EPA Region 5 Records Ctr.



CBS Corporation

Bloomington Project P.O. Box 997 Bloomington, IN 47402 (812) 334-0030 (812) 334-7855 (Fax)

BP-99-0101

December 20, 1999

To: DISTRIBUTION LIST

Subject: Pre- & Post-Excavation Groundwater Monitoring Results for Bennetts Dump

CBS Corporation performed pre-excavation groundwater sampling at on-site monitoring wells and nearby surface waters on August 25-26, 1999. Post-excavation sampling at the same locations was done on November 11 & 12, 1999. These sampling events were in accordance with what CBS agreed to in the Bennetts Dump Statement of Work (SOW).

This report contains the analytical results and field data associated with these sampling events. A sample location map of springs, streams, and on-site monitoring wells (Figure 1) is included.

Ground water samples were collected from three monitor wells in accordance with approved sampling protocols. Prior to sample collection, the water level in each well was measured and the volume of water in well storage was calculated. Each well was then purged dry or until field parameters (temperature, pH, and specific conductance) stabilized to allow representative samples to be obtained.

Samples were collected upon completion of purging. Each sample was withdrawn with the dedicated bladder pump used to purge each respective well and added directly to the sample bottles.

Grab samples were supposed to be collected from the south line of seeps and the north spring at the culvert under the tracks, both of which were dry at the time of sampling in both August and November. Stouts Creek adjacent to the site was also dry at the time of the August sampling.

The field parameters of the samples were also measured and recorded. For quality assurance purposes, a duplicate sample, a matrix spike, and a field blank were also collected during monitoring well sampling. All samples were labeled and logged onto a chain-of-custody form. These samples were stored and transported in insulated coolers containing wet ice. Custody of the water samples was maintained by CBS Corporation until delivery to the analytical laboratory.

The water samples and quality assurance samples were analyzed by Heritage Laboratories, Inc., in Indianapolis, Indiana. The samples were analyzed to a detection limit of 0.1 parts per billion (ppb) for all PCB parameters, except as noted, by EPA Method 608/SW-846 Method 8082.

Attachment 1 contains Figure 1, Sample Location Map with Monitoring Well Locations. Field measurements and PCB analytical results for the monitoring wells and surface water sample locations are presented in Table 1. Laboratory reports for the sampling events are included in Attachment 2, and corresponding field log sheets are contained in Attachment 3. Attachment 4 contains the validation reports for the lab analyses.

If you have any questions, please call Mike McCann at (812) 334-0030.

Sincerely,

Dorothy M. Alke

Project Director

Attachment 1

Sample Location Map with Monitoring Well Locations

Summary Table of Sampling Results

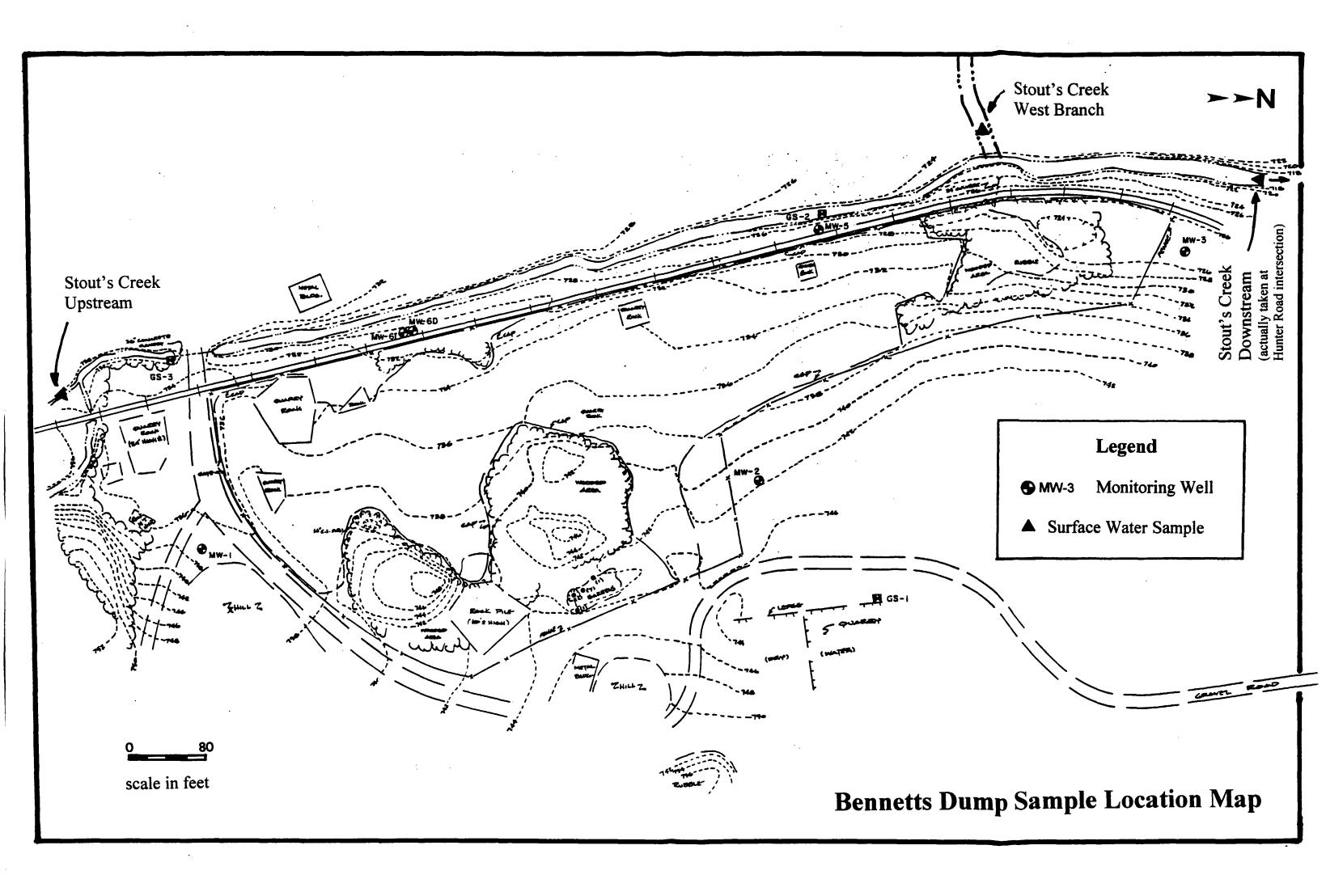


Table 1 - Bennett's Dump Groundwater & Surface Water Sampling Results

	TOC Elevation	Depth to Water	Water Elevation	Tamperature	Conductivity	рН	Sample	PCBs	TSS	
Location	(feet)	(feet)	(feet)	(deg C)	(us/cm)	Pii	Number	(ppb)	(ppm)	Comments
Pre-excavation - Augu	st 25 & 26,	1999								
MW-6i	732.06	5.26	726.8	15.1	584	7.08	BD9002	0.11	200	
MW-6i	732.06	5.26	726.8	15.1	584	7.08	BD9003	0.11	170	Duplicate
MW-6D	731.99	4.65	727.34	14.0	607	6.9	BD9001	58	110	
MW-3	727.69	8.85	718.84	13.3	441	7.1	BD9007	BDL	41	
Stout's Cr. Upstrm				21.5	520		BD9005	BDL	35	
Stout's Cr. Dnstrm			T	21.6	445		BD9004	BDL	5	
W. Branch Stout's Cr.			1	23.4	403		BD9006	0.14	5	
Field Blank			T				BD9008	BDL	3	}
Post-excavation - Nov	ember 11 &	12, 1999								
MW-6i	732.06	5.34	726.72	14.7	575	7.1	BD9009	0.13	16	
MW-6D	731.99	4.94	727.05	13.1	603	6.8	BD9010	7	2	
MW-6D	731.99	4.94	727.05	13.1	603	6.8	BD9011	6.2	BDL	Duplicate
MW-3	727.69	8.53	719.16	12.8	445	6.8	BD9016	BDL	22	
Stout's Cr. Upstrm				12.0	675		BD9012	BDL	4	
Stout's Cr. Dnstrm				11.0	670		BD9013	BDL	6	
W. Branch Stout's Cr.				12.6	623		BD9014	BDL	2	
Field Blank			Ţ				BD9015	BDL	BDL	

BDL - below detection limit

Attachment 2 Laboratory Certificates of Analysis

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	27-AUG-99	4602	A493876
COMMERCIAL LABORATORY OPERATIONS	Complete	ete PO Number	
7901 W. MORRIS ST.	10-SEP-99	•••••	
INDIANAPOLIS, IN 46231	Printed	Samp	oled
(317)243-8304	10-SEP-99	25-AUG-9	9 16:15

Report To

JIM PATRICK CBS CORPORATION ONE CITY CENTRE - SUITE 210 P.O. BOX 997 BLOOMINGTON, IN 47404-0997

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Bill To

Sample Description

CLIENT ID: BD9001

MATRIX: WG SITE: BENNETT'S DUMP

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: 8. WOOD Analysis Date: 31-AUG-99 Instrument: PREP Test: P230.1.0					
Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units		
INITIAL WEIGHT OR VOLUME FINAL VOLUME	950 5		mL mL		

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082 Analyst: S. BRYAN Analysis Date: 02-SEP-99 Instrument: GC/ECD Test: 0301.7.0 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P230.1.0					
Parameter	Result	Det. Limit	Units		
WET WEIGHT RESULTS			l .		
PCB AROCLOR 1016	BDL	2.0	ug/L		
PCB AROCLOR 1221	BDL	10	ug/L		
PCB AROCLOR 1232	BDL	2.0	ug/L		
PCB AROCLOR 1242	58	2.0	ug/L		
PCB AROCLOR 1248	BDL	2.0	ug/L		
PCB AROCLOR 1254	BDL	2.0	ug/L		
PCB AROCLOR 1260	BDL	2.0	ug/L		
PCB AROCLOR 1262	BDL	2.0	ug/L		
SURROGATE RECOVERY					
DECACHLOROBIPHENYL (DCB)	40.0		% Rec		

1:20 Dilution. DEGRADED AROCLOR 1242 REPORTED, HOWEVER SAMPLE HAD STRONG 1248 CHARACTERISTICS.

TOTAL PCB CALCULATION HL13					
Analyst: S. BRYAN	Analysis Date: 02-SEP-99	Instrument: GC/ECD	Test: 0301.3.0		

Sample ID: A493876 BD9001

Parameter	 Result	Det. Limit	Units
WET WEIGHT RESULTS			
TOTAL PCBS	 58	2.0	ug/L
1:20 Dilution.			

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 31-AUG-99-13:00 Test: G403.7.0				
Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units	
SUSPENDED SOLIDS	110	11_	mg/L	

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86605.

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Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	27-AUG- <u>99</u>	4602	A493877
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Number	
7901 W. MORRIS ST.	10-SEP-99		
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	10-SEP-99	25-AUG-99	14:30

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BLOOMINGTON, IN 47402-0997

Bill To

Sample Description

CLIENT ID: BD9002

MATRIX: WG

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: B. WOOD Analysis Date: 31:AUG:99 Instrument: PREP Test: P230.1.0				
Param WET WEIGHT RESULTS	eter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLU FINAL VOLUME	IME SAME OF	930 5		mL mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082 Analyst: S. BRYAN Analysis Date: 01-SEP-99 Instrument: GC/ECD Test: 0301.7.0 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P230.1.0					
Parameter	Result	Det. Limit	Units		
WET WEIGHT RESULTS			.		
PCB AROCLOR 1016	BDL	0.10	ug/L		
PCB AROCLOR 1221	BDL	0.50	ug/L		
PCB AROCLOR 1232	BDL	0.10	ug/L		
PCB AROCLOR 1242	0.11	0.10	ug/L		
PCB AROCLOR 1248	BDL	0.10	ug/L		
PCB AROCLOR 1254	BDL	0.10	ug/L		
PCB AROCLOR 1260	BDL	0.10	ug/L		
PCB AROCLOR 1262	BDL	0.10	ug/L		
SURROGATE RECOVERY					
DECACHLOROBIPHENYL (DCB)	98.0		% Rec		

TOTAL PCB CALCULATION HLI3					
Analyst: S. BRYAN	Analysis Date: 01-SEP-99	Instrument: GC/ECD	Test: 0301.3.0)	
Pai	ameter	Result	Det. Limit	Units	

Sample ID: A493877 BD9002

Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units
TOTAL PCBS	0.11	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 31-AUG-99 13:0	00	Test: G 40	3.7.0
Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS SUSPENDED SOLIDS	200	1	mg/L

Sample Comments

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INDIANAPOLIS, IN 46231	Printed	Sampl	ed
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BLOOMINGTON, IN 47402-0997

Bill To

Sample Description

CLIENT ID: BD9003

MATRIX: WG

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: 8. WOOD Analysis Date: 31-AUG-99 Instrument: PREP Test: P230.1.0					
Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units		
INITIAL WEIGHT OR VOLUME FINAL VOLUME	940 5		mL mL		

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SI Analyst: S. BRYAN Analysis Date: 01-SEP- Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SA	99 Instrument: GC/ECD	Test: 0301.7.	Ò
Parameter WET WEIGHT RESULTS PCB AROCLOR 1016 PCB AROCLOR 1221 PCB AROCLOR 1232 PCB AROCLOR 1242 PCB AROCLOR 1248 PCB AROCLOR 1254 PCB AROCLOR 1260 PCB AROCLOR 1262 SURROGATE RECOVERY	BDL BDL BDL 0.11 BDL BDL BDL BDL BDL	Det. Limit 0.10 0.50 0.10 0.10 0.10 0.10 0.10 0.1	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L
DECACHLOROBIPHENYL (DCB)	86.0		% Rec

TOTAL PCB CALCULATION HL13							
Analyst: S. BRYAN	Analysis Date: 01-SEP-99	Instrument: GC/ECD	Test: 0301.3.0	l			
Pa	rameter	Result	Det. Limit	Units			

Sample ID: A493878 BD9003

Parameter		Result	Det. Limit	Units
WET WEIGHT RESULTS				
TOTAL PCBS		0.11	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 31-AUG-99 13:00 Test: G403.7.0			
Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS SUSPENDED SOLIDS	170	1	mg/L

Sample Comments

BDL Below Detection Limit

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INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	10-SEP-99	25-AUG-99	15:15

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Bill To

Sample Description

CLIENT ID: BD9004

MATRIX: WS

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION Analyst: B. WOOD Analysis Date: 31-AUG-99	SW846-3510B Instrument: PREP	Test: P230.1.	: D
Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME FINAL VOLUME	960 5		mL mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082 Analyst: S. BRYAN Analysis Date: 01-SEP-99 Instrument: GC/ECD Test: 0301.7.0 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P230.1.0					
Parameter	Re sul t	Det. Limit	Units		
WET WEIGHT RESULTS PCB AROCLOR 1016 PCB AROCLOR 1221 PCB AROCLOR 1232 PCB AROCLOR 1242 PCB AROCLOR 1248 PCB AROCLOR 1254 PCB AROCLOR 1260 PCB AROCLOR 1262 SURROGATE RECOVERY	BDL BDL BDL BDL BDL BDL BDL BDL	0.10 0.50 0.10 0.10 0.10 0.10 0.10	ug/L ug/L ug/L ug/L ug/L ug/L ug/L		
DECACHLOROBIPHENYL (DCB)	96.0		% Rec		

TOTAL PCB CALCULATION HLI3							
Analyst: S. BRYAN	Analysis Date: 01-SEP-99	Instrument: GC/ECD	Test: 0301.3.0	} 			
Pa	rameter	Result	Det. Limit	Units			

Sample ID: A493879 BD9004

Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS			
TOTAL PCBS	BDL	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 31-AUG-	99 13:00	Test: G40	3.7.0
Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units
SUSPENDED SOLIDS	5	1	mg/L

Sample Comments

BDL Below Detection Limit

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Approved: GK Garage

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	27-AUG-99	4602	A493880
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Nu	mber
7901 W. MORRIS ST.	10-SEP-99		
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	10-SEP-99	25-AUG-99	15:30

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BLOOMINGTON, IN 47402-0997

Sample Description

CLIENT ID: BD9005

MATRIX: WS

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: B. WOOD Analysis Date: 31-Aug-99 Instrument: PREP Test: P230.1.0					0
Parameter		_	Result	Det. Limit	Units
WET WEIGHT RESULTS INITIAL WEIGHT OR VOLUME FINAL VOLUME		850 5	3 2 mm. 3 1		mL mL

Result	Det. Limit	Units
		ľ
BDL	0.10	ug/L
BDL	0.50	ug/L
BDL	0.10	ug/L
BDL	0.10	ug/L
BDL	0.10	ug/L
		ug/L
l l		ug/L
BDL	0.10	ug/L
İ		·
	BDL BDL BDL BDL BDL BDL	BDL 0.50 BDL 0.10 BDL 0.10 BDL 0.10 BDL 0.10 BDL 0.10 BDL 0.10

TOTAL PCB CALCULATIO	N:HLI3			
Analyst: S. BRYAN	Analysis Date: 01-SEP-99	Instrument: GC/ECD	Test: 0301.3.0	j
Par	ameter_	Result	Det. Limit	Units

Sample ID: A493880 BD9005

Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS			
TOTAL PCBS	BDL	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2			
Analyst: T. BYRNE Analysis Date: 31-AUG-99 13:00)	Test: 640	3.7.0
Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS			
SUSPENDED SOLIDS	35	1	mg/L

Sample Comments

BDL Below Detection Limit

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7901 W. MORRIS ST.	10-SEP-99		
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	10-SEP-99	25-AUG-99	15:40

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Bill To

Sample Description

CLIENT ID: BD9006

MATRIX: WS

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: B. WOOD Analysis Date: 31-AUG-99 Instrument: PREP Test: P230.1.0				0
Parameter WET WEIGHT RESULTS		Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME		940		mL
FINAL VOLUME		5		mL_

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD \$W846-8082 Analyst: S. BRYAN Analysis Date: 01-SEP-99 Instrument: GC/ECD Test: 0301.7.0 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P230.1.0				
Result	Det. Limit	Units		
l				
∮ BDL		ug/L		
(BDL		ug/L		
BDL	0.10	ug/L		
0.14	0.10	ug/L		
BDL	0.10	ug/L		
BDL	0.10	ug/L		
BDL	0.10	ug/L		
BDL	0.10	ug/L		
		J ,		
98.0		% Rec		
	Instrument: GC/ECD S10B P230.1.0 Result BDL BDL BDL O.14 BDL	Instrument: GC/ECD Test: 0301.7.0 Result		

TOTAL PCB CALCULATION	N HLI3			
Analyst: S. BRYAN	Analysis Date: 01-SEP-99	Instrument: GC/ECD	Test: 0301.3.0	

Sample ID: A493881 BD9006

Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS			
TOTAL PCBS	0.14	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 31-AUG-99 13:00 Test: G403.7.0				
Parameter	Result	Det. Limit	Units	
WET WEIGHT RESULTS				
SUSPENDED SOLIDS	5	1.	mg/L	

Sample Comments

BDL Below Detection Limit

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Approved:

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	27-AUG-99	4602	A493882
COMMERCIAL LABORATORY OPERATIONS	Complete	PO No	mber
7901 W. MORRIS ST.	10-SEP-99		
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	10-SEP-99	26-AUG-99	14:50

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Bill To

Sample Description

CLIENT ID: BD9007

MATRIX: WG

PCB SEPARATORY FUNNEL LIQUE Analyst: B. WOOD ANALYST: B.	ID-LIQUID EXTRACTION alysis Date: 31-AUG-99	SW846-3510B Instrument: PREP	Test: P230.1.	0
Parameter WET WEIGHT RESULTS	-	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME FINAL VOLUME	or and only \$500 to be	1000 5		mL mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD Analyst: S. BRYAN Analysis Date: 02-SE Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION	P-99 Instrument: GC/ECD	Test: 0301.7.	
Parameter	Result	Det. Limit	Units
ET WEIGHT RESULTS			
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.50	ug/L
CB AROCLOR 1232	BDL	0.10	ug/L
CB AROCLOR 1242	BDL	0.10	ug/L
CB AROCLOR 1248	BDL	0.10	ug/L
CB AROCLOR 1254	BDL	0.10	ug/L
CB AROCLOR 1260	BDL	0.10	ug/L
CB AROCLOR 1262	BDL	0.10	ug/L
URROGATE RECOVERY			
ECACHLOROBIPHENYL (DCB)	80.0		% Rec

TOTAL PCB CALCULATION HLI3					
Analyst: S. BRYAN	Analysis Date: 02-SEP-99	Instrument: GC/ECD	Test: 0301.3.0		
Pa	rameter	Result	Det. Limit_	Units	

Sample ID: A493882 BD9007

Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units
TOTAL PCBS	BDL	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2		7=-A- C/N	7:7:0
Analyst: T. BYRNE Analysis Date: 31-AUG-99 13:00	Result	Test: G40	Units
WET WEIGHT RESULTS SUSPENDED SOLIDS	41	T.	mg/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86605.

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HERITAGE ENVIRONMENTAL SERVICES, LLC	27-AUG-99	4602	A493883
COMMERCIAL LABORATORY OPERATIONS	Complete	PO N	umber
7901 W. MORRIS ST.	10-SEP- <u>99</u>	_	
INDIANAPOLIS, IN 46231	Printed	Samp	led
(317)243-8304	10-SEP-99	26-AUG-9	9 14:50

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BLOOMINGTON, IN 47402-0997

Sample Description

CLIENT ID: BD9008

MATRIX: WG

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION Analysis Date: 31-AUG-99	SW846-3510B Instrument: PREP	Test: P230.1.))
Parameter WET WEIGHT RESULTS	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME FINAL VOLUME	950 5		mL mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD S Analyst: S. BRYAN Analysis Date: 01-SEP- Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION S	-99 Instrument: GC/ECD	Test: 0301.7.	0
Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS	001	0.10	
PCB AROCLOR 1016	8DL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.50	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
PCB AROCLOR 1262	BDL	0.10	ug/L
SURROGATE RECOVERY			
DECACHLOROBIPHENYL (DCB)	104.0		% Rec

TOTAL PCB CALCULATION	N HLI3			14.
Analyst: S. BRYAN	Analysis Date: 01-SEP-99	Instrument: GC/ECD	Test: 0301.3.0)
Pa	rameter	Result	Det. Limit	Units
		· -		

Sample ID: A493883 BD9008

Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS		II	
TOTAL PCBS	BDL	0.10	ug/L

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 31-AUG-99 13:00 Test: G403.7.0			
Parameter	Result	Det. Limit	Units
WET WEIGHT RESULTS			
SUSPENDED SOLIDS	3	1	mg/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86605.

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Additional copies of this report sent to: RUSS CEPKO, CBS CORPORATION 11 STANWIX STREET, PITTSBURG, PA 15222-1384

Approved: jx pence

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500847
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Number	
7901 W. MORRIS ST.	22-NOV-99		***
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	23-NOV-99	11-NOV-99	11:15

Report To

JIM PATRICK
CBS CORPORATION
ONE CITY CENTRE - SUITE 210
P.O. BOX 997
BLOOMINGTON, IN 47404-0997

ACCOUNTS PAYABLE CBS CORPORATION ONE CITY CENTRE - SUITE 210 PO BOX 997 BLOOMINGTON, IN 47402-0997

Bill To

Sample Description

CLIENT ID: BD9009

MATRIX: WG

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analysis Date: 16:NOV:99 Instrument: PREP Test: P230.1.0			
Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	890		mL
FINAL VOLUME	<u> </u>		mL

Analyst: M. KEEZER Analysis Date: Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRAC	18-NOV-99 Instrument: GC/ECD TION SW846-3510B P230.1.0	Test: 03 01.7.0	#(*)
Parameter	Result	Det. Limit	Units
CB AROCLOR 1016	BDL	0.10	ug/L
CB AROCLOR 1221	BDL	0.50	ug/L
CB AROCLOR 1232	BDL	0.10	ug/L
CB AROCLOR 1242	0.13	0.10	ug/L
CB AROCLOR 1248	BDL	0.10	ug/L
CB AROCLOR 1254	BDL	0.10	ug/L
CB AROCLOR 1260	BDL	0.10	ug/L
CB AROCLOR 1262	BDL	0.10	ug/L
 URROGATE RECOVERY	A CONTRACTOR		

TOTAL PCB CALCULATION	N HLI3			
Analyst: M. KEEZER	Analysis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.3.0)
Para	ameter	Result	Det. Limit	Units
TOTAL PCBS		0.13	0.10	ug/L
TOTAL PCB DETECTION	LIMIT DOES NOT INCLUDE ARC	OCLOR 1221		

Sample ID: A500847 BD9009

TOTAL SUSPENDED SOLIDS EPA 160.2 Analysis T. BYRNE Analysis Date:	15÷NOV-99 14:50	Test: G403.7.0
Parameter SUSPENDED SOLIDS	Result 16	Det. Limit Units 1 mg/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Approved: _____ R.X. Seuce_____

Service Location	Received	Project	Lab ID	
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500840	
COMMERCIAL LABORATORY OPERATIONS			PO Number	
7901 W. MORRIS ST.	22-NOV-99		***	
INDIANAPOLIS, IN 46231	Printed	Samp	led	
(317)243-8304	23-NOV-99	11-NOV-99	9 13:50	

Report To

JIM PATRICK CBS CORPORATION
ONE CITY CENTRE - SUITE 210 P.O. BOX 997 BLOOMINGTON, IN 47404-0997

ACCOUNTS PAYABLE CBS CORPORATION ONE CITY CENTRE - SUITE 210 PO BOX 997 BLOOMINGTON, IN 47402-0997

Bill To

Sample Description

CLIENT ID: BD9010

MATRIX: WG

SITE: BENNETT'S DUMP

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: M. WRIGHT Analysis Date: 16-MOV-99 Instrument: PREP Test: P230-1.0			
Parameter INITIAL WEIGHT OR VOLUME FINAL VOLUME	Result 1000 5	Det. Limit	Units ML ML

Analyst: M. KEEZER Analysts Date: 1 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACT		Test: 0301.7.0
Parameter	Result	Det. Limit Units
PCB AROCLOR 1016	BDL	0.50 ug/L
PCB AROCLOR 1221	7.0	2.5 ug/L
PCB AROCLOR 1232	BDL	0.50 ug/L
PCB AROCLOR 1242	BDL	0.50 ug/L
PCB AROCLOR 1248	BDL	0.50 ug/L
PCB AROCLOR 1254	BDL	0.50 ug/L
PCB AROCLOR 1260	BDL	0.50 ug/L
PCB AROCLOR 1262	BDL	0.50 ug/L
SURROGATE RECOVERY		
DECACHLOROBIPHENYL (DCB)	130.0	% Rec

AROCLOR 1221 SLIGHTLY DEGRADED.

TOTAL PCB CALCULATION	N HLI3		
Analyst: M. KEEZER	Analysis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.3.0

Sample ID: A500840 BD9010

Parameter	Result	Det. Limit	Units
TOTAL PCBS	7.0	0.50	ug/L
TOTAL PCB DETECTION LIMIT DOES NOT INCLUDE ARC	CLOR 1221		
1.5 0120/100			

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 15-NOV-99 14:50 Test: G403.7.0			
Parameter SUSPENDED SOLIDS	Result 2	Det. Limit	Units ma/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Service Location	Received	Project Lab	ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602 A500)841
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Number	
7901 W. MORRIS ST.	22-NOV-99	***	
INDIANAPOLIS, IN 46231	Printed	Sampled	
(317)243-8304	23-NOV-99	11-NOV-99 13:5	50

Report To

Bill To

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CBS CORPORATION
ONE CITY CENTRE - SUITE 210
P.O. BOX 997
BLOOMINGTON, IN 47404-0997

ACCOUNTS PAYABLE
CBS CORPORATION
ONE CITY CENTRE - SUITE 210
PO BOX 997
BLOOMINGTON, IN 47402-0997

Sample Description

CLIENT ID: BD9011

MATRIX: WG

SITE: BENNETT'S DUMP

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION Analysis Date: 16-NOV-99	N SW846-3510B Instrument: PREP	Test: P230.1.	.0
Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	950		mL
FINAL VOLUME	5		mL

Analyst: M. KEEZER Analy Prep: PCB SEPARATORY FUNNEL LIQUID-LI	ysis Date: 18-NOV-99 Instr QUID EXTRACTION SU846-35108 P230		Test: 0301.7,(,
Parameter		Result	Det. Limit	Units
PCB AROCLOR 1016	BD:	L	0.50	ug/L
CB AROCLOR 1221	6.1	2	2.5	ug/L
PCB AROCLOR 1232	BDI	Ĺ	0.50	ug/L
CB AROCLOR 1242	BDI	L	0.50	ug/L
CB AROCLOR 1248	BDI		0.50	ug/L
CB AROCLOR 1254	BDI		0.50	ug/L
PCB AROCLOR 1260	BDI		0.50	ug/L
PCB AROCLOR 1262	Malatine e BDI	L	0.50	ug/L
URROGATE RECOVERY	1984 - 1885 1984 - 1885			
DECACHLOROBIPHENYL (DCB)	140	0		% Rec

TOTAL PCB CALCULATION HLI3
Analyst: W. KEEZER Analysis Date: 18-NOV-99 Instrument: GC/ECD Test: 0301.3.0

Sample ID: A500841 BD9011

Parameter	Result	Det. Limit	Units
TOTAL PCBS	6.2	0.50	ug/L
TOTAL PCB DETECTION LIMIT DOES NOT INCLUDE ARE 1:5 DILUTION	OCLOR 1221		

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. SYRNE Analysis Date: 15-NOV-99 14:50	· .)	Test: G403.7.0
Parameter	Result	Det. Limit Units
SUSPENDED SOLIDS	BDL	1 mg/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500842
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Nu	mber
7901 W. MORRIS ST.	22-NOV-99		***
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	23-NOV-99	11-NOV-99	14:15

Report To

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BLOOMINGTON, IN 47404-0997

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BLOOMINGTON, IN 47402-0997

Bill To

Sample Description

CLIENT ID: BD9012

MATRIX: WG

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B Analyst: B. WOOD Analysis Date: 16-WOV-99 Instrument: PREP Test: P230.1.0					
Parameter INITIAL WEIGHT OR VOLUME FINAL VOLUME	Result 930 5	Det. Limit	Units ML ML		

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082 Analyst: N. KEEZER Analysis Date: 18-NOV-99 Instrument: GC/ECD Test: 0301,7.0 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P230.1.0						
Parameter PCB AROCLOR 1016 PCB AROCLOR 1221 PCB AROCLOR 1232 PCB AROCLOR 1242 PCB AROCLOR 1248 PCB AROCLOR 1254 PCB AROCLOR 1254 PCB AROCLOR 1260 PCB AROCLOR 1262 SURROGATE RECOVERY	BDL BDL BDL BDL BDL BDL BDL BDL BDL BDL	Det. Limit 0.10 0.50 0.10 0.10 0.10 0.10 0.10 0.10	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L			
DECACHLOROBIPHENYL (DCB)	118		% Rec			

TOTAL PCB CALCULATION	HLI3			
Analyst: M. KEEZER	Analysis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.3.0	
Para		Result	Det. Limit	Units
TOTAL PCBS		BDL	0.10	uq/L
TOTAL PCB DETECTION I	IMIT DOES NOT INCLUDE AF	ROCLOR 1221		

Sample ID: A500842 BD9012

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: 1. BYRNE Analysis Date: 15-NOV-99 14:50)	Test: G40	3.7.0
Parameter	Result	Det. Limit	Units
SUSPENDED SOLIDS	4		mq/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500843
COMMERCIAL LABORATORY OPERATIONS	Complete	PO N	umber
7901 W. MORRIS ST.	22-NOV-99		***
INDIANAPOLIS, IN 46231	Printed	Samp	led
(317)243-8304	23-NOV-99	11-NOV-9	9 14:30

Report To

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PO BOX 997

BLOOMINGTON, IN 47402-0997

Sample Description

CLIENT ID: BD9013 MATRIX: WG

PCB SEPARATORY Analyst: N. WRIGHT	FUI	NNEL LIQUID-LIQUID Analysis Date:	SW846-3510B Instrument: PREP	Test: P230.1.	0
		Parameter	Result	Det. Limit	Units
INITIAL WEIGHT	OR	VOLUME	1000		mL.
FINAL VOLUME			5		mL

PCB AROCLORS BY GAS CHROMATO Analyst: N. KEEZER Analy Prep: PCB SEPARATORY FUNNEL LIQUID-LIG	/sis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.7.	0
Parameter	<u></u>	Result	Det. Limit	Units
PCB AROCLOR 1016		BDL	0.10	ug/L
PCB AROCLOR 1221		BDL	0.50	ug/L
PCB AROCLOR 1232		BDL	0.10	ug/L
PCB AROCLOR 1242		BDL	0.10	ug/L
PCB AROCLOR 1248		BDL	0.10	ug/L
PCB AROCLOR 1254	A MARKET A	BDL	0.10	ug/L
PCB AROCLOR 1260		BDL	0.10	ug/L
PCB AROCLOR 1262	1 to 1 to 1	BDL	0.10	ug/L
SURROGATE RECOVERY				
DECACHLOROBÍPHENYL (DCB)		104.0		% Rec

TOTAL PCB CALCULATION	N HLI3			
Analyst: M. KEEZER	Analysis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.3.4)
Par	ameter	Result	Det. Limit	Units
TOTAL PCBS		BDL	0.10	ug/L
TOTAL PCB DETECTION	LIMIT DOES NOT INCLUDE AF	ROCLOR 1221		***

Sample ID: A500843 BD9013

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 15-NOV-99 14:50).	Test: G4D3.7.0
Parameter SUSPENDED SOLIDS	Result 6	Det. Limit Units 1 mg/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500844
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Number	
7901 W. MORRIS ST.	22-NOV-99		***
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	23-NOV-99	11-NOV-99	14:50

Report To

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Bill To

Sample Description

CLIENT ID: BD9014 MATRIX: WG

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION	N SW846-3510B	•	
Analyst: B. 9000 Analysis Date: 16-909-99	Instrument: PREP	Test: P230.1.	0.,
Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	920		mL
FINAL VÖLÜME	5		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8 Analyst: M. KEEZER Analysis Date: 18-NOV-99 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510	Instrument: GC/ECD	Test: 0301.7.	0
Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.50	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
PCB AROCLOR 1262	BDL	0.10	ug/L
SURROGATE RECOVERY			
DECACHLOROBIPHENYL (DCB)	122.0		% Rec

Result	Det. Limit Uni
BDL	0.10 ug/L

Sample ID: A500844 BD9014

TOTAL SUSPENDED SOLIDS EPA 160.2			
Analyst: T. BYRNE Analysis Date: 15-NOV-99 14:5	0	Test: G40	3.7.0
Parameter	Result	Det. Limit	Units
SUSPENDED SOLIDS	2	1	mg/L

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500845
COMMERCIAL LABORATORY OPERATIONS	Complete	PO Nu	mber
7901 W. MORRIS ST.	22-NOV-99	• • • • • • • • • • • • •	***
INDIANAPOLIS, IN 46231	Printed	Sampl	ed
(317)243-8304	23-NOV-99	11-NOV-99	15:00

Report To

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CBS CORPORATION
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P.O. BOX 997
BLOOMINGTON, IN 47404-0997

ACCOUNTS PAYABLE

Bill To

CBS CORPORATION
ONE CITY CENTRE - SUITE 210
PO BOX 997

BLOOMINGTON, IN 47402-0997

Sample Description

CLIENT ID: BD9015

MATRIX: WG

PCB SEPARATORY FI	UNNEL LIQUID-LIQUID EXTRACTION Analysis Date: 16:MOV-99	SW846-3510B	Test: P230.1.)
INITIAL WEIGHT OF	Parameter R VOLUME	Result 950 5.	Det. Limit	Units ML ML

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-4 Analyst: M. KEEZER Analysis Date: 18-NOV-99 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-351	Instrument: GC/ECD	Test: 0301.7	o
Parameter PCB AROCLOR 1016 PCB AROCLOR 1221 PCB AROCLOR 1232 PCB AROCLOR 1242 PCB AROCLOR 1248 PCB AROCLOR 1254 PCB AROCLOR 1260 PCB AROCLOR 1262 SURROGATE RECOVERY	Result BDL BDL BDL BDL BDL BDL BDL BD	Det. Limit 0.10 0.50 0.10 0.10 0.10 0.10 0.10 0.10	Units ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L
DECACHLOROBIPHENYL (DCB)	106.0		% Rec

TOTAL PCB CALCULATION			
Analyst: M. KEEZER	Analysis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.3.0
Pa	rameter	Result	Det. Limit Units
TOTAL PCBS		BDL	0.10 ug/L
TOTAL PCB DETECTION	LIMIT DOES NOT INCLUDE AR	OCLOR 1221	

Sample ID: A500845 BD9015

TOTAL SUSPENDED SOLIDS EPA 160.2 Analyst: T. BYRNE Analysis Date: 15-NOV-99 14:50		Test: G403.7.0	
Parameter SUSPENDED SOLIDS	Result BDL	Det. Limit Units	

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, LLC	12-NOV-99	4602	A500846
COMMERCIAL LABORATORY OPERATIONS	Complete		lumber
7901 W. MORRIS ST.	22-NOV-99		***
INDIANAPOLIS, IN 46231	Printed	Samp	oled
(317)243-8304	23-NOV-99	11-NOV-9	9 09:45

Report To

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CBS CORPORATION
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P.O. BOX 997
BLOOMINGTON, IN 47404-0997

ACCOUNTS PAYABLE CBS CORPORATION

Bill To

ONE CITY CENTRE - SUITE 210

PO BOX 997

BLOOMINGTON, IN 47402-0997

Sample Description

CLIENT ID: BD9016

MATRIX: WG

SITE: BENNETT'S DUMP

PCB SEPARATORY	FUNNEL L	IQUID-LIQUID EXTRACTION Analysis Date: 16-NOV-99	SW846-3510B	Test: P230.1.	.0
	Paramet		Result	Det. Limit	Units
INITIAL WEIGHT FINAL VOLUME	OR VOLUM	t Transport og skrivereder er et	950 · 5		mL mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082 Analyst: M. KEEZER Analysis Date: 18-MOV-99 Instrument: GC/ECD Test: 0301.7.0 Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-35108 PZ30.1.0					
Parameter	Result	Det. Limit	Units		
PCB AROCLOR 1016	BDL	0.10	ug/L		
PCB AROCLOR 1221	BDL	0.50	ug/L		
PCB AROCLOR 1232	BDL	0.10	ug/L		
PCB AROCLOR T242	BDL	0.10	ug/L		
PCB AROCLOR 1248	BDL	0.10	ug/L		
PCB AROCLOR 1254	BDL	0.10	ug/L		
PCB AROCLOR 1260	BDL	0.10	ug/L		
PCB AROCLOR 1262	BDL	0.10	ug/L		
SURROGATE RECOVERY					
DECACHLOROBIPHENYL (DCB)	112.0		% Rec		

I HLI3			
Analysis Date: 18-NOV-99	Instrument: GC/ECD	Test: 0301.3.0)
ameter	Result	Det. Limit	Units
	BDL	0.10	ug/L
IMIT DOES NOT INCLUDE AR	OCLOR 1221		
	ameter	Analysis Date: 18-NOV-99 Instrument: GC/ECD mmeter Result	Analysis Date: 18-NOV-99: Instrument: GC/ECD Test: 0301.3.0 meter Result Det. Limit BDL 0.10

HERITAGE ENVIRONMENTAL SERVICES, LLC

Sample ID: A500846 BD9016

TOTAL SUSPENDED SOLIDS EPA 160.2 Analysis Date: 15-NOV-99 14:50		Test: G403.720	
Parameter	Result	Det. Limit Units	
SUSPENDED SOLIDS	22	1 mg/L	

Sample Comments

BDL Below Detection Limit

Sample was received on ice. Sample chain of custody number 86618.

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Approved: JK Seuce

Attachment 3 Field Log Sheets

Site BD		Well No	6I	
Sampling Purpose PRE-	EX	well no		
Date/Time: 8125/95		In 1345	Out	1440
Sampling Personnel	MY NV			
HNu Background	Well_ NA	Weather	SUMMY 5	ত
I. Well Information		 :	,	
Reference Pt. (casing & Well Diameter	height above	grade) TOP (Well Depth from	RP 14.3	
water bepth from ki				
II. Well Volume Informa				1
Length of Water Column_	9.07	_ Volume of Wate	er Column	1.45 gA
III. Evacuation Informa	tion			
Evacuation Method	DEDICKTED !	BAILER		
Redline	Calibrati	on Stds: L	7 -	10
Purge Volume (Gals)	T T	pH	SpC	Time
1.5	16.8	643	587	1419
•	15.9			1421
2,7 3.0	15.2	4.91	583	=
	_	7.02	<i>585</i>	1423
4.0	15.1	7.08	5°84	1425
IV. Sample Data			`	
Container(s) Preserv	ation Time	Collected Samp	le ID No.	Analysis
		11-		RIR
-	lco	- /	Jouz	
7		1430 BO	903	145
V. Field Measurements				
Temp. 15.1 pH	7.08 s	pc_581	Film N	inte
VI. Remarks/Miscellaneo	us Observation	s I ran /yE	run Ma	erc_
Dup.	TAKEN	•		_
VII. Sample Destination	ı			
EMS Laboratory Via	Courier	Ву		
		MP. W	100cm	

Site	D		We	11 No	62	
Sampling Purpose		-ex				1.1.1
Date/Time:			In_	1345	Out_	1440
Sampling Person	1e1	my NV				
HNu Background_		Well	NA .	Weather	SURM	98
I. Well Informat	:ion			· .		
Reference Pt. (c	asing & 1	height above	grade)	ric f	by C	
Well Dismeter	as a f	Ju gire above	Well Den	th from Di	o 34.	11
Reference Pt. (c Well Diameter Water Depth from	RP	4.45	well bep	CH IIOM K		<u>·1. </u>
water bepen rrom		, 9-	 -			
II. Well Volume						4
Length of Water	Column	29.46	Volume	of Water	Column_	4.7 gm
III. Evacuation	Informat	ion				
Evacuation Metho	\mathcal{D}_{d}	EDILATED	WATER	^		
Redline		Calibrat			7	10
Purge Volume (Ga		T	pН		SpC	Time
		147	-	,	719	
5 (DRV)		14.3				1/200
O DKY		14,0	6, 9		607	14:10
			•			
IV. Sample Data						
Container(s)	Preservat	tion Time	Collected	d Sample	ID No.	Analysis
2	1 Ce					PCB
		•	4.13		7007	,
V. Field Measure			,			
Temp		6.9	s-c 6	07	/	MUNE
Tempp	H		SpC		Film	70145
D 1 ///			_			
VI. Remarks/Misc	ellaneous	s Observatio	ns () (#	OT STA	SUG	AT MUKY
			•			/
						·
VII. Sample Dest	inotia-					
vii. Sampie Dest	Inacion					
EMS Laboratory V	li a			D		
EMS Laboratory V	1d	Course	<u> </u>	ву		
			.110). W	$I(\mathcal{M})$	
			1/1/1	≥'. M	1 -	
			<u> </u>	· · · · · ·	ļ	
			Field Sei	cvices Cod	rdinator	

Site BENNETT	s		Well	No. 5	
Sampling Purpose /	Pre-excav	ration			
Date/Time: 8/20	/99		In /2	:15 Out	15:00
Sampling Personnel_		1. Ne Cana			
HNu Background	Well	NA	Wea	ther cloudy	75°
I. Well Information			•		
Reference Pt. (casi: Well Diameter	51/2"	Well		from RP <u>43.0</u>	-3
II. Well Volume Inf	ormation				
Length of Water Col	umn 34.78	<u>v</u>	lume of	Water Column_	45 gal
III. Evacuation Inf	ormation				
Evacuation Method	BLADDER	-			
Redline		bration S	tds:	7	10
Purge Volume (Gals)			pH	SpC	Time
48	13.5	ı	7.1	439	1443
49	13.4			440	1445
50			7.1		1446
5 O	13.3		7.1	441	773
IV. Sample Data					
Container(s) Pres	servation (CE	Time Coll	ected	Sample ID No. BD 900 7	Analysis PcB
2	ICE	1450		BD 9008	PCB
V. Field Measuremen	ts				
Temp. 13.3 pH_	7.1	SpC	441	Film	MONE
VI. Remarks/Miscell	aneous Observ	ations S	CIGATU	4 pursid	
	RNGNOS	- C 14 B	/ /-		
	BD 9008 7	s Mela B	Spi Ke		
VII. Sample Destina	tion				
EMS Laboratory Via_	Cons	14		Ву	
		•		~	
		4		1. / / / /	

	74 L	ocation				Date	8/29	199
		roject / Clie						
* :	_							
	F	SONLI	PTTS	Dur	78 B	257 9	9 13	548 hz
1			<u> </u>		<u> </u>	10012		
	Mu	y- 67	7 7	TW 4	5.26	DTB	14.	33
	Hu)-6 D	2 <	rw -	165	DIE	3 34	1.11
	Μ	w-3	t	>TW	8.85	DIG	3 4	3.63
			i			1		
		<i>Seep</i>	5 A	US I	xy,	Sprun	16 15	Dry
	·	_ <u> </u>			1	<u> </u>	1	
	<u> </u>) 900 c	1 15	DUNN	15112EM	<u>ر</u> ک	ours	<u>Cr.</u>
1	<u>B</u> 1	0900	5 15	W51	THEAT	ڪ.	TALTS	Cr.
						W		-
#		1	7500	TS C	ZECK	<u> </u>		10 21
₩⊦	PV	4 7.7	b	rem	21.6	- GN	D 4	45
₩				<u> </u>	<u> </u>			
#		BUTTU	<u> </u>	=ATPU	דורופ	1515	-	
#	1)	Dim na	<u> </u>		TS CR	ine il	205	P /53)
#	0	4 . 14	, <u>(</u>	Tane)	CAN	9	HIS.
#			< 1 h	P~	21.5		5	20
#		JEST				BD 90	20/2	1540hi
#		1	70:					
#		(A	JD (103	1	. !		
#		~	5-10	90~	HOST	OF TH	e Fu	W
*				- 4				
M.			1				:	

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Site BD	Well	No	6I	
Sampling Purpose POTREM				
Date/Time: 11/11/99	In /	0:50	Out /(:	25
Sampling Personnel NV, TK				
HNu Background Well	Wes	ther_c/	may 55	0/=
Ind background werr	#00	icher	7,23	
I. Well Information	;		,	
Reference Pt. (casing & height above Well Diameter 2 '	grade) Tol	> & PVC	(TIC)	
Well Diameter 2''	Well Depth	from RP	14.3	<i>3 '</i>
Water Depth from RP 5,34'				
II. Well Volume Information	Volume of	Water C	olumn_/	4 gal
III. Evacuation Information				
Evacuation Method BLADDER PU	MP			
RedlineCalibrat			7	10
Purge Volume (Gals) T 2.0 /4.6 2.5 /4.7 2.7 /4.7 3.0 14.7	PH 6.9 7.0	Š	SpC 420 75 75	Time //:08 //:'0 //://
IV. Sample Data	• •	_		
	Collected	Sample BD90		Analysis PCB
V. Field Measurements				
Temp. 14.7°C pH 7.1	spc_ 575	u S/cm F	ilm <u>K</u>	me
VI. Remarks/Miscellaneous Observatio	ns slightly	milky		
VII. Sample Destination				
EMS Laboratory Via Cowier		Ву		<u>_</u>
	``\^ ?	_ 0		

SiteB1)	Well	No. 6D	
Sampling Purpose	POST-6			
Date/Time: it/1/9		In	11:25 Out_	14:00
Sampling Personnel_				1556 =
HNu Background	Well	We	ather <u>Cloudy</u> ,	53° F
I. Well Information		,	·	
Reference Pt. (casin Well Diameter Water Depth from RP_	<u> </u>	above grade)Well Depth	TIC PVC from RP 34.	(*)
water poper from m-				
II. Well Volume Info				/ -
Length of Water Colu	ımn <u>29,17</u>	Volume or	f Water Column_	4.1 gal
III. Evacuation Info	rmation			
Evacuation Method	BI AD	DER		
Redline	Cal	libration Stds:	i7_	<u> </u>
Purge Volume (Gals)	Т	pH _	SpC	Time
4.9	(3.	6.6	610	13:43
5.9	13.	(6.8	603	13:45
ブブム	13.	. / 0/	603	13:40
7,0	75.	•	4 00	13.99
IV. Sample Data				
Container(s) Pres	ervation	Time Collected	Sample ID No.	Analysis
2	(くど	13:20	BD 9010	PCB
2	اريح	13:50	BD9011	PCB
		(3.20	09 1	
V. Field Measurement	:s		,	
Temp. 13 1 °C pH_	6.8	spc_ 603 µ	S/CW Film 4	onl
VI. Remarks/Miscella	neous Obser	rvations	. <i>l</i>	
SAMPLE 101	± RDQOIL :		Elear	
37 · · · · · · · · · · · · · · · · · · ·	007011 1	s aupe		
VII. Sample Destinat	ion			
EMS Laboratory Via	Cour	er	Ву	

Site 3D		Well	No	ک	
Sampling Purpose_ PosT-	-E×c				
Date/Time: 11-12-99 Sampling Personnel NV		In <u>G</u>	8:05	Out	09:55
Sampling Personnel NV	<i>JK</i>				
HNu Background	Well	<i>NA</i> Wea	ather_c/	moly, s	530
I. Well Information				•	
Reference Pt. (casing & h	eight abo	ove grade)	from DD	70c_	. 63′
Well Diameter 5/2 Water Depth from RP 8	53 '	well beput	TIOM KI		
II. Well Volume Informati	on				
Length of Water Column	35.1	Volume of	Water (Column	45 gol
III. Evacuation Information	on				
Evacuation Method BL. Redline	ADDER	ration Stds:		7	<u> </u>
Purge Volume (Gals)	GIIID.	pH		SpC	Time
45	12.7	ک.)		443	6938
46	12.7	6.7		444	0940
47		*.		445	0942
1 (12.8	6.8		4 73	0712
IV. Sample Data					
Container(s) Preservat	ion Ti	ime Collected	Sample BD90		Analysis PCB
-		0175	ייוטק	, 6	,
V. Field Measurements					
Temp. 12.8 pH 6.8		_ SpC_445	I	Film	lone
VI. Remarks/Miscellaneous	0bservat	tions slightly	جلم م	. h	
		3 (1)	y rown		
VII. Sample Destination					
EMS Laboratory ViaCr	urier		Ву		

						أأتغنده
	78 Loca	tion <u>Ben</u>	nettis D	ump	Date	1/1./99
		ct / Client			/	
						
		N Vand	ran &	J. Kr	the so	moled
		Mon. W/e	1/5 6I	and 6	D To ble	dder
		pumps				
		frup in	6D.	/		
2		'				
	14:15				n station	
		Collect	ed gra	o sample	BD90	12
1		Cond	6 /3 <u>~~/</u> C	M Teach	12.0°C	4.1 4
						etel at
,		Same	poor as	7 1 1 1 1 1 1 1 1	sample.	
	14:30	Startis	Cr. das	tream st	ation C. Au	
		Collect	dgals	ample Bl	9013	whaspl)
-		Cond	670,S/c	" Temp.	11.08	
1111	!	* Culy &	Takle to	win C	reck; sa	npbd_
	_	-bom				
##	14:50	11)	- /-	C		
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H	_,	Collecter	623	Sign kind	1 /	<u> </u>
		* V /0	, fl.	~ 5 adi	. 12,6	
	15.cm	Took	Field	plank	sample	/D
		BD9	~ .	(
					rull Vry	show

Attachment 4

Validation Reports for

Laboratory Certificates of Analysis

Validation Results for the November 1999 Bennett's Dump Monitoring Well and Stream Samples

1. Validation of the following samples has been completed:

o BD 9009-BD 9016

Validation was performed per the requirements for level 4 data in the project QAPjP. This includes a check for; Holding Time, Calibration, Blank Contamination, Precision, Accuracy, and Accuracy of Nominal Reporting Limits against method requirements. Based on this review all method requirements were met and no data qualification flags are recommended for samples BD 9010-BD 9016. It should be noted that the original data package showed potential contamination of the lab blank sample above the contract required detection limit (CRDL). When brought to the lab's attention, they reprinted the blank chromatogram at a smaller scale and recalculated the amount of potential PCBs present as less than the CRDL and also noted that although a few Aroclor peaks were present there is no pattern match for any Aroclor. Sample BD 9009 was quantitated just above the CRDL for Aroclor 1242. It is questionable whether there is really this Aroclor present because of the closeness to the detection limit and the small amount of contamination evident in the lab blank. However, the pattern is more like Aroclor 1242 than the lab blank therefore it may be positive for Aroclor 1242, but the exact quantitation is questionable because of blank contamination. Therefore a "J" flag is recommended.

- 2. The QAPjP requires an assessment of the overall data quality with respect to Precision, Accuracy, Representativeness, Completeness and Comparability (PARCC).
- Precision and accuracy: Precision and accuracy were accessed by reviewing the lab performance on lab spiked samples, lab spike duplicates and field duplicates. All requirements were met except where noted for sample BD 9009.
- Representativeness: The representativeness requirement involves an assessment of the field sampling and lab analytical techniques. The field sampling locations and techniques as well as lab procedures were in accordance with the approved sampling plan and QAPjP. There were no deviations and the representativeness requirement was met.
- Completeness: The completeness goal for the project was for all project data to be 90% accepted. Completeness is calculated by dividing the total number of acceptable analyses by the total performed. An acceptable analysis is defined as one that conformed to QC protocols and is not rejected. All the noted sample analyses in this batch were accepted so the completeness goal was met.
- Comparability: All the samples taken, analyzed and validated by CBS were taken by CBS sampling crews using the same procedures and analyzed by the same laboratory. Therefore within the samples taken by CBS there are no comparibility issues.

Overall, the main objective of the sampling event was to determine if PCBs are present at a concentration of .1 ppb or more. This data is of sufficient quality to satisfy this goal.

Validation Results for the August 1999 Bennett's Dump Monitoring Well and Stream Samples

- 1. Validation of the following samples has been completed:
 - o BD 9001-BD 9008
- 2. Validation was performed per the requirements for level 4 data in the project QAPjP. This includes a check for; Holding Time, Calibration, Blank Contamination, Precision, Accuracy, and Accuracy of Nominal Reporting Limits against method requirements. Based on this review, the following data qualification flags are recommended:
- Samples BD 9002, 9003, and 9006 results are reported by the lab as between the method detection limit (MCL) and the limit of quantitation (.1 and .3 ppb). They also are not 5 times the quantity of PCBs found in the method blank that itself contains what appear to be PCBs at near the MDL. The level of PCBs reported for these samples is too near the detection limit and not high enough above the method blank to be considered a reliable detection or quantitation. These samples should be flagged "UJ" and reported at the method detection limit of .1 ppb.
- Sample BD 9001 had two liters of liquid submitted. The first liter was extracted/analyzed and yielded a result of 58 ppb, but had very low surrogate recovery. Because of the low surrogate recovery, the lab then extracted/analyzed the second liter. This result was 2.6 ppb. The lab also reported that the two liters of sample were visibly different in that the first sample analyzed had more visible sediment. These samples were taken from the same well and should be considered field duplicates. Given the large PCB discrepancy and visible TSS differences, it appears that the field conditions were not stable during sampling this well. It is recommended that both samples be flagged "J" as estimates since it is not known which analysis is more representative of actual conditions at the well.
- 3. The QAPjP requires an assessment of the overall data quality with respect to Precision, Accuracy, Representativeness, Completeness and Comparability (PARCC).
- Precision and accuracy: Precision and accuracy were accessed by reviewing the lab
 performance on lab spiked samples, lab spike duplicates and field duplicates. The PCBs in the
 method blank calls into question the accuracy of several of the samples as noted above.
- Representativeness: The representativeness requirement involves an assessment of the field sampling and lab analytical techniques. The field sampling locations and techniques as well as lab procedures were in accordance with the approved sampling plan and QAPjP. The large relative percent deviation between replicates on sample BD 9001 calls into question the representativeness of the sample from this well. It is recommended that the samplers ensure that adequate purge volumes are taken from this well in future sampling to provide stable field parameters and that the level of TSS visibly in the samples stabilizes.
- Completeness: The completeness goal for the project was for all project data to be 90% accepted. Completeness is calculated by dividing the total number of acceptable analyses by the total performed. An acceptable analysis is defined as one that conformed to QC protocols and is not rejected. All the noted sample analyses in this batch were accepted so the completeness goal was met.
- Comparability: All the samples taken, analyzed and validated by CBS were taken by CBS

sampling crews using the same procedures and analyzed by the same laboratory. Therefore within the samples taken by CBS there are no comparibility issues.

Overall, the main objective of the sampling event was to determine if PCBs are present at a concentration of .1 ppb or more. Because of the level of PCBs potentially in the method blank, this goal was not met for several of the samples as noted above. Additionally, it appears that the results for BD 9001 were not representative of stable aquifer conditions at the well. For the other samples (BD 9004, 5, 7 and 8), this data is of sufficient quality to satisfy this goal.