
- DIRECTION OF WATER FLOW

NOTES:

1. BASE MAP ADAPTED FROM TOPOGRAPHIC MAP DEVELOPED BY LOCKWOOD MAPPING, INC. BASED ON AN APRIL 14, 1993 AERIAL PHOTOGRAPH; SOME STREAM-GAUGE LOCATIONS ARE INFERRED; LOCATION OF SLURRY WALL BASED ON SITE PLAN DRAWN BY DUNN GEOSCIENCE CORP. (DEC. 1984), TITLED "BORING, WELL & TEST PIT PLOT PLAN;" LOCATION OF SUBSURFACE LEACHATE-RECOVERY TRENCHES BASED ON SITE MAP PROVIDED BY O'BRIEN & GERE ENGINEERING INC.
2. SURFACE WATER IS SHOWN IN BLUE; AREAS SHADED GREEN REPRESENT WETLAND AREAS DELINEATED BY MENZIE-CURA & ASSOCIATES, INC. (AUGUST 1992).
3. BOUNDARIES FOR REACH 10 AND REACH 12, AS WELL AS SPRDS PHASE II SAMPLING LOCATIONS WERE PRESENTED IN THE "FINAL FOCUSED FEASIBILITY STUDY FOR PCB-IMPACTED SEDIMENTS IN THE VICINITY OF THE PAS SUPERFUND SITE, OSWEGO, NEW YORK" (ENVIRON, 1997).
4. ND = NOT DETECTED. EACH PCB AROCLOR WAS NOT DETECTED ABOVE THE LABORATORY QUANTITATION LIMIT SHOWN IN PARENTHESIS.
5. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
6. D = THE COMPOUND WAS ANALYZED AT A SECONDARY DILLUTION.
7. [ ] = DUPLICATE SAMPLE RESULTS.
8. NA = NOT AVAILABLE. SAMPLES WERE NOT COLLECTED DUE TO SITE CONDITIONS (LIMITED DEPTH OF SEDIMENT).
9. TOTAL PCB CONCENTRATIONS REPRESENT TOTAL AROCLORS.

0 200' 400'

GRAPHIC SCALE

X: NONE
E: ON=*, OFF=REF*
P: PAGESET/PLT-BL
11/11/04 SYR-BS-KMD EAB
38444003/38444C03.DWG

POLLUTION ABATEMENT SERVICES SITE
OSWEGO, NEW YORK
PCB LONG-TERM MONITORING PROGRAM REPORT

PCB LONG-TERM MONITORING PROGRAM RESULTS FOR SEDIMENT (1999 TO 2004)

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE 1

SAMPLE ID	TOTAL PCBs
1999	
PAS-BS-501	0.52J
PAS-BS-502	0.33J
PAS-BS-503	0.35
2000	
PAS-BS-504	0.79
PAS-BS-505	0.72
PAS-BS-506	0.81
2001	
PAS-BS-507	0.98
PAS-BS-508	0.74
PAS-BS-509	1.4
2002	
PAS-BS-510	0.96
PAS-BS-511	0.67
PAS-BS-512	0.73
2003	
PAS-BS-513	0.70
PAS-BS-514	2.0
PAS-BS-515	1.3
2004	
PAS-BS-516	1.3
PAS-BS-517	1.2
PAS-BS-518	1.1

SAMPLE ID	TOTAL PCBs
2000	
PAS-BS-401	3.0
PAS-BS-402	3.3
PAS-BS-403	2.7
2001	
PAS-BS-404	2.5
PAS-BS-405	3.4
PAS-BS-406	2.8
2002	
PAS-BS-407	0.93
PAS-BS-408	1.2
PAS-BS-409	1.7
2003	
PAS-BS-410	0.95
PAS-BS-411	1.2
PAS-BS-412	0.25
2004	
PAS-BS-413	1.5
PAS-BS-414	1.3
PAS-BS-415	1.7

SAMPLE ID	TOTAL PCBs
2000	
PAS-BS-301	3.0
PAS-BS-302	3.0
PAS-BS-303	3.9
2001	
PAS-BS-304	2.4
PAS-BS-305	2.8
PAS-BS-306	2.5
2002	
PAS-BS-307	0.94
PAS-BS-308	0.84
PAS-BS-309	1.0
2003	
PAS-BS-310	0.41
PAS-BS-311	0.66
PAS-BS-312	0.72
2004	
PAS-BS-313	0.99
PAS-BS-314	2.8
PAS-BS-315	1.1

SAMPLE ID	TOTAL PCBs
2000	
PAS-BS-201	3.3
PAS-BS-202	2.8
PAS-BS-203	3.6
2001	
PAS-BS-204	2.4
PAS-BS-205	2.2
PAS-BS-206	2.2
2002	
PAS-BS-207	0.87
PAS-BS-208	1.3
PAS-BS-209	1.1
2003	
PAS-BS-210	0.39
PAS-BS-211	0.30
PAS-BS-212	0.46
2004	
PAS-BS-213	1.4
PAS-BS-214	0.91
PAS-BS-215	1.8

SAMPLE ID	TOTAL PCBs
1999	
PAS-BS-101	0.47J
PAS-BS-102	0.43J
PAS-BS-103	0.47J
2000	
PAS-BS-104	1.5
PAS-BS-105	1.1
PAS-BS-106	1.3
2001	
PAS-BS-107	1.7
PAS-BS-108	1.1
PAS-BS-109	1.4
2002	
PAS-BS-110	0.52
PAS-BS-111	0.32
PAS-BS-112	0.55
2003	
PAS-BS-113	0.098
PAS-BS-114	0.26
PAS-BS-115	0.17
2004	
PAS-BS-116	0.53
PAS-BS-117	0.45
PAS-BS-118	0.96

SAINT PAUL'S CEMETERY
CONRAIL
WINE CREEK WETLANDS
HOLLIDAY PROPERTY
MITCHELL STREET
SMITH'S BEACH ROAD
WHITE CREEK WETLANDS
REACH 13
REACH 10
SAINT PAUL STREET
SWG-4
SWG-3
SWG-2
SS-4A
SS-3
FORMER DAM
REACH 12
PAS SITE
REACH 9
SWG-6
WINE CREEK
WINE CREEK WETLANDS
REACH 11
LEACHATE-COLLECTION TANK
WHITE CREEK
RADIO TOWER
SLURRY WALL
SWG-1A
SS-1
EAST SENECA STREET
NIAGARA MOHAWK FIRE TRAINING SCHOOL
FORMER COUNTY LANDFILL

LEGEND

- APPROXIMATE LONG-TERM MONITORING FISH SAMPLING LOCATION
- APPROXIMATE LONG-TERM MONITORING SEDIMENT SAMPLING LOCATION
- SS-1 APPROXIMATE PREVIOUS SEDIMENT SAMPLING LOCATION
- SWG-1 APPROXIMATE STREAM GAUGE LOCATION
- APPROXIMATE SPRDS PHASE II SEDIMENT SAMPLING LOCATION
- FENCE (SITE BOUNDARY)
- SLURRY WALL
- APPROXIMATE LOCATION OF SUBSURFACE LEACHATE COLLECTION TRENCH
- LAND AREAS SUBJECT TO FREQUENT, SHALLOW INUNDATION
- WETLAND AREAS DELINEATED BY MENZIE-CURA & ASSOCIATES, INC. (AUGUST 1992)
- REACH BOUNDARY
- DIRECTION OF WATER FLOW

NOTES:

1. BASE MAP ADAPTED FROM TOPOGRAPHIC MAP DEVELOPED BY LOCKWOOD MAPPING, INC. BASED ON AN APRIL 14, 1993 AERIAL PHOTOGRAPH; SOME STREAM-GAUGE LOCATIONS ARE INFERRED; LOCATION OF SLURRY WALL BASED ON SITE PLAN DRAWN BY DUNN GEOSCIENCE CORP. (DEC. 1984), TITLED "BORING, WELL & TEST PIT PLOT PLAN;" LOCATION OF SUBSURFACE LEACHATE-RECOVERY TRENCHES BASED ON SITE MAP PROVIDED BY O'BRIEN & GERE ENGINEERING INC.
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4. BOUNDARIES FOR REACH 10 AND REACH 12, AS WELL AS SPRDS PHASE II SAMPLING LOCATIONS WERE PRESENTED IN THE "FINAL FOCUSED FEASIBILITY STUDY FOR PCB-IMPACTED SEDIMENTS IN THE VICINITY OF THE PAS SUPERFUND SITE, OSWEGO, NEW YORK" (ENVIRON, 1997).
5. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY.
6. CONCENTRATIONS ARE REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).
7. BIOTA DATA FOR 1999 ARE NOT AVAILABLE FOR LOCATIONS 2, 3, AND 4 BECAUSE SAMPLES WERE NOT COLLECTED DUE TO SITE CONDITIONS (LOW FLOW CONDITIONS IN WHITE CREEK LIMITED SAMPLE AVAILABILITY).
8. TOTAL PCB CONCENTRATIONS REPRESENT TOTAL AROCLORS.

0 200' 400'
GRAPHIC SCALE

X: NONE
L: ON=*, OFF=REF*
P: PAGESET/PLT-BL
11/01/04 SYR-85-KMD
36444003/36444C04.DWG

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PCB LONG-TERM MONITORING PROGRAM RESULTS FOR BIOTA (1999 TO 2004)

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FIGURE 2