MSD

May 5, 1998

Ms. Liza I. Montalvo
Remedial Project Manager
U. S. Environmental Protection Agency
Kentucky/Tennessee Section
Region IV
61 Forsyth Street
Atlanta, GA 30303

Re Results of Groundwater Quality Monitoring - FY 98, Third Quarter (FY98, -3Q), Lees Lane Superfund Site, Jefferson County, Kentucky, Administrative Order on Consent, USEPA Docket No. 91-32-C

Dear Ms. Montalvo:

In accordance with paragraph 11, under Reporting Requirement, of the subject Consent Order and Attachment 1, Operation and Maintenance Plan for Post-Removal Site Control at the Lee's Lane Landfill Site, Section 4.4, Groundwater Quality Monitoring, attached for your information files is one photocopy each of the following analyses and reports prepared by Heritage Laboratories, Inc., 4925 Heller Street, Louisville, Kentucky 40218 for MSD.

Certificate of Analysis

WELL LOCATION	SAMPLE DESCRIPTION	LAB ID	REPORT LENGTH
MW-02	LL-MW0222	A436688	7 pages
MW-04	LL-MW0422	A436683	7 pages
MW-04 DUP	LL-MW0422 DUP	A436684	7 pages
MW-05	LL-MW0522	A436685	7 pages
MW-A	LL-MWA22	A436690	7 pages
MW-B	LL-MWB22	A436689	7 pages
Field Blank	LLMWFB22	A436687	7 pages

10861086

Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street Louisville, Kentucky 40203-1913 502-540-6000

Quality Assurance Reports

DESCRIPTION	REPORT LENGTH
Quality Assurance Report	33pages
Semi-volatile Continuing Calibration Check	12 pages
Semi-volatile Method Blank	2 pages

The above identified Certificates of Analysis, Quality Assurance Reports, and other documentation were received by the undersigned on May 4, 1998, and are transmitted within the five (5) working day requirement of Paragraph 11 of the Consent Order.

Please advise if you have any questions concerning the attached information.

Sincerely,

C. A. Neumayer
Director of Operations

CAN/dc
LeesgrouFY98-2q
Enclosures

cc: Kentucky Natural Resource Environment Protection Cabinet
Mr. Rick Hogan, Division of Waste Management
Kentucky Natural Resource Environment Protection Cabinet
Mr. Jeff Pratt, Division of Waste Management
G. R. Garner, Executive Director, MSD
File WD-2 (Lee's Lane M&M)

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, INC. COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-MAR-98		A436688
	Complete	PO Number	
	15-APR-98	DP 00151	
	Printed	Sampled	
	16-APR-98	25-MAR-98 12:20	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMW0222

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 01-APR-98 07:13 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

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Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	98		% Rec
TOLUENE-D8	103		% Rec
BROMOFLUOROBENZENE	100		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: P. SIMS Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 14-APR-98 18:17 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

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Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
SURROGATE RECOVERY			
2-FLUOROPHENOL	42		% Rec
PHENOL-D5	30		% Rec
NITROBENZENE-D5	84		% Rec
2-FLUOROBIPHENYL	76		% Rec
2,4,6-TRIBROMOPHENOL	97		% Rec
TERPHENYL-D14	76		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081

Analyst: J. GRIFFIN Analysis Date: 01-APR-98 12:19 Instrument: GC/ECD Test: 0305.1.0

Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	76.8		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M101.3.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:07 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	0.15	0.010	mg/L

BERYLLIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	89.	0.20	mg/L

CHROMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	3.4	0.025	mg/L

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MAGNESIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	29.	0.20	mg/L

MANGANESE ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	0.17	0.010	mg/L

NICKEL ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

POTASSIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	1.6	0.20	mg/L

SILVER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	9.4	0.20	mg/L

VANADIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:57 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:07 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:28 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

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LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:28 Instrument: TRACE ICP Test: M116.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:28 Instrument: TRACE ICP Test: M128.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:28 Instrument: TRACE ICP Test: M134.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0
Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

This Certificate shall not be reproduced, except in full, without the written approval of the lab.

Additional copies of this report sent to:
JOHN GONZALEZ, LOUISVILLE AND JEFFERSON COUNTY
METROPOLITAN SEWER DISTRICT 700 WEST LIBERTY, LOUISVILLE, KY 40203

Approved : GABusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, INC. COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-MAR-98		A436683
	Complete	PO Number	
	10-APR-98	DP 00151	
	Printed	Sampled	
	11-APR-98	25-MAR-98 09:05	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMW0422

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 31-MAR-98 13:11 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	35	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	26	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

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Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	93		% Rec
TOLUENE-D8	102		% Rec
BROMOFLUOROBENZENE	96		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: P. SIMS Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 10-APR-98 04:35 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

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Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
SURROGATE RECOVERY			
2-FLUOROPHENOL	45		% Rec
PHENOL-D5	32		% Rec
NITROBENZENE-D5	85		% Rec
2-FLUOROBIPHENYL	79		% Rec
2,4,6-TRIBROMOPHENOL	86		% Rec
TERPHENYL-D14	86		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081
Analyst: J. GRIFFIN Analysis Date: 31-MAR-98 17:48 Instrument: GC/ECD Test: 0305.1.0
Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	86.9		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A
Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A
Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M101.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 01:56 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	0.13	0.010	mg/L

BERYLLIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	120	0.20	mg/L

CHROMIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	7.3	0.025	mg/L

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MAGNESIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	40.	0.20	mg/L

MANGANESE ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	0.16	0.010	mg/L

NICKEL ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

POTASSIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2.1	0.20	mg/L

SILVER ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	28.	0.20	mg/L

VANADIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:35 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 01:56 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B
Analyst: G. MAPP Analysis Date: 01-APR-98 14:02 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	0.014	0.0050	mg/L

LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:02 Instrument: TRACE ICP Test: M116.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:02 Instrument: TRACE ICP Test: M128.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:02 Instrument: TRACE ICP Test: M134.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0
Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

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METROPOLITAN SEWER DISTRICT 700 WEST LIBERTY, LOUISVILLE, KY 40203

Approved : P.K. Spence

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, INC. COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-MAR-98		A436684
	Complete	PO Number	
	15-APR-98	DP 00151	
	Printed	Sampled	
	16-APR-98	25-MAR-98 09:00	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMW04DUP22

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 31-MAR-98 13:55 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	21	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	90		% Rec
TOLUENE-D8	102		% Rec
BROMOFLUOROBENZENE	98		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: C. WILLHITE Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 14-APR-98 04:14 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

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Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
.			
SURROGATE RECOVERY			

2-FLUOROPHENOL	41		% Rec
PHENOL-D5	30		% Rec
NITROBENZENE-D5	87		% Rec
2-FLUOROBIPHENYL	79		% Rec
2,4,6-TRIBROMOPHENOL	94		% Rec
TERPHENYL-D14	78		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081

Analyst: J. GRIFFIN Analysis Date: 31-MAR-98 21:48 Instrument: GC/ECD Test: 0305.1.0

Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	76.4		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M101.3.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 01:59 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	0.13	0.010	mg/L

BERYLLIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	120	0.20	mg/L

CHROMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	7.0	0.025	mg/L

 (continued on next page)

MAGNESIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	41.	0.20	mg/L

MANGANESE ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	0.16	0.010	mg/L

NICKEL ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

POTASSIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2.1	0.20	mg/L

SILVER ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	28.	0.20	mg/L

VANADIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:49 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 01:59 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	0.025	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B
Analyst: G. MAPP Analysis Date: 01-APR-98 14:18 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	0.012	0.0050	mg/L

 (continued on next page)

LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:18 Instrument: TRACE ICP Test: M116.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:18 Instrument: TRACE ICP Test: M128.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:18 Instrument: TRACE ICP Test: M134.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0
Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

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Approved : HABusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, INC. COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-MAR-98		A436685
	Complete	PO Number	
	15-APR-98	DP 00151	
	Printed	Sampled	
	16-APR-98	25-MAR-98 10:20	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMW0522

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 31-MAR-98 14:37 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	17	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

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Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	94		% Rec
TOLUENE-D8	103		% Rec
BROMOFLUOROBENZENE	99		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: C. WILLHITE Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 14-APR-98 05:04 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
SURROGATE RECOVERY			
2-FLUOROPHENOL	46		% Rec
PHENOL-D5	33		% Rec
NITROBENZENE-D5	88		% Rec
2-FLUOROBIPHENYL	81		% Rec
2,4,6-TRIBROMOPHENOL	94		% Rec
TERPHENYL-D14	78		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081

Analyst: J. GRIFFIN Analysis Date: 31-MAR-98 22:38 Instrument: GC/ECD Test: 0305.1.0

Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	79.2		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M101.3.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	0.70	0.050	mg/L

ANTIMONY ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:02 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	0.57	0.010	mg/L

BERYLLIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	73.	0.20	mg/L

CHROMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	0.030	0.010	mg/L

COPPER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	14.	0.025	mg/L

 (continued on next page)

MAGNESIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	24.	0.20	mg/L

MANGANESE ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	0.99	0.010	mg/L

NICKEL ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	0.024	0.010	mg/L

POTASSIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	8.7	0.20	mg/L

SILVER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	42.	0.20	mg/L

VANADIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:52 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:02 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	0.022	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:21 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	0.019	0.0050	mg/L

LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:21 Instrument: TRACE ICP Test: M116.0.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	0.030	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:21 Instrument: TRACE ICP Test: M128.0.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:21 Instrument: TRACE ICP Test: M134.0.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

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JOHN GONZALEZ, LOUISVILLE AND JEFFERSON COUNTY
METROPOLITAN SEWER DISTRICT 700 WEST LIBERTY, LOUISVILLE, KY 40203

Approved : _____

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, INC. COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-MAR-98		A436690
	Complete	PO Number	
	15-APR-98	DP 00151	
	Printed	Sampled	
	16-APR-98	25-MAR-98 14:30	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMWA22

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 01-APR-98 08:46 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	96		% Rec
TOLUENE-D8	102		% Rec
BROMOFLUOROBENZENE	99		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: P. BANDY Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 13-APR-98 10:35 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
SURROGATE RECOVERY			

2-FLUOROPHENOL	38		% Rec
PHENOL-D5	27		% Rec
NITROBENZENE-D5	78		% Rec
2-FLUOROBIPHENYL	76		% Rec
2,4,6-TRIBROMOPHENOL	77		% Rec
TERPHENYL-D14	116		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081

Analyst: J. GRIFFIN Analysis Date: 01-APR-98 03:40 Instrument: GC/ECD Test: 0305.1.0
Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	100.7		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M101.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:13 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	0.019	0.010	mg/L

BERYLLIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	100	0.20	mg/L

CHROMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	0.049	0.025	mg/L

 (continued on next page)

MAGNESIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	36.	0.20	mg/L

MANGANESE ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	BDL	0.010	mg/L

NICKEL ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

POTASSIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2.2	0.20	mg/L

SILVER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	30.	0.20	mg/L

VANADIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:03 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:13 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:55 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

 (continued on next page)

LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:55 Instrument: TRACE ICP Test: M116.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:55 Instrument: TRACE ICP Test: M128.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:55 Instrument: TRACE ICP Test: M134.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0
Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

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Approved : G A Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Project	Lab ID
HERITAGE ENVIRONMENTAL SERVICES, INC. COMMERCIAL LABORATORY OPERATIONS 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-MAR-98		A436689
	Complete	PO Number	
	15-APR-98	DP 00151	
	Printed	Sampled	
	16-APR-98	25-MAR-98 13:25	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMWB22

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 01-APR-98 08:03 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	96		% Rec
TOLUENE-D8	103		% Rec
BROMOFLUOROBENZENE	99		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: P. SIMS Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 14-APR-98 19:07 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
SURROGATE RECOVERY			

2-FLUOROPHENOL	45		% Rec
PHENOL-D5	34		% Rec
NITROBENZENE-D5	85		% Rec
2-FLUOROBIPHENYL	79		% Rec
2,4,6-TRIBROMOPHENOL	93		% Rec
TERPHENYL-D14	72		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081

Analyst: J. GRIFFIN Analysis Date: 01-APR-98 01:09 Instrument: GC/ECD Test: 0305.1.0

Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	104.4		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M101.3.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:10 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	0.010	0.010	mg/L

BERYLLIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	110	0.20	mg/L

CHROMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	0.071	0.025	mg/L

MAGNESIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	38.	0.20	mg/L

MANGANESE ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	0.24	0.010	mg/L

NICKEL ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

POTASSIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2.1	0.20	mg/L

SILVER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	32.	0.20	mg/L

VANADIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 01:00 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:10 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:51 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:51 Instrument: TRACE ICP Test: M116.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:51 Instrument: TRACE ICP Test: M128.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:51 Instrument: TRACE ICP Test: M134.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0
Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

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Approved : H C Busch

CERTIFICATE OF ANALYSIS

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	Printed	Sampled	
	16-APR-98	25-MAR-98 10:10	

Report To	Bill To
DAN SAMMONS, MFWTP IND. WASTE LABORATORY LOUISVILLE AND JEFFERSON COUNTY M.S.D. P.O. BOX 740011 LOUISVILLE, KY 40201	MS. KAREN SHORTE LOUISVILLE & JEFFERSON COUNTY M.S.D. PO BOX 740011 LOUISVILLE, KY 40201

Sample Description

CLIENT ID: LLMWFB22

VOLATILE ORGANICS SW846-8240B

Analyst: H. WILLIAMS Analysis Date: 01-APR-98 06:29 Instrument: GC/MS VOA Test: 0510.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	11	5	ug/L
CHLOROMETHANE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENE (TOTAL)	BDL	5	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	96		% Rec
TOLUENE-D8	103		% Rec
BROMOFLUOROBENZENE	100		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: P. BANDY Analysis Date: 01-APR-98 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1.0		mL

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS) SW846-8270C

Analyst: L. DOBBINS Analysis Date: 14-APR-98 17:27 Instrument: GC/MS SVOA Test: 0505.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZ(A)ANTHRACENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BENZYLBUTYLPHTHALATE	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMOPHENYLPHENYLETHER	BDL	10	ug/L
CARBAZOLE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYLPHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
1,2-DICHLOROBENZENE	BDL	10	ug/L
1,3-DICHLOROBENZENE	BDL	10	ug/L
1,4-DICHLOROBENZENE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
DINITROBENZENES	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L

 (continued on next page)

Parameter	Result	Det. Limit	Units
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
2-NITROANILINE	BDL	50	ug/L
3-NITROANILINE	BDL	50	ug/L
4-NITROANILINE	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSO-DIPHENYLAMINE	BDL	10	ug/L
N-NITROSO-DI-N-PROPYLAMINE	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
2-PICOLINE	BDL	50	ug/L
PYRENE	BDL	10	ug/L
PYRIDINE	BDL	50	ug/L
TETRACHLOROBENZENES	BDL	10	ug/L
TOLUENEDIAMINE	BDL	50	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
BENZOIC ACID	BDL	50	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-2-METHYLPHENOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
2-METHYLPHENOL	BDL	10	ug/L
4-METHYLPHENOL	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	50	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
SURROGATE RECOVERY			

2-FLUOROPHENOL	41		% Rec
PHENOL-D5	28		% Rec
NITROBENZENE-D5	89		% Rec
2-FLUOROBIPHENYL	72		% Rec
2,4,6-TRIBROMOPHENOL	101		% Rec
TERPHENYL-D14	75		% Rec

GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Analyst: J. OELSLAGER Analysis Date: 30-MAR-98 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB/PESTICIDE SCAN GC:ECD SW846-8081

Analyst: J. GRIFFIN Analysis Date: 31-MAR-98 23:28 Instrument: GC/ECD Test: 0305.1.0

Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	0.24	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ENDRIN KETONE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
PCB AROCLOR 1016	BDL	0.5	ug/L
PCB AROCLOR 1221	BDL	0.5	ug/L
PCB AROCLOR 1232	BDL	0.5	ug/L
PCB AROCLOR 1242	BDL	0.5	ug/L
PCB AROCLOR 1248	BDL	0.5	ug/L
PCB AROCLOR 1254	BDL	1	ug/L
PCB AROCLOR 1260	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	96.3		% Rec

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 30-MAR-98 12:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Analyst: S. PUGH Analysis Date: 31-MAR-98 12:00 Instrument: PREP Test: P130.4.1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ALUMINUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M101.3.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:05 Instrument: ICP Test: M102.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BARIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M104.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	BDL	0.010	mg/L

BERYLLIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M105.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0040	mg/L

CADMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M108.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CALCIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M109.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	BDL	0.20	mg/L

CHROMIUM ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M110.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

COBALT ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M111.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M112.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	0.020	mg/L

IRON ICP SW846-6010B

Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M115.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	BDL	0.025	mg/L

 (continued on next page)

MAGNESIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M118.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	BDL	0.20	mg/L

MANGANESE ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M119.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	BDL	0.010	mg/L

NICKEL ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M122.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

POTASSIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M126.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	BDL	0.20	mg/L

SILVER ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M130.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

SODIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M131.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	BDL	0.20	mg/L

VANADIUM ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 31-MAR-98 00:55 Instrument: ICP Test: M138.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP SW846-6010B
Analyst: A. STOCKBURGER Analysis Date: 01-APR-98 02:05 Instrument: ICP Test: M139.3.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.1

Parameter	Result	Det. Limit	Units
ZINC	BDL	0.020	mg/L

ARSENIC TRACE ICP SW846-6010B
Analyst: G. MAPP Analysis Date: 01-APR-98 14:25 Instrument: TRACE ICP Test: M103.0.0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:25 Instrument: TRACE ICP Test: M116.0.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.0050	mg/L

SELENIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:25 Instrument: TRACE ICP Test: M128.0.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM TRACE ICP SW846-6010B

Analyst: G. MAPP Analysis Date: 01-APR-98 14:25 Instrument: TRACE ICP Test: M134.0.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Analyst: J. LEAK Analysis Date: 30-MAR-98 14:30 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7470A

Analyst: J. LEAK Analysis Date: 01-APR-98 12:20 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

CYANIDE DISTILLATION SW846-9010A

Analyst: S. TELLES Analysis Date: 30-MAR-98 15:30 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	250		mL
FINAL VOLUME	250		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012

Analyst: K. WHITFIELD Analysis Date: 31-MAR-98 14:15 Instrument: AUTO-ANALYZER Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9010A P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

Sample Comments

BDL Below Detection Limit

Sample chain of custody number I-48447.

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METROPOLITAN SEWER DISTRICT 700 WEST LIBERTY, LOUISVILLE, KY 40203

Approved : GABusch

QUALITY ASSURANCE REPORT

Service Location
HERITAGE ENVIRONMENTAL SERVICES, INC.
COMMERCIAL LABORATORY OPERATIONS
7901 W. MORRIS ST.
INDIANAPOLIS, IN 46231
(317)243-8304

Report Date
22-APR-98

Submitter
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P.O. BOX 740011
LOUISVILLE, KY 402012

Client ID	Lab ID	Date-Time Sampled	Date Received	Date Complete	Description
LLMW0422	A436683	25-MAR-98 09:05	26-MAR-98	10-APR-98	
LLMW04DUP22	A436684	25-MAR-98 09:00	26-MAR-98	15-APR-98	
LLMW0522	A436685	25-MAR-98 10:20	26-MAR-98	15-APR-98	
LLMWFB22	A436687	25-MAR-98 10:10	26-MAR-98	15-APR-98	
LLMW0222	A436688	25-MAR-98 12:20	26-MAR-98	15-APR-98	
LLMWB22	A436689	25-MAR-98 13:25	26-MAR-98	15-APR-98	
LLMWA22	A436690	25-MAR-98 14:30	26-MAR-98	15-APR-98	

HERITAGE ENVIRONMENTAL SERVICES, INC.

CYANIDE, TOTAL (AUTOMATED) SW846-9012 — G101.4

Prep: CYANIDE DISTILLATION SW846-9010A

Run: R345559 Analyst.: S TELLES Run Date...: 30-MAR-98
PREP Reviewer: B SHRAKE Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
BLA02	Q814730		R345560
LFB02L	Q814731		R345560
LFB02H	Q814732		R345560
SPI02	Q814733	A436841	R345560
DPS02	Q814734	A436841	R345560
SAMPLE	A436683	Rep: 0	R345560
SAMPLE	A436684	Rep: 0	R345560
SAMPLE	A436685	Rep: 0	R345560
SAMPLE	A436687	Rep: 0	R345560
SAMPLE	A436688	Rep: 0	R345560
SAMPLE	A436689	Rep: 0	R345560
SAMPLE	A436690	Rep: 0	R345560

Run: R345560 Analyst.: K WHITFIELD Run Date...: 31-MAR-98 Instrument: AUTO-ANALYZER
ANALYTICAL Reviewer: B SHRAKE Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA01	Q814727		CYANIDE			-.0001	mg/L		
CDL01	Q814728		CYANIDE	0.02		0.0188	mg/L	94	
ICV01	Q814729		CYANIDE	0.15		0.139	mg/L	92.7	
BLA02	Q814730		CYANIDE			0.0003	mg/L		
LFB02L	Q814731		CYANIDE	0.05		0.0435	mg/L	87	
LFB02H	Q814732		CYANIDE	0.25		0.249	mg/L	99.6	
SPI02	Q814733	A436841	CYANIDE	0.004	0.1	0.101	mg/L	97	
DPS02	Q814734	A436841	CYANIDE	0.004	0.1	0.091	mg/L	87	10.9
CCV	Q814735		CYANIDE	0.1		0.099	mg/L	99	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814737		CYANIDE	0.1		0.1	mg/L	100	
BLA01	Q814738		CYANIDE			0.001	mg/L		

ALUMINUM ICP SW846-6010B — M101.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	ALUMINUM	5.00		5.00	mg/L	100	
BLA01	Q814054	NA	ALUMINUM			< 0.0200	mg/L		
ICV01	Q814056	PERKIN	ALUMINUM	1		1.00	mg/L	100	
CDL01	Q814060	INORGAN	ALUMINUM	10		10.0	mg/L	100	
ICS-A	Q814061	PERKIN-	ALUMINUM	500		513.	mg/L	103	
BLA02	Q813762	NA	ALUMINUM			< 0.0200	mg/L		
LCS	Q813761	SPEX	ALUMINUM	20.0		20.6	mg/L	103	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	ALUMINUM	0	2.00	2.25	mg/L	113	
DPS02	Q813764	A436683	ALUMINUM	0	2.00	2.07	mg/L	104	9
CCV	Q814074	INORGAN	ALUMINUM	5.00		5.03	mg/L	101	
BLA01	Q814075	NA	ALUMINUM			< 0.0200	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	ALUMINUM	5.00		5.02	mg/L	100	
BLA01	Q814077	NA	ALUMINUM			< 0.0200	mg/L		
ICS-A	Q814095	PERKIN-	ALUMINUM	500		498.	mg/L	100	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*
*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

ANTIMONY ICP SW846-6010B M102.3
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345500 Analyst.: S PUGH Run Date...: 31-MAR-98
PREP Reviewer: D CZERNY Review Date: 01-APR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q814337	SPEX	R345535
BLA02	Q814338	NA	R345535
SPI02	Q814339	A436269	R345535
DPS02	Q814340	A436269	R345535
SAMPLE	A436683	Rep: 0	R345535
SAMPLE	A436684	Rep: 0	R345535
SAMPLE	A436685	Rep: 0	R345535
SAMPLE	A436687	Rep: 0	R345535
SAMPLE	A436688	Rep: 0	R345535
SAMPLE	A436689	Rep: 0	R345535
SAMPLE	A436690	Rep: 0	R345535

HERITAGE ENVIRONMENTAL SERVICES, INC.

Run: R345535 Analyst.: A STOCKBURGER Run Date...: 31-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 01-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814577	INORGAN	ANTIMONY	1.00		0.960	mg/L	96	
BLA01	Q814578	NA	ANTIMONY			< 0.0120	mg/L		
ICV01	Q814579	PERKIN	ANTIMONY	1		1.01	mg/L	101	
CDL01	Q814583	PERKIN	ANTIMONY	0.120		0.110	mg/L	92	
ICS-A	Q814586	PERKIN	ANTIMONY	0.6		0.589	mg/L	98	
BLA02	Q814338	NA	ANTIMONY			< 0.0120	mg/L		
LCS	Q814337	SPEX	ANTIMONY	5.00		5.03	mg/L	101	
SPI02	Q814339	A436269	ANTIMONY	0	0.500	0.513	mg/L	103	
DPS02	Q814340	A436269	ANTIMONY	0	0.500	0.514	mg/L	103	0
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814607	INORGAN	ANTIMONY	1.00		0.963	mg/L	96	
BLA01	Q814608	NA	ANTIMONY			< 0.0120	mg/L		
CDL01	Q814613	PERKIN	ANTIMONY	0.120		0.110	mg/L	92	
ICS-A	Q814615	PERKIN	ANTIMONY	0.6		0.607	mg/L	101	

Comments

*Q814339 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q814340 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

ARSENIC TRACE ICP SW846-6010B M103.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436683	Rep: 0	R345647
SAMPLE	A436684	Rep: 0	R345647
SAMPLE	A436685	Rep: 0	R345647
SAMPLE	A436687	Rep: 0	R345647
SAMPLE	A436688	Rep: 0	R345647
SAMPLE	A436689	Rep: 0	R345647
SAMPLE	A436690	Rep: 0	R345647
LCS	Q813765	INORGAN	R345647
BLA02	Q813766	NA	R345647
SPI02	Q813767	A436683	R345647
DPS02	Q813768	A436683	R345647

Run: R345647 Analyst.: G MAPP Run Date...: 01-APR-98 Instrument: TRACE ICP
ANALYTICAL Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q815211	PERKIN-	ARSENIC	0.05		0.0532	mg/L	106	
BLA01	Q815213	NA	ARSENIC			< 0.00200	mg/L		
CDL01	Q815214	PERKIN-	ARSENIC	0.02		0.0178	mg/L	89	
ICS-A	Q815217	PERKIN	ARSENIC	0.1		0.109	mg/L	109	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q815218	INORGAN	ARSENIC	0.1		0.0999	mg/L	100	
BLA02	Q813766	NA	ARSENIC			< 0.00200	mg/L		
LCS	Q813765	INORGAN	ARSENIC	0.5		0.525	mg/L	105	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813767	A436683	ARSENIC	0.0137	2	2.17	mg/L	108	
DPS02	Q813768	A436683	ARSENIC	0.0137	2	2.07	mg/L	103	5
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
CCV	Q815228	INORGAN	ARSENIC	0.1		0.102	mg/L	102	
BLA01	Q815229	NA	ARSENIC			< 0.00200	mg/L		
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q815230	INORGAN	ARSENIC	0.1		0.105	mg/L	105	
BLA01	Q815231	NA	ARSENIC			< 0.00200	mg/L		
CDL01	Q815232	PERKIN-	ARSENIC	0.02		0.0221	mg/L	111	
ICS-A	Q815234	PERKIN	ARSENIC	0.1		0.112	mg/L	112	

BARIUM ICP SW846-6010B M104.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	BARIUM	5.00		4.97	mg/L	99	
BLA01	Q814054	NA	BARIUM			< 0.00400	mg/L		
ICV01	Q814056	PERKIN	BARIUM	1		0.995	mg/L	100	
CDL01	Q814060	INORGAN	BARIUM	10		10.0	mg/L	100	
ICS-A	Q814062	PERKIN	BARIUM	0.500		0.484	mg/L	97	
BLA02	Q813762	NA	BARIUM			< 0.00400	mg/L		
LCS	Q813761	SPEX	BARIUM	20.0		20.0	mg/L	100	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	BARIUM	0.127	2.00	2.22	mg/L	105	
DPS02	Q813764	A436683	BARIUM	0.127	2.00	2.13	mg/L	100	5
CCV	Q814074	INORGAN	BARIUM	5.00		5.04	mg/L	101	
BLA01	Q814075	NA	BARIUM			< 0.00400	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	BARIUM	5.00		5.02	mg/L	100	
BLA01	Q814077	NA	BARIUM			< 0.00400	mg/L		
ICS-A	Q814096	PERKIN	BARIUM	0.500		0.462	mg/L	92	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

BERYLLIUM ICP SW846-6010B M105.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	BERYLLIUM	5.00		4.93	mg/L	99	
BLA01	Q814054	NA	BERYLLIUM			0.00187	mg/L		
ICV01	Q814055	PERKIN	BERYLLIUM	1		0.981	mg/L	98	
CDL01	Q814059	PERKIN	BERYLLIUM	0.010		0.0111	mg/L	111	
ICS-A	Q814062	PERKIN	BERYLLIUM	0.500		0.471	mg/L	94	
BLA02	Q813762	NA	BERYLLIUM			< 0.00160	mg/L		
LCS	Q813761	SPEX	BERYLLIUM	0.500		0.501	mg/L	100	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	BERYLLIUM	0	0.050	0.0519	mg/L	104	
DPS02	Q813764	A436683	BERYLLIUM	0	0.050	0.0500	mg/L	100	4
CCV	Q814074	INORGAN	BERYLLIUM	5.00		5.01	mg/L	100	
BLA01	Q814075	NA	BERYLLIUM			0.00187	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	BERYLLIUM	5.00		4.99	mg/L	100	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA01	Q814077	NA	BERYLLIUM			0.00187	mg/L		
CDL01	Q814094	PERKIN	BERYLLIUM	0.010		0.0102	mg/L	102	
ICS-A	Q814096	PERKIN	BERYLLIUM	0.500		0.457	mg/L	91	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

CADMIUM ICP SW846-6010B M108.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	CADMIUM	5.00		4.93	mg/L	99	
BLA01	Q814054	NA	CADMIUM			< 0.00200	mg/L		
ICV01	Q814055	PERKIN	CADMIUM	1		1.03	mg/L	103	
CDL01	Q814059	PERKIN	CADMIUM	0.010		0.0103	mg/L	103	
ICS-A	Q814062	PERKIN	CADMIUM	1.00		0.911	mg/L	91	
BLA02	Q813762	NA	CADMIUM			< 0.00200	mg/L		
LCS	Q813761	SPEX	CADMIUM	0.500		0.496	mg/L	99	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	CADMIUM	0	0.050	0.0559	mg/L	112	
DPS02	Q813764	A436683	CADMIUM	0	0.050	0.0510	mg/L	102	9
CCV	Q814074	INORGAN	CADMIUM	5.00		4.94	mg/L	99	
BLA01	Q814075	NA	CADMIUM			< 0.00200	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	CADMIUM	5.00		4.95	mg/L	99	
BLA01	Q814077	NA	CADMIUM			< 0.00200	mg/L		
CDL01	Q814094	PERKIN	CADMIUM	0.010		0.0103	mg/L	103	
ICS-A	Q814096	PERKIN	CADMIUM	1.00		0.891	mg/L	89	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*
*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

CALCIUM ICP SW846-6010B M109.3
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	CALCIUM	50.0		48.4	mg/L	97	
BLA01	Q814054	NA	CALCIUM			< 0.0800	mg/L		
ICV01	Q814057	SPEX	CALCIUM	20		19.8	mg/L	99	
ICS-A	Q814061	PERKIN-	CALCIUM	500		472.	mg/L	94	
BLA02	Q813762	NA	CALCIUM			< 0.0800	mg/L		
LCS	Q813761	SPEX	CALCIUM	100		95.9	mg/L	96	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	CALCIUM	119.	100	230.	mg/L	111	
DPS02	Q813764	A436683	CALCIUM	119.	100	217.	mg/L	98	12
CCV	Q814074	INORGAN	CALCIUM	50.0		49.0	mg/L	98	
BLA01	Q814075	NA	CALCIUM			< 0.0800	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	CALCIUM	50.0		48.8	mg/L	98	
BLA01	Q814077	NA	CALCIUM			< 0.0800	mg/L		
ICS-A	Q814095	PERKIN-	CALCIUM	500		464.	mg/L	93	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*
*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

HERITAGE ENVIRONMENTAL SERVICES, INC.

CHROMIUM ICP SW846-6010B M110.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	CHROMIUM	5.00		4.96	mg/L	99	
BLA01	Q814054	NA	CHROMIUM			< 0.00400	mg/L		
ICV01	Q814055	PERKIN	CHROMIUM	1		1.01	mg/L	101	
CDL01	Q814059	PERKIN	CHROMIUM	0.020		0.0193	mg/L	97	
ICS-A	Q814062	PERKIN	CHROMIUM	0.500		0.459	mg/L	92	
BLA02	Q813762	NA	CHROMIUM			< 0.00400	mg/L		
LCS	Q813761	SPEX	CHROMIUM	2.00		1.92	mg/L	96	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	CHROMIUM	0	0.200	0.215	mg/L	108	
DPS02	Q813764	A436683	CHROMIUM	0	0.200	0.198	mg/L	99	9
CCV	Q814074	INORGAN	CHROMIUM	5.00		4.96	mg/L	99	
BLA01	Q814075	NA	CHROMIUM			0.00484	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	CHROMIUM	5.00		4.96	mg/L	99	
BLA01	Q814077	NA	CHROMIUM			< 0.00400	mg/L		
CDL01	Q814094	PERKIN	CHROMIUM	0.020		0.0193	mg/L	97	
ICS-A	Q814096	PERKIN	CHROMIUM	0.500		0.448	mg/L	90	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

HERITAGE ENVIRONMENTAL SERVICES, INC.

COBALT ICP SW846-6010B M111.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	COBALT	5.00		4.94	mg/L	99	
BLA01	Q814054	NA	COBALT			< 0.00400	mg/L		
ICV01	Q814055	PERKIN	COBALT	1		1.02	mg/L	102	
CDL01	Q814059	PERKIN	COBALT	0.100		0.105	mg/L	105	
ICS-A	Q814062	PERKIN	COBALT	0.500		0.460	mg/L	92	
BLA02	Q813762	NA	COBALT			< 0.00400	mg/L		
LCS	Q813761	SPEX	COBALT	5.00		4.92	mg/L	98	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	COBALT	0	0.500	0.526	mg/L	105	
DPS02	Q813764	A436683	COBALT	0	0.500	0.495	mg/L	99	6
CCV	Q814074	INORGAN	COBALT	5.00		4.95	mg/L	99	
BLA01	Q814075	NA	COBALT			0.00402	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	COBALT	5.00		4.95	mg/L	99	
BLA01	Q814077	NA	COBALT			< 0.00400	mg/L		
CDL01	Q814094	PERKIN	COBALT	0.100		0.102	mg/L	102	
ICS-A	Q814096	PERKIN	COBALT	0.500		0.450	mg/L	90	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

HERITAGE ENVIRONMENTAL SERVICES, INC.

COPPER ICP SW846-6010B M112.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	COPPER	5.00		4.97	mg/L	99	
BLA01	Q814054	NA	COPPER			< 0.00800	mg/L		
ICV01	Q814055	PERKIN	COPPER	1		1.01	mg/L	101	
CDL01	Q814059	PERKIN	COPPER	0.050		0.0532	mg/L	106	
ICS-A	Q814062	PERKIN	COPPER	0.500		0.496	mg/L	99	
BLA02	Q813762	NA	COPPER			< 0.00800	mg/L		
LCS	Q813761	SPEX	COPPER	2.50		2.52	mg/L	101	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	COPPER	0	0.250	0.274	mg/L	110	
DPS02	Q813764	A436683	COPPER	0	0.250	0.259	mg/L	104	6
CCV	Q814074	INORGAN	COPPER	5.00		5.00	mg/L	100	
BLA01	Q814075	NA	COPPER			< 0.00800	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	COPPER	5.00		4.97	mg/L	99	
BLA01	Q814077	NA	COPPER			< 0.00800	mg/L		
CDL01	Q814094	PERKIN	COPPER	0.050		0.0518	mg/L	104	
ICS-A	Q814096	PERKIN	COPPER	0.500		0.475	mg/L	95	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

HERITAGE ENVIRONMENTAL SERVICES, INC.

IRON ICP SW846-6010B — M115.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	IRON	5.00		4.96	mg/L	99	
BLA01	Q814054	NA	IRON			< 0.0100	mg/L		
ICV01	Q814055	PERKIN	IRON	1		1.02	mg/L	102	
CDL01	Q814060	INORGAN	IRON	10		10.1	mg/L	101	
ICS-A	Q814061	PERKIN-	IRON	200		186.	mg/L	93	
BLA02	Q813762	NA	IRON			0.0188	mg/L		
LCS	Q813761	SPEX	IRON	10.0		10.1	mg/L	101	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	IRON	7.27	1	* 8.56	mg/L		
DPS02	Q813764	A436683	IRON	7.27	1	* 8.48	mg/L		
CCV	Q814074	INORGAN	IRON	5.00		4.96	mg/L	99	
BLA01	Q814075	NA	IRON			0.0170	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	IRON	5.00		4.95	mg/L	99	
BLA01	Q814077	NA	IRON			< 0.0100	mg/L		
ICS-A	Q814095	PERKIN-	IRON	200		182.	mg/L	91	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

LEAD TRACE ICP SW846-6010B — M116.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436683	Rep: 0	R345647

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436684	Rep: 0	R345647
SAMPLE	A436685	Rep: 0	R345647
SAMPLE	A436687	Rep: 0	R345647
SAMPLE	A436688	Rep: 0	R345647
SAMPLE	A436689	Rep: 0	R345647
SAMPLE	A436690	Rep: 0	R345647
LCS	Q813765	INORGAN	R345647
BLA02	Q813766	NA	R345647
SPI02	Q813767	A436683	R345647
DPS02	Q813768	A436683	R345647

Run: R345647 Analyst.: G MAPP Run Date...: 01-APR-98 Instrument: TRACE ICP
ANALYTICAL Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q815211	PERKIN-	LEAD	0.05		0.0520	mg/L	104	
BLA01	Q815213	NA	LEAD			< 0.00200	mg/L		
CDL01	Q815214	PERKIN-	LEAD	0.006		0.00817	mg/L	136	
ICS-A	Q815217	PERKIN	LEAD	0.05		0.0466	mg/L	93	
CCV	Q815218	INORGAN	LEAD	0.1		0.0993	mg/L	99	
BLA02	Q813766	NA	LEAD			< 0.00200	mg/L		
LCS	Q813765	INORGAN	LEAD	0.5		0.512	mg/L	102	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813767	A436683	LEAD	0	0.5	0.492	mg/L	98	
DPS02	Q813768	A436683	LEAD	0	0.5	0.474	mg/L	95	3
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
CCV	Q815228	INORGAN	LEAD	0.1		0.101	mg/L	101	
BLA01	Q815229	NA	LEAD			< 0.00200	mg/L		
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q815230	INORGAN	LEAD	0.1		0.104	mg/L	104	
BLA01	Q815231	NA	LEAD			< 0.00200	mg/L		
CDL01	Q815232	PERKIN-	LEAD	0.006		0.00715	mg/L	119	
ICS-A	Q815234	PERKIN	LEAD	0.05		0.0475	mg/L	95	

MAGNESIUM ICP SW846-6010B MI18.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

HERITAGE ENVIRONMENTAL SERVICES, INC.

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	MAGNESIUM	50.0		48.9	mg/L	98	
BLA01	Q814054	NA	MAGNESIUM			< 0.0800	mg/L		
ICV01	Q814057	SPEX	MAGNESIUM	20		19.6	mg/L	98	
ICS-A	Q814061	PERKIN-	MAGNESIUM	500		487.	mg/L	97	
BLA02	Q813762	NA	MAGNESIUM			0.120	mg/L		
LCS	Q813761	SPEX	MAGNESIUM	100		96.2	mg/L	96	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	MAGNESIUM	40.3	100	149.	mg/L	109	
DPS02	Q813764	A436683	MAGNESIUM	40.3	100	139.	mg/L	99	10
CCV	Q814074	INORGAN	MAGNESIUM	50.0		49.2	mg/L	98	
BLA01	Q814075	NA	MAGNESIUM			< 0.0800	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	MAGNESIUM	50.0		49.1	mg/L	98	
BLA01	Q814077	NA	MAGNESIUM			< 0.0800	mg/L		
ICS-A	Q814095	PERKIN-	MAGNESIUM	500		476.	mg/L	95	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

MANGANESE ICP SW846-6010B M119.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	MANGANESE	5.00		4.95	mg/L	99	
BLA01	Q814054	NA	MANGANESE			< 0.00400	mg/L		
ICV01	Q814055	PERKIN	MANGANESE	1		1.01	mg/L	101	
CDL01	Q814059	PERKIN	MANGANESE	0.030		0.0302	mg/L	101	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICS-A	Q814062	PERKIN	MANGANESE	0.500		0.473	mg/L	95	
BLA02	Q813762	NA	MANGANESE			< 0.00400	mg/L		
LCS	Q813761	SPEX	MANGANESE	5.00		4.94	mg/L	99	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	MANGANESE	0.158	0.500	0.695	mg/L	107	
DPS02	Q813764	A436683	MANGANESE	0.158	0.500	0.666	mg/L	102	5
CCV	Q814074	INORGAN	MANGANESE	5.00		4.95	mg/L	99	
BLA01	Q814075	NA	MANGANESE			< 0.00400	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	MANGANESE	5.00		4.95	mg/L	99	
BLA01	Q814077	NA	MANGANESE			< 0.00400	mg/L		
CDL01	Q814094	PERKIN	MANGANESE	0.030		0.0296	mg/L	99	
ICS-A	Q814096	PERKIN	MANGANESE	0.500		0.456	mg/L	91	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

MERCURY CVAA SW846-7470A — M120.1

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

Run: R345457 Analyst.: J LEAK Run Date...: 30-MAR-98
PREP Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q814023		R345689
BLA02	Q814024		R345689
SPI02	Q814025	A436374	R345689
DPS02	Q814026	A436374	R345689
SAMPLE	A436689	Rep: 0	R345689
SAMPLE	A436690	Rep: 0	R345689

Run: R345458 Analyst.: J LEAK Run Date...: 30-MAR-98
PREP Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q814027		R345689
BLA02	Q814028		R345689
SPI02	Q814029	A436371	R345689
DPS02	Q814030	A436371	R345689
SAMPLE	A436683	Rep: 0	R345689
SAMPLE	A436684	Rep: 0	R345689
SAMPLE	A436685	Rep: 0	R345689
SAMPLE	A436687	Rep: 0	R345689
SAMPLE	A436688	Rep: 0	R345689

Run: R345689 Analyst.: J LEAK Run Date...: 01-APR-98 Instrument: CVAA
ANALYTICAL Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q815525		MERCURY	0.002		0.00203	mg/L	101.5	
BLA01	Q815526		MERCURY			< 0.00008	mg/L		

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q815527		MERCURY	0.003		0.00298	mg/L	99.3	
CDL01	Q815529		MERCURY	0.0002		0.00023	mg/L	115	
LCS	Q814023		MERCURY	0.002		0.00202	mg/L	101	
BLA02	Q814024		MERCURY			< 0.00008	mg/L		
SPI02	Q814025	A436374	MERCURY	0	0.001	0.00101	mg/L	101	
DPS02	Q814026	A436374	MERCURY	0	0.001	0.00101	mg/L	101	0
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CDL01	Q815552		MERCURY	0.0002		0.00024	mg/L	120	
CCV	Q815553		MERCURY	0.003		0.00293	mg/L	97.7	
BLA01	Q815554		MERCURY			< 0.00008	mg/L		
LCS	Q814027		MERCURY	2		1.96	ug/L	98	
BLA02	Q814028		MERCURY			< 0.08	ug/L		
SPI02	Q814029	A436371	MERCURY	0	1	1	mg/L	100	
DPS02	Q814030	A436371	MERCURY	0	1	1.01	ug/L	101	1
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
CDL01	Q815564		MERCURY	0.0002		0.00022	mg/L	110	
CCV	Q815565		MERCURY	0.003		0.0029	mg/L	96.7	
BLA01	Q815566		MERCURY			< 0.00008	mg/L		
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
CDL01	Q815573		MERCURY	0.0002		0.00021	mg/L	105	
CCV	Q815574		MERCURY	0.003		0.0029	mg/L	96.7	
BLA01	Q815575		MERCURY			< 0.00008	mg/L		

NICKEL ICP SW846-6010B M122.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	NICKEL	5.00		4.94	mg/L	99	
BLA01	Q814054	NA	NICKEL			< 0.00400	mg/L		
ICV01	Q814055	PERKIN	NICKEL	1		1.02	mg/L	102	
CDL01	Q814059	PERKIN	NICKEL	0.080		0.0881	mg/L	110	
ICS-A	Q814062	PERKIN	NICKEL	1.00		0.890	mg/L	89	
BLA02	Q813762	NA	NICKEL			< 0.00400	mg/L		

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
LCS	Q813761	SPEX	NICKEL	5.00		4.93	mg/L	99	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	NICKEL	0	0.500	0.529	mg/L	106	
DPS02	Q813764	A436683	NICKEL	0	0.500	0.497	mg/L	99	6
CCV	Q814074	INORGAN	NICKEL	5.00		4.94	mg/L	99	
BLA01	Q814075	NA	NICKEL			< 0.00400	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	NICKEL	5.00		4.94	mg/L	99	
BLA01	Q814077	NA	NICKEL			< 0.00400	mg/L		
CDL01	Q814094	PERKIN	NICKEL	0.080		0.0822	mg/L	103	
ICS-A	Q814096	PERKIN	NICKEL	1.00		0.878	mg/L	88	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

POTASSIUM ICP SW846-6010B M126.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	POTASSIUM	50		49.2	mg/L	98	
BLA01	Q814054	NA	POTASSIUM			< 0.0800	mg/L		
ICV01	Q814056	PERKIN	POTASSIUM	10		9.65	mg/L	97	
ICV01	Q814057	SPEX	POTASSIUM	20		19.5	mg/L	98	
BLA02	Q813762	NA	POTASSIUM			< 0.0800	mg/L		
LCS	Q813761	SPEX	POTASSIUM	100		97.4	mg/L	97	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	POTASSIUM	2.10	100	111.	mg/L	109	
DPS02	Q813764	A436683	POTASSIUM	2.10	100	103.	mg/L	101	8
CCV	Q814074	INORGAN	POTASSIUM	50		49.6	mg/L	99	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA01	Q814075	NA	POTASSIUM			< 0.0800	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	POTASSIUM	50		49.4	mg/L	99	
BLA01	Q814077	NA	POTASSIUM			< 0.0800	mg/L		

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

SELENIUM TRACE ICP SW846-6010B M128.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436683	Rep: 0	R345647
SAMPLE	A436684	Rep: 0	R345647
SAMPLE	A436685	Rep: 0	R345647
SAMPLE	A436687	Rep: 0	R345647
SAMPLE	A436688	Rep: 0	R345647
SAMPLE	A436689	Rep: 0	R345647
SAMPLE	A436690	Rep: 0	R345647
LCS	Q813765	INORGAN	R345647
BLA02	Q813766	NA	R345647
SPI02	Q813767	A436683	R345647
DPS02	Q813768	A436683	R345647

Run: R345647 Analyst.: G MAPP Run Date...: 01-APR-98 Instrument: TRACE ICP
ANALYTICAL Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q815211	PERKIN-	SELENIUM	0.05		0.0521	mg/L	104	
BLA01	Q815213	NA	SELENIUM			0.00214	mg/L		
CDL01	Q815214	PERKIN-	SELENIUM	0.01		0.00979	mg/L	98	
ICS-A	Q815217	PERKIN	SELENIUM	0.05		0.0481	mg/L	96	
CCV	Q815218	INORGAN	SELENIUM	0.1		0.0994	mg/L	99	
BLA02	Q813766	NA	SELENIUM			< 0.00200	mg/L		
LCS	Q813765	INORGAN	SELENIUM	0.5		0.514	mg/L	103	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813767	A436683	SELENIUM	0	2	2.27	mg/L	114	
DPS02	Q813768	A436683	SELENIUM	0	2	2.12	mg/L	106	7
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
CCV	Q815228	INORGAN	SELENIUM	0.1		0.100	mg/L	100	
BLA01	Q815229	NA	SELENIUM			< 0.00200	mg/L		
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q815230	INORGAN	SELENIUM	0.1		0.104	mg/L	104	
BLA01	Q815231	NA	SELENIUM			< 0.00200	mg/L		
CDL01	Q815232	PERKIN-	SELENIUM	0.01		0.00971	mg/L	97	
ICS-A	Q815234	PERKIN	SELENIUM	0.05		0.0495	mg/L	99	

SILVER ICP SW846-6010B M130.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	SILVER	1.00		0.990	mg/L	99	
BLA01	Q814054	NA	SILVER			< 0.00400	mg/L		
ICV01	Q814056	PERKIN	SILVER	0.5		0.537	mg/L	107	
CDL01	Q814059	PERKIN	SILVER	0.020		0.0210	mg/L	105	
ICS-A	Q814062	PERKIN	SILVER	0.2		0.207	mg/L	104	
BLA02	Q813762	NA	SILVER			< 0.00400	mg/L		
LCS	Q813761	SPEX	SILVER	0.500		0.526	mg/L	105	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	SILVER	0	0.050	0.0470	mg/L	94	
DPS02	Q813764	A436683	SILVER	0	0.050	0.0524	mg/L	105	11
CCV	Q814074	INORGAN	SILVER	1.00		0.990	mg/L	99	
BLA01	Q814075	NA	SILVER			< 0.00400	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	SILVER	1.00		0.988	mg/L	99	
BLA01	Q814077	NA	SILVER			< 0.004	mg/L		
CDL01	Q814094	PERKIN	SILVER	0.020		0.0214	mg/L	107	
ICS-A	Q814096	PERKIN	SILVER	0.2		0.204	mg/L	102	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*
*Q813764 * Spike is NA; Sample concentration is greater than four times the spike*

Comments

concentration. (Fe)

SODIUM ICP SW846-6010B M131.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	SODIUM	50		49.0	mg/L	98	
BLA01	Q814054	NA	SODIUM			< 0.0800	mg/L		
ICV01	Q814056	PERKIN	SODIUM	1		0.967	mg/L	97	
ICV01	Q814057	SPEX	SODIUM	20		21.5	mg/L	108	
BLA02	Q813762	NA	SODIUM			0.110	mg/L		
LCS	Q813761	SPEX	SODIUM	100		106.	mg/L	106	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	SODIUM	28.0	100	148.	mg/L	120	
DPS02	Q813764	A436683	SODIUM	28.0	100	138.	mg/L	110	9
CCV	Q814074	INORGAN	SODIUM	50		48.5	mg/L	97	
BLA01	Q814075	NA	SODIUM			< 0.0800	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	SODIUM	50		48.0	mg/L	96	
BLA01	Q814077	NA	SODIUM			< 0.0800	mg/L		

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

HERITAGE ENVIRONMENTAL SERVICES, INC.

THALLIUM TRACE ICP SW846-6010B — M134.0

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436683	Rep: 0	R345647
SAMPLE	A436684	Rep: 0	R345647
SAMPLE	A436685	Rep: 0	R345647
SAMPLE	A436687	Rep: 0	R345647
SAMPLE	A436688	Rep: 0	R345647
SAMPLE	A436689	Rep: 0	R345647
SAMPLE	A436690	Rep: 0	R345647
LCS	Q813765	INORGAN	R345647
BLA02	Q813766	NA	R345647
SPI02	Q813767	A436683	R345647
DPS02	Q813768	A436683	R345647

Run: R345647 Analyst.: G MAPP Run Date...: 01-APR-98 Instrument: TRACE ICP
ANALYTICAL Reviewer: S O'NEAL Review Date: 02-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
ICV01	Q815211	PERKIN-	THALLIUM	0.05		0.0513	mg/L	103	
BLA01	Q815213	NA	THALLIUM			< 0.00400	mg/L		
CDL01	Q815214	PERKIN-	THALLIUM	0.02		0.0214	mg/L	107	
ICS-A	Q815217	PERKIN	THALLIUM	0.1		0.0841	mg/L	84	
CCV	Q815218	INORGAN	THALLIUM	0.1		0.0993	mg/L	99	
BLA02	Q813766	NA	THALLIUM			0.00459	mg/L		
LCS	Q813765	INORGAN	THALLIUM	0.5		0.503	mg/L	101	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813767	A436683	THALLIUM	0	3	3.01	mg/L	100	
DPS02	Q813768	A436683	THALLIUM	0	3	2.89	mg/L	96	4
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
CCV	Q815228	INORGAN	THALLIUM	0.1		0.0987	mg/L	99	
BLA01	Q815229	NA	THALLIUM			< 0.00400	mg/L		
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q815230	INORGAN	THALLIUM	0.1		0.102	mg/L	102	
BLA01	Q815231	NA	THALLIUM			< 0.00400	mg/L		
CDL01	Q815232	PERKIN-	THALLIUM	0.02		0.0209	mg/L	105	
ICS-A	Q815234	PERKIN	THALLIUM	0.1		0.0883	mg/L	88	

VANADIUM ICP SW846-6010B — M138.3

Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345418 Analyst.: S PUGH Run Date...: 30-MAR-98
PREP Reviewer: D CZERNY Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q813761	SPEX	R345463
BLA02	Q813762	NA	R345463
SPI02	Q813763	A436683	R345463
DPS02	Q813764	A436683	R345463
SAMPLE	A436683	Rep: 0	R345463

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436684	Rep: 0	R345463
SAMPLE	A436685	Rep: 0	R345463
SAMPLE	A436687	Rep: 0	R345463
SAMPLE	A436688	Rep: 0	R345463
SAMPLE	A436689	Rep: 0	R345463
SAMPLE	A436690	Rep: 0	R345463

Run: R345463 Analyst.: A STOCKBURGER Run Date...: 30-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 31-MAR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814053	INORGAN	VANADIUM	5.00		4.97	mg/L	99	
BLA01	Q814054	NA	VANADIUM			< 0.00400	mg/L		
ICV01	Q814055	PERKIN	VANADIUM	1		1.01	mg/L	101	
CDL01	Q814059	PERKIN	VANADIUM	0.100		0.102	mg/L	102	
ICS-A	Q814062	PERKIN	VANADIUM	0.500		0.483	mg/L	97	
BLA02	Q813762	NA	VANADIUM			< 0.00400	mg/L		
LCS	Q813761	SPEX	VANADIUM	5.00		5.01	mg/L	100	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q813763	A436683	VANADIUM	0	0.500	0.531	mg/L	106	
DPS02	Q813764	A436683	VANADIUM	0	0.500	0.505	mg/L	101	5
CCV	Q814074	INORGAN	VANADIUM	5.00		5.00	mg/L	100	
BLA01	Q814075	NA	VANADIUM			< 0.00400	mg/L		
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814076	INORGAN	VANADIUM	5.00		4.99	mg/L	100	
BLA01	Q814077	NA	VANADIUM			< 0.00400	mg/L		
CDL01	Q814094	PERKIN	VANADIUM	0.100		0.0987	mg/L	99	
ICS-A	Q814096	PERKIN	VANADIUM	0.500		0.464	mg/L	93	

Comments

*Q813763 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*
*Q813764 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

ZINC ICP SW846-6010B M139.3
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES SW846-3005A

Run: R345500 Analyst.: S PUGH Run Date...: 31-MAR-98
PREP Reviewer: D CZERNY Review Date: 01-APR-98

QC Type	Lab ID	Source	Anal Run
LCS	Q814337	SPEX	R345535
BLA02	Q814338	NA	R345535
SPI02	Q814339	A436269	R345535
DPS02	Q814340	A436269	R345535
SAMPLE	A436683	Rep: 0	R345535
SAMPLE	A436684	Rep: 0	R345535
SAMPLE	A436685	Rep: 0	R345535
SAMPLE	A436687	Rep: 0	R345535
SAMPLE	A436688	Rep: 0	R345535

QC Type	Lab ID	Source	Anal Run
SAMPLE	A436689	Rep: 0	R345535
SAMPLE	A436690	Rep: 0	R345535

Run: R345535 Analyst.: A STOCKBURGER Run Date...: 31-MAR-98 Instrument: ICP
ANALYTICAL Reviewer: S ENDERSON Review Date: 01-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814577	INORGAN	ZINC	5.00		4.96	mg/L	99	
BLA01	Q814578	NA	ZINC			< 0.00800	mg/L		
ICV01	Q814579	PERKIN	ZINC	1		1.02	mg/L	102	
CDL01	Q814583	PERKIN	ZINC	0.040		0.0404	mg/L	101	
ICS-A	Q814586	PERKIN	ZINC	1.00		0.955	mg/L	96	
BLA02	Q814338	NA	ZINC			0.0173	mg/L		
LCS	Q814337	SPEX	ZINC	5.00		5.02	mg/L	100	
SPI02	Q814339	A436269	ZINC	0	0.500	0.524	mg/L	105	
DPS02	Q814340	A436269	ZINC	0	0.500	0.526	mg/L	105	0
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q814607	INORGAN	ZINC	5.00		5.03	mg/L	101	
BLA01	Q814608	NA	ZINC			< 0.00800	mg/L		
CDL01	Q814613	PERKIN	ZINC	0.040		0.0473	mg/L	118	
ICS-A	Q814615	PERKIN	ZINC	1.00		1.00	mg/L	100	

Comments

*Q814339 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*
*Q814340 * Spike is NA; Sample concentration is greater than four times the spike concentration. (Fe)*

PCB/PESTICIDE SCAN GC:ECD SW846-8081 0305.1
Prep: GC SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Run: R345472 Analyst.: J OELSLAGER Run Date...: 30-MAR-98
PREP Reviewer: B WOOD Review Date: 31-MAR-98

QC Type	Lab ID	Source	Anal Run
BLA02	Q814177		R345643
LCS	Q814178		R345643
SAMPLE	A436683	Rep: 0	R345643
SPI02	Q814179	A436683	R345643
DPS02	Q814180	A436683	R345643
SAMPLE	A436684	Rep: 0	R345643
SAMPLE	A436685	Rep: 0	R345643
SAMPLE	A436687	Rep: 0	R345643
SAMPLE	A436688	Rep: 0	R345643
SAMPLE	A436689	Rep: 0	R345643
SAMPLE	A436690	Rep: 0	R345643

Run: R345643 Analyst.: J GRIFFIN Run Date...: 31-MAR-98 Instrument: GC/ECD
ANALYTICAL Reviewer: E WERNZ Review Date: 02-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA02	Q814177		ALPHA-BHC			BDL 0.05	ug/L		

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA02	Q814177		BETA-BHC			BDL 0.05	ug/L		
BLA02	Q814177		DELTA-BHC			BDL 0.05	ug/L		
BLA02	Q814177		GAMMA-BHC (LINDANE)			BDL 0.05	ug/L		
BLA02	Q814177		HEPTACHLOR			BDL 0.05	ug/L		
BLA02	Q814177		ALDRIN			BDL 0.05	ug/L		
BLA02	Q814177		HEPTACHLOR EPOXIDE			BDL 0.05	ug/L		
BLA02	Q814177		ENDOSULFAN I			BDL 0.05	ug/L		
BLA02	Q814177		DIELDRIN			BDL 0.1	ug/L		
BLA02	Q814177		4,4'-DDE			BDL 0.1	ug/L		
BLA02	Q814177		ENDRIN			BDL 0.1	ug/L		
BLA02	Q814177		ENDOSULFAN II			BDL 0.1	ug/L		
BLA02	Q814177		4,4'-DDD			BDL 0.1	ug/L		
BLA02	Q814177		ENDOSULFAN SULFATE			BDL 0.1	ug/L		
BLA02	Q814177		4,4'-DDT			BDL 0.1	ug/L		
BLA02	Q814177		METHOXYCHLOR			BDL 0.5	ug/L		
BLA02	Q814177		ENDRIN ALDEHYDE			BDL 0.1	ug/L		
BLA02	Q814177		ENDRIN KETONE			BDL 0.1	ug/L		
BLA02	Q814177		ALPHA-CHLORDANE			BDL 0.5	ug/L		
BLA02	Q814177		GAMMA-CHLORDANE			BDL 0.5	ug/L		
BLA02	Q814177		TOXAPHENE			BDL 1	ug/L		
BLA02	Q814177		PCB AROCLOR 1016			BDL 0.5	ug/L		
BLA02	Q814177		PCB AROCLOR 1221			BDL 0.5	ug/L		
BLA02	Q814177		PCB AROCLOR 1232			BDL 0.5	ug/L		
BLA02	Q814177		PCB AROCLOR 1242			BDL 0.5	ug/L		
BLA02	Q814177		PCB AROCLOR 1248			BDL 0.5	ug/L		
BLA02	Q814177		PCB AROCLOR 1254			BDL 1	ug/L		
BLA02	Q814177		PCB AROCLOR 1260			BDL 1	ug/L		
LCS	Q814178		GAMMA-BHC (LINDANE)	500		513.3	ug/L	102.7	
LCS	Q814178		HEPTACHLOR	500		470.1	ug/L	94	
LCS	Q814178		ALDRIN	500		486.1	ug/L	97.2	
LCS	Q814178		DIELDRIN	1000		1103.3	ug/L	110.3	
LCS	Q814178		ENDRIN	1000		1109.4	ug/L	110.9	
LCS	Q814178		4,4'-DDT	1000		1135.2	ug/L	113.5	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SPI02	Q814179	A436683	GAMMA-BHC (LINDANE)	0	0.926	0.967	ug/L	104.4	
SPI02	Q814179	A436683	HEPTACHLOR	0	0.926	0.867	ug/L	93.6	
SPI02	Q814179	A436683	ALDRIN	0	0.926	0.851	ug/L	91.9	
SPI02	Q814179	A436683	DIELDRIN	0	1.85	2.04	ug/L	110.3	
SPI02	Q814179	A436683	ENDRIN	0	1.85	2.05	ug/L	110.8	
SPI02	Q814179	A436683	4,4'-DDT	0	1.85	2.09	ug/L	113	
DPS02	Q814180	A436683	GAMMA-BHC (LINDANE)	0	1.25	1.29	ug/L	103.2	1.2
DPS02	Q814180	A436683	HEPTACHLOR	0	1.25	0.944	ug/L	75.5	21.4
DPS02	Q814180	A436683	ALDRIN	0	1.25	0.833	ug/L	66.6	31.9
DPS02	Q814180	A436683	DIELDRIN	0	2.5	2.71	ug/L	108.4	1.7
DPS02	Q814180	A436683	ENDRIN	0	2.5	2.75	ug/L	110	.7
DPS02	Q814180	A436683	4,4'-DDT	0	2.5	2.83	ug/L	113.2	.2
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
CCV	Q815189		ALPHA-BHC	20		20.69	ug/L	103.5	
CCV	Q815189		GAMMA-BHC (LINDANE)	20		21.22	ug/L	106.1	
CCV	Q815189		HEPTACHLOR	20		20.95	ug/L	104.8	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q815189		ENDOSULFAN I	20		20.78	ug/L	103.9	
CCV	Q815189		DIELDRIN	40		42.55	ug/L	106.4	
CCV	Q815189		ENDRIN	40		42.49	ug/L	106.2	
CCV	Q815189		4,4'-DDD	40		41.73	ug/L	104.3	
CCV	Q815189		4,4'-DDT	40		43.33	ug/L	108.3	
CCV	Q815189		METHOXYCHLOR	200		222.7	ug/L	111.4	
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
CCV	Q815190		ALPHA-BHC	20		21.21	ug/L	106.1	
CCV	Q815190		GAMMA-BHC (LINDANE)	20		21.73	ug/L	108.7	
CCV	Q815190		HEPTACHLOR	20		21.43	ug/L	107.2	
CCV	Q815190		ENDOSULFAN I	20		21.15	ug/L	105.8	
CCV	Q815190		DIELDRIN	40		43.12	ug/L	107.8	
CCV	Q815190		ENDRIN	40		43.03	ug/L	107.6	
CCV	Q815190		4,4'-DDD	40		42.49	ug/L	106.2	
CCV	Q815190		4,4'-DDT	40		45.52	ug/L	113.8	
CCV	Q815190		METHOXYCHLOR	200		228.4	ug/L	114.2	

SEMI-VOLATILE ORGANICS (BASE/NEUTRAL/ACID FRACTIONS SW846-8270C 0505.3

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510B

Run: R345669 Analyst.: P SIMS Run Date...: 01-APR-98
PREP Reviewer: T REECE Review Date: 01-APR-98

QC Type	Lab ID	Source	Anal Run
BLA02	Q815328		R345965
SAMPLE	A436683	Rep: 0	R346164
SAMPLE	A436684	Rep: 0	R346402
SAMPLE	A436685	Rep: 0	R346402
SAMPLE	A436688	Rep: 0	R346406
SAMPLE	A436687	Rep: 0	R346406
SAMPLE	A436689	Rep: 0	R346406
SAMPLE	A436690	Rep: 0	R346405
LCS	Q815329	HLI	R345965
SPI02	Q815330	A436725	R346860
DPS02	Q815331	A436725	R346860

Run: R345965 Analyst.: L DOBBINS Run Date...: 07-APR-98 Instrument: GC/MS SVOA
ANALYTICAL Reviewer: A BRADBURN Review Date: 08-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA02	Q815328		See Attached Report: g4453f.ind						
LCS	Q815329	HLI	ACENAPHTHENE	100		76.8	ug/L	76.8	
LCS	Q815329	HLI	ACENAPHTHYLENE	100		79.7	ug/L	79.7	
LCS	Q815329	HLI	ANTHRACENE	100		78.9	ug/L	78.9	
LCS	Q815329	HLI	BENZO(A)PYRENE	100		95.2	ug/L	95.2	
LCS	Q815329	HLI	BENZO(B)FLUORANTHENE (3,4-BENZOFLUOR	100		91.1	ug/L	91.1	
LCS	Q815329	HLI	BENZO(G,H,I)PERYLENE	100		121	ug/L	121	
LCS	Q815329	HLI	BENZO(K)FLUORANTHENE	100		90.2	ug/L	90.2	
LCS	Q815329	HLI	BENZYL ALCOHOL	100		79.8	ug/L	79.8	
LCS	Q815329	HLI	BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHT	100		89.2	ug/L	89.2	
LCS	Q815329	HLI	BIS(2-CHLOROETHOXY)METHANE	100		83.2	ug/L	83.2	
LCS	Q815329	HLI	BIS(2-CHLOROETHYL)ETHER	100		77.8	ug/L	77.8	
LCS	Q815329	HLI	BIS(2-CHLOROISOPROPYL)ETHER	100		81	ug/L	81	
LCS	Q815329	HLI	BIS(2-ETHYLHEXYL)PHTHALATE	100		87.2	ug/L	87.2	
LCS	Q815329	HLI	4-BROMODIPHENYL ETHER	100		77.5	ug/L	77.5	
LCS	Q815329	HLI	CARBAZOLE	100		85.8	ug/L	85.8	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
LCS	Q815329	HLI	4-CHLOROANILINE	100		105	ug/L	105	
LCS	Q815329	HLI	2-CHLORONAPHTHALENE	100		79.6	ug/L	79.6	
LCS	Q815329	HLI	4-CHLOROPHENYL-PHENYLETHER	100		72	ug/L	72	
LCS	Q815329	HLI	CHRYSENE	100		94.1	ug/L	94.1	
LCS	Q815329	HLI	DIBENZ(A,H)ANTHRACENE	100		120	ug/L	120	
LCS	Q815329	HLI	DIBENZOFURAN	100		76.7	ug/L	76.7	
LCS	Q815329	HLI	1,2-DICHLOROBENZENE (O-DICHLOROBENZE	100		68.6	ug/L	68.6	
LCS	Q815329	HLI	1,3-DICHLOROBENZENE (M-DICHLOROBENZE	100		68.8	ug/L	68.8	
LCS	Q815329	HLI	1,4-DICHLOROBENZENE (P-DICHLOROBENZE	100		69.5	ug/L	69.5	
LCS	Q815329	HLI	3,3'-DICHLOROBENZIDINE	100		127	ug/L	127	
LCS	Q815329	HLI	DIETHYLPHTHALATE	100		78.7	ug/L	78.7	
LCS	Q815329	HLI	DIMETHYLPHTHALATE	100		79.8	ug/L	79.8	
LCS	Q815329	HLI	DI-N-BUTYLPHTHALATE	100		77.7	ug/L	77.7	
LCS	Q815329	HLI	2,4-DINITROTOLUENE	100		94.7	ug/L	94.7	
LCS	Q815329	HLI	2,6-DINITROTOLUENE	100		91.4	ug/L	91.4	
LCS	Q815329	HLI	DI-N-OCTYLPHTHALATE	100		83.6	ug/L	83.6	
LCS	Q815329	HLI	FLUORANTHENE	100		79.9	ug/L	79.9	
LCS	Q815329	HLI	FLUORENE	100		73	ug/L	73	
LCS	Q815329	HLI	HEXACHLOROBENZENE	100		80.9	ug/L	80.9	
LCS	Q815329	HLI	HEXACHLOROBUTADIENE	100		75.9	ug/L	75.9	
LCS	Q815329	HLI	HEXACHLOROCYCLOPENTADIENE	100		92.7	ug/L	92.7	
LCS	Q815329	HLI	HEXACHLOROETHANE	100		73.1	ug/L	73.1	
LCS	Q815329	HLI	INDENO(1,2,3-CD)PYRENE	100		116	ug/L	116	
LCS	Q815329	HLI	ISOPHORONE	100		86.4	ug/L	86.4	
LCS	Q815329	HLI	2-METHYLNAPHTHALENE	100		76.5	ug/L	76.5	
LCS	Q815329	HLI	NAPHTHALENE	100		76.6	ug/L	76.6	
LCS	Q815329	HLI	2-NITROANILINE (O-NITROANILINE)	100		93.7	ug/L	93.7	
LCS	Q815329	HLI	3-NITROANILINE (M-NITROANILINE)	100		118	ug/L	118	
LCS	Q815329	HLI	4-NITROANILINE (P-NITROANILINE)	100		93.9	ug/L	93.9	
LCS	Q815329	HLI	NITROBENZENE	100		84	ug/L	84	
LCS	Q815329	HLI	N-NITROSODIPHENYLAMINE	200		77.6	ug/L	38.8	
LCS	Q815329	HLI	N-NITROSO-DI-N-PROPYLAMINE	100		85.5	ug/L	85.5	
LCS	Q815329	HLI	PHENANTHRENE	100		80	ug/L	80	
LCS	Q815329	HLI	2-PICOLINE	100		68.2	ug/L	68.2	
LCS	Q815329	HLI	PYRENE	100		95.1	ug/L	95.1	
LCS	Q815329	HLI	PYRIDINE	100		57.3	ug/L	57.3	
LCS	Q815329	HLI	1,2,4-TRICHLOROBENZENE	100		75.7	ug/L	75.7	
LCS	Q815329	HLI	BENZOIC ACID	100		18.7	ug/L	18.7	
LCS	Q815329	HLI	4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-	100		80	ug/L	80	
LCS	Q815329	HLI	2-CHLOROPHENOL	100		74.4	ug/L	74.4	
LCS	Q815329	HLI	2,4-DICHLOROPHENOL	100		80	ug/L	80	
LCS	Q815329	HLI	2,4-DIMETHYLPHENOL	100		67.9	ug/L	67.9	
LCS	Q815329	HLI	2,4-DINITROPHENOL	100		119	ug/L	119	
LCS	Q815329	HLI	2-METHYLPHENOL (O-CRESOL)	100		73.4	ug/L	73.4	
LCS	Q815329	HLI	4-METHYLPHENOL (P-CRESOL)	100		65.9	ug/L	65.9	
LCS	Q815329	HLI	2-NITROPHENOL	100		92.7	ug/L	92.7	
LCS	Q815329	HLI	4-NITROPHENOL	100		43.6	ug/L	43.6	
LCS	Q815329	HLI	PENTACHLOROPHENOL	100		88.9	ug/L	88.9	
LCS	Q815329	HLI	PHENOL	100		43.1	ug/L	43.1	
LCS	Q815329	HLI	2,4,5-TRICHLOROPHENOL	100		86.6	ug/L	86.6	
LCS	Q815329	HLI	2,4,6-TRICHLOROPHENOL	100		84.2	ug/L	84.2	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
Run: R346164 ANALYTICAL		Analyst.: L DOBBINS Reviewer: A BRADBURN	Run Date...: 09-APR-98 Review Date: 10-APR-98		Instrument: GC/MS SVOA				
CCV	Q818605		See Attached Report: g3981t.ind						
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
Run: R346402 ANALYTICAL		Analyst.: L DOBBINS Reviewer: A BRADBURN	Run Date...: 13-APR-98 Review Date: 14-APR-98		Instrument: GC/MS SVOA				
CCV	Q820103		See Attached Report: g4021t.ind						
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
Run: R346405 ANALYTICAL		Analyst.: L DOBBINS Reviewer: A BRADBURN	Run Date...: 13-APR-98 Review Date: 14-APR-98		Instrument: GC/MS SVOA				
CCV	Q820106		See Attached Report: g3581q.ind						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
Run: R346406 ANALYTICAL		Analyst.: L DOBBINS Reviewer: A BRADBURN	Run Date...: 14-APR-98 Review Date: 15-APR-98		Instrument: GC/MS SVOA				
CCV	Q820113		See Attached Report: g4041t.ind						
SAMPLE	A436687		See Cert. of Analysis, Rep: 0						
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
Run: R346860 ANALYTICAL		Analyst.: J MINNIEAR, II Reviewer: A BRADBURN	Run Date...: 16-APR-98 Review Date: 22-APR-98		Instrument: GC/MS SVOA				
SPI02	Q815330	A436725	PHENOL	0	100	48.4	ug/L	48.4	
SPI02	Q815330	A436725	2-CHLOROPHENOL	0	100	97.2	ug/L	97.2	
SPI02	Q815330	A436725	1,4-DICHLOROBENZENE (P-DICHLOROBENZE	0	100	96.8	ug/L	96.8	
SPI02	Q815330	A436725	N-NITROSO-DI-N-PROPYLAMINE	0	100	188	ug/L	188	
SPI02	Q815330	A436725	1,2,4-TRICHLOROBENZENE	0	100	98.3	ug/L	98.3	
SPI02	Q815330	A436725	4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-	0	100	109	ug/L	109	
SPI02	Q815330	A436725	ACENAPHTHENE	0	100	100	ug/L	100	
SPI02	Q815330	A436725	4-NITROPHENOL	0	100	44.7	ug/L	44.7	
SPI02	Q815330	A436725	2,4-DINITROTOLUENE	0	100	117	ug/L	117	
SPI02	Q815330	A436725	PENTACHLOROPHENOL	0	100	109	ug/L	109	
SPI02	Q815330	A436725	PYRENE	0	100	114	ug/L	114	
DPS02	Q815331	A436725	PHENOL	0	100	44.9	ug/L	44.9	7.5
DPS02	Q815331	A436725	2-CHLOROPHENOL	0	100	88.1	ug/L	88.1	9.8
DPS02	Q815331	A436725	1,4-DICHLOROBENZENE (P-DICHLOROBENZE	0	100	89.7	ug/L	89.7	7.6
DPS02	Q815331	A436725	N-NITROSO-DI-N-PROPYLAMINE	0	100	176	ug/L	176	6.6
DPS02	Q815331	A436725	1,2,4-TRICHLOROBENZENE	0	100	90.8	ug/L	90.8	7.9
DPS02	Q815331	A436725	4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-	0	100	97.1	ug/L	97.1	11.5
DPS02	Q815331	A436725	ACENAPHTHENE	0	100	97.6	ug/L	97.6	2.4
DPS02	Q815331	A436725	4-NITROPHENOL	0	100	38.5	ug/L	38.5	14.9
DPS02	Q815331	A436725	2,4-DINITROTOLUENE	0	100	110	ug/L	110	6.2
DPS02	Q815331	A436725	PENTACHLOROPHENOL	0	100	96.6	ug/L	96.6	12.1
DPS02	Q815331	A436725	PYRENE	0	100	111	ug/L	111	2.7

Comments

Q815330 NOTE: LCS NOT REQUIRED BECAUSE MS/MSD PASSED METHOD CRITERIA.
Q815331 NOTE: LCS NOT REQUIRED BECAUSE MS/MSD PASSED METHOD CRITERIA.

HERITAGE ENVIRONMENTAL SERVICES, INC.

VOLATILE ORGANICS SW846-8240B 0510.3

Run: R345548 Analyst.: H WILLIAMS Run Date...: 31-MAR-98 Instrument: GC/MS VOA
ANALYTICAL Reviewer: R SHAMP Review Date: 01-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q814676		DICHLORODIFLUOROMETHANE	1.0939		0.8067			26.2
CCV	Q814676		CHLOROMETHANE	1.5525		1.1064			28.7
CCV	Q814676		VINYL CHLORIDE	0.8347		0.8368			.2
CCV	Q814676		BROMOMETHANE	0.7714		0.7248			6
CCV	Q814676		CHLOROETHANE	0.8901		0.827			7
CCV	Q814676		TRICHLOROFLUOROMETHANE	2.6975		2.3757			11.9
CCV	Q814676		ACROLEIN	0.7404		0.1175			84.1
CCV	Q814676		ACETONE (2-PROPANONE)	0.8502		0.5747			32.4
CCV	Q814676		1,1-DICHLOROETHENE	1.1946		1.1184			6.3
CCV	Q814676		DICHLOROMETHANE (METHYLENE CHLORIDE)	1.5886		1.405			11.5
CCV	Q814676		ACRYLONITRILE	2.3797		0.4284			81.9
CCV	Q814676		VINYL ACETATE	1.3303		1.1257			15.3
CCV	Q814676		CARBON DISULFIDE	3.5537		3.4438			3
CCV	Q814676		1,1-DICHLOROETHANE	2.9719		2.7428			7.7
CCV	Q814676		METHYL ETHYL KETONE	1.2744		1.1632			8.7
CCV	Q814676		CHLOROFORM	3.2717		3.0202			7.6
CCV	Q814676		TETRAHYDROFURAN	1.8140		0.7012			61.3
CCV	Q814676		1,1,1-TRICHLOROETHANE	0.6823		0.6711			1.6
CCV	Q814676		CARBON TETRACHLORIDE	0.672		0.6698			.3
CCV	Q814676		1,2-DICHLOROETHANE	0.5798		0.5628			2.9
CCV	Q814676		BENZENE	1.0388		1.0056			3.2
CCV	Q814676		TRICHLOROETHENE	0.5142		0.4749			7.6
CCV	Q814676		1,2-DICHLOROPROPANE	0.6377		0.6029			5.4
CCV	Q814676		BROMODICHLOROMETHANE	0.9475		0.924			2.4
CCV	Q814676		4-METHYL-2-PENTANONE	0.7782		0.788			1.2
CCV	Q814676		CIS-1,3-DICHLOROPROPENE	0.6438		0.638			.9
CCV	Q814676		TOLUENE	0.6323		0.6112			3.3
CCV	Q814676		TRANS-1,3-DICHLOROPROPENE	0.6513		0.6199			4.8
CCV	Q814676		2-HEXANONE	0.7748		0.6752			12.8
CCV	Q814676		1,1,2-TRICHLOROETHANE	0.5648		0.5466			3.2
CCV	Q814676		TETRACHLOROETHENE	0.4798		0.463			3.5
CCV	Q814676		DIBROMOCHLOROMETHANE	1.0116		1.0066			.5
CCV	Q814676		CHLOROBENZENE	1.0285		1.0083			1.9
CCV	Q814676		ETHYL BENZENE	0.4323		0.4227			2.2
CCV	Q814676		STYRENE	0.9626		0.9662			.3
CCV	Q814676		BROMOFORM	0.7878		0.8168			3.6
CCV	Q814676		1,1,2,2-TETRACHLOROETHANE	1.0024		1.1226			11.9
CCV	Q814676		DICHLOROETHANE-D4	1.9063		1.81			5
CCV	Q814676		TOLUENE-D8	0.8899		0.8883			.1
CCV	Q814676		4-BROMOFLUOROBENZENE	0.9505		0.9454			.5
BLA01	Q814679		DICHLORODIFLUOROMETHANE			BDL 5	ug/L		
BLA01	Q814679		CHLOROMETHANE			BDL 10	ug/L		
BLA01	Q814679		VINYL CHLORIDE			BDL 10	ug/L		
BLA01	Q814679		BROMOMETHANE			BDL 10	ug/L		
BLA01	Q814679		CHLOROETHANE			BDL 10	ug/L		
BLA01	Q814679		TRICHLOROFLUOROMETHANE			BDL 5	ug/L		
BLA01	Q814679		ACROLEIN			BDL 50	ug/L		
BLA01	Q814679		ACETONE (2-PROPANONE)			BDL 20	ug/L		
BLA01	Q814679		1,1-DICHLOROETHENE			BDL 5	ug/L		
BLA01	Q814679		DICHLOROMETHANE (METHYLENE CHLORIDE)			BDL 5	ug/L		

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA01	Q814679		ACRYLONITRILE			BDL 70	ug/L		
BLA01	Q814679		VINYL ACETATE			BDL 10	ug/L		
BLA01	Q814679		CARBON DISULFIDE			BDL 5	ug/L		
BLA01	Q814679		1,1-DICHLOROETHANE			BDL 5	ug/L		
BLA01	Q814679		METHYL ETHYL KETONE			BDL 10	ug/L		
BLA01	Q814679		CHLOROFORM			BDL 5	ug/L		
BLA01	Q814679		TETRAHYDROFURAN			BDL 25	ug/L		
BLA01	Q814679		1,1,1-TRICHLOROETHANE			BDL 5	ug/L		
BLA01	Q814679		CARBON TETRACHLORIDE			BDL 5	ug/L		
BLA01	Q814679		1,2-DICHLOROETHANE			BDL 5	ug/L		
BLA01	Q814679		BENZENE			BDL 5	ug/L		
BLA01	Q814679		TRICHLOROETHENE			BDL 5	ug/L		
BLA01	Q814679		1,2-DICHLOROPROPANE			BDL 5	ug/L		
BLA01	Q814679		BROMODICHLOROMETHANE			BDL 5	ug/L		
BLA01	Q814679		4-METHYL-2-PENTANONE			BDL 10	ug/L		
BLA01	Q814679		CIS-1,3-DICHLOROPROPENE			BDL 5	ug/L		
BLA01	Q814679		TOLUENE			BDL 5	ug/L		
BLA01	Q814679		TRANS-1,3-DICHLOROPROPENE			BDL 5	ug/L		
BLA01	Q814679		2-HEXANONE			BDL 10	ug/L		
BLA01	Q814679		1,1,2-TRICHLOROETHANE			BDL 5	ug/L		
BLA01	Q814679		TETRACHLOROETHENE			BDL 5	ug/L		
BLA01	Q814679		DIBROMOCHLOROMETHANE			BDL 5	ug/L		
BLA01	Q814679		CHLOROBENZENE			BDL 5	ug/L		
BLA01	Q814679		ETHYL BENZENE			BDL 5	ug/L		
BLA01	Q814679		STYRENE			BDL 5	ug/L		
BLA01	Q814679		BROMOFORM			BDL 5	ug/L		
BLA01	Q814679		1,1,2,2-TETRACHLOROETHANE			BDL 5	ug/L		
BLA01	Q814679		DICHLOROETHANE-D4				ug/L	93	
BLA01	Q814679		TOLUENE-D8				ug/L	100	
BLA01	Q814679		4-BROMOFLUOROBENZENE				ug/L	100	
SAMPLE	A436683		See Cert. of Analysis, Rep: 0						
SAMPLE	A436684		See Cert. of Analysis, Rep: 0						
SAMPLE	A436685		See Cert. of Analysis, Rep: 0						
SPI01	Q814685	A436685	DICHLORODIFLUOROMETHANE	0	50	59.2	ug/L	118	
SPI01	Q814685	A436685	CHLOROMETHANE	0	50	47.9	ug/L	95.7	
SPI01	Q814685	A436685	VINYL CHLORIDE	0	50	63.4	ug/L	127	
SPI01	Q814685	A436685	BROMOMETHANE	0	50	48.2	ug/L	96.4	
SPI01	Q814685	A436685	CHLOROETHANE	0	50	47.4	ug/L	94.7	
SPI01	Q814685	A436685	TRICHLOROFLUOROMETHANE	0	50	45.5	ug/L	91.1	
SPI01	Q814685	A436685	ACROLEIN	0	300	447	ug/L	149	
SPI01	Q814685	A436685	ACETONE (2-PROPANONE)	0	50	40.6	ug/L	81.2	
SPI01	Q814685	A436685	1,1-DICHLOROETHENE	0	50	47.8	ug/L	95.6	
SPI01	Q814685	A436685	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	50	45.3	ug/L	90.5	
SPI01	Q814685	A436685	ACRYLONITRILE	0	300	500	ug/L	166.7	
SPI01	Q814685	A436685	VINYL ACETATE	0	50	40.9	ug/L	81.9	
SPI01	Q814685	A436685	CARBON DISULFIDE	0	50	50	ug/L	99.9	
SPI01	Q814685	A436685	1,1-DICHLOROETHANE	0	50	47	ug/L	94	
SPI01	Q814685	A436685	METHYL ETHYL KETONE	17.3	50	55.1	ug/L	75.7	
SPI01	Q814685	A436685	CHLOROFORM	0	50	46.3	ug/L	92.6	
SPI01	Q814685	A436685	TETRAHYDROFURAN	0	125	104	ug/L	83.2	
SPI01	Q814685	A436685	1,1,1-TRICHLOROETHANE	0	50	49.8	ug/L	99.7	
SPI01	Q814685	A436685	CARBON TETRACHLORIDE	0	50	49.8	ug/L	99.5	
SPI01	Q814685	A436685	1,2-DICHLOROETHANE	0	50	50	ug/L	100	
SPI01	Q814685	A436685	BENZENE	0	50	48.2	ug/L	96.4	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
SPI01	Q814685	A436685	TRICHLOROETHENE	0	50	45.5	ug/L	91	
SPI01	Q814685	A436685	1,2-DICHLOROPROPANE	0	50	48.8	ug/L	97.6	
SPI01	Q814685	A436685	BROMODICHLOROMETHANE	0	50	49.2	ug/L	98.4	
SPI01	Q814685	A436685	4-METHYL-2-PENTANONE	0	50	48.2	ug/L	96.3	
SPI01	Q814685	A436685	CIS-1,3-DICHLOROPROPENE	0	50	48.2	ug/L	96.5	
SPI01	Q814685	A436685	TOLUENE	0	50	48.1	ug/L	96.2	
SPI01	Q814685	A436685	TRANS-1,3-DICHLOROPROPENE	0	50	46.6	ug/L	93.2	
SPI01	Q814685	A436685	2-HEXANONE	0	50	40.2	ug/L	80.5	
SPI01	Q814685	A436685	1,1,2-TRICHLOROETHANE	0	50	47.4	ug/L	94.7	
SPI01	Q814685	A436685	TETRACHLOROETHENE	0	50	48.4	ug/L	96.9	
SPI01	Q814685	A436685	DIBROMOCHLOROMETHANE	0	50	49.1	ug/L	98.2	
SPI01	Q814685	A436685	CHLOROBENZENE	0	50	47.6	ug/L	95.2	
SPI01	Q814685	A436685	ETHYL BENZENE	0	50	49.3	ug/L	98.5	
SPI01	Q814685	A436685	STYRENE	0	50	48.5	ug/L	97.1	
SPI01	Q814685	A436685	BROMOFORM	0	50	50.6	ug/L	101	
SPI01	Q814685	A436685	1,1,2,2-TETRACHLOROETHANE	0	50	54.5	ug/L	109	
DPS01	Q814686	A436685	DICHLORODIFLUOROMETHANE	0	50	59	ug/L	118	.2
DPS01	Q814686	A436685	CHLOROMETHANE	0	50	46.1	ug/L	92.3	3.7
DPS01	Q814686	A436685	VINYL CHLORIDE	0	50	62.4	ug/L	125	1.7
DPS01	Q814686	A436685	BROMOMETHANE	0	50	50.5	ug/L	101	4.7
DPS01	Q814686	A436685	CHLOROETHANE	0	50	46.4	ug/L	92.8	2
DPS01	Q814686	A436685	TRICHLOROFLUOROMETHANE	0	50	45.7	ug/L	91.4	.4
DPS01	Q814686	A436685	ACROLEIN	0	300	404	ug/L	134.7	10.1
DPS01	Q814686	A436685	ACETONE (2-PROPANONE)	0	50	38.6	ug/L	77.1	5.1
DPS01	Q814686	A436685	1,1-DICHLOROETHENE	0	50	46.8	ug/L	93.7	2.1
DPS01	Q814686	A436685	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	50	47.1	ug/L	94.3	-
DPS01	Q814686	A436685	ACRYLONITRILE	0	300	451	ug/L	150.3	10.3
DPS01	Q814686	A436685	VINYL ACETATE	0	50	40.4	ug/L	80.9	1.3
DPS01	Q814686	A436685	CARBON DISULFIDE	0	50	50.3	ug/L	101	.8
DPS01	Q814686	A436685	1,1-DICHLOROETHANE	0	50	46.9	ug/L	93.7	.3
DPS01	Q814686	A436685	METHYL ETHYL KETONE	17.3	50	55.9	ug/L	77.1	1.9
DPS01	Q814686	A436685	CHLOROFORM	0	50	46.1	ug/L	92.2	.5
DPS01	Q814686	A436685	TETRAHYDROFURAN	0	125	106	ug/L	84.8	1.9
DPS01	Q814686	A436685	1,1,1-TRICHLOROETHANE	0	50	50.6	ug/L	101	1.6
DPS01	Q814686	A436685	CARBON TETRACHLORIDE	0	50	50.4	ug/L	101	1.2
DPS01	Q814686	A436685	1,2-DICHLOROETHANE	0	50	50	ug/L	99.9	.1
DPS01	Q814686	A436685	BENZENE	0	50	49.1	ug/L	98.2	1.9
DPS01	Q814686	A436685	TRICHLOROETHENE	0	50	55.7	ug/L	111	20.1
DPS01	Q814686	A436685	1,2-DICHLOROPROPANE	0	50	49.7	ug/L	99.4	1.8
DPS01	Q814686	A436685	BROMODICHLOROMETHANE	0	50	50.4	ug/L	101	2.3
DPS01	Q814686	A436685	4-METHYL-2-PENTANONE	0	50	47.4	ug/L	94.8	1.7
DPS01	Q814686	A436685	CIS-1,3-DICHLOROPROPENE	0	50	49.4	ug/L	98.7	2.3
DPS01	Q814686	A436685	TOLUENE	0	50	48.8	ug/L	97.6	1.4
DPS01	Q814686	A436685	TRANS-1,3-DICHLOROPROPENE	0	50	48	ug/L	96	3
DPS01	Q814686	A436685	2-HEXANONE	0	50	40	ug/L	80	.6
DPS01	Q814686	A436685	1,1,2-TRICHLOROETHANE	0	50	49.3	ug/L	98.6	4
DPS01	Q814686	A436685	TETRACHLOROETHENE	0	50	49.2	ug/L	98.4	1.6
DPS01	Q814686	A436685	DIBROMOCHLOROMETHANE	0	50	51.3	ug/L	103	4.4
DPS01	Q814686	A436685	CHLOROBENZENE	0	50	48.6	ug/L	97.1	1.9
DPS01	Q814686	A436685	ETHYL BENZENE	0	50	48.9	ug/L	97.8	.7
DPS01	Q814686	A436685	STYRENE	0	50	49.1	ug/L	98.1	1.1
DPS01	Q814686	A436685	BROMOFORM	0	50	52.3	ug/L	105	3.3
DPS01	Q814686	A436685	1,1,2,2-TETRACHLOROETHANE	0	50	34.5	ug/L	69	44.9

HERITAGE ENVIRONMENTAL SERVICES, INC.

Run: R345629 Analyst.: H WILLIAMS Run Date...: 01-APR-98 Instrument: GC/MS VOA
ANALYTICAL Reviewer: R SHAMP Review Date: 03-APR-98

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
CCV	Q815111		DICHLORODIFLUOROMETHANE	1.0939		0.8433			22.9
CCV	Q815111		CHLOROMETHANE	1.5525		1.1963			22.9
CCV	Q815111		VINYL CHLORIDE	0.8347		0.8825			5.7
CCV	Q815111		BROMOMETHANE	0.7714		0.6214			19.4
CCV	Q815111		CHLOROETHANE	0.8901		0.8048			9.5
CCV	Q815111		TRICHLOROFLUOROMETHANE	2.6975		2.3559			12.6
CCV	Q815111		ACROLEIN	0.7404		0.1039			85.9
CCV	Q815111		ACETONE (2-PROPANONE)	0.8502		0.5284			37.8
CCV	Q815111		1,1-DICHLOROETHENE	1.1946		1.1068			7.3
CCV	Q815111		DICHLOROMETHANE (METHYLENE CHLORIDE)	1.5886		1.3688			13.8
CCV	Q815111		ACRYLONITRILE	2.3797		0.4159			82.5
CCV	Q815111		VINYL ACETATE	1.3303		1.0471			21.2
CCV	Q815111		CARBON DISULFIDE	3.5537		3.3859			4.7
CCV	Q815111		1,1-DICHLOROETHANE	2.9719		2.7308			8.1
CCV	Q815111		METHYL ETHYL KETONE	1.2744		1.0148			20.3
CCV	Q815111		CHLOROFORM	3.2717		2.9385			10.1
CCV	Q815111		TETRAHYDROFURAN	1.8140		0.6543			63.9
CCV	Q815111		1,1,1-TRICHLOROETHANE	0.6823		0.6661			2.3
CCV	Q815111		CARBON TETRACHLORIDE	0.672		0.6435			4.2
CCV	Q815111		1,2-DICHLOROETHANE	0.5798		0.5478			5.5
CCV	Q815111		BENZENE	1.0388		1.0125			2.5
CCV	Q815111		TRICHLOROETHENE	0.5142		0.475			7.6
CCV	Q815111		1,2-DICHLOROPROPANE	0.6377		0.6233			2.2
CCV	Q815111		BROMODICHLOROMETHANE	0.9475		0.9305			1.7
CCV	Q815111		4-METHYL-2-PENTANONE	0.7782		0.7513			3.4
CCV	Q815111		CIS-1,3-DICHLOROPROPENE	0.6438		0.6451			.1
CCV	Q815111		TOLUENE	0.6323		0.6073			3.9
CCV	Q815111		TRANS-1,3-DICHLOROPROPENE	0.6513		0.6249			4
CCV	Q815111		2-HEXANONE	0.7748		0.639			17.5
CCV	Q815111		1,1,2-TRICHLOROETHANE	0.5648		0.5472			3.1
CCV	Q815111		TETRACHLOROETHENE	0.4798		0.4589			4.3
CCV	Q815111		DIBROMOCHLOROMETHANE	1.0116		0.9965			1.4
CCV	Q815111		CHLOROBENZENE	1.0285		0.9933			3.4
CCV	Q815111		ETHYL BENZENE	0.4323		0.4313			.2
CCV	Q815111		STYRENE	0.9626		0.9606			.2
CCV	Q815111		BROMOFORM	0.7878		0.7914			.4
CCV	Q815111		1,1,2,2-TETRACHLOROETHANE	1.0024		1.0856			8.2
CCV	Q815111		DICHLOROETHANE-D4	1.9063		1.7768			6.7
CCV	Q815111		TOLUENE-D8	0.8899		0.8991			1
CCV	Q815111		4-BROMOFLUOROBENZENE	0.9505		0.9498			0
BLA01	Q815112		DICHLORODIFLUOROMETHANE			BDL 5	ug/L		
BLA01	Q815112		CHLOROMETHANE			BDL 10	ug/L		
BLA01	Q815112		VINYL CHLORIDE			BDL 10	ug/L		
BLA01	Q815112		BROMOMETHANE			BDL 10	ug/L		
BLA01	Q815112		CHLOROETHANE			BDL 10	ug/L		
BLA01	Q815112		TRICHLOROFLUOROMETHANE			BDL 5	ug/L		
BLA01	Q815112		ACROLEIN			BDL 50	ug/L		
BLA01	Q815112		ACETONE (2-PROPANONE)			BDL 20	ug/L		
BLA01	Q815112		1,1-DICHLOROETHENE			BDL 5	ug/L		
BLA01	Q815112		DICHLOROMETHANE (METHYLENE CHLORIDE)			BDL 5	ug/L		
BLA01	Q815112		ACRYLONITRILE			BDL 70	ug/L		
BLA01	Q815112		VINYL ACETATE			BDL 10	ug/L		

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
BLA01	Q815112		CARBON DISULFIDE			BDL 5	ug/L		
BLA01	Q815112		1,1-DICHLOROETHANE			BDL 5	ug/L		
BLA01	Q815112		METHYL ETHYL KETONE			BDL 10	ug/L		
BLA01	Q815112		CHLOROFORM			BDL 5	ug/L		
BLA01	Q815112		TETRAHYDROFURAN			BDL 25	ug/L		
BLA01	Q815112		1,1,1-TRICHLOROETHANE			BDL 5	ug/L		
BLA01	Q815112		CARBON TETRACHLORIDE			BDL 5	ug/L		
BLA01	Q815112		1,2-DICHLOROETHANE			BDL 5	ug/L		
BLA01	Q815112		BENZENE			BDL 5	ug/L		
BLA01	Q815112		TRICHLOROETHENE			BDL 5	ug/L		
BLA01	Q815112		1,2-DICHLOROPROPANE			BDL 5	ug/L		
BLA01	Q815112		BROMODICHLOROMETHANE			BDL 5	ug/L		
BLA01	Q815112		4-METHYL-2-PENTANONE			BDL 10	ug/L		
BLA01	Q815112		CIS-1,3-DICHLOROPROPENE			BDL 5	ug/L		
BLA01	Q815112		TOLUENE			BDL 5	ug/L		
BLA01	Q815112		TRANS-1,3-DICHLOROPROPENE			BDL 5	ug/L		
BLA01	Q815112		2-HEXANONE			BDL 10	ug/L		
BLA01	Q815112		1,1,2-TRICHLOROETHANE			BDL 5	ug/L		
BLA01	Q815112		TETRACHLOROETHENE			BDL 5	ug/L		
BLA01	Q815112		DIBROMOCHLOROMETHANE			BDL 5	ug/L		
BLA01	Q815112		CHLOROBENZENE			BDL 5	ug/L		
BLA01	Q815112		ETHYL BENZENE			BDL 5	ug/L		
BLA01	Q815112		STYRENE			BDL 5	ug/L		
BLA01	Q815112		BROMOFORM			BDL 5	ug/L		
BLA01	Q815112		1,1,2,2-TETRACHLOROETHANE			BDL 5	ug/L		
BLA01	Q815112		DICHLOROETHANE-D4				ug/L	93	
BLA01	Q815112		TOLUENE-D8				ug/L	101	
BLA01	Q815112		4-BROMOFLUOROBENZENE				ug/L	97	
SAMPLE	A436687		See Cert. of Analysis, Rep: 0				PKS 4-22-98		
SAMPLE	A436688		See Cert. of Analysis, Rep: 0						
SAMPLE	A436689		See Cert. of Analysis, Rep: 0						
SAMPLE	A436690		See Cert. of Analysis, Rep: 0						
SPI01	Q815114	A436688	DICHLORODIFLUOROMETHANE	0	50	39.4	ug/L	78.8	
SPI01	Q815114	A436688	CHLOROMETHANE	0	50	39.4	ug/L	78.8	
SPI01	Q815114	A436688	VINYL CHLORIDE	0	50	53.1	ug/L	106	
SPI01	Q815114	A436688	BROMOMETHANE	0	50	42.2	ug/L	84.4	
SPI01	Q815114	A436688	CHLOROETHANE	0	50	44.5	ug/L	89	
SPI01	Q815114	A436688	TRICHLOROFLUOROMETHANE	0	50	43.5	ug/L	87	
SPI01	Q815114	A436688	ACROLEIN	0	300	283	ug/L	94.3	
SPI01	Q815114	A436688	ACETONE (2-PROPANONE)	0	50	44.8	ug/L	89.5	
SPI01	Q815114	A436688	1,1-DICHLOROETHENE	0	50	45.8	ug/L	91.5	
SPI01	Q815114	A436688	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	50	43.9	ug/L	87.7	
SPI01	Q815114	A436688	ACRYLONITRILE	0	300	340	ug/L	113.3	
SPI01	Q815114	A436688	VINYL ACETATE	0	50	40.4	ug/L	80.7	
SPI01	Q815114	A436688	CARBON DISULFIDE	0	50	46.5	ug/L	93.1	
SPI01	Q815114	A436688	1,1-DICHLOROETHANE	0	50	46.2	ug/L	92.4	
SPI01	Q815114	A436688	METHYL ETHYL KETONE	0	50	47.5	ug/L	95	
SPI01	Q815114	A436688	CHLOROFORM	0	50	45.5	ug/L	91.1	
SPI01	Q815114	A436688	TETRAHYDROFURAN	0	125	121	ug/L	96.8	
SPI01	Q815114	A436688	1,1,1-TRICHLOROETHANE	0	50	48.3	ug/L	96.6	
SPI01	Q815114	A436688	CARBON TETRACHLORIDE	0	50	47	ug/L	94	
SPI01	Q815114	A436688	1,2-DICHLOROETHANE	0	50	47.4	ug/L	94.8	
SPI01	Q815114	A436688	BENZENE	0	50	47.4	ug/L	94.7	
SPI01	Q815114	A436688	TRICHLOROETHENE	0	50	44.5	ug/L	89	

HERITAGE ENVIRONMENTAL SERVICES, INC.

QC Type	Lab ID	Source	Parameter	True/Sampl	Spike Val	Observed	Units	% Rec	RPD
SPI01	Q815114	A436688	1,2-DICHLOROPROPANE	0	50	48.6	ug/L	97.2	
SPI01	Q815114	A436688	BROMODICHLOROMETHANE	0	50	47.9	ug/L	95.7	
SPI01	Q815114	A436688	4-METHYL-2-PENTANONE	0	50	50.2	ug/L	100	
SPI01	Q815114	A436688	CIS-1,3-DICHLOROPROPENE	0	50	47.9	ug/L	95.8	
SPI01	Q815114	A436688	TOLUENE	0	50	47.8	ug/L	95.5	
SPI01	Q815114	A436688	TRANS-1,3-DICHLOROPROPENE	0	50	46.7	ug/L	93.4	
SPI01	Q815114	A436688	2-HEXANONE	0	50	43.2	ug/L	86.4	
SPI01	Q815114	A436688	1,1,2-TRICHLOROETHANE	0	50	48.5	ug/L	96.9	
SPI01	Q815114	A436688	TETRACHLOROETHENE	0	50	47.3	ug/L	94.7	
SPI01	Q815114	A436688	DIBROMOCHLOROMETHANE	0	50	49.3	ug/L	98.6	
SPI01	Q815114	A436688	CHLOROBENZENE	0	50	47.2	ug/L	94.3	
SPI01	Q815114	A436688	ETHYL BENZENE	0	50	47.7	ug/L	95.4	
SPI01	Q815114	A436688	STYRENE	0	50	48.1	ug/L	96.2	
SPI01	Q815114	A436688	BROMOFORM	0	50	50.6	ug/L	101	
SPI01	Q815114	A436688	1,1,2,2-TETRACHLOROETHANE	0	50	56.3	ug/L	113	
DPS01	Q815115	A436688	DICHLORODIFLUOROMETHANE	0	50	40.9	ug/L	81.7	3.7
DPS01	Q815115	A436688	CHLOROMETHANE	0	50	39.2	ug/L	78.5	.5
DPS01	Q815115	A436688	VINYL CHLORIDE	0	50	55.3	ug/L	111	4
DPS01	Q815115	A436688	BROMOMETHANE	0	50	44.4	ug/L	88.8	5.1
DPS01	Q815115	A436688	CHLOROETHANE	0	50	44.2	ug/L	88.4	.7
DPS01	Q815115	A436688	TRICHLOROFLUOROMETHANE	0	50	43.6	ug/L	87.2	.2
DPS01	Q815115	A436688	ACROLEIN	0	300	297	ug/L	99	4.9
DPS01	Q815115	A436688	ACETONE (2-PROPANONE)	0	50	42.2	ug/L	84.3	6
DPS01	Q815115	A436688	1,1-DICHLOROETHENE	0	50	46	ug/L	91.9	.4
DPS01	Q815115	A436688	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	50	45.3	ug/L	90.6	3.2
DPS01	Q815115	A436688	ACRYLONITRILE	0	300	348	ug/L	116	2.4
DPS01	Q815115	A436688	VINYL ACETATE	0	50	39.8	ug/L	79.6	1.5
DPS01	Q815115	A436688	CARBON DISULFIDE	0	50	46.6	ug/L	93.1	.1
DPS01	Q815115	A436688	1,1-DICHLOROETHANE	0	50	46.7	ug/L	93.5	1.1
DPS01	Q815115	A436688	METHYL ETHYL KETONE	0	50	44.8	ug/L	89.6	5.9
DPS01	Q815115	A436688	CHLOROFORM	0	50	45	ug/L	90	1.2
DPS01	Q815115	A436688	TETRAHYDROFURAN	0	125	113	ug/L	90.4	6.8
DPS01	Q815115	A436688	1,1,1-TRICHLOROETHANE	0	50	49.8	ug/L	99.6	3
DPS01	Q815115	A436688	CARBON TETRACHLORIDE	0	50	48.7	ug/L	97.4	3.6
DPS01	Q815115	A436688	1,2-DICHLOROETHANE	0	50	49.1	ug/L	98.2	3.5
DPS01	Q815115	A436688	BENZENE	0	50	47.8	ug/L	95.7	1
DPS01	Q815115	A436688	TRICHLOROETHENE	0	50	55.7	ug/L	111	22.4
DPS01	Q815115	A436688	1,2-DICHLOROPROPANE	0	50	49.1	ug/L	98.2	1
DPS01	Q815115	A436688	BROMODICHLOROMETHANE	0	50	49.1	ug/L	98.2	2.5
DPS01	Q815115	A436688	4-METHYL-2-PENTANONE	0	50	48.9	ug/L	97.8	2.6
DPS01	Q815115	A436688	CIS-1,3-DICHLOROPROPENE	0	50	48.6	ug/L	97.2	1.5
DPS01	Q815115	A436688	TOLUENE	0	50	47.8	ug/L	95.6	.1
DPS01	Q815115	A436688	TRANS-1,3-DICHLOROPROPENE	0	50	46.5	ug/L	92.9	.5
DPS01	Q815115	A436688	2-HEXANONE	0	50	40.5	ug/L	81.1	6.4
DPS01	Q815115	A436688	1,1,2-TRICHLOROETHANE	0	50	47.1	ug/L	94.2	2.8
DPS01	Q815115	A436688	TETRACHLOROETHENE	0	50	47.8	ug/L	95.6	1
DPS01	Q815115	A436688	DIBROMOCHLOROMETHANE	0	50	48.6	ug/L	97.2	1.5
DPS01	Q815115	A436688	CHLOROBENZENE	0	50	46.8	ug/L	93.7	.7
DPS01	Q815115	A436688	ETHYL BENZENE	0	50	47.4	ug/L	94.9	.6
DPS01	Q815115	A436688	STYRENE	0	50	45.9	ug/L	91.7	4.7
DPS01	Q815115	A436688	BROMOFORM	0	50	50.7	ug/L	101	.3
DPS01	Q815115	A436688	1,1,2,2-TETRACHLOROETHANE	0	50	33.6	ug/L	67.2	50.5

HERITAGE ENVIRONMENTAL SERVICES, INC.

Comments

Q815114 NOTE: LCS NOT REQUIRED BECAUSE MS/MSD PASSED METHOD CRITERIA.
Q815115 COTE: LCS NOT REQUIRED BECAUSE MS/MSD PASSED METHOD CRITERIA.

Approved by: P.K Spence

Average RPD= 4.95

Continuing Calibration Report

Data File : C:\T040998\3981T.D
Acq On : 9 Apr 98 17:48
Sample : SSTD050
Misc : 50PT 8270 032798
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 3921T.D cal 10 = 3882T.D cal 20 = 3883T.D
cal 80 = 3884T.D cal120 = 3885T.D

		Compound	AvgRF	CCRF	%Dev
1	I	1,4-Dichlorobenzene-d4	1.00000	1.00000	0.0
2		N-Nitrosodimethyl amine	0.84120	0.95458	13.5
3		Pyridine	1.07558	1.18149	9.8
4		2-Picoline	1.21996	1.22079	0.1
5	S	2-Fluorophenol	1.24794	1.22824	1.6
6		Aniline	2.02738	1.95809	3.4
7	S	Phenol-d5	1.61178	1.61923	0.5
8	MC	Phenol	1.71680	1.67768	2.3
9		bis(2-Chloroethyl)ether	1.42949	1.43594	0.5
10	S	2-Chlorophenol-d4	1.36257	1.38010	1.3
11	MC	2-Chlorophenol	1.40450	1.39419	0.7
12		1,3-Dichlorobenzene	1.60566	1.58649	1.2
13	MC	1,4-Dichlorobenzene	1.61834	1.59432	1.5
14	S	1,2-Dichlorobenzene-d4	1.56940	1.55058	1.2
15		1,2-Dichlorobenzene	1.54204	1.49677	2.9
16		Benzyl alcohol	0.81111	0.77522	4.4
17		2-Methylphenol	1.17438	1.17415	0.0
18		bis(2-chloroisopropyl)ether	2.99796	3.03073	1.1
19	MP	n-Nitroso-di-n-propylamine	1.07885	1.05580	2.1
20		4-Methylphenol	1.17450	1.17300	0.1
21		Hexachloroethane	0.66971	0.69757	4.2
22	I	Naphthalene-d8	1.00000	1.00000	0.0
23	S	Nitrobenzene-d5	0.37004	0.38513	4.1
24		Nitrobenzene	0.37106	0.39512	6.5
25		Isophorone	0.73459	0.75079	2.2
26	C	2-Nitrophenol	0.21758	0.22852	5.0
27		2,4-Dimethylphenol	0.35920	0.38050	5.9
28		bis(2-Chloroethoxy)methane	0.49781	0.49619	0.3
29	C	2,4-Dichlorophenol	0.32137	0.32668	1.7
30		Benzoic acid	0.20995	0.24393	16.2
31	M	1,2,4-Trichlorobenzene	0.34484	0.34676	0.6
32		Naphthalene	1.06710	1.08590	1.8
33		4-Chloroaniline	0.36751	0.25583	30.4#
34		Toluenediamine	0.00497	0.00496	0.2
35	C	Hexachlorobutadiene	0.18731	0.19574	4.5
36	MC	4-Chloro-3-methylphenol	0.34483	0.35948	4.2
37		2-Methylnaphthalene	0.70193	0.70378	0.3
38	I	Acenaphthene-d10	1.00000	1.00000	0.0
39	P	Hexachlorocyclopentadiene	0.25159	0.28572	13.6

Continuing Calibration Report

Data File : C:\T040998\3981T.D
Acq On : 9 Apr 98 17:48
Sample : SSTD050
Misc : 50PT 8270 032798
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 3921T.D cal 10 = 3882T.D cal 20 = 3883T.D
cal 80 = 3884T.D cal120 = 3885T.D

		Compound	AvgRF	CCRF	%Dev
40		1,2,4,5-Tetrachlorobenzene	0.50527	0.51547	2.0
41	C	2,4,6-Trichlorophenol	0.39163	0.39097	0.2
42		2,4,5-Trichlorophenol	0.40467	0.42213	4.3
43	S	2-Fluorobiphenyl	1.25839	1.24911	0.7
44		2-Chloronaphthalene	1.18222	1.17647	0.5
45		2-Nitroaniline	0.47869	0.49927	4.3
46		Dimethylphthalate	1.48418	1.47288	0.8
47		1,3-Dinitrobenzene	0.21746	0.22700	4.4
48		2,6-Dinitrotoluene	0.35499	0.36824	3.7
49		Acenaphthylene	1.99150	2.03407	2.1
50		3-Nitroaniline	0.34482	0.30113	12.7
51	MC	Acenaphthene	1.28972	1.28691	0.2
52	P	2,4-Dinitrophenol	0.17133	0.17973	4.9
53	MP	4-Nitrophenol	0.17048	0.19181	12.5
54		Dibenzofuran	1.76129	1.77667	0.9
55	M	2,4-Dinitrotoluene	0.46850	0.50842	8.5
56		2,3,4,6-Tetrachlorophenol	0.30411	0.32289	6.2
57		Diethylphthalate	1.62405	1.63501	0.7
58		Fluorene	1.27685	1.24201	2.7
59		4-Chlorophenyl-phenylether	0.62091	0.61207	1.4
60		4-Nitroaniline	0.41492	0.42713	2.9
61	I	Phenanthrene-d10	1.00000	1.00000	0.0
62		4,6-Dinitro-2-methylphenol	0.13184	0.14959	13.5
63	C	n-Nitrosodiphenylamine	0.54456	0.55095	1.2
64	S	2,4,6-Tribromophenol	0.14380	0.15761	9.6
65		Azobenzene	1.64483	1.65223	0.4
66		alpha-BHC	0.14923	0.15281	2.4
67		4-Bromophenyl-phenylether	0.21921	0.23222	5.9
68		Hexachlorobenzene	0.27242	0.28680	5.3
69		beta-BHC	0.11886	0.12345	3.9
70	MC	Pentachlorophenol	0.14350	0.16202	12.9
71		gamma-BHC	0.12981	0.13210	1.8
72		Phenanthrene	1.11257	1.09665	1.4
73		Anthracene	1.05977	1.06954	0.9
74		delta-BHC	0.10851	0.10964	1.0
75		Carbazole	1.04149	1.05427	1.2
76		Heptachlor	0.10882	0.11390	4.7
77		Di-n-butylphthalate	1.63322	1.64995	1.0
78		Aldrin	0.08999	0.09425	4.7

(#) = Out of Range (Advisory for non CCC, SPCC)

Continuing Calibration Report

Data File : C:\T040998\3981T.D
Acq On : 9 Apr 98 17:48
Sample : SSTD050
Misc : 50PT 8270 032798
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 3921T.D cal 10 = 3882T.D cal 20 = 3883T.D
cal 80 = 3884T.D cal120 = 3885T.D

		Compound	AvgRF	CCRF	%Dev
79		Heptachlor epoxide	0.11914	0.12476	4.7
80	C	Fluoranthene	1.19442	1.25733	5.3
81	I	Chrysene-d12	1.00000	1.00000	0.0
82		Benzidine	0.29875	0.37630	26.0#
83	M	Pyrene	1.30091	1.44733	11.3
84		alpha-Endosulfan	0.03380	0.03839	13.6
85		p,p'-DDE	0.27538	0.31036	12.7
86	S	Terphenyl-d14	1.00825	1.13271	12.3
87		Dieldrin	0.26600	0.30178	13.5
88		Endrin	0.01109	0.01260	13.6
89		Endrin aldehyde	0.04374	0.05448	24.6#
90		beta-Endosulfan	0.04752	0.05385	13.3
91		p,p'-DDD	0.48309	0.56074	16.1
92		Butylbenzylphthalate	0.82046	0.89609	9.2
93		Endosulfan sulfate	0.08324	0.09386	12.8
94		p,p'-DDT	0.36137	0.40001	10.7
95		Methoxychlor	0.59340	0.62794	5.8
96		Benzo[a]anthracene	1.08563	1.08946	0.4
97		3,3'-Dichlorobenzidine	0.27757	0.22849	17.7
98		Chrysene	1.06083	1.05638	0.4
99		bis(2-Ethylhexyl)phthalate	1.10324	1.20079	8.8
100	I	Perylene-d12	1.00000	1.00000	0.0
101	C	Di-n-octylphthalate	3.02458	3.56779	18.0
102		Benzo[b]fluoranthene	1.44385	1.53465	6.3
103		Benzo[k]fluoranthene	1.41652	1.49413	5.5
104	C	Benzo[a]pyrene	1.22175	1.30805	7.1
105		Indeno[1,2,3-cd]pyrene	0.92654	1.18658	28.1#
106		Dibenz[a,h]anthracene	0.73593	0.94224	28.0#
107		Benzo[g,h,i]perylene	0.73328	0.99513	35.7#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

3981T.D NEWBNAT.M Thu Apr 09 19:53:39 1998 RPT
Average RPD= 6.53

Continuing Calibration Report

Data File : C:\T041498\4041T.D
Acq On : 14 Apr 98 15:47
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 4021T.D cal 10 = 4022T.D cal 20 = 4023T.D
cal 80 = 4024T.D cal120 = 4025T.D

	Compound	AvgRF	CCRF	%Dev
1 I	1,4-Dichlorobenzene-d4	1.00000	1.00000	0.0
2	N-Nitrosodimethyl amine	0.59502	0.58047	2.4
3	Pyridine	0.90057	0.88294	2.0
4	2-Picoline	0.96280	0.94982	1.3
5 S	2-Fluorophenol	1.04539	1.08155	3.5
6	Aniline	1.55343	1.69050	8.8
7 S	Phenol-d5	1.46076	1.44875	0.8
8 MC	Phenol	1.50042	1.45675	2.9
9	bis(2-Chloroethyl)ether	1.32204	1.26146	4.6
10 S	2-Chlorophenol-d4	1.24439	1.25868	1.1
11 MC	2-Chlorophenol	1.27814	1.28748	0.7
12	1,3-Dichlorobenzene	1.50018	1.44320	3.8
13 MC	1,4-Dichlorobenzene	1.53857	1.49299	3.0
14 S	1,2-Dichlorobenzene-d4	1.49359	1.42477	4.6
15	1,2-Dichlorobenzene	1.43891	1.41160	1.9
16	Benzyl alcohol	0.68406	0.70374	2.9
17	2-Methylphenol	1.08066	1.05897	2.0
18	bis(2-chloroisopropyl)ether	2.46220	2.24154	9.0
19 MP	n-Nitroso-di-n-propylamine	0.93195	0.88763	4.8
20	4-Methylphenol	1.07809	1.06940	0.8
21	Hexachloroethane	0.68193	0.67752	0.6
22 I	Naphthalene-d8	1.00000	1.00000	0.0
23 S	Nitrobenzene-d5	0.33673	0.32751	2.7
24	Nitrobenzene	0.34471	0.33267	3.5
25	Isophorone	0.70932	0.65877	7.1
26 C	2-Nitrophenol	0.20271	0.20929	3.2
27	2,4-Dimethylphenol	0.35022	0.33709	3.7
28	bis(2-Chloroethoxy)methane	0.47673	0.44393	6.9
29 C	2,4-Dichlorophenol	0.32615	0.32491	0.4
30	Benzoic acid	0.21618	0.23379	8.1
31 M	1,2,4-Trichlorobenzene	0.36541	0.36329	0.6
32	Naphthalene	1.02570	0.97603	4.8
33	4-Chloroaniline	0.20289	0.32855	61.9#
34	Toluenediamine	0.00753	0.00705	6.4
35 C	Hexachlorobutadiene	0.21256	0.20751	2.4
36 MC	4-Chloro-3-methylphenol	0.33734	0.33254	1.4
37	2-Methylnaphthalene	0.68801	0.68484	0.5
38 I	Acenaphthene-d10	1.00000	1.00000	0.0
39 P	Hexachlorocyclopentadiene	0.30529	0.31075	1.8

Continuing Calibration Report

Data File : C:\T041498\4041T.D
Acq On : 14 Apr 98 15:47
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 4021T.D cal 10 = 4022T.D cal 20 = 4023T.D
cal 80 = 4024T.D cal120 = 4025T.D

		Compound	AvgRF	CCRF	%Dev
40		1,2,4,5-Tetrachlorobenzene	0.65681	0.63097	3.9
41	C	2,4,6-Trichlorophenol	0.41646	0.42548	2.2
42		2,4,5-Trichlorophenol	0.44473	0.46148	3.8
43	S	2-Fluorobiphenyl	1.26306	1.23343	2.3
44		2-Chloronaphthalene	1.16385	1.14622	1.5
45		2-Nitroaniline	0.42851	0.42213	1.5
46		Dimethylphthalate	1.48042	1.43940	2.8
47		1,3-Dinitrobenzene	0.18876	0.20039	6.2
48		2,6-Dinitrotoluene	0.33543	0.34547	3.0
49		Acenaphthylene	1.88067	1.82810	2.8
50		3-Nitroaniline	0.24838	0.30036	20.9#
51	MC	Acenaphthene	1.16962	1.11882	4.3
52	P	2,4-Dinitrophenol	0.13556	0.15792	16.5
53	MP	4-Nitrophenol	0.13555	0.14524	7.1
54		Dibenzofuran	1.66044	1.62930	1.9
55	M	2,4-Dinitrotoluene	0.42081	0.43568	3.5
56		2,3,4,6-Tetrachlorophenol	0.29641	0.31663	6.8
57		Diethylphthalate	1.59666	1.56359	2.1
58		Fluorene	1.20927	1.15232	4.7
59		4-Chlorophenyl-phenylether	0.62453	0.61051	2.2
60		4-Nitroaniline	0.37158	0.39514	6.3
61	I	Phenanthrene-d10	1.00000	1.00000	0.0
62		4,6-Dinitro-2-methylphenol	0.10947	0.11846	8.2
63	C	n-Nitrosodiphenylamine	0.50185	0.47273	5.8
64	S	2,4,6-Tribromophenol	0.11753	0.12793	8.8
65		Azobenzene	1.37560	1.27142	7.6
66		alpha-BHC	0.13709	0.13461	1.8
67		4-Bromophenyl-phenylether	0.20974	0.20999	0.1
68		Hexachlorobenzene	0.26281	0.27122	3.2
69		beta-BHC	0.11092	0.10588	4.5
70	MC	Pentachlorophenol	0.13306	0.15154	13.9
71		gamma-BHC	0.11992	0.11543	3.7
72		Phenanthrene	1.04509	0.99922	4.4
73		Anthracene	1.00867	0.97054	3.8
74		delta-BHC	0.10268	0.09921	3.4
75		Carbazole	1.00167	0.93928	6.2
76		Heptachlor	0.10451	0.11074	6.0
77		Di-n-butylphthalate	1.56850	1.48210	5.5
78		Aldrin	0.07889	0.08048	2.0

(#) = Out of Range (Advisory for non CCC, SPCC)

Continuing Calibration Report

Data File : C:\T041498\4041T.D
Acq On : 14 Apr 98 15:47
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 4021T.D cal 10 = 4022T.D cal 20 = 4023T.D
cal 80 = 4024T.D cal120 = 4025T.D

		Compound	AvgRF	CCRF	%Dev
79		Heptachlor epoxide	0.10420	0.09556	8.3
80	C	Fluoranthene	1.13240	1.09766	3.1
81	I	Chrysene-d12	1.00000	1.00000	0.0
82		Benzidine	0.23722	0.30833	30.0#
83	M	Pyrene	1.36577	1.28984	5.6
84		alpha-Endosulfan	0.03369	0.03149	6.5
85		p,p'-DDE	0.26523	0.24911	6.1
86	S	Terphenyl-d14	1.02739	0.99180	3.5
87		Dieldrin	0.26002	0.22925	11.8
88		Endrin	0.01142	0.01077	5.7
89		Endrin aldehyde	0.03664	0.03550	3.1
90		beta-Endosulfan	0.04658	0.04257	8.6
91		p,p'-DDD	0.49307	0.45737	7.2
92		Butylbenzylphthalate	0.87884	0.81269	7.5
93		Endosulfan sulfate	0.07828	0.08180	4.5
94		p,p'-DDT	0.36916	0.37860	2.6
95		Methoxychlor	0.57781	0.62135	7.5
96		Benzo[a]anthracene	1.06501	1.06109	0.4
97		3,3'-Dichlorobenzidine	0.14193	0.22887	61.3#
98		Chrysene	1.07048	1.05542	1.4
99		bis(2-Ethylhexyl)phthalate	1.12754	1.00289	11.1
100	I	Perylene-d12	1.00000	1.00000	0.0
101	C	Di-n-octylphthalate	4.25604	3.86398	9.2
102		Benzo[b]fluoranthene	1.56187	1.54115	1.3
103		Benzo[k]fluoranthene	1.52789	1.56687	2.6
104	C	Benzo[a]pyrene	1.24913	1.24685	0.2
105		Indeno[1,2,3-cd]pyrene	0.84573	0.86311	2.1
106		Dibenz[a,h]anthracene	0.68287	0.71677	5.0
107		Benzo[g,h,i]perylene	0.68754	0.67003	2.5

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4041T.D NEWBNAT.M Tue Apr 14 20:48:24 1998 RPT
Average RPD= 5.85

Continuing Calibration Report

Data File : C:\T041398\4021T.D
Acq On : 13 Apr 98 18:06
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 4021T.D cal 10 = 4022T.D cal 20 = 4023T.D
cal 80 = 4024T.D cal120 = 4025T.D

		Compound	AvgRF	CCRF	%Dev
1	I	1,4-Dichlorobenzene-d4	1.00000	1.00000	0.0
2		N-Nitrosodimethyl amine	0.59502	0.48674	18.2
3		Pyridine	0.90057	0.72335	19.7
4		2-Picoline	0.96280	0.79820	17.1
5	S	2-Fluorophenol	1.04539	0.89027	14.8
6		Aniline	1.55343	1.10109	29.1#
7	S	Phenol-d5	1.46076	1.24774	14.6
8	MC	Phenol	1.50042	1.25891	16.1
9		bis(2-Chloroethyl)ether	1.32204	1.10897	16.1
10	S	2-Chlorophenol-d4	1.24439	1.07323	13.8
11	MC	2-Chlorophenol	1.27814	1.09246	14.5
12		1,3-Dichlorobenzene	1.50018	1.26838	15.5
13	MC	1,4-Dichlorobenzene	1.53857	1.29528	15.8
14	S	1,2-Dichlorobenzene-d4	1.49359	1.24906	16.4
15		1,2-Dichlorobenzene	1.43891	1.21206	15.8
16		Benzyl alcohol	0.68406	0.59627	12.8
17		2-Methylphenol	1.08066	0.90551	16.2
18		bis(2-chloroisopropyl)ether	2.46220	2.09967	14.7
19	MP	n-Nitroso-di-n-propylamine	0.93195	0.78792	15.5
20		4-Methylphenol	1.07809	0.91991	14.7
21		Hexachloroethane	0.68193	0.57761	15.3
22	I	Naphthalene-d8	1.00000	1.00000	0.0
23	S	Nitrobenzene-d5	0.33673	0.28407	15.6
24		Nitrobenzene	0.34471	0.28899	16.2
25		Isophorone	0.70932	0.60460	14.8
26	C	2-Nitrophenol	0.20271	0.17419	14.1
27		2,4-Dimethylphenol	0.35022	0.29454	15.9
28		bis(2-Chloroethoxy)methane	0.47673	0.39644	16.8
29	C	2,4-Dichlorophenol	0.32615	0.27869	14.6
30		Benzoic acid	0.21618	0.19426	10.1
31	M	1,2,4-Trichlorobenzene	0.36541	0.30825	15.6
32		Naphthalene	1.02570	0.85760	16.4
33		4-Chloroaniline	0.20289	0.07532	62.9#
34		Toluenediamine	0.00753	0.00651	13.5
35	C	Hexachlorobutadiene	0.21256	0.17863	16.0
36	MC	4-Chloro-3-methylphenol	0.33734	0.28519	15.5
37		2-Methylnaphthalene	0.68801	0.56193	18.3
38	I	Acenaphthene-d10	1.00000	1.00000	0.0
39	P	Hexachlorocyclopentadiene	0.30529	0.28057	8.1

Continuing Calibration Report

Data File : C:\T041398\4021T.D
Acq On : 13 Apr 98 18:06
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 4021T.D cal 10 = 4022T.D cal 20 = 4023T.D
cal 80 = 4024T.D cal120 = 4025T.D

		Compound	AvgRF	CCRF	%Dev
40		1,2,4,5-Tetrachlorobenzene	0.65681	0.54955	16.3
41	C	2,4,6-Trichlorophenol	0.41646	0.36528	12.3
42		2,4,5-Trichlorophenol	0.44473	0.38568	13.3
43	S	2-Fluorobiphenyl	1.26306	1.05585	16.4
44		2-Chloronaphthalene	1.16385	0.98002	15.8
45		2-Nitroaniline	0.42851	0.36332	15.2
46		Dimethylphthalate	1.48042	1.23608	16.5
47		1,3-Dinitrobenzene	0.18876	0.16604	12.0
48		2,6-Dinitrotoluene	0.33543	0.29621	11.7
49		Acenaphthylene	1.88067	1.56888	16.6
50		3-Nitroaniline	0.24838	0.16451	33.8#
51	MC	Acenaphthene	1.16962	0.98034	16.2
52	P	2,4-Dinitrophenol	0.13556	0.12442	8.2
53	MP	4-Nitrophenol	0.13555	0.12868	5.1
54		Dibenzofuran	1.66044	1.42438	14.2
55	M	2,4-Dinitrotoluene	0.42081	0.37998	9.7
56		2,3,4,6-Tetrachlorophenol	0.29641	0.26580	10.3
57		Diethylphthalate	1.59666	1.36421	14.6
58		Fluorene	1.20927	1.00695	16.7
59		4-Chlorophenyl-phenylether	0.62453	0.52969	15.2
60		4-Nitroaniline	0.37158	0.33275	10.4
61	I	Phenanthrene-d10	1.00000	1.00000	0.0
62		4,6-Dinitro-2-methylphenol	0.10947	0.09691	11.5
63	C	n-Nitrosodiphenylamine	0.50185	0.42104	16.1
64	S	2,4,6-Tribromophenol	0.11753	0.10305	12.3
65		Azobenzene	1.37560	1.12231	18.4
66		alpha-BHC	0.13709	0.11583	15.5
67		4-Bromophenyl-phenylether	0.20974	0.17716	15.5
68		Hexachlorobenzene	0.26281	0.22470	14.5
69		beta-BHC	0.11092	0.09321	16.0
70	MC	Pentachlorophenol	0.13306	0.12707	4.5
71		gamma-BHC	0.11992	0.10009	16.5
72		Phenanthrene	1.04509	0.88236	15.6
73		Anthracene	1.00867	0.85226	15.5
74		delta-BHC	0.10268	0.08804	14.3
75		Carbazole	1.00167	0.84892	15.2
76		Heptachlor	0.10451	0.09316	10.9
77		Di-n-butylphthalate	1.56850	1.32813	15.3
78		Aldrin	0.07889	0.06682	15.3

(#) = Out of Range (Advisory for non CCC, SPCC)

Continuing Calibration Report

Data File : C:\T041398\4021T.D
Acq On : 13 Apr 98 18:06
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #16
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAT.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 4021T.D cal 10 = 4022T.D cal 20 = 4023T.D
cal 80 = 4024T.D cal120 = 4025T.D

		Compound	AvgRF	CCRF	%Dev
79		Heptachlor epoxide	0.10420	0.08589	17.6
80	C	Fluoranthene	1.13240	0.97182	14.2
81	I	Chrysene-d12	1.00000	1.00000	0.0
82		Benzidine	0.23722	0.24841	4.7
83	M	Pyrene	1.36577	1.15739	15.3
84		alpha-Endosulfan	0.03369	0.02829	16.0
85		p,p'-DDE	0.26523	0.22452	15.3
86	S	Terphenyl-d14	1.02739	0.87343	15.0
87		Dieldrin	0.26002	0.21840	16.0
88		Endrin	0.01142	0.00962	15.8
89		Endrin aldehyde	0.03664	0.03178	13.3
90		beta-Endosulfan	0.04658	0.03908	16.1
91		p,p'-DDD	0.49307	0.42450	13.9
92		Butylbenzylphthalate	0.87884	0.75545	14.0
93		Endosulfan sulfate	0.07828	0.06786	13.3
94		p,p'-DDT	0.36916	0.30470	17.5
95		Methoxychlor	0.57781	0.47420	17.9
96		Benzo[a]anthracene	1.06501	0.89617	15.9
97		3,3'-Dichlorobenzidine	0.14193	0.10508	26.0#
98		Chrysene	1.07048	0.91440	14.6
99		bis(2-Ethylhexyl)phthalate	1.12754	0.95557	15.3
100	I	Perylene-d12	1.00000	1.00000	0.0
101	C	Di-n-octylphthalate	4.25604	4.10273	3.6
102		Benzo[b]fluoranthene	1.56187	1.37793	11.8
103		Benzo[k]fluoranthene	1.52789	1.31121	14.2
104	C	Benzo[a]pyrene	1.24913	1.05863	15.3
105		Indeno[1,2,3-cd]pyrene	0.84573	0.64742	23.4#
106		Dibenz[a,h]anthracene	0.68287	0.53007	22.4#
107		Benzo[g,h,i]perylene	0.68754	0.51720	24.8#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

3981T.D NEWBNAT.M Tue Apr 14 04:37:29 1998 RPT
Average RPD= 15.62

Continuing Calibration Report

Data File : C:\Q041298\3581Q.D
Acq On : 13 Apr 98 00:26
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #14
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAQ.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 3581Q.D cal 10 = 3582Q.D cal 20 = 3583Q.D
cal 80 = 3584Q.D cal120 = 3585Q.D

		Compound	AvgRF	CCRF	%Dev
79		Heptachlor epoxide	0.10958	0.10326	5.8
80	C	Fluoranthene	1.17787	1.13113	4.0
81	I	Chrysene-d12	1.00000	1.00000	0.0
82		Benzidine	0.39062	0.41033	5.0
83	M	Pyrene	1.40864	1.36847	2.9
84		alpha-Endosulfan	0.04092	0.03836	6.3
85		p,p'-DDE	0.29849	0.28983	2.9
86	S	Terphenyl-d14	1.07438	1.03897	3.3
87		Dieldrin	0.25424	0.24362	4.2
88		Endrin	0.01438	0.01418	1.4
89		Endrin aldehyde	0.04045	0.03867	4.4
90		beta-Endosulfan	0.05534	0.05322	3.8
91		p,p'-DDD	0.52938	0.52202	1.4
92		Butylbenzylphthalate	0.76508	0.75731	1.0
93		Endosulfan sulfate	0.09748	0.09138	6.3
94		p,p'-DDT	0.42373	0.41923	1.1
95		Methoxychlor	0.66374	0.64363	3.0
96		Benzo[a]anthracene	1.15540	1.08171	6.4
97		3,3'-Dichlorobenzidine	0.30594	0.28419	7.1
98		Chrysene	1.09916	1.04625	4.8
99		bis(2-Ethylhexyl)phthalate	1.06044	1.06177	0.1
100	I	Perylene-d12	1.00000	1.00000	0.0
101	C	Di-n-octylphthalate	2.35791	2.37923	0.9
102		Benzo[b]fluoranthene	1.47991	1.40815	4.8
103		Benzo[k]fluoranthene	1.44909	1.35793	6.3
104	C	Benzo[a]pyrene	1.26616	1.18075	6.7
105		Indeno[1,2,3-cd]pyrene	1.16398	1.11893	3.9
106		Dibenz[a,h]anthracene	0.92321	0.87911	4.8
107		Benzo[g,h,i]perylene	0.95970	0.93025	3.1

(#) = Out of Range SPCC's out = 0 CCC's out = 0

3581Q.D NEWBNAQ.M Mon Apr 13 17:39:15 1998 RPT

Continuing Calibration Report

Data File : C:\Q041298\3581Q.D
Acq On : 13 Apr 98 00:26
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #14
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAQ.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 3581Q.D cal 10 = 3582Q.D cal 20 = 3583Q.D
cal 80 = 3584Q.D cal120 = 3585Q.D

		Compound	AvgRF	CCRF	%Dev
40		1,2,4,5-Tetrachlorobenzene	0.62508	0.59125	5.4
41	C	2,4,6-Trichlorophenol	0.44684	0.42899	4.0
42		2,4,5-Trichlorophenol	0.46369	0.44250	4.6
43	S	2-Fluorobiphenyl	1.26796	1.17963	7.0
44		2-Chloronaphthalene	1.16730	1.09773	6.0
45		2-Nitroaniline	0.47889	0.45995	4.0
46		Dimethylphthalate	1.45995	1.34182	8.1
47		1,3-Dinitrobenzene	0.21997	0.22052	0.3
48		2,6-Dinitrotoluene	0.37344	0.36006	3.6
49		Acenaphthylene	1.79681	1.68572	6.2
50		3-Nitroaniline	0.32830	0.30833	6.1
51	MC	Acenaphthene	1.15549	1.07997	6.5
52	P	2,4-Dinitrophenol	0.20132	0.20331	1.0
53	MP	4-Nitrophenol	0.16640	0.15770	5.2
54		Dibenzofuran	1.58530	1.48309	6.4
55	M	2,4-Dinitrotoluene	0.48119	0.47453	1.4
56		2,3,4,6-Tetrachlorophenol	0.32131	0.31921	0.7
57		Diethylphthalate	1.46646	1.38960	5.2
58		Fluorene	1.18384	1.08630	8.2
59		4-Chlorophenyl-phenylether	0.67075	0.62343	7.1
60		4-Nitroaniline	0.36827	0.34605	6.0
61	I	Phenanthrene-d10	1.00000	1.00000	0.0
62		4,6-Dinitro-2-methylphenol	0.16835	0.17070	1.4
63	C	n-Nitrosodiphenylamine	0.52462	0.50447	3.8
64	S	2,4,6-Tribromophenol	0.15862	0.14522	8.4
65		Azobenzene	1.40280	1.27919	8.8
66		alpha-BHC	0.15538	0.14226	8.4
67		4-Bromophenyl-phenylether	0.25274	0.23085	8.7
68		Hexachlorobenzene	0.31811	0.29666	6.7
69		beta-BHC	0.12194	0.11601	4.9
70	MC	Pentachlorophenol	0.18275	0.18478	1.1
71		gamma-BHC	0.13290	0.12515	5.8
72		Phenanthrene	1.06328	0.99113	6.8
73		Anthracene	0.99442	0.92956	6.5
74		delta-BHC	0.10968	0.10405	5.1
75		Carbazole	0.99419	0.94303	5.1
76		Heptachlor	0.13385	0.12441	7.1
77		Di-n-butylphthalate	1.42170	1.35897	4.4
78		Aldrin	0.09615	0.08947	6.9

(#) = Out of Range (Advisory for non CCC, SPCC)

Continuing Calibration Report

Data File : C:\Q041298\3581Q.D
Acq On : 13 Apr 98 00:26
Sample : SSTD050
Misc : 50PT 8270 041098
MS Integration Params: rteint.p

Vial: 1
Operator: LD1305
Inst : GC/MS #14
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\NEWBNAQ.M (RTE Integrator)
Title : CLP BNA Calibration
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 150%

cal 50 = 3581Q.D cal 10 = 3582Q.D cal 20 = 3583Q.D
cal 80 = 3584Q.D cal120 = 3585Q.D

		Compound	AvgRF	CCRF	%Dev
1	I	1,4-Dichlorobenzene-d4	1.00000	1.00000	0.0
2		N-Nitrosodimethyl amine	0.74327	0.68995	7.2
3		Pyridine	1.05589	0.99054	6.2
4		2-Picoline	1.21980	1.13756	6.7
5	S	2-Fluorophenol	1.16529	1.09467	6.1
6		Aniline	2.03416	1.91129	6.0
7	S	Phenol-d5	1.59790	1.51863	5.0
8	MC	Phenol	1.61325	1.49591	7.3
9		bis(2-Chloroethyl)ether	1.43207	1.33241	7.0
10	S	2-Chlorophenol-d4	1.31569	1.25534	4.6
11	MC	2-Chlorophenol	1.31861	1.24553	5.5
12		1,3-Dichlorobenzene	1.49212	1.40763	5.7
13	MC	1,4-Dichlorobenzene	1.50620	1.43109	5.0
14	S	1,2-Dichlorobenzene-d4	1.56553	1.48174	5.4
15		1,2-Dichlorobenzene	1.42613	1.35898	4.7
16		Benzyl alcohol	0.82617	0.79807	3.4
17		2-Methylphenol	1.12065	1.05993	5.4
18		bis(2-chloroisopropyl)ether	2.64950	2.42983	8.3
19	MP	n-Nitroso-di-n-propylamine	1.08891	1.01712	6.6
20		4-Methylphenol	1.18299	1.13485	4.1
21		Hexachloroethane	0.68552	0.66128	3.5
22	I	Naphthalene-d8	1.00000	1.00000	0.0
23	S	Nitrobenzene-d5	0.41435	0.39407	4.9
24		Nitrobenzene	0.42616	0.39765	6.7
25		Isophorone	0.78800	0.72289	8.3
26	C	2-Nitrophenol	0.23559	0.22790	3.3
27		2,4-Dimethylphenol	0.39594	0.36920	6.8
28		bis(2-Chloroethoxy)methane	0.52890	0.49307	6.8
29	C	2,4-Dichlorophenol	0.35514	0.33319	6.2
30		Benzoic acid	0.28796	0.27657	4.0
31	M	1,2,4-Trichlorobenzene	0.40516	0.38461	5.1
32		Naphthalene	1.06932	1.00448	6.1
33		4-Chloroaniline	0.40059	0.38587	3.7
34		Toluenediamine	0.00340	0.00335	1.5
35	C	Hexachlorobutadiene	0.24462	0.23564	3.7
36	MC	4-Chloro-3-methylphenol	0.36822	0.34638	5.9
37		2-Methylnaphthalene	0.71213	0.67691	4.9
38	I	Acenaphthene-d10	1.00000	1.00000	0.0
39	P	Hexachlorocyclopentadiene	0.40332	0.40529	0.5

HERITAGE
SEMI-VOLATILES Analysis-WATER METHOD BLANK
Analysis METHOD: SW846-8270

Mass Spec File:4453f SVL#1633-127

Analysis Date/Time:4-15-98/08:29

Prep Date:4-1-98

Target Compound List	Result	Units	Det. Limit
Acenaphthene.....	BDL	uG/L	10
Acenapthylene.....	BDL	uG/L	10
Anthracene.....	BDL	uG/L	10
Benz(a)anthracene.....	BDL	uG/L	10
Benzo(a)pyrene.....	BDL	uG/L	10
Benzo(b)fluoranthene.....	BDL	uG/L	10
Benzo(ghi)perylene.....	BDL	uG/L	10
Benzo(k)fluoranthene.....	BDL	uG/L	10
Benzyl Alcohol.....	BDL	uG/L	10
Benzylbutylphthalate.....	BDL	uG/L	10
Bis(2-chloroethoxy)methane.....	BDL	uG/L	10
Bis(2-chloroethyl)ether.....	BDL	uG/L	10
Bis(2-chloroisopropyl)ether....	BDL	uG/L	10
Bis(2-ethylhexyl)phthalate.....	BDL	uG/L	10
4-Bromophenylphenylether.....	BDL	uG/L	10
Carbazole.....	BDL	uG/L	10
4-Chloroaniline.....	BDL	uG/L	10 *
2-Chloronaphthalene.....	BDL	uG/L	10
4-Chlorophenylphenylether.....	BDL	uG/L	10 *
Chrysene.....	BDL	uG/L	10
Dibenz(a,h)anthracene.....	BDL	uG/L	10
Dibenzofuran.....	BDL	uG/L	10
1,2-Dichlorobenzene.....	BDL	uG/L	10
1,3-Dichlorobenzene.....	BDL	uG/L	10
1,4-Dichlorobenzene.....	BDL	uG/L	10
3,3' -Dichlorobenzidine.....	BDL	uG/L	20 *
Diethylphthalate.....	BDL	uG/L	10
Dimethylphthalate.....	BDL	uG/L	10
Di-n-butylphthalate.....	BDL	uG/L	10
Dinitrobenzenes.....	BDL	uG/L	50
2,4-Dinitrotoluene.....	BDL	uG/L	10 *
2,6-Dinitrotoluene.....	BDL	uG/L	10
Di-n-octylphthalate.....	BDL	uG/L	10
Fluoranthene.....	BDL	uG/L	10
Fluorene.....	BDL	uG/L	10
Hexachlorobenzene.....	BDL	uG/L	10
Hexachlorobutadiene.....	BDL	uG/L	10
Hexachlorocyclopentadiene.....	BDL	uG/L	10
Hexachloroethane.....	BDL	uG/L	10
Indeno(1,2,3-cd)pyrene.....	BDL	uG/L	10
Isophorone.....	BDL	uG/L	10
2-Methylnaphthalene.....	BDL	uG/L	10
Naphthalene.....	BDL	uG/L	10

Mass Spec File:4453f

2-Nitroaniline.....	BDL	uG/L	50	
3-Nitroaniline.....	BDL	uG/L	50	*
4-Nitroaniline.....	BDL	uG/L	50	
Nitrobenzene.....	BDL	uG/L	10	
N-Nitroso-diphenylamine.....	BDL	uG/L	10	
N-Nitroso-di-n-propylamine.....	BDL	uG/L	10	
Phenanthrene.....	BDL	uG/L	10	
2-Picoline.....	BDL	uG/L	50	
Pyrene.....	BDL	uG/L	10	
Pyridine.....	BDL	uG/L	50	*
Tetrachlorobenzenes.....	BDL	uG/L	10	
Toluenediamine.....	BDL	uG/L	50	*
1,2,4-Trichlorobenzene.....	BDL	uG/L	10	
Benzoic Acid.....	BDL	uG/L	50	*
4-Chloro-3-methylphenol.....	BDL	uG/L	10	
2-Chlorophenol.....	BDL	uG/L	10	
2,4-Dichlorophenol.....	BDL	uG/L	10	
2,4-Dimethylphenol.....	BDL	uG/L	10	
4,6-Dinitro-2-methylphenol.....	BDL	uG/L	50	*
2,4-Dinitrophenol.....	BDL	uG/L	50	*
2-Methylphenol.....	BDL	uG/L	10	
4-Methylphenol.....	BDL	uG/L	10	
2-Nitrophenol.....	BDL	uG/L	10	
4-Nitrophenol.....	BDL	uG/L	50	*
Pentachlorophenol.....	BDL	uG/L	50	
Phenol.....	BDL	uG/L	10	
Tetrachlorophenol.....	BDL	uG/L	10	
2,4,5-Trichlorophenol.....	BDL	uG/L	50	
2,4,6-Trichlorophenol.....	BDL	uG/L	10	

Surrogate List

2-Fluorophenol.....	59% Recovery
Phenol-d5.....	57% Recovery
Nitrobenzene-d5.....	110% Recovery
2-Fluorobiphenyl.....	101% Recovery
2,4,6-Tribromophenol.....	93% Recovery
Terphenyl-d14.....	95% Recovery

( ) = ESTIMATED CONCENTRATION

* : Targets exceed North Carolina limits (>10% deviation in the CCAL SSTD), but they pass EPA limits.