N00158.AR.000182
NAS WILLOW GROVE
5090.3a

APPENDIX
PADEP Act 2 Final Report

Ground-water Sampling Efforts
Installation Restoration Program Site 10
Naval Air Station Joint Reserve Base
Horsham Township, Pennsylvania

Contract No. N62472-92-1296
Contract Task Order Number 0074

Prepared for

Department of the Navy
Engineering Field Activity, Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Prepared by

EA Engineering, Science, and Technology
2 Read's Way, Suite 123
New Castle, DE 19720
(302) 322-3052

August 2004

APPENDIX A

MAP 61 AMBLER, ATLAS OF PRELIMINARY GEOLOGIC QUADRANGLE MAPS OF PENNSYLVANIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

AMBLER QUADRANGLE
PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

SOURCE

Pre-Triassic from U.S.G.S. Folio 162 and 1960 state map compilation sheet.

(2) Triassic from 1960 state map compilation sheet, W 22, and C9.

EXPLANATION

Tpb
Pensauken and Bridgeton Fms, undif.

Kp
Potapsco(?) Fm.

Trd
Diabase

Trb
Brunswick Fm.

Trl
Lockatong Fm.

Trs
Stockton Fm.

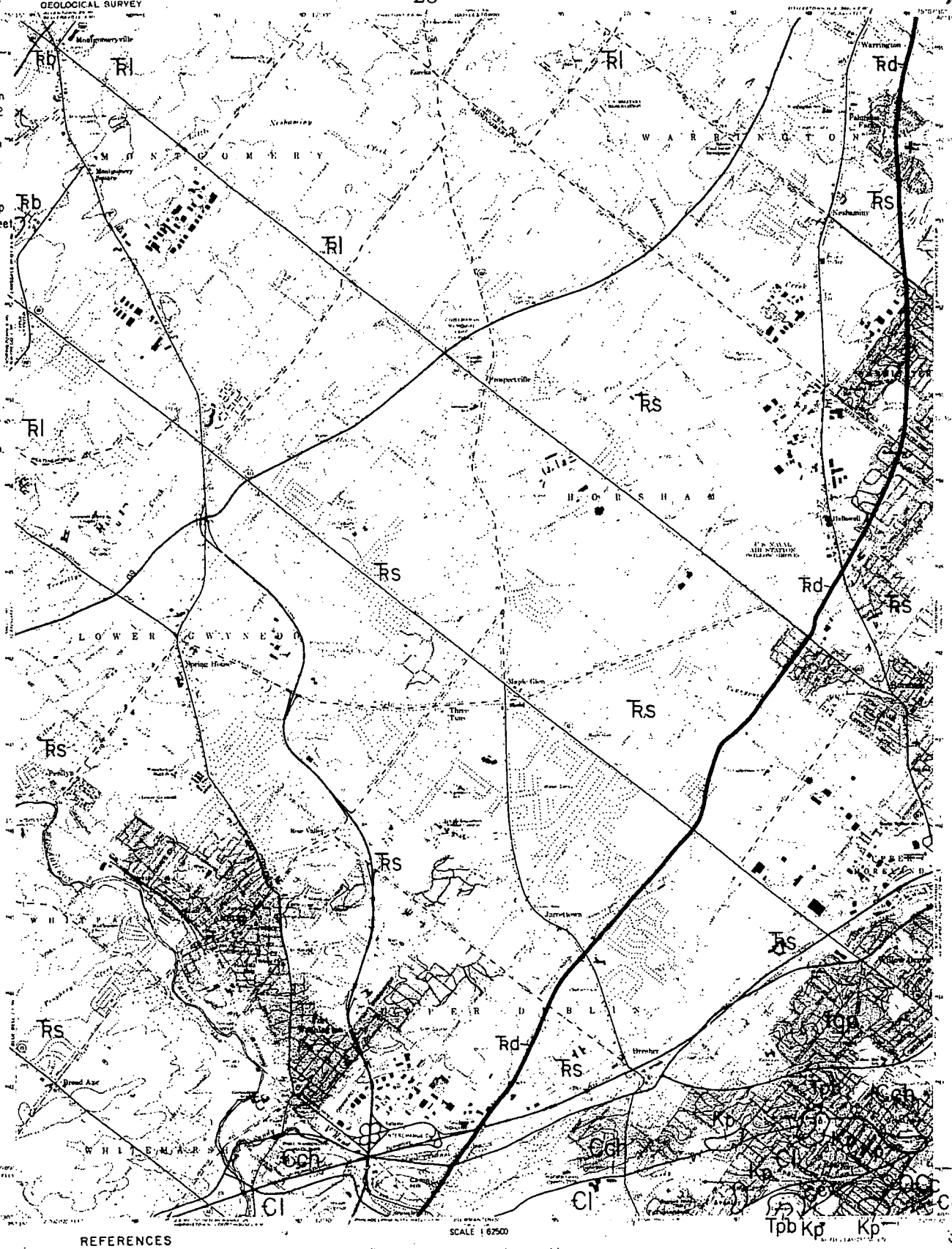
OCc
Conestoga Fm.

Ce
Elbrook Fm.

Cl
Ledger Fm.

Cch
Chickies Fm.

fgp
Felsic gneiss, pyroxene-bearing



SCALE 1:62500

REFERENCES

Bascom, F., Clark, W. B., Darton, N. H., and others (1902), *Philadelphia folio, Pennsylvania-New Jersey-Delaware*, U. S. Geological Survey Geologic Atlas of the U. S. Folio 182, 23 p.

Longwill, S. M., and Wood, C. R. (1966), *Ground-water resources of the Brunswick Formation in Montgomery and Berks Counties, Pennsylvania*, Pennsylvania Geological Survey, 4th ser., Water Resource Report 22, 59 p.

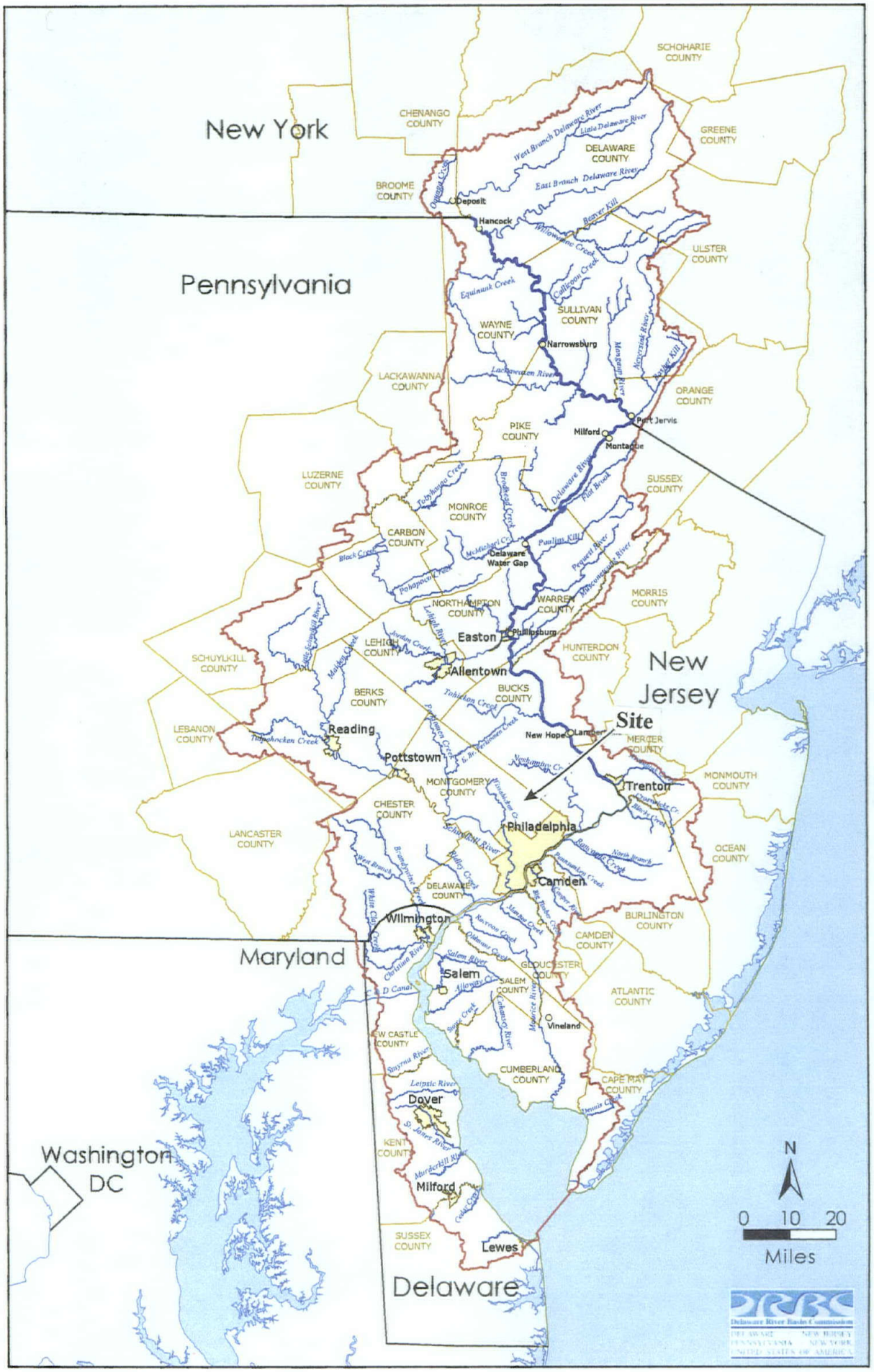
Willard, Bradford, Freedman, Jacob, McLaughlin, D. B., and others (1959), *Geology and mineral resources of Bucks County, Pennsylvania*, Pennsylvania Geological Survey, 4th ser., County Report 9, 243 p.

Compiled by T. M. BERG, 1978

AMBLER

APPENDIX B

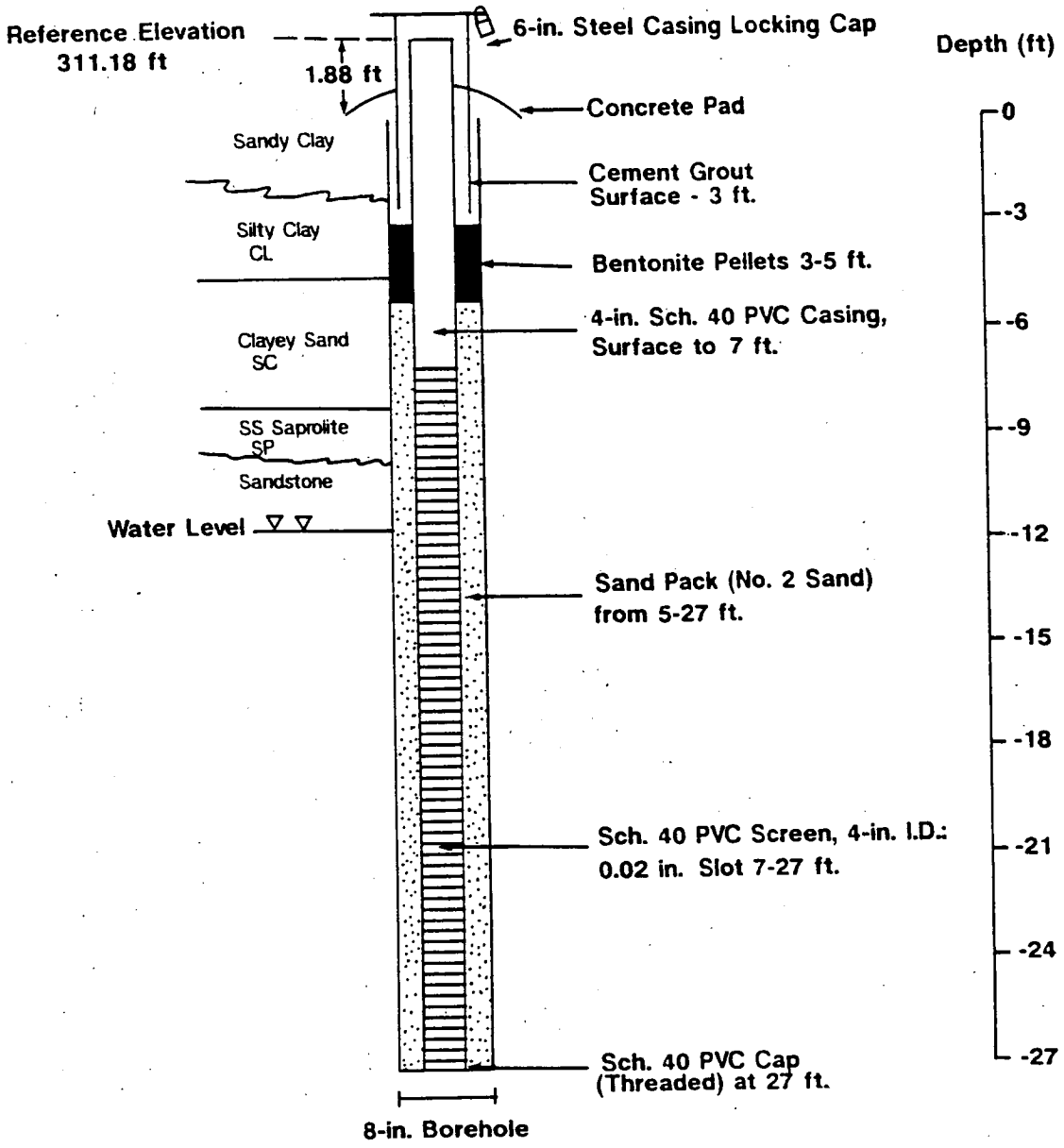
DELAWARE RIVER BASIN MAP, DELAWARE RIVER BASIN COMMISION


New York
Pennsylvania
New Jersey
Maryland
Delaware
Washington DC
SCHOHARIE COUNTY
CHENANGO COUNTY
GREENE COUNTY
DELAWARE COUNTY
BROOME COUNTY
ULSTER COUNTY
SULLIVAN COUNTY
WAYNE COUNTY
LACKAWANNA COUNTY
ORANGE COUNTY
PIKE COUNTY
LUZERNE COUNTY
SUSSEX COUNTY
MONROE COUNTY
CARBON COUNTY
MORRIS COUNTY
NORTHAMPTON COUNTY
WARREN COUNTY
HUNTERDON COUNTY
SCHUYLKILL COUNTY
LEHIGH COUNTY
BERKS COUNTY
BUCKS COUNTY
MERCER COUNTY
LEBANON COUNTY
MONMOUTH COUNTY
MONTGOMERY COUNTY
CHESTER COUNTY
LANCASTER COUNTY
OCEAN COUNTY
DELAWARE COUNTY
BURLINGTON COUNTY
CAMDEN COUNTY
GLOUCESTER COUNTY
SALEM COUNTY
ATLANTIC COUNTY
NEW CASTLE COUNTY
CUMBERLAND COUNTY
CAPE MAY COUNTY
KENT COUNTY
SUSSEX COUNTY
Deposit
Hancock
Narrowsburg
Milford
Port Jervis
Montague
Delaware Water Gap
Easton
Phillipsburg
Allentown
Reading
Pottstown
New Hope
Lambertville
Site
Trenton
Philadelphia
Camden
Wilmington
Salem
Vineland
Dover
Milford
Lewes
West Branch Delaware River
Little Delaware River
East Branch Delaware River
Beaver Kill
Willowemoc Creek
Callicoon Creek
Equinunk Creek
Lackawaxen River
Mongaup River
Neversink River
Rondout Kill
Delaware River
Flat Brook
Tobyhanna Creek
Brodhead Creek
Paulins Kill
Pequest River
Pohatcong Creek
Lehigh River
Jordan Creek
Tohickon Creek
Perkiomen Creek
Schuylkill River
Brandywine Creek
Christina River
Salem River
Maurice River
Cohansey River
Mullica River
Rancocas Creek
Cooper River
Big Timber Creek
Neshaminy Cr.
Pennsville
Leipsic River
St. Jones River
Murderkill River
Cedar Creek
Nanticoke River
Wicomico River
Pocomoke River
Chincoteague Bay
Delaware River Basin Commission
DELAWARE
NEW JERSEY
PENNSYLVANIA
NEW YORK
UNITED STATES OF AMERICA
N
0 10 20
Miles

APPENDIX C

NEW AND EXISTING WELL CONSTRUCTION DIAGRAMS

NFFW-1
WELL COMPLETION DIAGRAM



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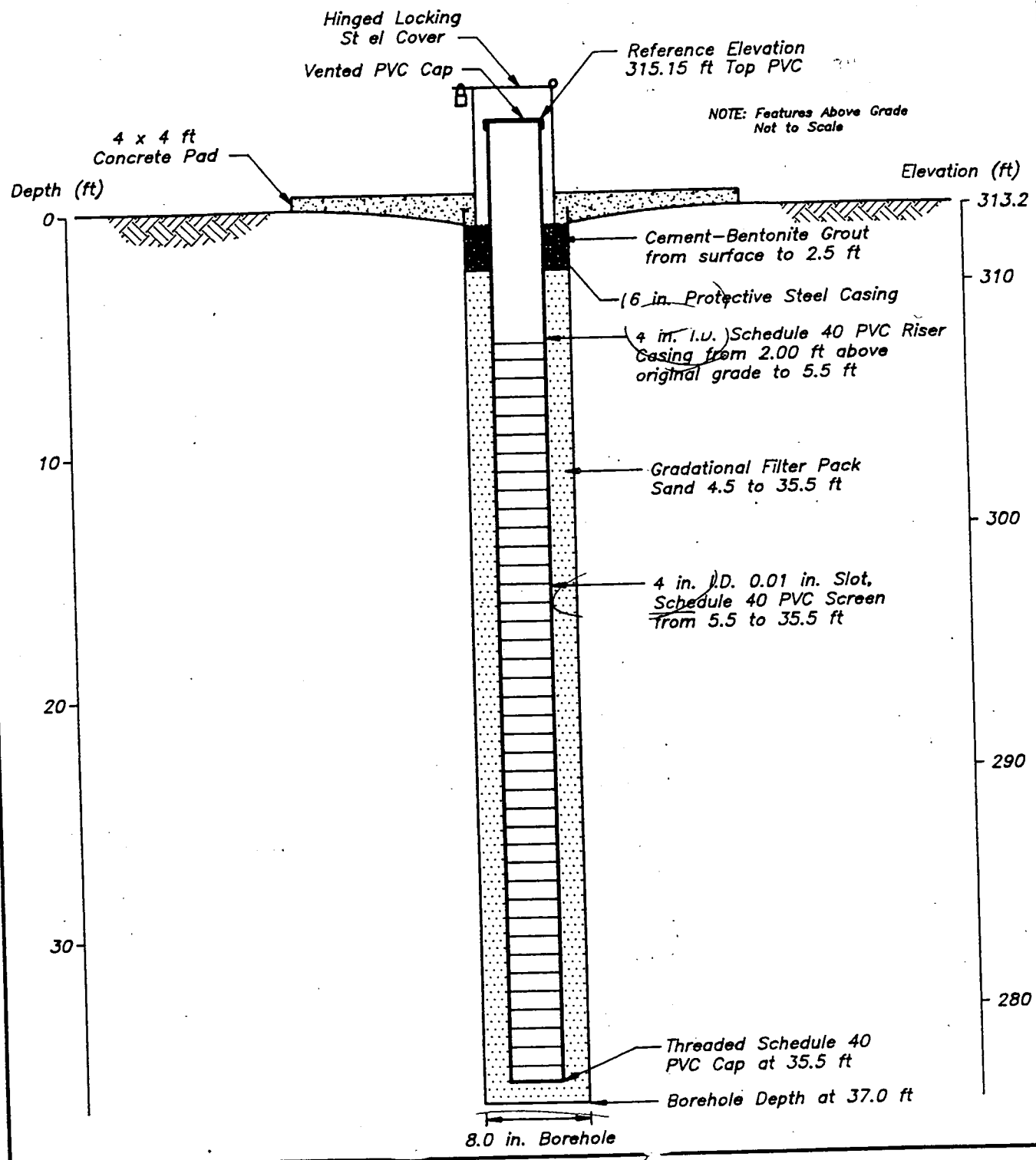


EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

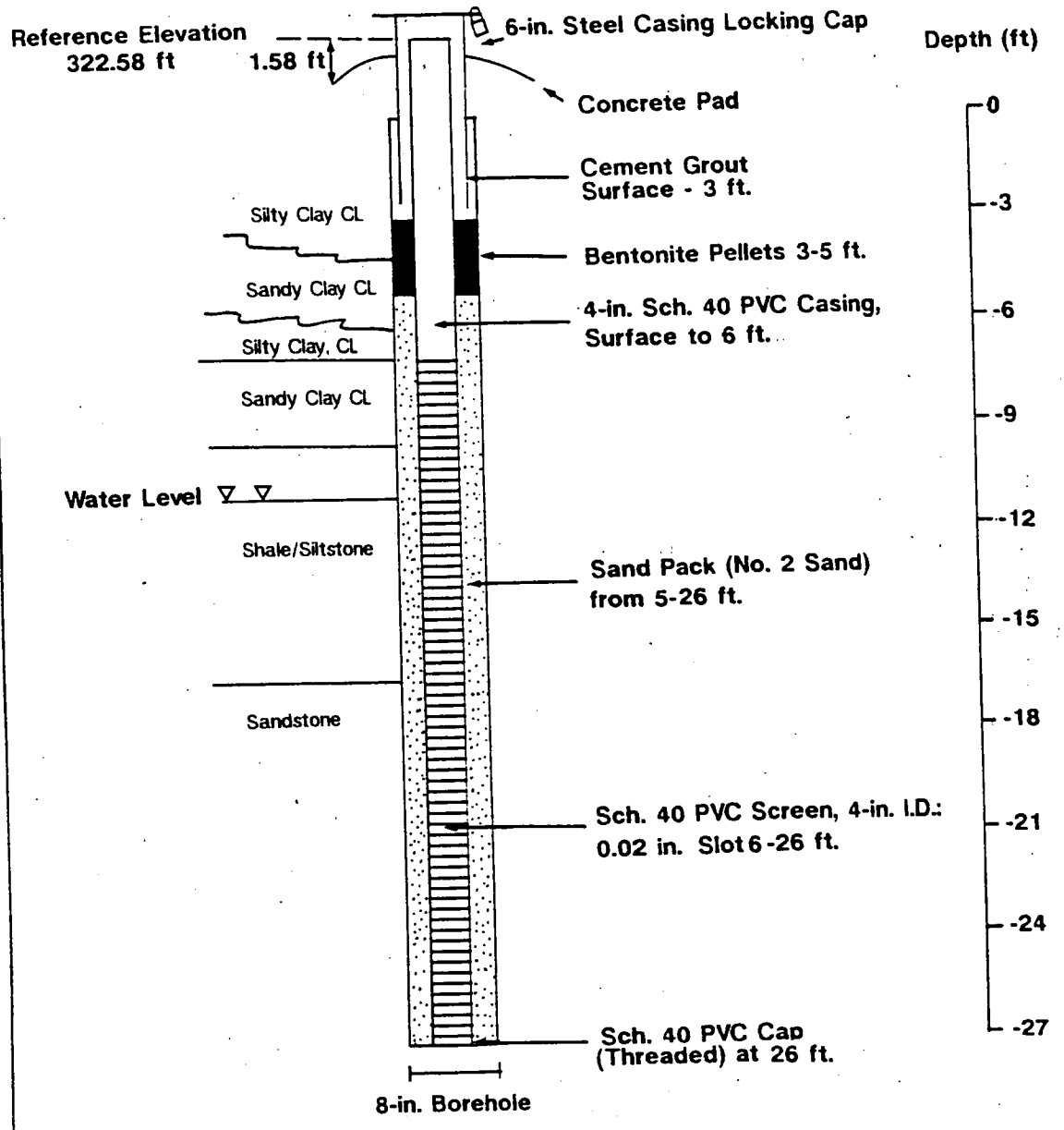
Client: U.S. Navy

Job No. 10388.06

Location: Willow Grove NAS

Coordinates X: 2726736
Y: 328669

NFFW-3
WELL COMPLETION DIAGRAM



NFFW-4
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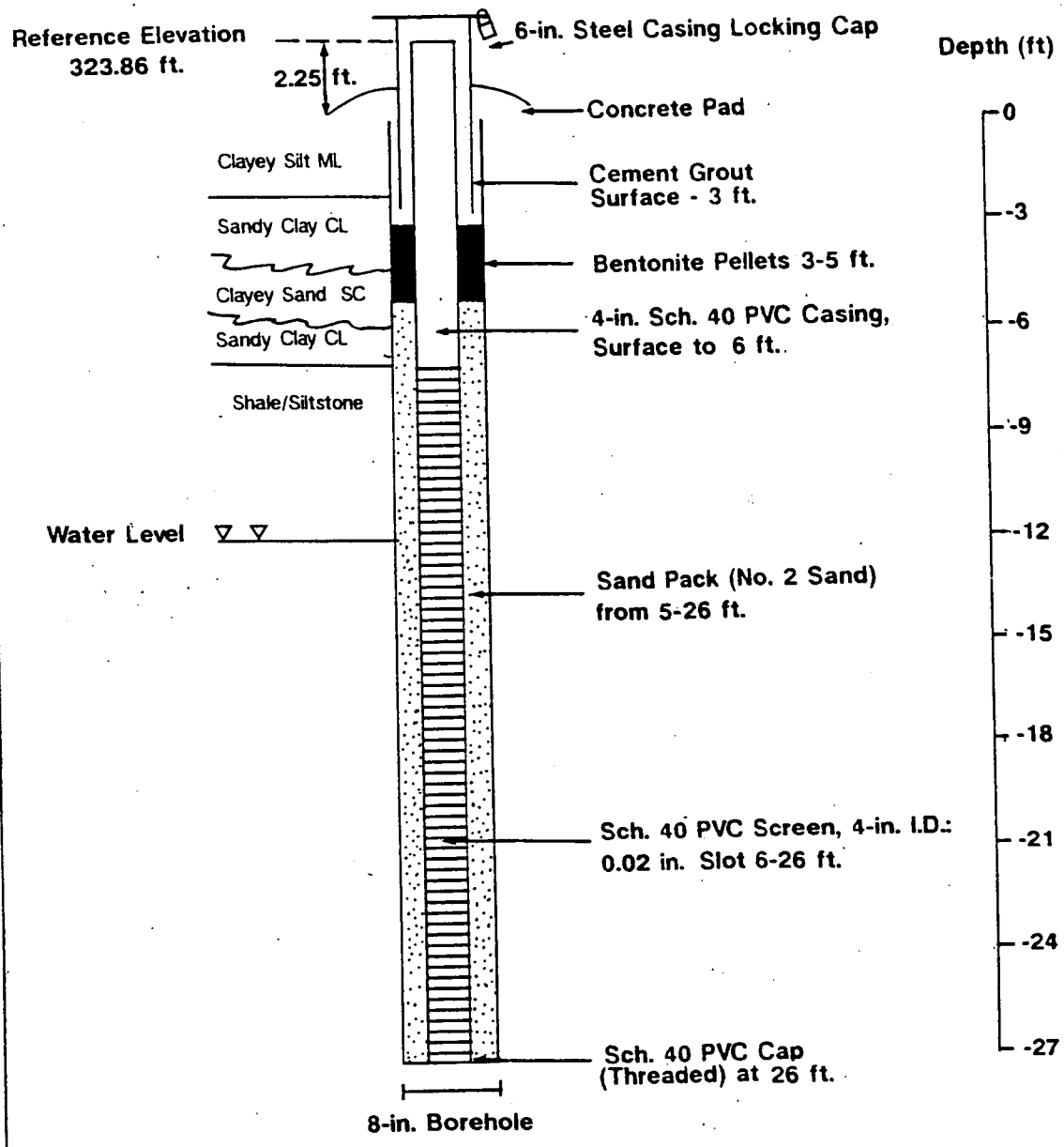
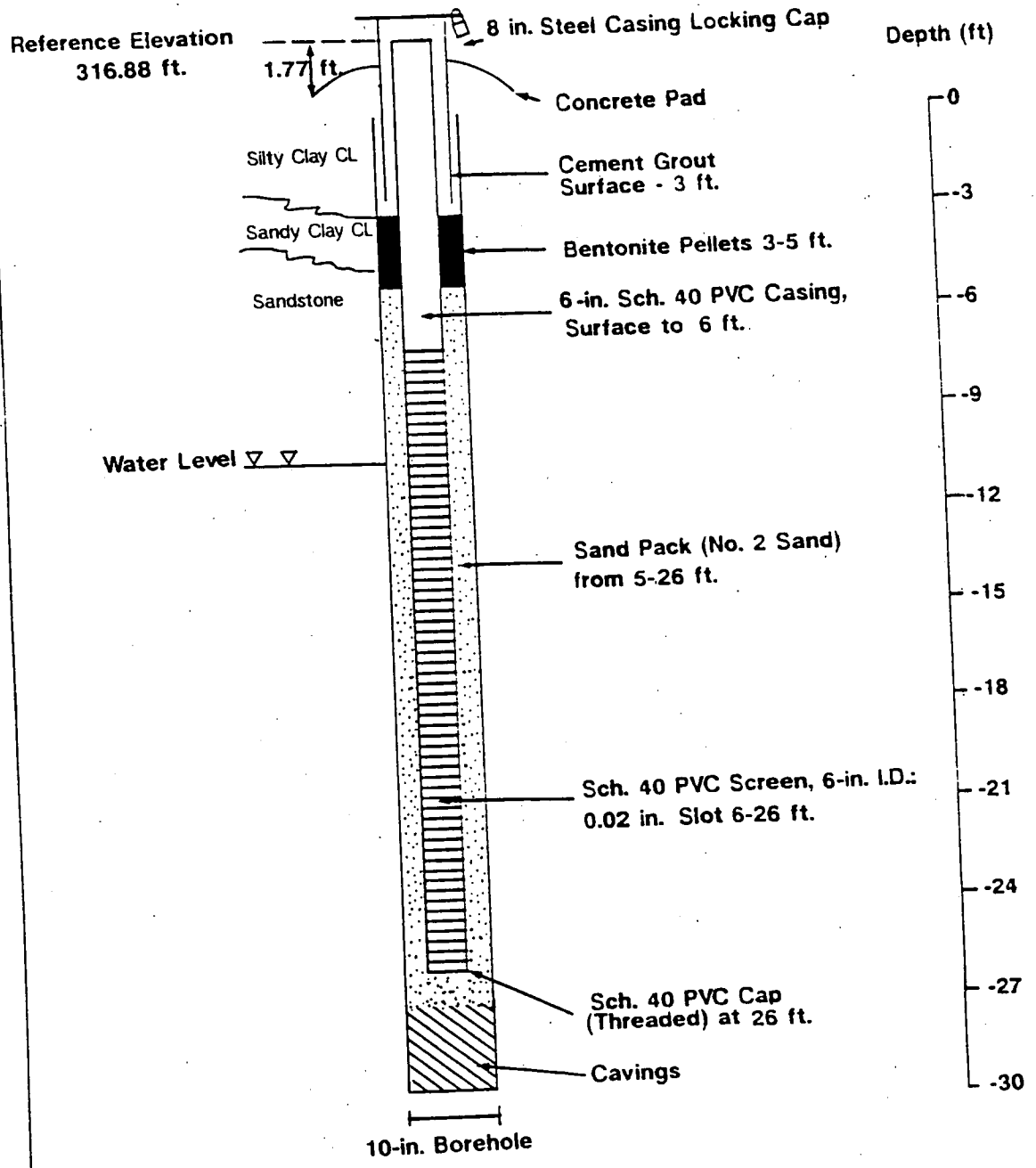


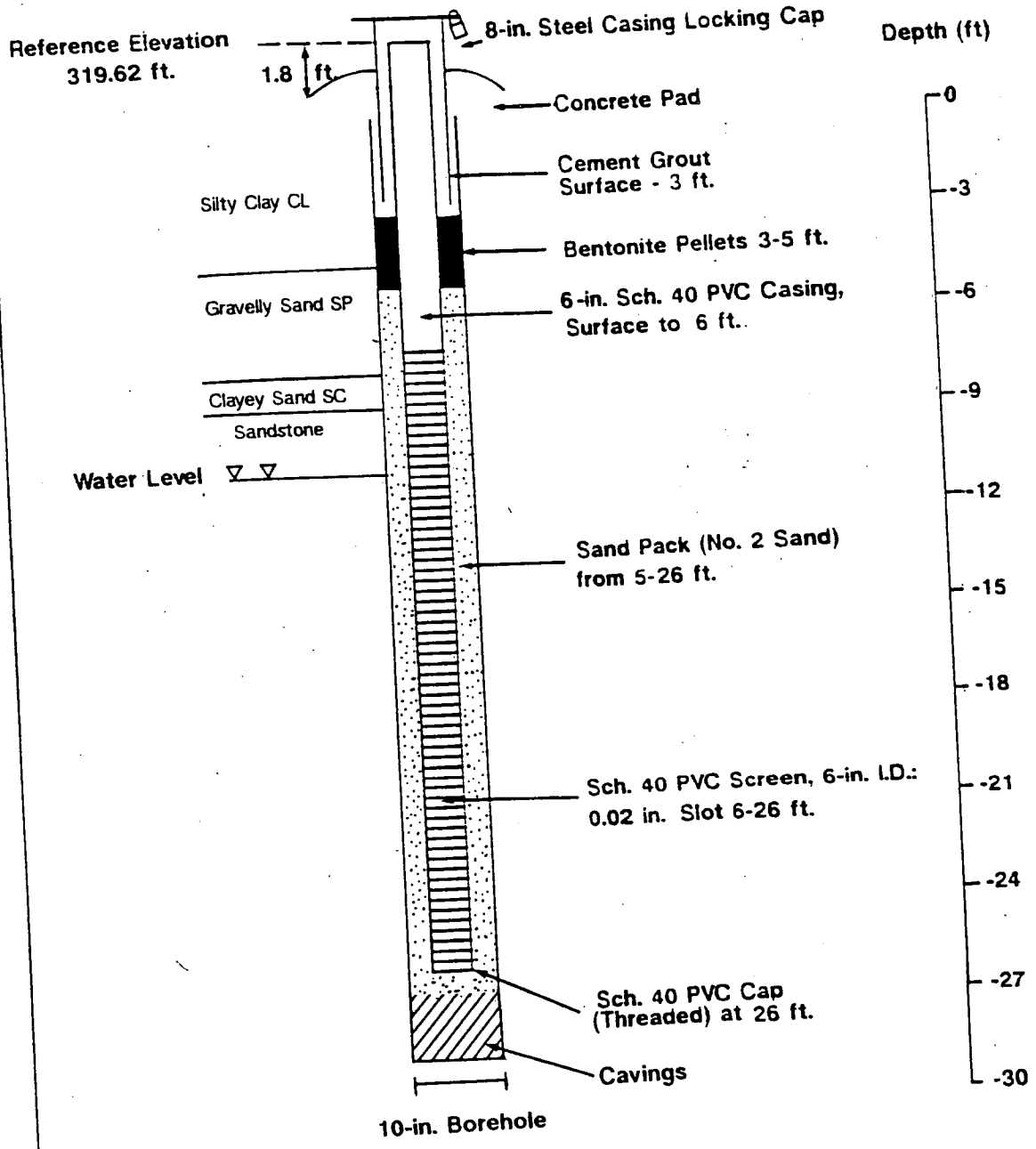
NFFW-5

WELL COMPLETION DIAGRAM



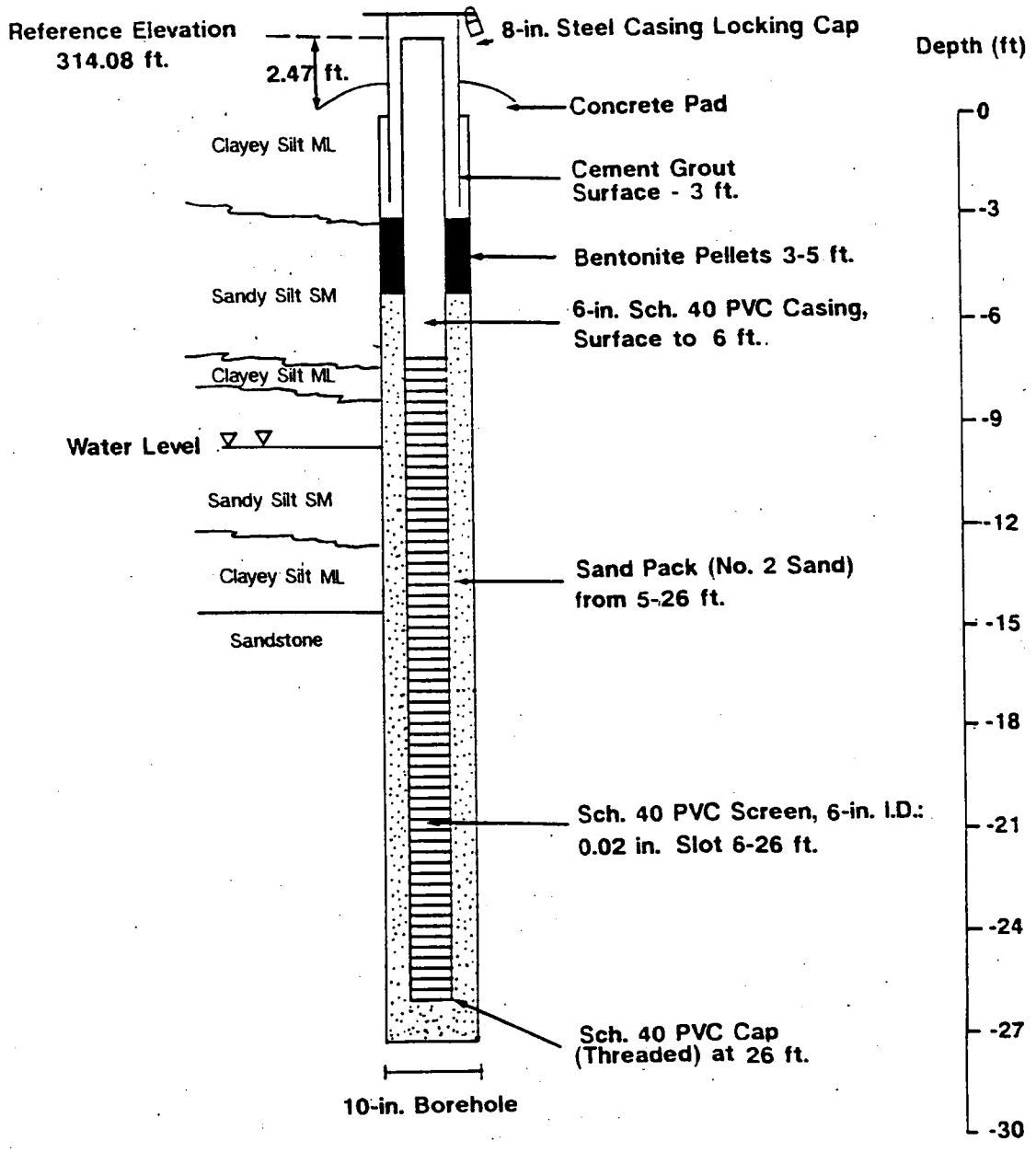
NFFW-6

WELL COMPLETION DIAGRAM



NFFW-7

WELL COMPLETION DIAGRAM



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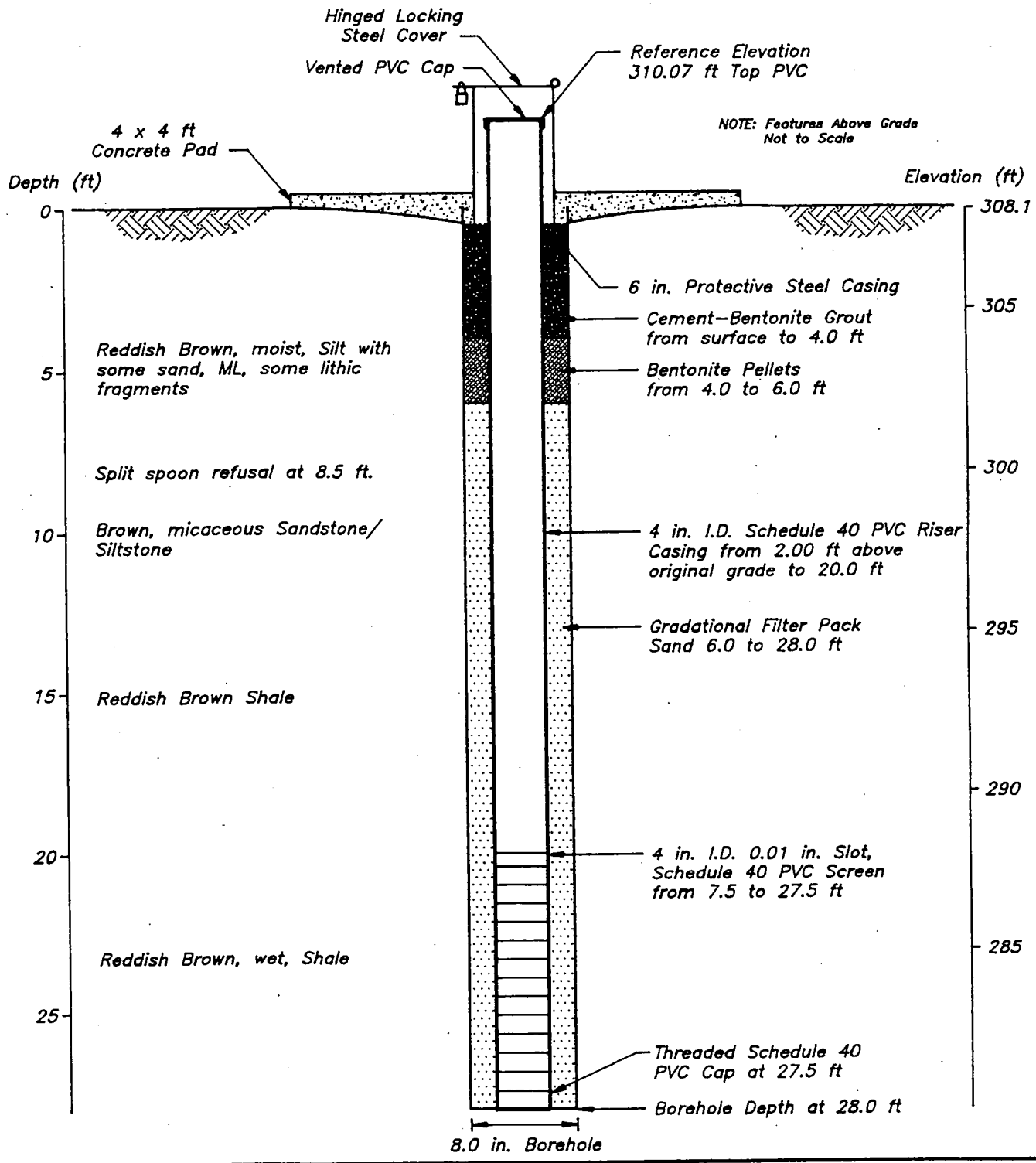
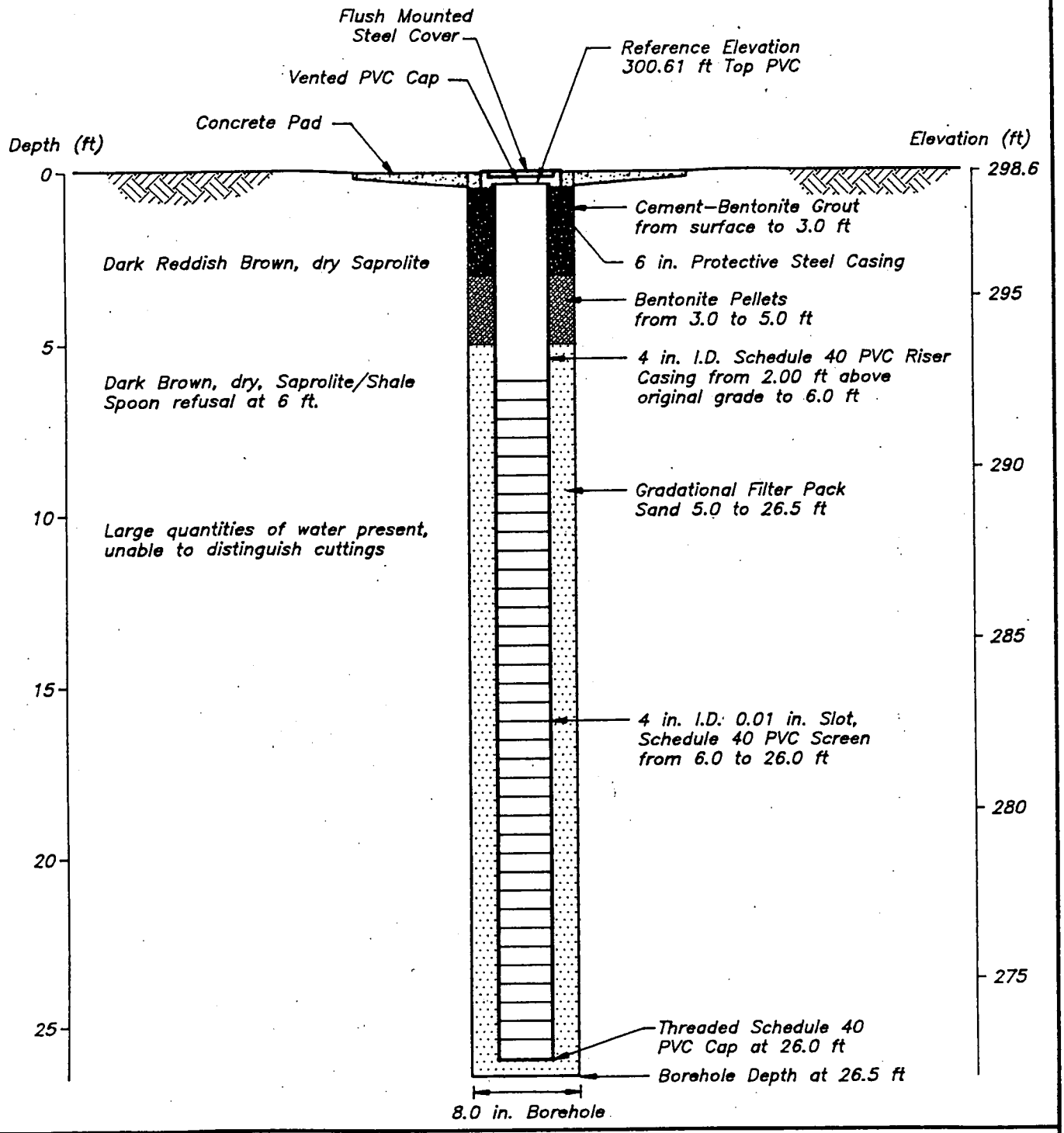
WELL COMPLETION DIAGRAM



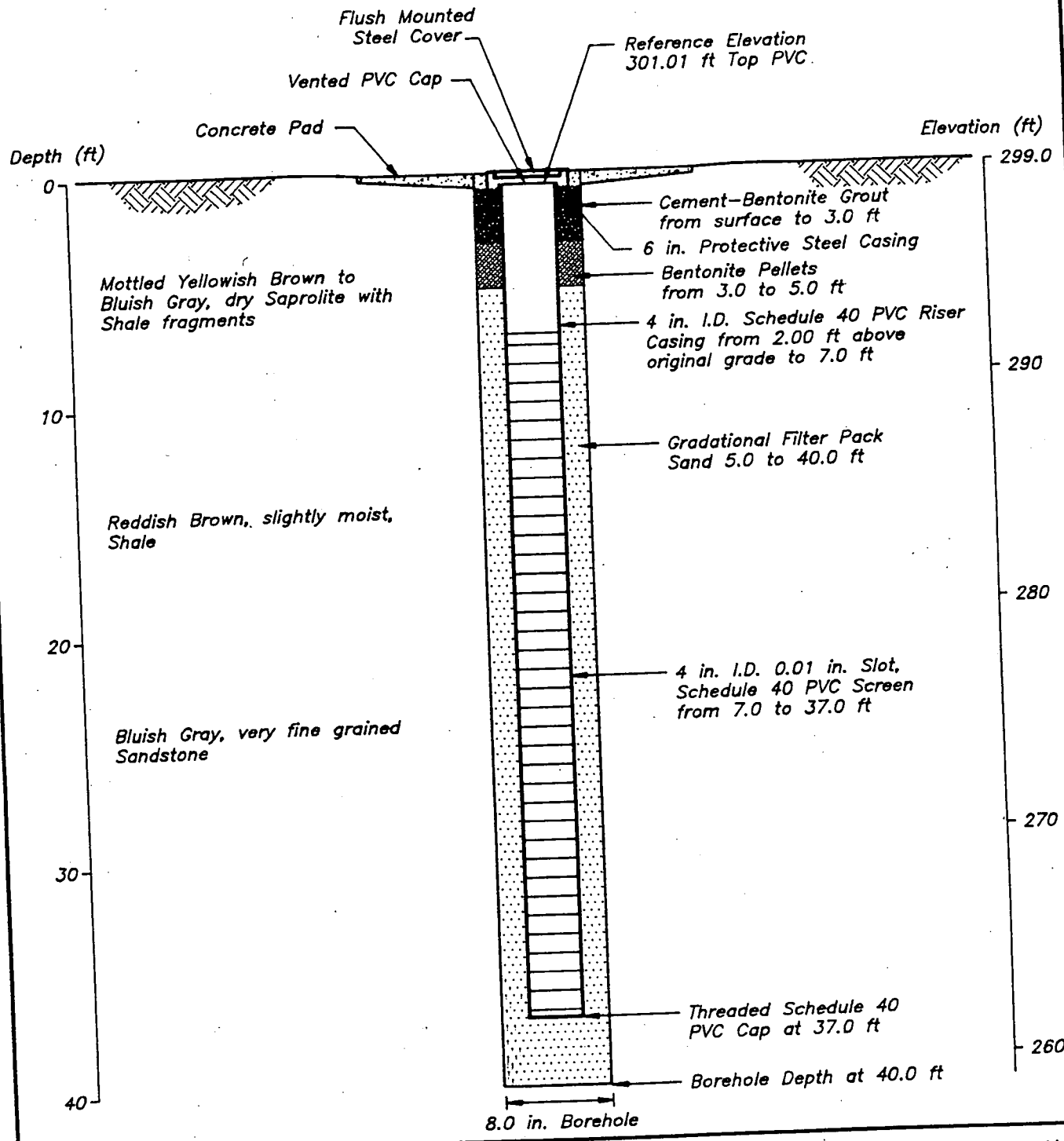
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	Client: U.S. Navy	Location: Willow Grove NAS
	Job No. 10388.06	Coordinates X: 2727073 Y: 328847

WELL NO: NFFW-9
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	Client: U.S. Navy	Location: Willow Grove NAS
	Job No. 10388.06	Coordinates X: 2726905 Y: 328896

WELL NO: NFFW-10
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

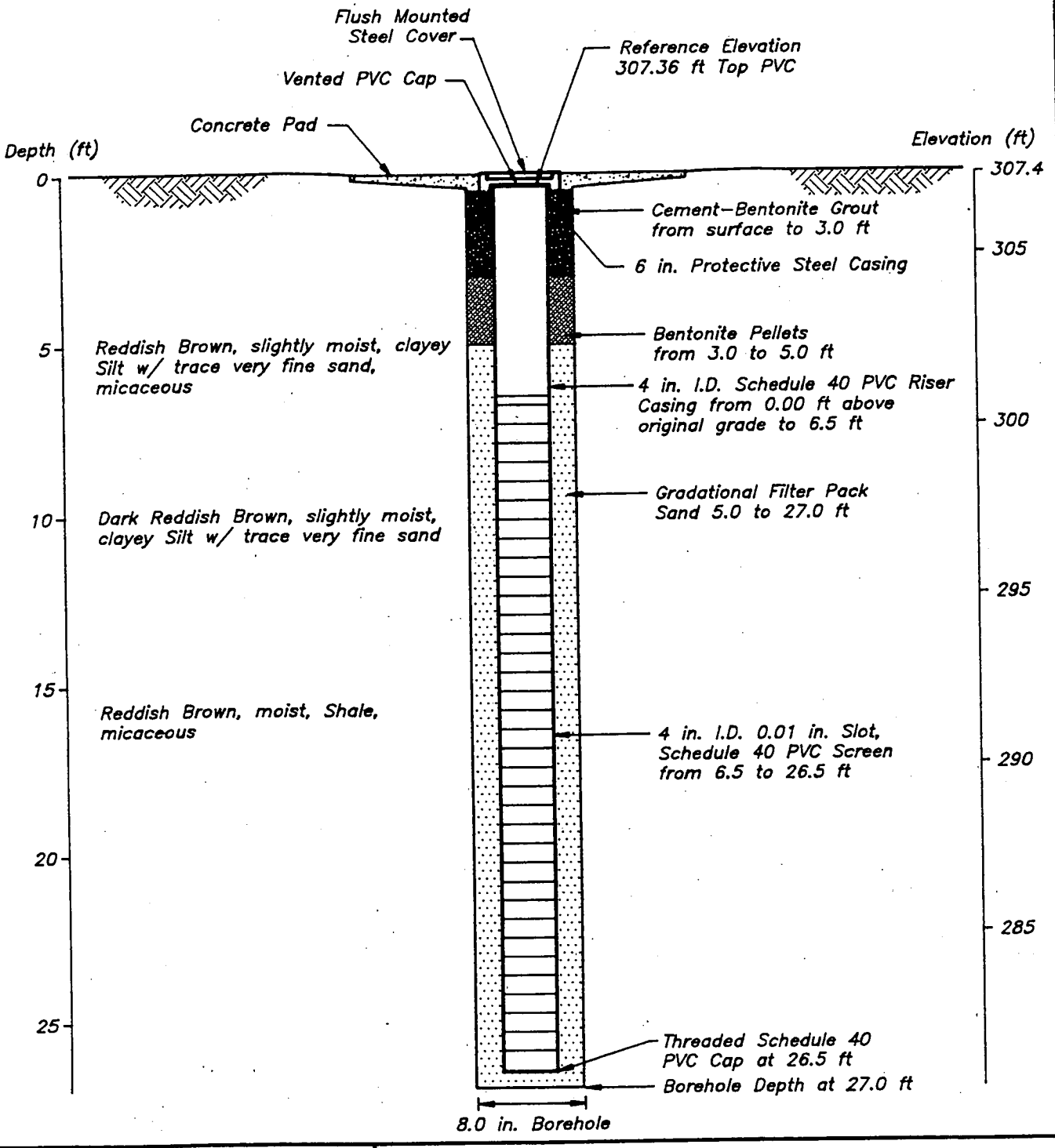
Client: U.S. Navy

Job No. 10388.06

Location: Willow Grove NAS

Coordinates X: 2726790
Y: 329112

WELL NO: NFFW-12
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

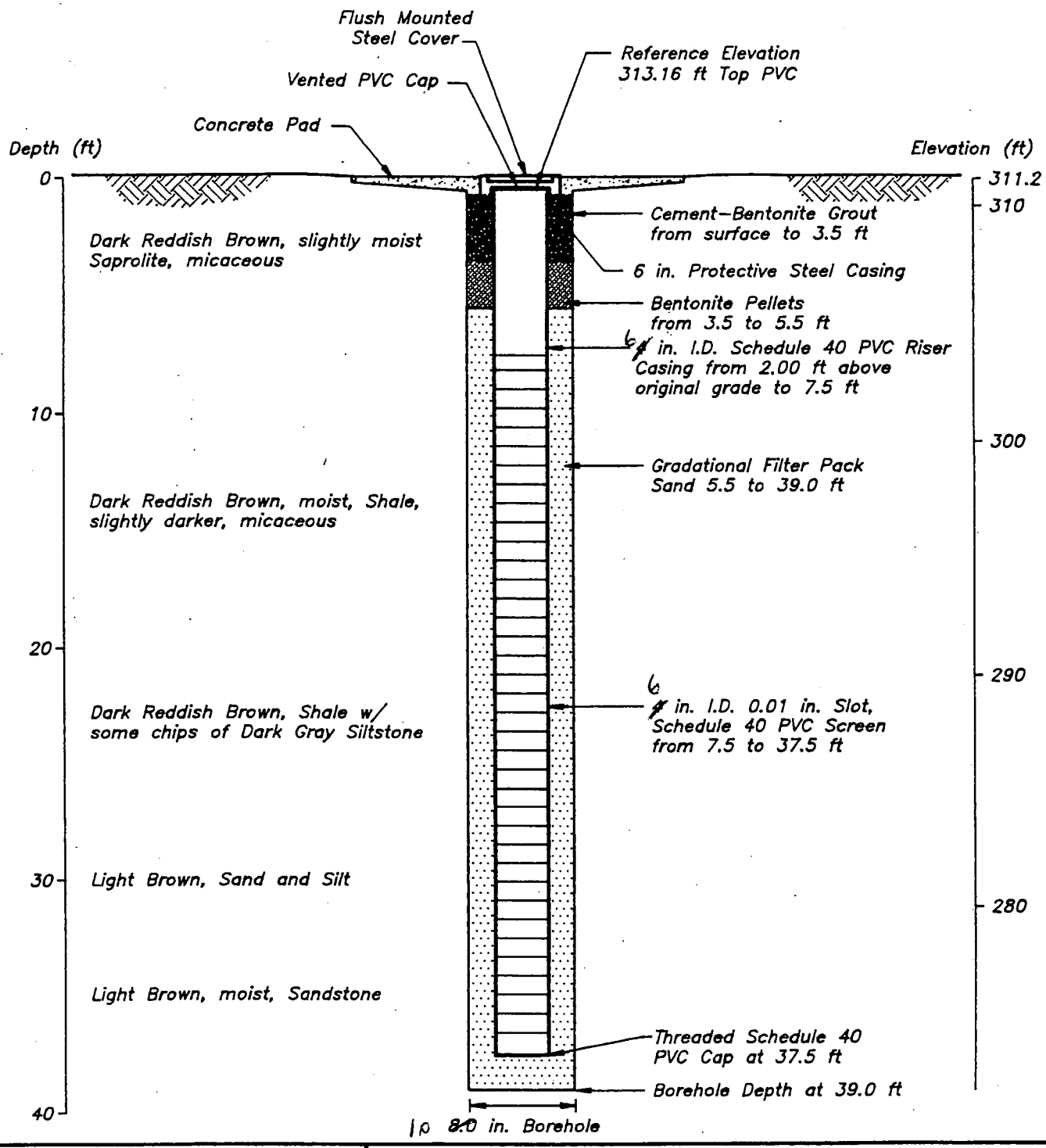
Client: U.S. Navy

Job No. 10388.06

Location: Willow Grove NAS

Coordinates X: 2726751
Y: 328781

WELL NO: NFFW-14
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

Client: U.S. Navy

Job No. 10388.06

Location: Willow Grove NAS

Coordinates X: 2726636
Y: 328596

TO: KAJ / Marin
From Scott Dobson

WELL NO: NFFW-15
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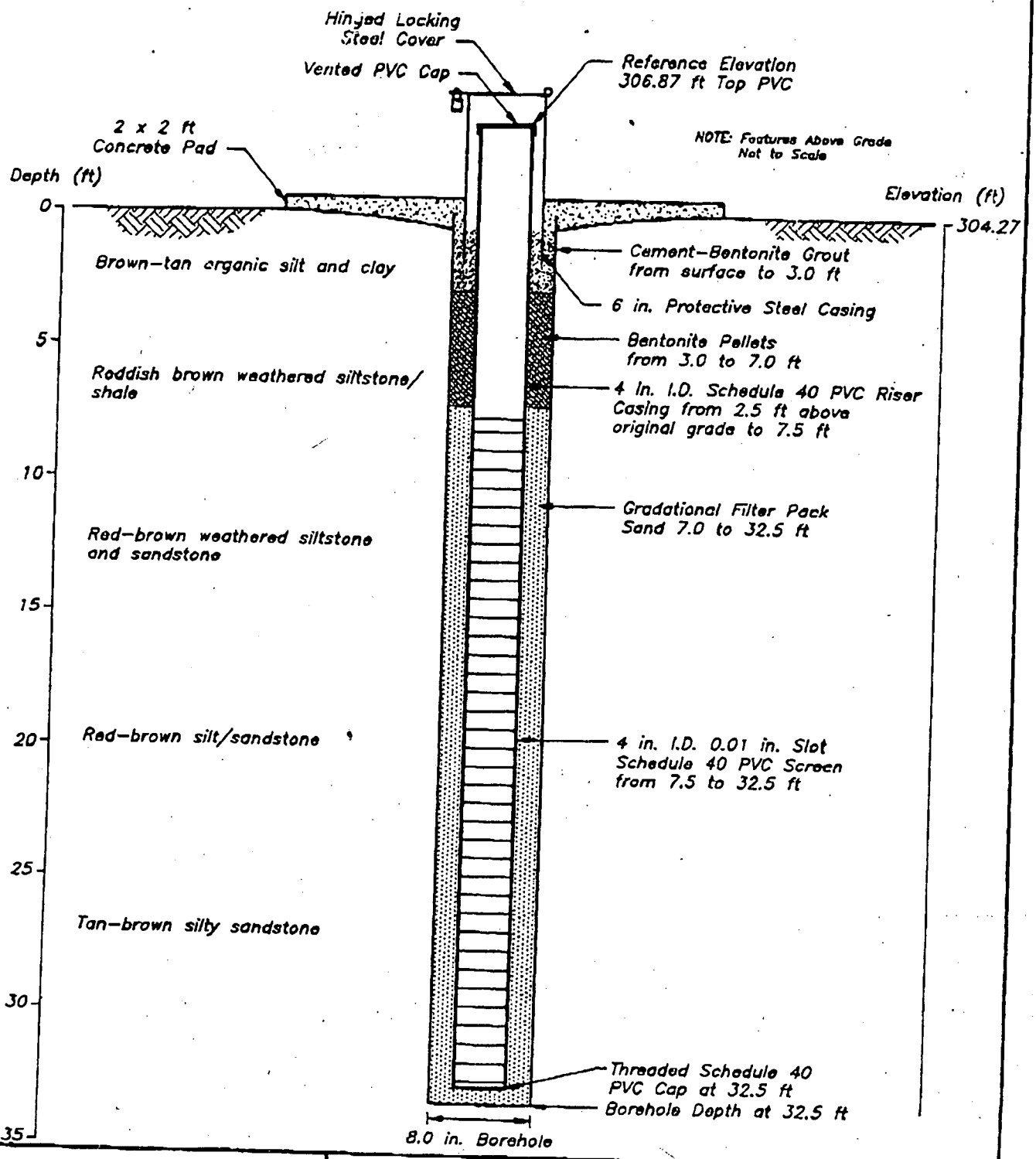

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	Client: U.S. Navy Job No. 12197.06	Location: Willow Grove NAS Coordinates X: 2,726,322.15 Y: 328,852.40

WELL NO: NFFW-16
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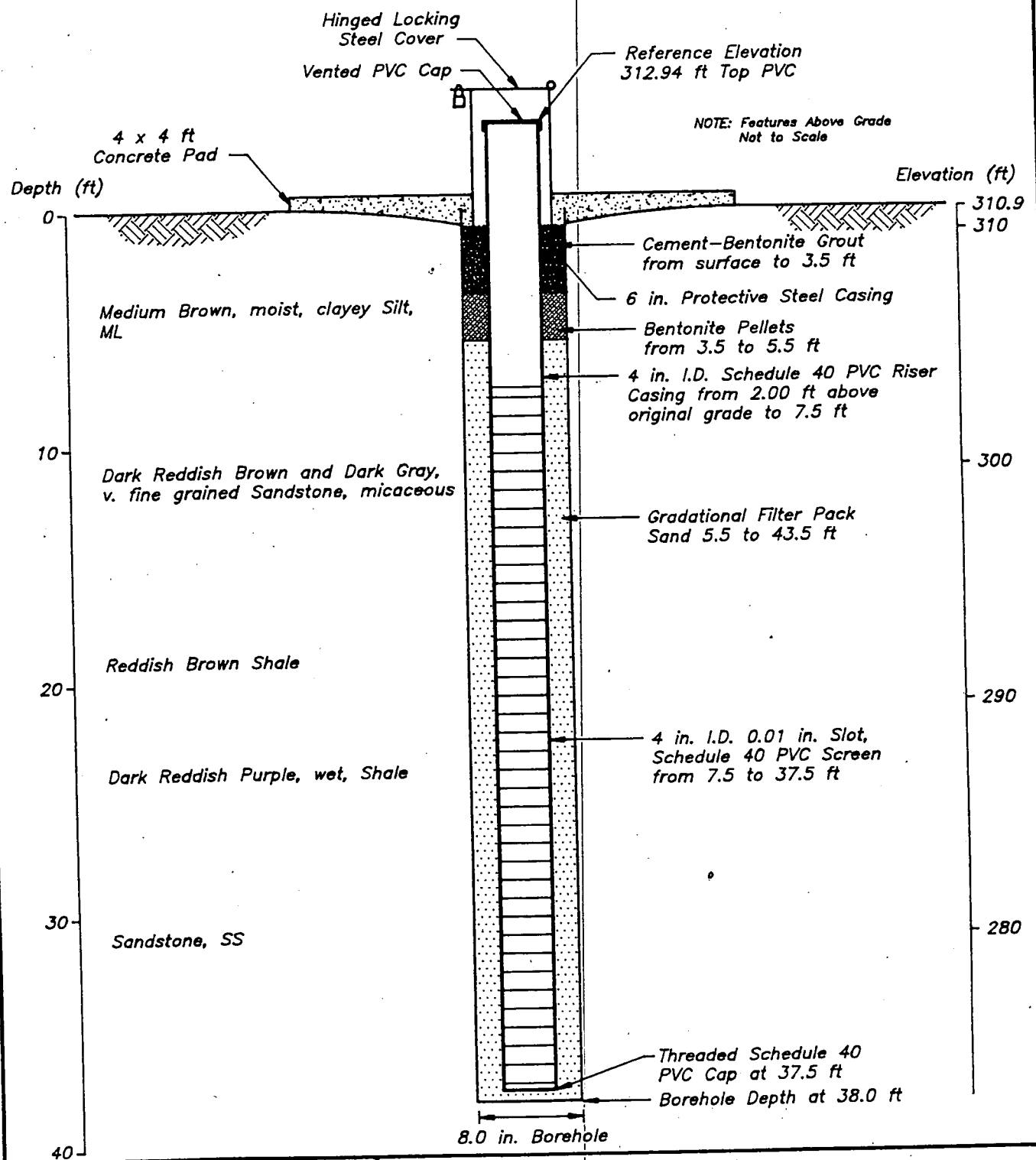


EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

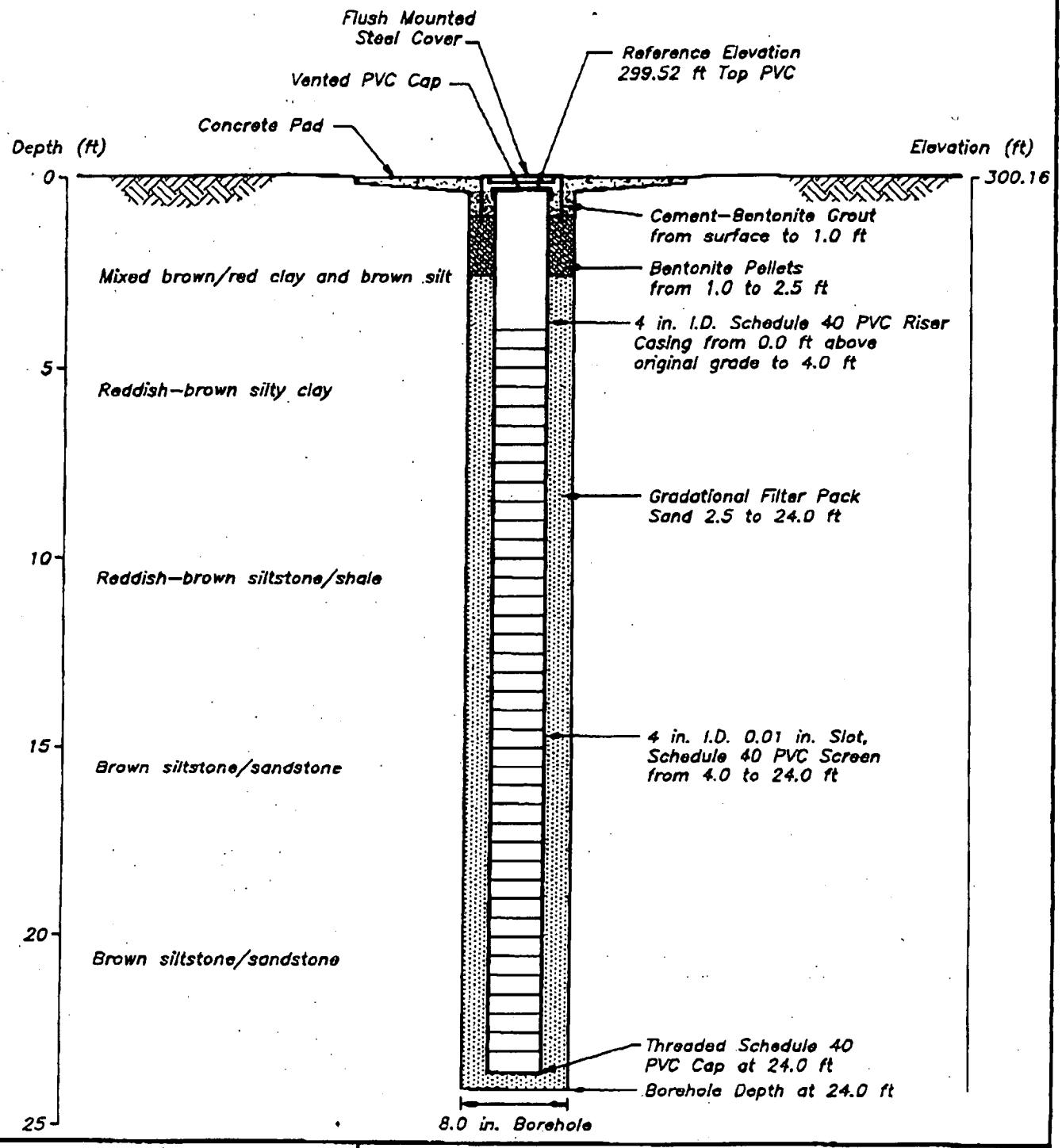
Client: U.S. Navy

Job No. 10388.06

Location: Willow Grove NAS

Coordinates X: 2726872
Y: 328742

WELL NO: NFFW-17
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

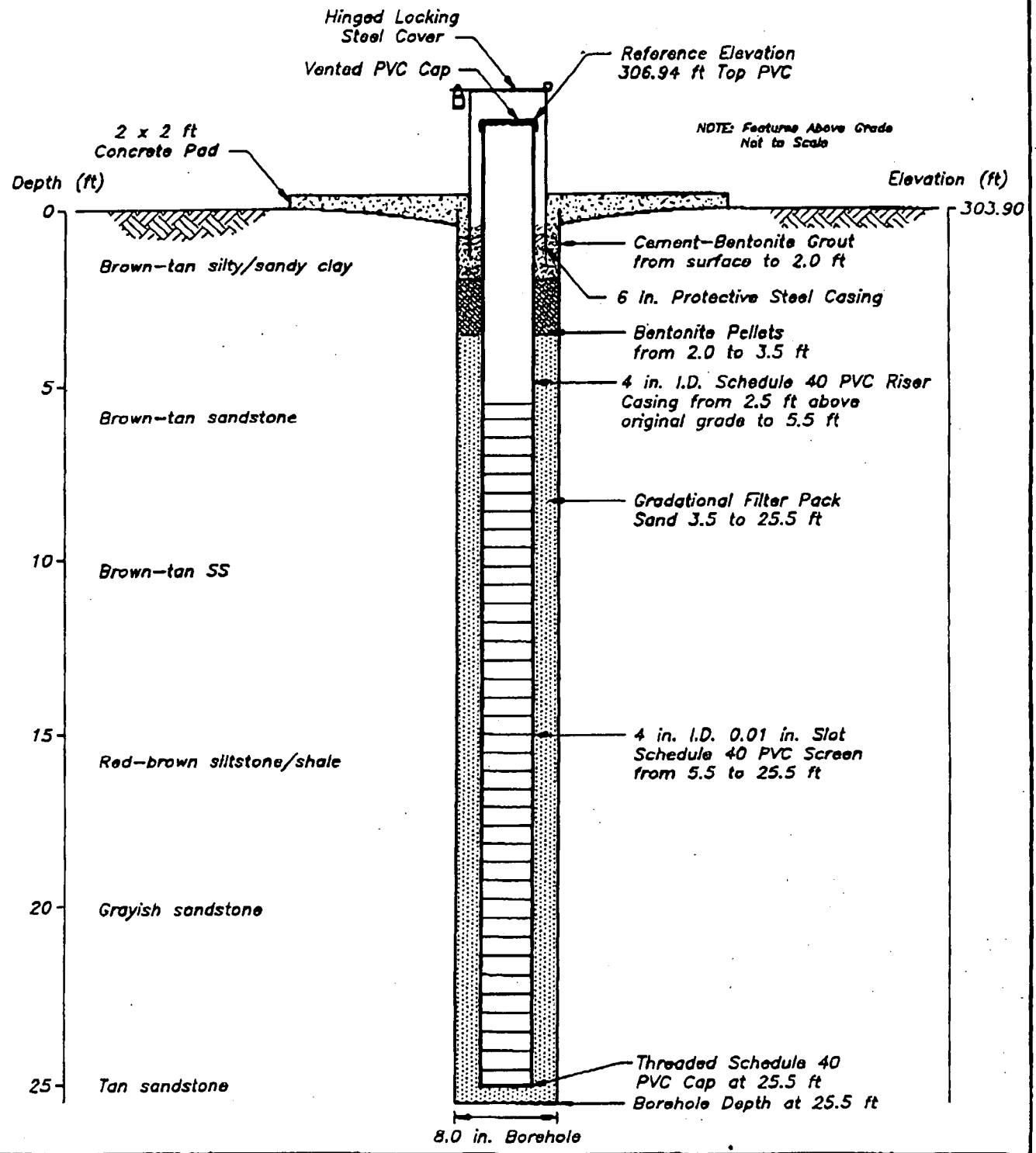
Client: U.S. Navy

Job No. 12197.06

Location: Willow Grove NAS

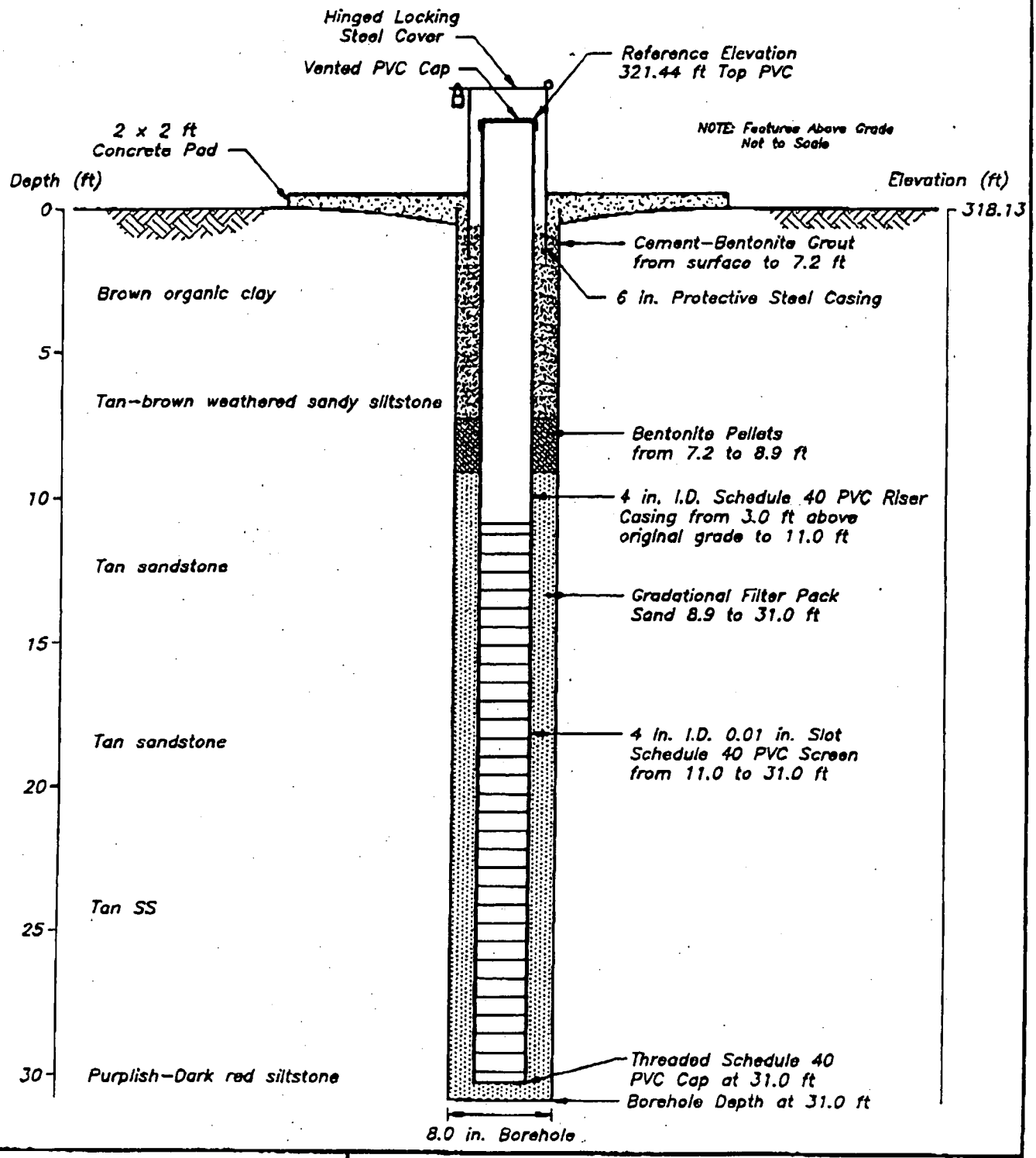
Coordinates X: 2,726,563.66
Y: 329,059.93

WELL NO: NFFW-18
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	Client: U.S. Navy Job No. 12197.06	Location: Willow Grove NAS Coordinates X: 2,727,098.29 Y: 328,987.35

WELL NO: NFFW-19
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

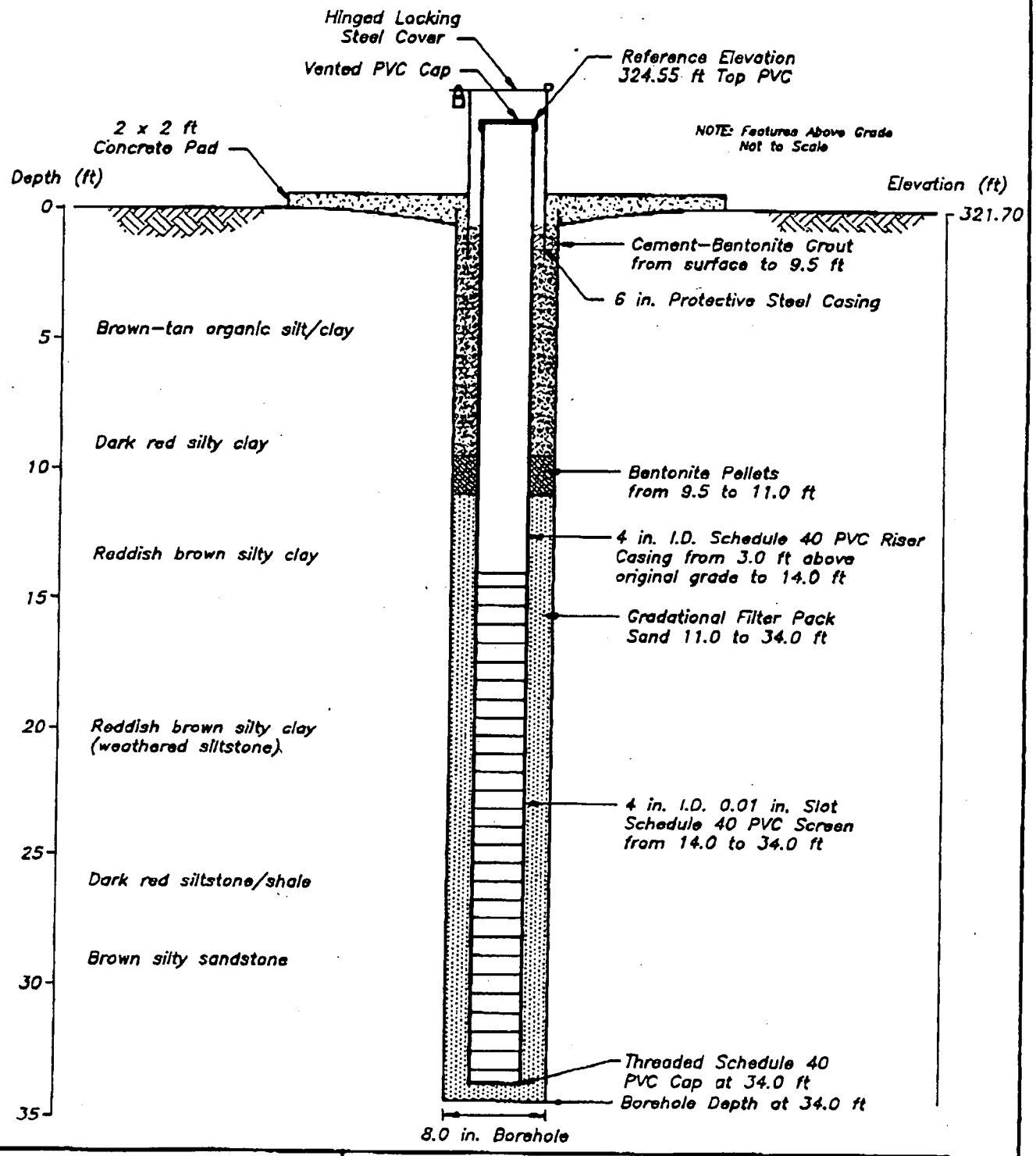
Client: U.S. Navy

Location: Willow Grove NAS

Job No. 12197.06

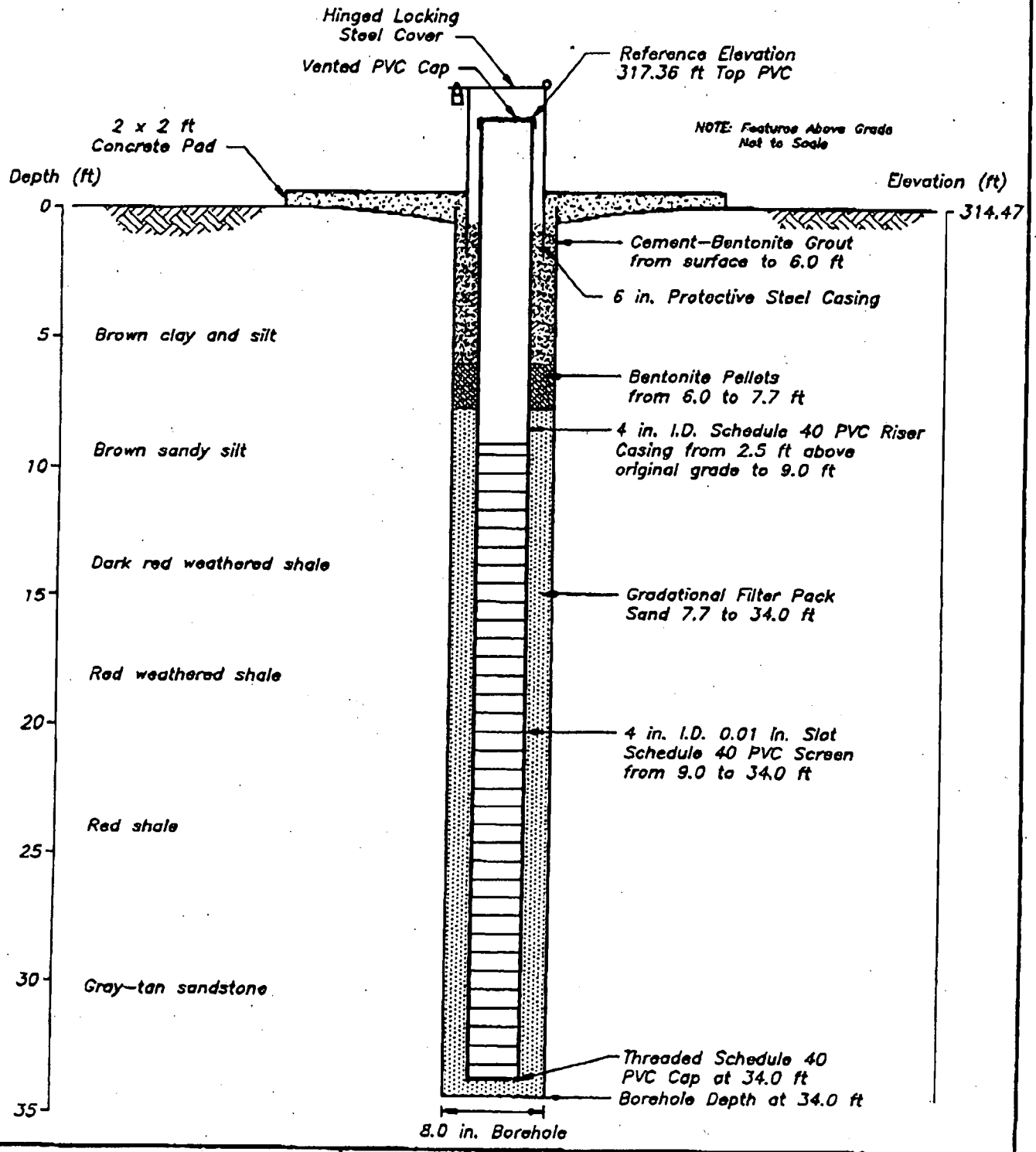
Coordinates X: 2,727,110.24
Y: 328,413.81

WELL NO: NFFW-20
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.	Client: U.S. Navy	Location: Willow Grove NAS
	Job No. 12197.06	Coordinates X: 2,726,579.81 Y: 328,509.71

WELL NO: NFFW-21
WELL COMPLETION DIAGRAM



EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

Client: U.S. Navy

Location: Willow Grove NAS

Job No. 12197.06

Coordinates X: 2,727,328.79
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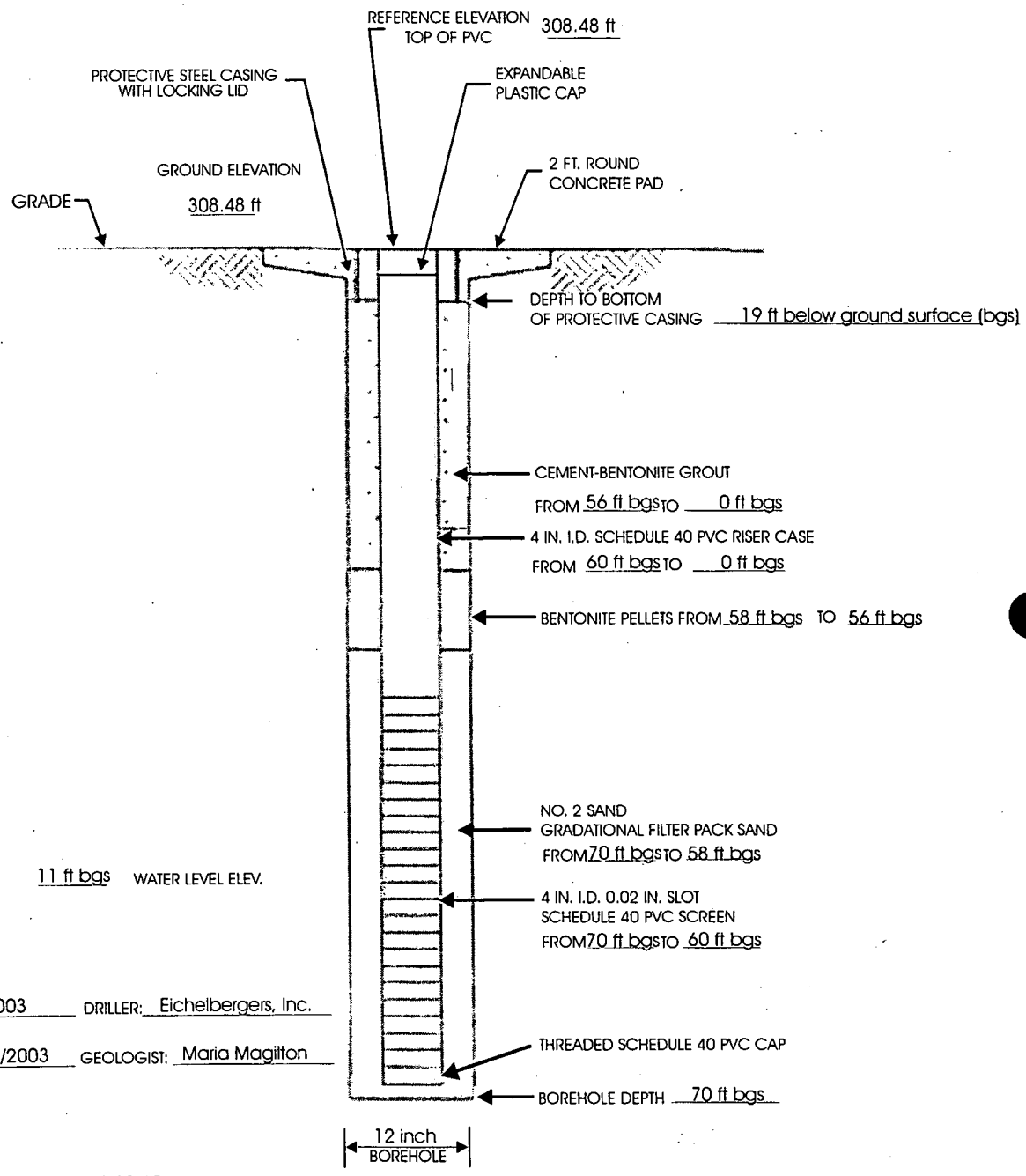
WELL CONSTRUCTION DIAGRAM
FLUSHMOUNT



START DATE: 5/1/2003 DRILLER: Eichelbergers, Inc.

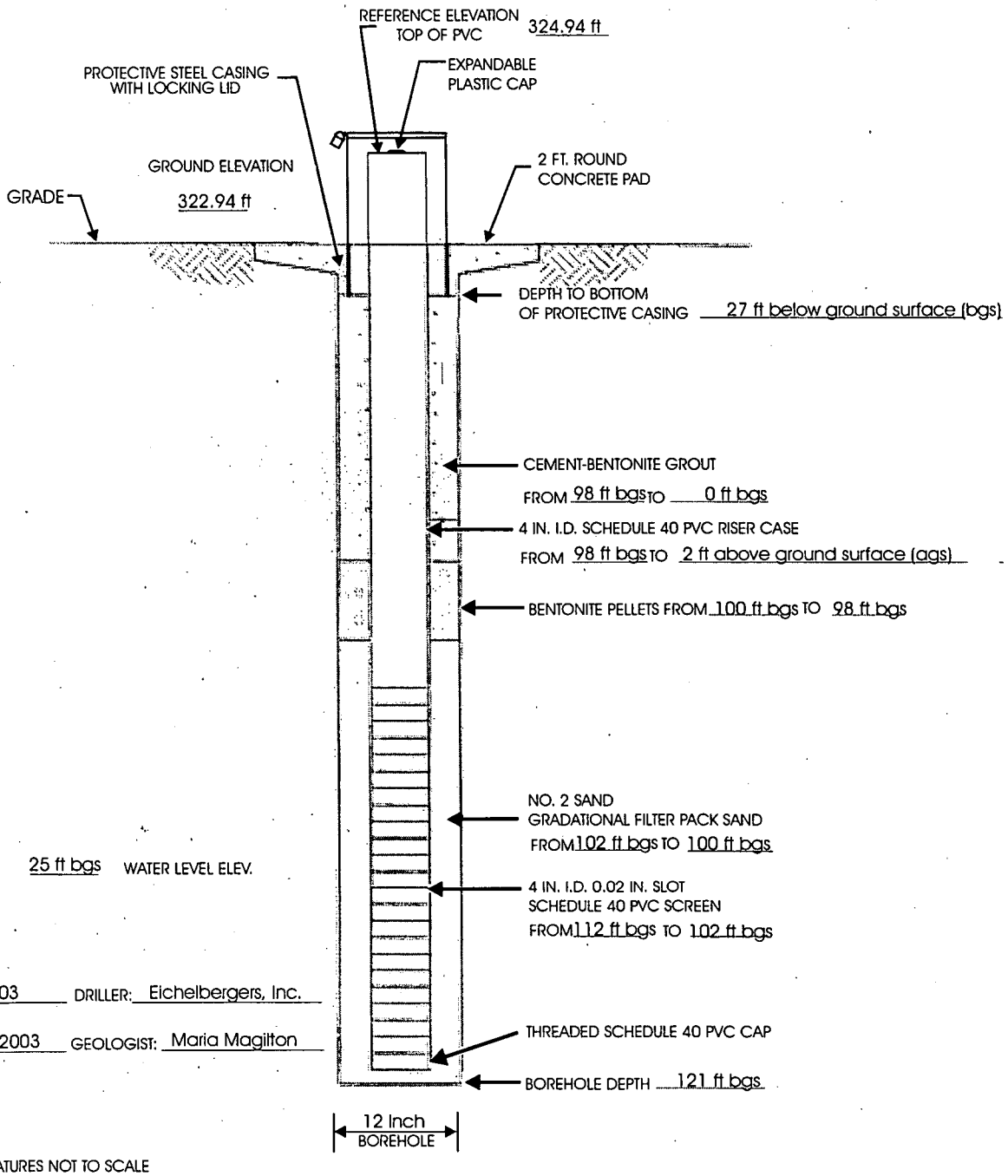
COMPLETE DATE: 5/14/2003 GEOLOGIST: Maria Magilton

NOTE: WELL FEATURES NOT TO SCALE

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.		WELL DESIGNATION: 10MW24

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO
KS	MM	MM	MM	MM	July 2003	29600.74

WELL CONSTRUCTION DIAGRAM
FLUSHMOUNT



START DATE: 5/7/2003 DRILLER: Eichelbergers, Inc.

COMPLETE DATE: 5/14/2003 GEOLOGIST: Maria Magilton

NOTE: WELL FEATURES NOT TO SCALE

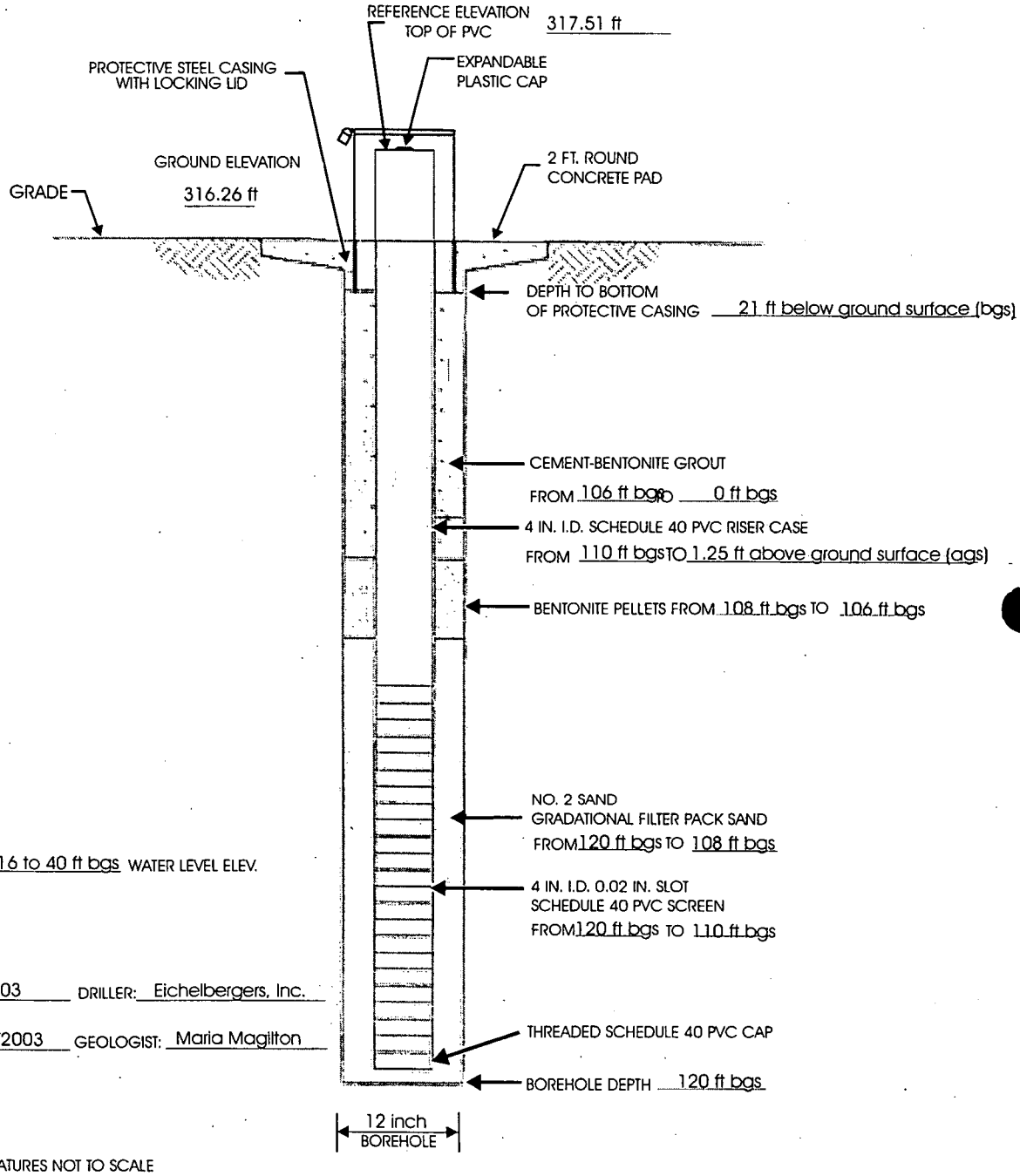
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

WELL DESIGNATION: 10MW25

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO
KS	MM	MM	MM	MM	July 2003	29600.74

WELL CONSTRUCTION DIAGRAM
FLUSHMOUNT

WELL CONSTRUCTION DIAGRAM
FLUSHMOUNT



NOTE: WELL FEATURES NOT TO SCALE

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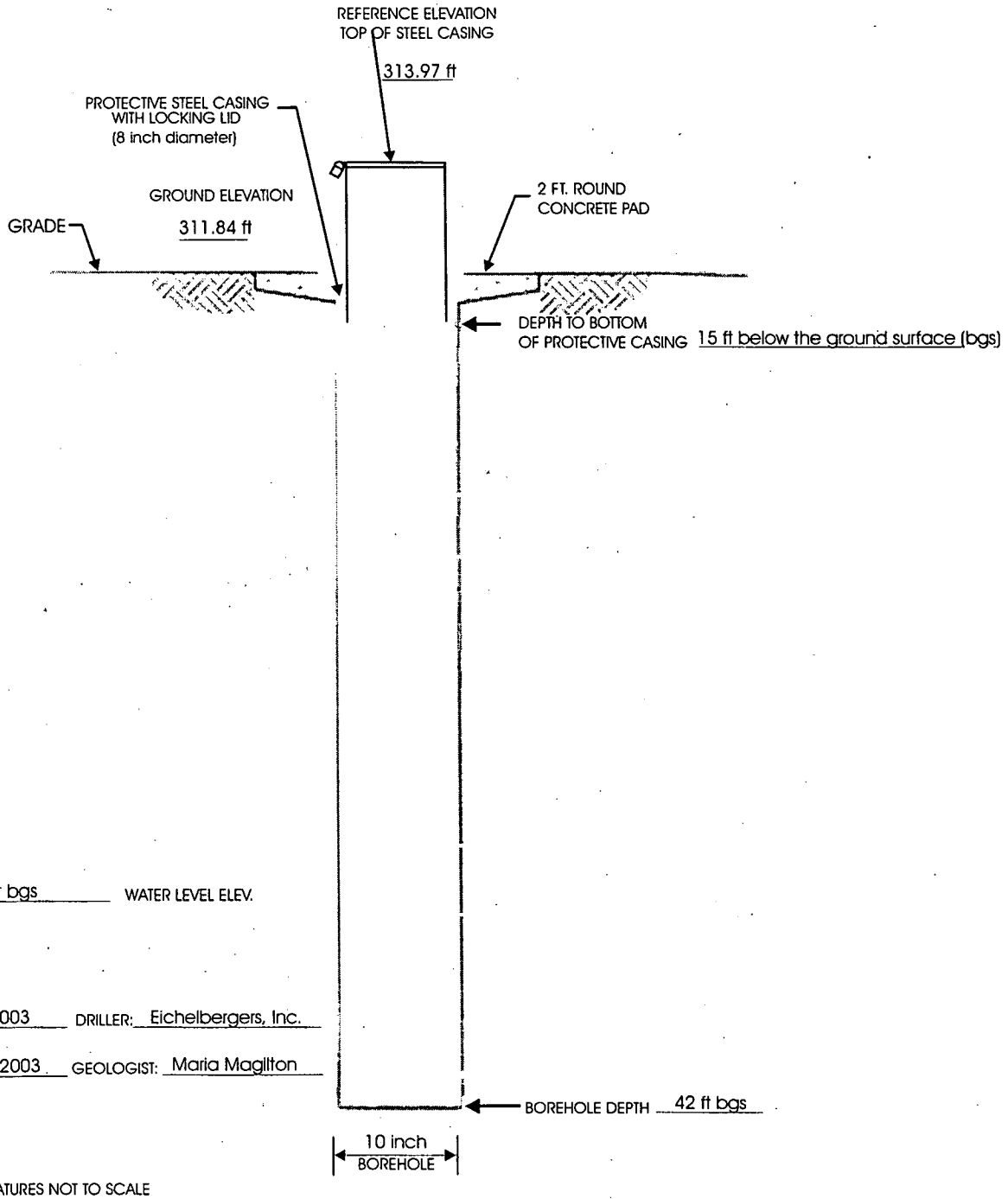
WELL CONSTRUCTION DIAGRAM



START DATE: 5/12/2003 DRILLER: Eichelbergers, Inc.

COMPLETE DATE: 5/14/2003 GEOLOGIST: Maria Magilton

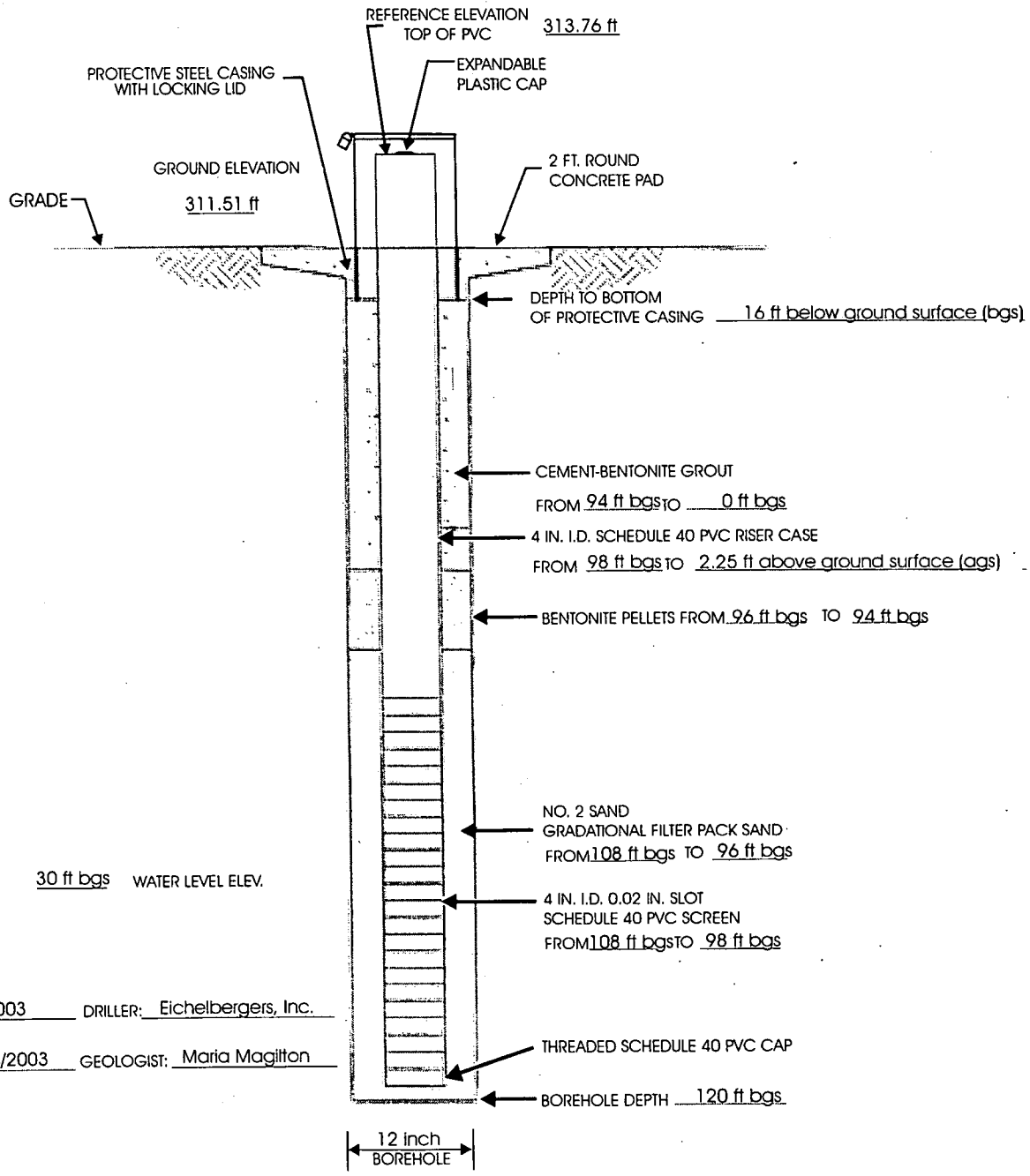
NOTE: WELL FEATURES NOT TO SCALE

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

WELL DESIGNATION: 10MW27

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO
KS	MM	MM	MM	MM	July 2003	29600.74

WELL CONSTRUCTION DIAGRAM
FLUSHMOUNT



START DATE: 5/9/2003 DRILLER: Eichelbergers, Inc.

COMPLETE DATE: 5/14/2003 GEOLOGIST: Maria Magilton

NOTE: WELL FEATURES NOT TO SCALE

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.						WELL DESIGNATION: 10MW28
PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO
KS	MM	MM	MM	MM	July 2003	29600.74

APPENDIX D

2003 AND 2004 WELL PURGING RECORDS

2003

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-1

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Clear, about 75 Degrees F

DATE 5/19/03 TIME 1440 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/19/03 SAMPLE TIME 1515

SAMPLE IDENTIFICATION 10MW01

WELL DEPTH 27.79 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 13 ft bgs CASING HEIGHT 1.4 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 16 L

PUMP TIME 31 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/19/03	1443	1.0	7.49	49.9	25.5	-84	204	4.19	11.63	0.5
5/19/03	1449	4.0	7.41	60.3	19.0	-98	158	2.59	11.63	0.5
5/19/03	1455	7.0	7.32	64.5	17.9	-105	152	2.61	11.63	0.5
5/19/03	1501	10.0	7.30	60.3	18.2	-106	12.1	2.54	11.63	0.5
5/19/03	1507	13.0	7.31	61.4	18.1	-114	9.2	1.47	11.63	0.5
5/19/03	1513	16.0	7.33	61.9	18.3	-120	4.6	1.27	11.63	0.5

NOTES

Ferrous Iron 4.4 mg/L

Hydrogen Sulfide 0.5 mg/L

Sulfate 3.0 mg/L

Well head PID 5.5 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-2R

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Sunny, about 78 Degrees F

DATE 5/20/03 TIME 910 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 5/20/03 SAMPLE TIME 1015

SAMPLE IDENTIFICATION 10MW2R (10DUP01)

WELL DEPTH 31.66 ft below ground surface (bgs) WELL DIAMETER 2 in.

DEPTH TO WATER 15.12 ft bgs CASING HEIGHT 0.66 ft

PUMP RATE 0.19 LPM VOLUME REMOVED 9.8 L

PUMP TIME 50 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/20/03	910	0	6.60	0.457	17.77	-78	290.0	4.47	15.08	0.19
5/20/03	915	0.95	6.61	0.460	16.84	-80	111.0	4.16	15.08	0.19
5/20/03	920	1.9	6.64	0.460	16.88	-86	90.0	3.87	15.08	0.19
5/20/03	925	2.9	6.68	0.462	17.82	-91	24.0	3.58	15.08	0.19
5/20/03	930	3.9	6.70	0.461	18.42	-92	25.0	3.45	15.08	0.19
5/20/03	935	4.9	6.70	0.460	19.55	-97	41.4	3.25	15.08	0.19
5/20/03	940	5.9	6.80	0.444	20.40	-113	23.2	2.96	15.08	0.19
5/20/03	945	6.9	6.66	0.465	16.74	-72	23.0	3.55	15.08	0.19
5/20/03	950	7.9	6.66	0.465	15.84	-70	25.8	3.50	15.08	0.19
5/20/03	955	8.85	6.67	0.466	15.86	-70	25.6	3.46	15.08	0.19
5/20/03	1000	9.8	6.67	0.466	15.87	-71	25.7	3.45	15.08	0.19

NOTES

Ferrous Iron 3.2 mg/L

Hydrogen Sulfide 0.3 mg/L

Sulfate 0.6 mg/L

Well head PID 0.4 ppm

Slight odor and black fine sediment during purging; slight sheen on IFP, however not enough to be detected by IFP

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-3

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cloudy, light rain, about 65 Degrees F

DATE 5/21/03 TIME 1258 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/21/03 SAMPLE TIME 1350

SAMPLE IDENTIFICATION 10MW03

WELL DEPTH 26.01 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 13.22 ft bgs CASING HEIGHT 2.16 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 26 L

PUMP TIME 49 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/21/03	1258	2.0	5.08	56.7	16.4	156	26.2	5.92	13.32	0.5
5/21/03	1304	5.0	4.86	57.5	16.0	161	25.6	2.11	13.33	0.5
5/21/03	1310	8.0	4.80	58.0	15.7	159	26.6	1.49	13.33	0.5
5/21/03	1316	11.0	4.79	58.3	15.6	159	27.2	1.24	13.33	0.5
5/21/03	1322	14.0	4.78	58.3	15.4	160	26.3	1.11	13.33	0.5
5/21/03	1328	17.0	4.77	58.7	15.2	162	24.9	1.00	13.33	0.5
5/21/03	1334	20.0	4.75	58.5	15.0	170	25.1	0.98	13.33	0.5
5/21/03	1340	23.0	4.69	58.6	14.9	172	26.3	0.97	13.33	0.5
5/21/03	1346	26.0	4.67	58.7	14.8	174	25.3	0.96	13.33	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.0 mg/L

Sulfate 80 mg/L

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-4

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cloudy, about 60 Degrees F

DATE 6/5/03 TIME 815 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 6/5/03 SAMPLE TIME 910

SAMPLE IDENTIFICATION 10MW04

WELL DEPTH 24.79 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 11.4 ft bgs CASING HEIGHT -0.37 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 20 L

PUMP TIME 34 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
6/5/03	830	2.0	5.67	46.8	14.8	199	14.9	13.93	11.64	0.5
6/5/03	836	5.0	5.46	47.3	14.6	194	14.1	9.29	11.86	0.5
6/5/03	842	8.0	5.48	47.0	14.5	182	14.3	7.74	11.94	0.5
6/5/03	848	11.0	5.31	47.1	14.8	175	13.8	6.51	11.99	0.5
6/5/03	854	14.0	5.28	47.6	15.0	166	14.1	5.93	12.03	0.5
6/5/03	900	17.0	5.30	47.9	15.0	161	10.1	5.77	12.04	0.5
6/5/03	906	20.0	5.29	48.6	15.2	153	9.2	5.49	12.05	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.3 mg/L

Sulfate 27 mg/L

Well head PID 5.1 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-5

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cloudy, light rain, about 65 Degrees F

DATE 5/21/03 TIME 1110 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/21/03 SAMPLE TIME 1200

SAMPLE IDENTIFICATION 10MW05

WELL DEPTH 25.95 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 11.82 ft bgs CASING HEIGHT 1.6 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 22 L

PUMP TIME 46 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/21/03	1114	1.0	5.18	37.1	17.0	35	36.4	7.63	11.99	0.5
5/21/03	1120	4.0	5.19	38.8	15.6	41	29.5	2.76	12.39	0.5
5/21/03	1126	7.0	5.22	39.2	15.3	34	29.4	1.84	12.55	0.5
5/21/03	1132	10.0	5.28	39.4	15.0	31	29.6	1.38	12.91	0.5
5/21/03	1138	13.0	5.31	39.5	14.9	30	30.2	1.26	13.13	0.5
5/21/03	1144	16.0	5.18	39.9	14.7	24	29.0	1.10	13.35	0.5
5/21/03	1150	19.0	5.29	40.1	14.7	30	29.6	1.02	13.46	0.5
5/21/03	1156	22.0	5.31	40.0	14.7	32	28.8	0.93	13.51	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 0.0 mg/L

Well head PID 2.0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-6

WELL/SITE DESCRIPTION NA; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP

DATE 5/20/03 TIME 1520 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/20/03 SAMPLE TIME 1610

SAMPLE IDENTIFICATION 10MW06

WELL DEPTH 27.08 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 18.45 ft bgs CASING HEIGHT 0.8 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 13 L

PUMP TIME 25 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/20/03	1538	1.0	5.33	44.3	30.0	-72	56.1	4.15	18.94	0.5
5/20/03	1544	4.0	5.18	47.9	23.5	-73	24.9	2.29	19.40	0.5
5/20/03	1550	7.0	5.07	50.2	21.6	-89	22.1	1.64	19.64	0.5
5/20/03	1556	10.0	5.22	51.7	20.5	-97	23.3	1.20	19.79	0.5
5/20/03	1602	13.0	5.26	53.5	20.2	-105	23.0	1.03	19.90	0.5

NOTES

Ferrous Iron 4.6 mg/L

Hydrogen Sulfide 0.4 mg/L

Sulfate 1.0 mg/L

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-7

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Clear, about 75 Degrees F

DATE 5/19/03 TIME 1610 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/19/03 SAMPLE TIME 1700

SAMPLE IDENTIFICATION 10MW07

WELL DEPTH 26.01 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 12.46 ft bgs CASING HEIGHT 1.89 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 20 L

PUMP TIME 34 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/19/03	1616	2.0	8.28	45.6	25.7	-126	126.0	4.00	12.80	0.5
5/19/03	1622	5.0	7.94	49.1	25.9	-107	26.1	3.46	12.81	0.5
5/19/03	1628	8.0	7.91	49.5	24.9	-111	33.9	2.52	12.99	0.5
5/19/03	1634	11.0	7.83	51.9	20.3	-86	35.9	3.16	13.02	0.5
5/19/03	1640	14.0	7.88	57.0	17.2	-105	25.8	3.10	13.11	0.5
5/19/03	1646	17.0	7.91	57.4	16.8	-110	9.2	1.85	13.16	0.5
5/19/03	1652	20.0	7.97	58.3	15.9	-116	1.5	1.32	13.21	0.5

NOTES

Ferrous Iron 3.2 mg/L

Hydrogen Sulfide 0.2 mg/L

Sulfate 2 mg/L

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-10

WELL/SITE DESCRIPTION Good, well was not bolted or locked; Site 10 Fuel Farm, NASJRB, Willow Grove, PA

WEATHER/TEMP Rain, about 70 Degrees F

DATE 5/21/03 TIME 855 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 5/21/03 SAMPLE TIME 935

SAMPLE IDENTIFICATION 10MW10

WELL DEPTH 37.55 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 7.42 ft bgs CASING HEIGHT -0.34 ft

PUMP RATE 0.19 LPM VOLUME REMOVED 5.9 L

PUMP TIME 30 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/21/03	855	0	6.41	0.563	13.75	260	15.1	10.61	8.34	0.19
5/21/03	900	0.95	6.40	0.551	13.78	241	13.2	6.57	8.34	0.19
5/21/03	905	1.9	6.40	0.550	13.65	241	16.4	6.44	8.34	0.19
5/21/03	910	2.9	6.42	0.548	13.62	240	18.5	5.75	8.34	0.19
5/21/03	915	3.9	6.42	0.547	13.62	238	18.4	5.52	8.34	0.19
5/21/03	920	4.9	6.43	0.547	13.61	236	18.7	5.50	8.34	0.19
5/21/03	925	5.9	6.43	0.546	13.60	235	18.4	5.50	8.34	0.19

NOTES

Ferrous Iron 0 mg/L

Hydrogen Sulfide 0 mg/L

Sulfate 3.30 mg/L

Well head PID 0 ppm

no odor; no product

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-12

WELL/SITE DESCRIPTION Good;Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Sunny, about 75 Degrees F

DATE 5/19/03 TIME 1235 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 5/19/03 SAMPLE TIME 1320

SAMPLE IDENTIFICATION 10MW12

WELL DEPTH 27.57 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 11.69 ft bgs CASING HEIGHT -0.11 ft

PUMP RATE 0.19 LPM VOLUME REMOVED 6.9 L

PUMP TIME 35 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp. C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/19/03	1235	0	6.68	0.662	17.65	-75	40.5	7.37	11.69	0.19
5/19/03	1240	0.95	6.71	0.659	17.35	-92	19.5	4.75	11.61	0.19
5/19/03	1245	1.9	6.74	0.659	17.22	-96	12.6	4.22	11.61	0.19
5/19/03	1250	2.9	6.77	0.660	17.09	-100	12.4	3.91	11.61	0.19
5/19/03	1255	3.9	6.79	0.661	17.14	-104	23.0	3.67	11.61	0.19
5/19/03	1300	4.9	6.80	0.661	17.25	-106	20.4	3.51	11.61	0.19
5/19/03	1305	5.9	6.81	0.663	17.18	-109	20.2	3.37	11.61	0.19
5/19/03	1310	6.9	6.82	0.662	17.25	-111	20.2	3.25	11.61	0.19

NOTES

Ferrous Iron 3 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 3.30 mg/L

Well head PID 35 ppm

slight odor; no sheen recognized by IFP

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-14

WELL/SITE DESCRIPTION Fair; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Sunny, about 76 Degrees F

DATE 5/19/03 TIME 1520 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 5/19/03 SAMPLE TIME 1610

SAMPLE IDENTIFICATION 10MW14

WELL DEPTH 36 ft below ground surface (bgs) WELL DIAMETER 2 in.

DEPTH TO WATER 15 ft bgs CASING HEIGHT about 5 inches ft

PUMP RATE 0.19 LPM VOLUME REMOVED 7.9 L

PUMP TIME 40 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/19/03	1520	0	6.54	0.604	21.39	-88	71.7	4.91	15.00	0.19
5/19/03	1525	0.95	6.59	1.11	21.17	-91	24.5	5.55	15.00	0.19
5/19/03	1530	1.9	6.62	1.12	20.89	-98	25.5	5.18	15.00	0.19
5/19/03	1535	2.9	6.68	1.16	20.82	-113	25.2	4.32	15.00	0.19
5/19/03	1540	3.9	6.69	1.15	21.74	-121	25.0	3.94	15.00	0.19
5/19/03	1545	4.9	6.68	1.17	21.98	-120	24.5	3.83	15.00	0.19
5/19/03	1550	5.9	6.71	1.13	22.59	-133	24.5	3.64	15.00	0.19
5/19/03	1555	6.9	6.70	1.13	22.58	-135	24.4	3.62	15.00	0.19
5/19/03	1600	7.9	6.70	1.13	22.13	-138	24.4	3.60	15.00	0.19

NOTES

Ferrous Iron 2 mg/L

Hydrogen Sulfide 1 mg/L

Sulfate 1.16 mg/L

Well head PID 0 ppm

a large amount of black fine sediment; slight odor; no sheen recognized on IFP

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-15

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Sunny, about 82 Degress F

DATE 5/20/03 TIME 1320 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 5/20/03 SAMPLE TIME 1415

SAMPLE IDENTIFICATION 10 MW15 (MS/MSD)

WELL DEPTH 33 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 10.33 ft bgs CASING HEIGHT 2.45 ft

PUMP RATE 0.19 LPM VOLUME REMOVED 8.9 L

PUMP TIME 45 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/20/03	1320	0	6.49	0.280	16.52	117	111.0	10.65	10.37	0.19
5/20/03	1325	0.95	6.39	0.247	13.37	162	39.9	5.49	10.37	0.19
5/20/03	1330	1.9	6.35	0.244	17.06	162	29.7	4.39	10.37	0.19
5/20/03	1335	2.9	6.31	0.246	17.71	171	27.1	4.21	10.37	0.19
5/20/03	1340	3.9	6.37	0.248	14.83	173	22.2	4.82	10.37	0.19
5/20/03	1345	4.9	6.39	0.246	13.34	185	22.9	4.84	10.37	0.19
5/20/03	1350	5.9	6.41	0.245	13.69	192	21.8	4.30	10.37	0.19
5/20/03	1355	6.9	6.42	0.246	13.69	194	21.0	4.25	10.37	0.19
5/20/03	1400	7.9	6.42	0.246	13.78	195	21.0	4.29	10.37	0.19
5/20/03	1405	8.9	6.42	0.246	13.69	196	21.0	4.26	10.37	0.19

NOTES

Ferrous Iron 0 mg/L

Hydrogen Sulfide 0 mg/L

Sulfate 0 mg/L

Well head PID 0 ppm

no odor

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-18

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Mostly Clear, about 80 Degrees F

DATE 5/20/03 TIME 1300 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/20/03 SAMPLE TIME 1420

SAMPLE IDENTIFICATION 10MW18

WELL DEPTH 25.42 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 10.64 ft bgs CASING HEIGHT 2.98 ft

PUMP RATE 0.19 LPM VOLUME REMOVED 35 L

PUMP TIME 67 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/20/03	1310	2.0	5.22	33.6	33.1	2	78.0	4.32	10.67	0.5
5/20/03	1316	5.0	5.15	34.9	28.7	-11	39.3	2.60	10.67	0.5
5/20/03	1322	8.0	4.71	37.0	25.6	-19	38.4	1.72	10.67	0.5
5/20/03	1328	11.0	5.06	39.6	22.3	-26	45.2	1.39	10.67	0.5
5/20/03	1334	14.0	5.08	42.2	20.9	-31	55.7	1.16	10.67	0.5
5/20/03	1340	17.0	5.13	42.1	21.1	-37	78.9	0.88	10.67	0.5
5/20/03	1346	20.0	5.17	42.5	20.5	-38	90.2	0.80	10.67	0.5
5/20/03	1352	23.0	5.06	40.9	20.0	-28	108.0	0.75	10.67	0.5
5/20/03	1358	26.0	5.09	41.7	19.6	-31	33.6	0.97	10.67	0.5
5/20/03	1404	29.0	5.13	41.7	19.5	-33	24.5	0.58	10.67	0.5
5/20/03	1410	32.0	5.11	42.4	19.1	-31	22.9	0.49	10.67	0.5
5/20/03	1416	35.0	5.10	41.3	19.2	-30	23.1	0.41	10.67	0.5

NOTES

Ferrous Iron 3.6 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 39 mg/L

Well head PID 0.7 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-21

WELL/SITE DESCRIPTION Fair (concrete base broken); Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Mostly Clear, about 70 Degrees F

DATE 5/20/03 TIME 1054 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 5/20/03 SAMPLE TIME 1130

SAMPLE IDENTIFICATION 10MW21

WELL DEPTH 33.39 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 16.41 ft bgs CASING HEIGHT 3.3 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 20 L

PUMP TIME 37 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
5/20/03	1054	2.0	4.84	39.7	26.4	87	79.8	8.80	16.43	0.5
5/20/03	1100	5.0	4.94	40.7	23.7	116	28.2	4.83	16.43	0.5
5/20/03	1106	8.0	4.16	41.4	22.8	132	24.2	4.17	16.43	0.5
5/20/03	1112	11.0	4.14	41.4	22.5	143	19.9	3.78	16.43	0.5
5/20/03	1118	14.0	4.16	41.7	22.3	148	21.8	3.61	16.43	0.5
5/20/03	1124	17.0	4.14	41.8	22.2	154	21.0	3.40	16.43	0.5
5/20/03	1130	20.0	4.14	41.9	22.2	160	22.0	3.24	16.43	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.0 mg/L

Sulfate 67 mg/L

Well head PID 1.0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW24

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cloudy, Rain, about 70 Degrees F

DATE 6/4/03 TIME 1205 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 6/4/03 SAMPLE TIME 1330

SAMPLE IDENTIFICATION 10MW24

WELL DEPTH 70.4 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 12.55 ft bgs CASING HEIGHT 0 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 40 L

PUMP TIME 66 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
6/4/03	1214	4.0	5.62	65.4	15.7	-49	83.9	11.20	12.70	0.5
6/4/03	1220	7.0	5.30	68.3	15.6	-43	66.2	6.44	12.71	0.5
6/4/03	1226	10.0	5.36	70.4	15.6	-63	78.2	3.90	12.71	0.5
6/4/03	1232	13.0	5.43	71.8	15.6	-75	91.9	2.35	12.71	0.5
6/4/03	1238	16.0	5.49	73.1	15.5	-86	185.0	1.60	12.71	0.5
6/4/03	1244	19.0	5.54	74.3	15.4	-94	302.0	1.22	12.71	0.5
6/4/03	1250	22.0	5.56	74.4	15.4	-97	270.0	1.11	12.71	0.5
6/4/03	1256	25.0	5.59	73.6	15.6	-99	155.0	1.09	12.71	0.5
6/4/03	1302	28.0	5.63	72.3	15.6	-103	96.4	1.15	12.71	0.5
6/4/03	1308	34.0	5.69	71.4	15.6	-109	78.5	1.20	12.71	0.5
6/4/03	1314	37.0	5.76	69.9	15.5	-118	67.4	1.23	12.71	0.5
6/4/03	1320	40.0	5.80	68.6	15.4	-127	71.8	1.24	12.71	0.5

NOTES

Ferrous Iron 0 mg/L

Hydrogen Sulfide 0 mg/L

Sulfate 24 mg/L

Well head PID 102 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW25

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cool, Rainy, about 70 Degrees F

DATE 6/4/03 TIME 1100 FIELD TECHNICIAN Kim Walters

SAMPLING DATE 6/4/03 SAMPLE TIME 1315

SAMPLE IDENTIFICATION 10MW25

WELL DEPTH 112 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 25.8 ft bgs CASING HEIGHT 2 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 43 L

PUMP TIME 78 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
6/4/03	1150	4.0	4.25	569	14.3	199	278.0	16.1	26	0.5
6/4/03	1156	7.0	4.29	535	15.5	161	41.6	10.6	26	0.5
6/4/03	1202	10.0	4.29	507	15.5	148	20.1	8.8	26	0.5
6/4/03	1208	13.0	4.30	490	15.4	144	29.4	8.3	26	0.5
6/4/03	1214	16.0	4.30	485	15.5	139	16.5	7.8	26	0.5
6/4/03	1220	19.0	4.30	473	16.2	137	15.3	7.0	26	0.5
6/4/03	1226	22.0	4.30	465	16.2	139	14.7	6.8	26	0.5
6/4/03	1232	25.0	4.30	455	15.9	138	12.2	6.7	26	0.5
6/4/03	1238	28.0	4.30	452	15.7	139	12.1	6.6	26	0.5
6/4/03	1244	31.0	4.30	452	15.2	134	19.5	6.6	26	0.5
6/4/03	1250	34.0	4.40	460	16.5	129	22.1	6.1	26	0.5
6/4/03	1256	37.0	4.40	454	16.3	132	21.6	6.1	26	0.5
6/4/03	1302	40.0	4.40	452	16.3	132	21.6	6.1	26	0.5
6/4/03	1308	43.0	4.40	452	16.3	132	21.6	6.1	26	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 45 mg/L

Well head PID 235 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW26

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP NA

DATE 6/5/03 TIME 850 FIELD TECHNICIAN Kim Walters

SAMPLING DATE 6/5/03 SAMPLE TIME 1005

SAMPLE IDENTIFICATION 10MW26

WELL DEPTH 120 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 27.5 ft bgs CASING HEIGHT 1.25 ft

PUMP RATE 108.5 LPM VOLUME REMOVED 36 L

PUMP TIME 67 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
6/5/03	855	3.0	4.3	630	14.5	203	1.4	19.0	31.3	0.5
6/5/03	901	6.0	4.3	631	14.5	172	0.2	12.9	33.8	0.5
6/5/03	907	9.0	4.4	633	14.6	151	0.0	9.8	35.9	0.5
6/5/03	913	12.0	4.4	632	14.7	134	0.0	8.2	37.3	0.5
6/5/03	919	15.0	4.4	629	14.8	122	0.0	7.3	38.2	0.5
6/5/03	926	18.0	4.4	626	14.8	114	0.0	6.8	38.5	0.5
6/5/03	932	21.0	4.4	623	14.8	111	0.0	6.5	39.0	0.5
6/5/03	938	24.0	4.4	625	14.9	107	0.0	6.3	39.7	0.5
6/5/03	944	27.0	4.4	624	14.9	106	0.0	6.2	40.6	0.5
6/5/03	950	30.0	4.4	626	14.8	104	0.0	6.1	41.3	0.5
6/5/03	956	33.0	4.4	625	14.9	103	0.0	6.0	41.9	0.5
6/5/03	1002	36.0	4.4	625	15.0	103	0.0	6.0	41.3	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 57 mg/L

Well head PID 13.5 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW27

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cloudy, Rain, About 70 Degrees F

DATE 6/3/03 TIME 1330 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 6/3/03 SAMPLE TIME 1430

SAMPLE IDENTIFICATION 10MW27

WELL DEPTH 42 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 20.03 ft bgs CASING HEIGHT 2.13 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 24 L

PUMP TIME 48 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
6/3/03	1340	3.0	4.88	0.031	16.5	215	19.5	9.11	20.07	0.5
6/3/03	1346	6.0	4.64	0.031	16.2	229	23.0	6.28	20.07	0.5
6/3/03	1352	9.0	4.52	0.032	16.1	233	22.5	5.45	20.07	0.5
6/3/03	1358	12.0	4.51	0.031	16.1	228	20.7	5.04	20.07	0.5
6/3/03	1404	15.0	4.53	0.031	16.1	226	20.6	4.82	20.07	0.5
6/3/03	1410	18.0	4.55	0.031	16.0	226	18.2	4.62	20.07	0.5
6/3/03	1416	21.0	4.55	0.031	16.0	226	18.1	4.49	20.07	0.5
6/3/03	1422	24.0	4.55	0.031	16.0	227	17.5	4.39	20.07	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 41 mg/L

Well head PID 0.5 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW28

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Cloudy, light rain, about 70 Degrees F

DATE 6/3/03 TIME 1210 FIELD TECHNICIAN Jeff Smith

SAMPLING DATE 6/3/03 SAMPLE TIME 1300

SAMPLE IDENTIFICATION 10MW28

WELL DEPTH 108.06 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 19.97 ft bgs CASING HEIGHT 2.25 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 18 L

PUMP TIME 30 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
6/3/03	1220	3.0	5.21	0.061	17.4	101	9.5	9.48	20.8	0.5
6/3/03	1226	6.0	5.29	0.063	16.7	78	7.9	4.66	20.8	0.5
6/3/03	1232	9.0	5.37	0.063	16.7	68	7.2	3.72	20.8	0.5
6/3/03	1238	12.0	5.43	0.063	16.5	64	7.1	3.29	20.8	0.5
6/3/03	1244	15.0	5.45	0.063	16.4	65	7.4	2.99	20.8	0.5
6/3/03	1250	18.0	5.47	0.063	16.4	64	6.7	2.79	20.8	0.5

NOTES

Ferrous Iron 0.0 mg/L

Hydrogen Sulfide 0.1 mg/L

Sulfate 21 mg/L

Well head PID 0.5 ppm

2004

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-1

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Snow/Rain/Drizzle, about 28 to 30 degrees F

DATE 2/24/04 TIME 1300 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/24/04 SAMPLE TIME 1345

SAMPLE IDENTIFICATION 10MW01

WELL DEPTH 27.79 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 12.96 ft bgs CASING HEIGHT 1.4 ft

PUMP RATE 1 LPM VOLUME REMOVED 16 L

PUMP TIME 16 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/24/04	1320	0.0	8.28	60.0	12.1	-39	19.7	10.22	12.96	1.0
2/24/04	1324	4.0	8.13	60.0	13.4	-49	15.7	0.77	13.14	1.0
2/24/04	1328	8.0	8.15	60.0	13.6	-55	15.0	0.21	13.25	1.0
2/24/04	1332	12.0	8.16	60.0	13.6	-58	14.8	0.18	13.26	1.0
2/24/04	1336	16.0	8.15	60.0	13.6	-58	14.6	0.17	13.26	1.0

NOTES

Good/Stable

Well head PID 1.7 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-1

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Slight Wind, about 35 degrees F

DATE 2/27/04 TIME 1100 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/27/04 SAMPLE TIME 1130

SAMPLE IDENTIFICATION 10MW01

WELL DEPTH 27.79 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 13.25 ft bgs CASING HEIGHT 1.4 ft

PUMP RATE 0.75 LPM VOLUME REMOVED 15 L

PUMP TIME 20 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm2	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/27/04	1110	0.0	7.04	0.469	11.98	-74.4	4.3	10.98	13.25	0.75
2/27/04	1114	3.0	6.57	0.472	14.19	-107.2	3.7	2.52	13.37	0.75
2/27/04	1118	6.0	6.42	0.472	14.86	-119.0	3.1	2.19	13.41	0.75
2/27/04	1122	9.0	6.30	0.472	14.94	-127.9	2.7	2.14	13.41	0.75
2/27/04	1126	12.0	6.28	0.472	14.98	-132.1	2.4	2.11	13.42	0.75
2/27/04	1130	15.0	6.27	0.472	15.01	-133.5	2.2	2.10	13.42	0.75

NOTES

Good/Stable

Well head PID reading from 2/24/04 was 1.7 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-2R

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Windy, about 45 degrees F

DATE 2/19/04 TIME 1420 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/19/04 SAMPLE TIME 1510

SAMPLE IDENTIFICATION 10MW2R

WELL DEPTH 31.66 ft below ground surface (bgs) WELL DIAMETER 2 in.

DEPTH TO WATER 13.44 ft bgs CASING HEIGHT 0.66 ft

PUMP RATE 0.19 LPM VOLUME REMOVED 18 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/19/04	1435	0	7.18	57.2	13.6	-124	46.0	3.98	13.44	0.75
2/19/04	1439	3.0	6.98	56.9	13.6	-116	60.0	0.46	13.76	0.75
2/19/04	1443	6.0	6.96	56.7	13.6	-119	84.0	0.40	13.93	0.75
2/19/04	1447	9.0	6.97	56.4	13.5	-121	102.0	0.34	13.98	0.75
2/19/04	1451	12.0	6.97	56.5	13.4	-122	49.0	0.32	13.98	0.75
2/19/04	1455	15.0	6.98	56.0	13.5	-124	46.0	0.32	13.99	0.75
2/19/04	1459	18.0	7.00	55.8	13.4	-125	45.0	0.34	13.99	0.75

NOTES

Good/Stable

odor detected; small suspended black solid

Well head PID 1.6 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-5

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/23/04 TIME 1435 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/23/04 SAMPLE TIME 1525

SAMPLE IDENTIFICATION 10MW05

WELL DEPTH 25.95 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 7.56 ft bgs CASING HEIGHT 1.6 ft

PUMP RATE 1.0 to 0.5 LPM VOLUME REMOVED 18 L

PUMP TIME 28 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/23/04	1450	0	9.35	49.0	11.3	55	25.9	13.23	7.56	1.0
2/23/04	1454	4.0	9.04	48.0	12.7	50	17.9	7.68	7.81	1.0
2/23/04	1458	8.0	8.85	48.0	13.5	50	12.9	7.26	8.33	1.0
2/23/04	1502	10.0	8.76	49.0	13.4	51	12.7	7.17	8.68	0.5
2/23/04	1506	12.0	8.69	49.0	13.7	51	12.4	7.07	8.96	0.5
2/23/04	1510	14.0	8.65	49.0	13.8	50	12.0	7.03	9.11	0.5
2/23/04	1514	16.0	8.62	49.0	13.8	50	11.8	7.02	9.20	0.5
2/23/04	1518	18.0	8.60	49.0	13.7	49	11.7	7.00	9.25	0.5

NOTES

Good/Stable

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-6

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/23/04 TIME 1615 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/23/04 SAMPLE TIME 1655

SAMPLE IDENTIFICATION 10MW06

WELL DEPTH 27.08 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 18.2 ft bgs CASING HEIGHT 0.8 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 12 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/23/04	1625	0	8.53	63.0	12.0	-31	19.1	10.98	18.20	0.5
2/23/04	1629	2.0	8.46	63.0	14.1	-39	18.4	1.34	18.46	0.5
2/23/04	1633	4.0	8.44	63.0	14.7	-43	18.2	0.40	18.58	0.5
2/23/04	1637	6.0	8.41	64.0	14.4	-41	18.8	0.30	18.68	0.5
2/23/04	1641	8.0	8.37	63.0	14.6	-40	19.2	0.28	18.76	0.5
2/23/04	1645	10.0	8.35	64.0	14.3	-41	19.4	0.27	18.82	0.5
2/23/04	1649	12.0	8.34	64.0	14.4	-40	19.5	0.26	18.86	0.5

NOTES

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-12

WELL/SITE DESCRIPTION Good;Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Windy, about 45 degrees F

DATE 2/19/04 TIME 1155 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 2/19/04 SAMPLE TIME 1300

SAMPLE IDENTIFICATION 10MW12

WELL DEPTH 27.57 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 11.05 ft bgs CASING HEIGHT -0.11 ft

PUMP RATE 0.19 to 0.5 LPM VOLUME REMOVED 18.45 L

PUMP TIME 40 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/19/04	1215	0	10.60	73.0	14.7	-84	404.0	3.09	11.05	0.19
2/19/04	1220	0.95	9.59	71.0	14.7	-78	357.0	1.86	11.05	0.5
2/19/04	1225	3.45	8.98	71.0	14.7	-69	356.0	1.48	11.05	0.5
2/19/04	1230	5.95	8.75	71.0	14.9	-69	355.0	1.25	11.05	0.5
2/19/04	1235	8.45	8.56	71.0	14.9	-70	260.0	1.00	11.05	0.5
2/19/04	1240	10.95	8.55	71.0	14.9	-70	260.1	1.00	11.05	0.5
2/19/04	1245	13.45	8.41	70.0	14.8	-69	220.0	0.82	11.05	0.5
2/19/04	1250	15.95	8.40	70.0	14.8	-69	220.1	0.82	11.05	0.5
2/19/04	1255	18.45	8.41	70.0	14.8	-69	220.1	0.80	11.05	0.5

NOTES

slight odor

no product

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-18

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Snow/Rain/Drizzle, about 28 to 30 degrees F

DATE 2/24/04 TIME 1600 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/24/04 SAMPLE TIME 1650

SAMPLE IDENTIFICATION 10MW18

WELL DEPTH 25.42 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 10.55 ft bgs CASING HEIGHT 2.98 ft

PUMP RATE 0.75 LPM VOLUME REMOVED 15 L

PUMP TIME 20 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/24/04	1620	0.0	7.79	53.0	8.2	37	96.0	7.42	10.55	0.75
2/24/04	1624	3.0	7.69	53.0	9.7	33	81.0	0.62	10.55	0.75
2/24/04	1628	6.0	7.70	54.0	10.2	30	29.1	0.21	10.55	0.75
2/24/04	1632	9.0	7.72	54.0	10.1	26	25.9	0.17	10.55	0.75
2/24/04	1636	12.0	7.73	54.0	10.2	24	25.3	0.16	10.55	0.75
2/24/04	1640	15.0	7.73	54.0	10.4	22	24.5	0.16	10.55	0.75

NOTES

Good/Stable

Well head PID 0 ppm

Note that tubing remaining across approximately 50 feet of cold snow-covered ground is attributing to the low temperature readings. Therefore, stability was not determined critical.

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-18

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Slight wind, about 35 degrees F

DATE 2/27/04 TIME 937 FIELD TECHNICIAN Kim Walters

SAMPLING DATE 2/27/04 SAMPLE TIME 1000

SAMPLE IDENTIFICATION 10MW18

WELL DEPTH 25.42 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 11.22 ft bgs CASING HEIGHT 2.98 ft

PUMP RATE 0.75 LPM VOLUME REMOVED 15 L

PUMP TIME 20 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm2	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/27/04	937	0.0	6.76	497.0	11.33	-56.6	9.3	4.08	11.22	0.75
2/27/04	941	3.0	6.52	497.0	10.84	-80.0	10.6	1.18	11.22	0.75
2/27/04	945	6.0	6.50	495.0	11.17	-83.9	3.5	0.85	11.22	0.75
2/27/04	949	9.0	6.50	498.0	11.09	-82.2	4.8	0.75	11.22	0.75
2/27/04	953	12.0	6.49	498.0	11.08	-82.1	4.6	0.74	11.22	0.75
2/27/04	957	15.0	6.49	498.0	11.07	-82.0	4.5	0.74	11.22	0.75

NOTES

No problems

Well head PID reading from 2/24/04 was 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-19

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/23/04 TIME 1425 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 2/23/04 SAMPLE TIME 1450

SAMPLE IDENTIFICATION 10MW19

WELL DEPTH 31.69 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 13.15 ft bgs CASING HEIGHT 3.27 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 8 L

PUMP TIME 16 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/23/04	1425	0.0	6.40	49.9	14.8	-2	990.0	1.52	13.15	0.5
2/23/04	1429	2.0	6.49	50.1	15.0	-14	990.0	0.00	13.75	0.5
2/23/04	1433	4.0	6.51	50.2	15.3	-17	990.0	0.00	14.31	0.5
2/23/04	1437	6.0	6.51	50.3	15.4	-19	990.0	0.00	14.31	0.5
2/23/04	1441	8.0	6.50	50.4	15.7	-21	990.0	0.00	14.31	0.5

NOTES

no odor

no product

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-20

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/20/04 TIME 1125 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/20/04 SAMPLE TIME 1340

SAMPLE IDENTIFICATION 10MW20

WELL DEPTH 34 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 23.38 ft bgs CASING HEIGHT 2.75 ft

PUMP RATE 1.0 to 0.5 LPM VOLUME REMOVED 18 L

PUMP TIME 28 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/20/04	1300	0	6.79	55.1	11.5	-50	5.0	6.37	23.38	1.0
2/20/04	1304	4.0	6.70	55.1	15.1	-40	11.0	4.80	23.89	1.0
2/20/04	1308	8.0	6.67	55.1	15.0	-38	14.0	3.35	24.45	1.0
2/20/04	1312	10.0	6.68	54.9	15.3	-40	14.0	2.60	24.60	0.5
2/20/04	1316	12.0	6.67	54.9	15.3	-42	15.0	1.92	24.65	0.5
2/20/04	1320	14.0	6.66	54.9	15.3	-43	13.0	1.68	24.65	0.5
2/20/04	1324	16.0	6.65	54.9	15.2	-45	14.0	1.70	24.66	0.5
2/20/04	1328	18.0	6.65	54.9	15.2	-46	14.0	1.72	24.66	0.5

NOTES

Good/Stable

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-20

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/27/04 TIME 1056 FIELD TECHNICIAN Kim Walters

SAMPLING DATE 2/27/04 SAMPLE TIME 1125

SAMPLE IDENTIFICATION 10MW20

WELL DEPTH 34 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 23.85 ft bgs CASING HEIGHT 2.75 ft

PUMP RATE 1 LPM VOLUME REMOVED 24 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm2	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/27/04	1056	0.0	7.25	480.0	12.80	-104.4	5.7	7.03	23.85	1.0
2/27/04	1100	4.0	6.61	482.0	15.08	-112.7	3.7	1.60	25.45	1.0
2/27/04	1104	8.0	6.53	483.0	15.43	-123.2	2.5	0.89	25.75	1.0
2/27/04	1108	12.0	6.46	483.0	15.47	-114.9	2.1	0.90	25.95	1.0
2/27/04	1112	16.0	6.52	481.0	15.12	-142.9	1.5	0.70	26.05	1.0
2/27/04	1116	20.0	6.51	480.0	15.79	-150.2	1.4	0.70	26.05	1.0
2/27/04	1120	24.0	6.51	480.0	15.80	-150.9	1.4	0.71	26.05	1.0

NOTES

None

Well head PID reading from 2/20/04 was 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID NFFW-21

WELL/SITE DESCRIPTION Fair; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Rain/Snow/Drizzle, about 28 to 30 degrees F

DATE 2/24/04 TIME 1102 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 2/24/04 SAMPLE TIME 1140

SAMPLE IDENTIFICATION 10MW21

WELL DEPTH 33.39 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 16.45 ft bgs CASING HEIGHT 3.3 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 12 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/24/04	1102	0	6.02	58.8	13.2	192	22.0	4.67	16.37	0.5
2/24/04	1106	2.0	6.10	59.2	15.6	177	11.0	2.69	16.37	0.5
2/24/04	1110	4.0	6.14	60.9	14.5	171	7.0	2.35	16.37	0.5
2/24/04	1114	6.0	6.11	58.8	15.1	171	7.0	2.05	16.37	0.5
2/24/04	1118	8.0	6.11	58.6	16.0	170	7.0	2.03	16.37	0.5
2/24/04	1122	10.0	6.11	58.6	16.1	170	7.0	2.02	16.37	0.5
2/24/04	1126	12.0	6.10	58.7	16.0	169	7.0	2.03	16.37	0.5

NOTES

no odor

no product

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW24

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Windy, about 45 degrees F

DATE 2/19/04 TIME 1410 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 2/19/04 SAMPLE TIME 1550

SAMPLE IDENTIFICATION 10MW24

WELL DEPTH 70.4 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 13.25 ft bgs CASING HEIGHT 0 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 20 L

PUMP TIME 30 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED	pH	Cond	Temp	ORP	TURB.	DO	DEPTH TO WATER	PUMP RATE
		UNIT: L		mS/m	C	mV	NTU	mg/L	ft bgs	LPM
2/19/04	1415	0	9.39	0.11	14.7	-31	500.0	7.00	13.42	0.5
2/19/04	1420	2.5	10.52	0.11	14.8	-3	464.0	3.02	13.42	0.5
2/19/04	1425	Stopped, PADEP Arrived onsite for site tour								
2/19/04	1515	5.0	11.75	0.11	10.6	33	360.0	4.52	13.42	0.5
2/19/04	1520	7.5	11.78	0.12	13.5	30	391.0	3.85	13.42	0.5
2/19/04	1525	10.0	11.96	0.12	14.3	28	333.0	2.41	13.33	0.5
2/19/04	1530	12.5	12.00	0.12	14.4	28	265.0	2.20	13.33	0.5
2/19/04	1535	15.0	12.01	0.12	14.3	28	264.0	2.21	13.33	0.5
2/19/04	1540	17.5	12.01	0.12	14.3	28	263.0	2.20	13.33	0.5
2/19/04	1545	20.0	12.02	0.12	14.2	29	262.0	2.23	13.33	0.5

NOTES

slight odor

no product

Well head PID 504 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW25

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/20/04 TIME 850 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/20/04 SAMPLE TIME 950

SAMPLE IDENTIFICATION 10MW25 (MS/MSD)

WELL DEPTH 112 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 25.48 ft bgs CASING HEIGHT 2 ft

PUMP RATE 1 LPM VOLUME REMOVED 24 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED	pH	Cond	Temp	ORP	TURB.	DO	DEPTH TO WATER	PUMP RATE
		UNIT: L		mS/m	C	mV	NTU	mg/L	ft bgs	LPM
2/20/04	915	0.0	7.08	51.5	12.5	57	9.0	8.57	25.48	1.0
2/20/04	919	4.0	6.70	54.1	14.0	10	240.0	2.08	25.65	1.0
2/20/04	923	8.0	6.65	53.4	14.1	28	72.0	0.27	25.72	1.0
2/20/04	927	12.0	6.59	53.2	14.1	42	39.0	0.24	25.76	1.0
2/20/04	931	16.0	6.58	52.7	14.2	50	36.0	0.22	25.79	1.0
2/20/04	935	20.0	6.56	52.4	14.2	56	34.0	0.20	25.80	1.0
2/20/04	939	24.0	6.54	52.3	14.1	58	33.0	0.20	25.80	1.0

NOTES

Good/Stable

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW25

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Slight wind, about 35 degrees F

DATE 2/27/04 TIME 920 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/27/04 SAMPLE TIME 1000

SAMPLE IDENTIFICATION 10MW25 (MS/MSD)

WELL DEPTH 112 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 26.7 ft bgs CASING HEIGHT 2 ft

PUMP RATE 0.75 LPM VOLUME REMOVED 15 L

PUMP TIME 20 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED	pH	Cond	Temp	ORP	TURB.	DO	DEPTH TO WATER	PUMP RATE
		UNIT: L		mS/cm2	C	mV	NTU	mg/L	ft bgs	LPM
2/27/04	930	0.0	8.46	0.402	13.12	69.2	58.4	11.43	26.70	0.75
2/27/04	934	3.0	6.88	0.409	14.06	43.3	92.2	2.67	26.92	0.75
2/27/04	938	6.0	6.59	0.409	14.51	42.9	13.1	2.25	26.98	0.75
2/27/04	942	9.0	6.52	0.409	14.54	42.6	9.0	2.13	27.00	0.75
2/27/04	946	12.0	6.50	0.408	14.56	42.2	4.2	2.09	27.01	0.75
2/27/04	950	15.0	6.49	0.408	14.55	41.8	2.8	2.07	27.01	0.75

NOTES

Good/Stable

Well head reading from 2/20/04 was o ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW27

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/20/04 TIME 1415 FIELD TECHNICIAN Eddie Meadows

SAMPLING DATE 2/20/04 SAMPLE TIME 1455

SAMPLE IDENTIFICATION 10MW27 (10MWDUP)

WELL DEPTH 42 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 19.92 ft bgs CASING HEIGHT 2.13 ft

PUMP RATE 0.75 LPM VOLUME REMOVED 18 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/20/04	1420	0.0	4.72	56.7	15.7	242	43.0	6.25	19.92	0.75
2/20/04	1424	3.0	5.58	45.1	16.3	207	32.0	3.35	19.96	0.75
2/20/04	1428	6.0	5.56	42.7	16.4	208	26.0	3.01	19.97	0.75
2/20/04	1432	9.0	5.54	40.6	16.5	210	17.0	2.85	19.97	0.75
2/20/04	1436	12.0	5.51	39.6	16.5	211	13.0	2.76	19.98	0.75
2/20/04	1440	15.0	5.50	39.0	16.5	213	12.0	2.73	19.98	0.75
2/20/04	1444	18.0	5.51	38.6	16.5	215	12.0	2.72	19.98	0.75

NOTES

Good/Stable

Well head PID 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW27

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP Slight wind, about 35 degrees F

DATE 2/27/04 TIME 944 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 2/27/04 SAMPLE TIME 1015

SAMPLE IDENTIFICATION 10MW27

WELL DEPTH 42 ft below ground surface (bgs) WELL DIAMETER 6 in.

DEPTH TO WATER 20.62 ft bgs CASING HEIGHT 2.13 ft

PUMP RATE 0.5 LPM VOLUME REMOVED 12 L

PUMP TIME 24 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/cm2	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/27/04	944	0.0	5.61	0.243	14.42	9.9	28.0	0.00	20.62	0.5
2/27/04	948	2.0	5.46	0.256	16.72	15.7	14.0	0.00	20.62	0.5
2/27/04	952	4.0	5.40	0.256	17.31	16.3	20.1	9.98	20.62	0.5
2/27/04	956	6.0	5.41	0.256	17.50	14.5	20.1	9.98	20.54	0.5
2/27/04	1000	8.0	5.40	0.256	17.51	14.3	20.0	9.98	20.54	0.5
2/27/04	1004	10.0	5.39	0.255	17.52	14.2	20.0	9.99	20.54	0.5
2/27/04	1008	12.0	5.38	0.256	17.53	14.2	20.0	9.97	20.54	0.5

NOTES

no odor

no product

Well head reading from 2/20/04 was 0 ppm

EA Engineering, Science, and Technology, Inc.

WELL PURGING AND SAMPLING RECORD

WELL ID 10MW28

WELL/SITE DESCRIPTION Good; Site 10 Fuel Farm NASJRB Willow Grove, PA

WEATHER/TEMP about 47 degrees F

DATE 2/20/04 TIME 930 FIELD TECHNICIAN Maria Magilton

SAMPLING DATE 2/20/04 SAMPLE TIME 1015

SAMPLE IDENTIFICATION 10MW28

WELL DEPTH 108.06 ft below ground surface (bgs) WELL DIAMETER 4 in.

DEPTH TO WATER 19.33 ft bgs CASING HEIGHT 2.25 ft

PUMP RATE 0.1 LPM VOLUME REMOVED 4 L

PUMP TIME 40 min.

WELL WENT DRY, IF YES PURGED AGAIN? NO

IF PURGED AGAIN, VOLUME REMOVED

DATE	TIME	VOLUME REMOVED UNIT: L	pH	Cond mS/m	Temp C	ORP mV	TURB. NTU	DO mg/L	DEPTH TO WATER ft bgs	PUMP RATE LPM
2/20/04	930	0.0	11.61	56.0	10.6	60	20.3	4.67	21.6	0.1
2/20/04	935	0.5	10.93	58.0	9.6	55	21.1	4.22	21.6	0.1
2/20/04	940	1.0	10.51	59.0	8.4	56	27.7	3.35	21.9	0.1
2/20/04	945	1.5	10.24	59.0	7.8	57	38.5	2.43	22.0	0.1
2/20/04	950	2.0	10.07	58.0	7.9	57	41.3	1.82	22.1	0.1
2/20/04	955	2.5	10.00	58.0	8.0	57	43.4	1.53	22.1	0.1
2/20/04	1000	3.0	10.00	58.0	8.3	60	44.3	1.40	22.3	0.1
2/20/04	1005	3.5	10.01	58.0	8.4	61	44.9	1.39	22.3	0.1
2/20/04	1010	4.0	10.01	58.0	8.5	65	45.0	1.38	22.4	0.1

NOTES

no odor

no product

Well head PID 0 ppm

APPENDIX E

2003 AND 2004 CHAIN OF CUSTODIES

2003

Laboratory Use Only

Custody Transfer Record/Lab Work Request

Page ___ of ___

0305L4[illegible]

4,10 40

FIELD PERSONNEL: COMPLETE ONLY SHA[illegible]D AREAS

2 Coolers

√D

Client: EA Engineering EA Eng - Willow Grove

Est. Final Proj. Sampling Date: ~~23 June 03~~ MM June 20 03 MM

Project #: 29600.74 6100 60104-003-001-9999-01

Project Contact/Phone #: maria magilton 302-540-1284

Lionville Laboratory Project Manager: Mark Haslett

QC: SW846 Del: SPEC TAT: 2 weeks.

Date Rec'd: 5-20-03 Date Due: 6-3-03

		A.C	DE	FG	H,I	J	K
Refrigerator #		1	2				
#/Type Container	Liquid	3	2	2	2	1	1p
	Solid						
Volume	Liquid	40	40	40	950	950	1L
	Solid						
Preservatives		HCL	HCL	—	—	—	HNO3

ANALYSES REQUESTED →

ORGANIC							INORG	
VOA	~~BNA~~	~~PCB~~	~~Herb~~				Metal	CN

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL VOC 0624D	Bromoform Cumene Dibromochloromethane	EDB 0504	Methane OPTSC	TCL SVOC 0625	Benzo(a) pyrene 08310	TAL metals	MHSLTO
Soil / Sediment / Solid / Sludge / Water / Oil / Air / Drum Solids / Drum Liquids / EP/TCLP Leachate / Wipe / Other / Fish		→ TRIP BLANK.													
	001	10mw12			W	5/19	1320	X	X	X	X	X	X	X	
	002	10mw14			W	5/19	1610	X	X	X	X	X	X	X	
	003	10TB01051903			W	—	—	X	X	X	X				
	004	10mw16			W	5/19	1305	X	X	X	X	X	X	X	
	005	10mw01			W	5/19	1515	X	X	X	X	X	X	X	
	006	10mw07			W	5/19	1700	X	X	X	X	X	X	X	

Invoiced.

Special Instructions:

Methods for Analysis

- TCL VOC by 8260B
- TAL metals 6010B/7000
- Bromoform, Dibromochloromethane, + Cumene will be 25mL purge
- EDB by 504
- Methane by RSK175
- TCL SVOC by 8270C
- Benzo(a)pyrene by 8310

DATE/REVISIONS:

1. ___
2. ___
3. ___
4. ___
5. ___
6. ___

Relinquished by	Received by	Date	Time
M. Magilton	—	5/19	1830
[illegible]	[illegible]	5-20-03	0955

Relinquished by	Received by	Date	Time

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. 23 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 7930047611 40/10.4°C 8161 8486 7134

8120

ville Laboratory Use Only
305L457

Custody Transfer Record/Lab Work Request

Page 1 of 2 JP 5/21/03

VLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

4 Coolers

nt EA Engineering EA Eng - Willow Grove
. Final Proj. Sampling Date June 2003
ject # 291000.74 610 C 60104-003-001-999-03
ject Contact/Phone # Maria Masilton 302-540-1284
nville Laboratory Project Manager Mark Hasloh
: SW846 Del SPLC TAT 2 weeks
te Rec'd 5/21/03 Date Due 6-4-03

Refrigerator #		M-U	V-AA	BB-GG	A-F	G-I		J-L
		1	1	1	2	2		2
#/Type Container	Liquid	6L	6L	6L	6L	6L		PL
	Solid							
Volume	Liquid	40	40	40	950	950		1000
	Solid							
Preservatives		HCL	HCL	HCL	HCL	HCL		HNO3

ANALYSES REQUESTED →

ORGANIC							INORG	
VOA	BNA	Pest/PCB	Herb				Metal	CN

Lionville Laboratory Use Only

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL 8260B VOC	Bromo Form Dibromo Chloro Methane Cumene	EDB EPA 504	Methane RSK 175	TCL 8270C SVOC	Benzo(a) pyrene 8310		TAL Metals 6010B/7000	MHS LTO
Soil						5-20-03										
Sediment	001	10MW15	X	X	W	5/19	1415	X9	X1	X6	X6	X6	X3		X3	
Solid	002	10MW22			W	5/19	1015	X3	X1	X2	X2	X2	X1		X1	
Sludge	003	10TB02052003			W	—	—	X3	X1	X2	X2					
Water	004	10FB01052003			W	5/19	1600	X3	X1	X2	X2	X2	X1		X1	
Oil	005	10RB01052003			W	5/19	1600	X3	X1	X2	X2	X2	X1		X1	
Air	006	10MW06			W	5/19	1610	X3	X1	X2	X2	X2	X1		X1	
Drum Solids	007	10MW18			W	5/19	~~1300~~ 1920	X3	X1	X2	X2	X2	X1		X1	
Drum Liquids	008	10MW08			W	5/19	0950	X3	X1	X2	X2	X2	X1		X1	
EP/TCLP Leachate	009	10MW21			W	5/19	1130	X1	X1	X2	X2	X0	X2		X0	
Wipe	~~010~~	~~10MW03~~ JM 5-20-03			W	5/20	1130	2-1		0	0	0	1		1	
Other																
Fish																

Special Instructions:
Analysis for Analysis
- TCL VOC by 8260B
- TAL Metals 6010B/7000
- Bromoform, Dibromochloromethane, Cumene will be 25 ml purge.
- EDB by 504
- Methane by RSK 175
- TCL SVOC by 8270C
- Benzo(a)pyrene by 8310

DATE/REVISIONS:
010, 011 1. Added to COC. Bottles rec'd, not listed on COC originally.
2.
009 3. Only one VOA bottle rec'd, 0 bottles rec'd for SVOC
0 bottles rec'd for metals
Client instructed that 10MW03 is actually 10MW21
All Samples Collected 5-20-03
6.

Relinquished by	Received by	Date	Time
L. Masilton	[redacted]	5/19	1800
[illegible]	[illegible]	5/20/03	[illegible]

Relinquished by	Received by	Date	Time
	[redacted]		

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES: See notes above.

Lionville Laboratory Use Only

Samples were: 1) Shipped ___ or Hand Delivered ___ Airbill # ___ See bubble receipt form
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was: 1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 2 °C
3.2°, 4.7°, 4.6°, 1.3°

Invoice.

lle Laboratory Use Only
5L457

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC.

t EA Engineering
Final Proj. Sampling Date
ect # see page 1
ect Contact/Phone #
ville Laboratory Project Manager
Del TAT
Rec'd 5/21/03 Date Due

		M-U	V-AA	BB-GG	A-F	G-I	J-L
Refrigerator #		1	1	1	2	2	2
#/Type Container	Liquid	GL	GL	GL	GL	GL	PL
	Solid						
Volume	Liquid	40	40	40	950	950	1000
	Solid						
Preservatives							

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL VOC	B,C,D	EDB	Methane	TCL Semi Vol	Benzo Pyrene	TAL Metals
010													
~~011~~	10DUP01			W	—	—	3	1	2	2	2	1	1
7/11													

IX
S:
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum
Solids
Drum
Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

cial Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

see page 1

Relinquished by	Received by	Date	Time
dEx	JPerry	5/21/03	

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

ville Laboratory Use Only

0306L463

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ent EA Eng - Willow Grove

. Final Proj. Sampling Date Sherlowater 6/6/03

ject # 29600.74 6100 2132 60104-003-001

ject Contact/Phone # Maria Magilton 302-325-3560

nville Laboratory Project Manager Mark Hasleh

SW846 Del SPEC TAT 2 weeks.

e Rec'd 5-21-03 Date Due 6-4-03

		A-C		D.E	FG	H.I	J		K							
Refrigerator #		1		1	1	2			2							
#/Type Container	Liquid	3g		2g	2g	2g	1g		1P							
	Solid															
Volume	Liquid	40		40	40	950	950		1L							
	Solid															
Preservatives		HCL		HCL	HCL				HNO3							
ANALYSES REQUESTED		See Bottles														
		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	TCL VOC	Bromoform Cumene Dibromochloro		Metal	CN						
		Lionville Laboratory Use Only														
		TCL 0624 VOC	Bromoform Cumene Dibromochloro	EDB 0504	Methane OPTSC	TCL 0625 SVOC	Benzo(a) Pyrene	08310	TAL Metals	MHSLTO						

TRIX
DES:
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum
Solids
Drum
Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL VOC	Bromoform Cumene Dibromochloro	EDB 0504	Methane OPTSC	TCL SVOC	Benzo(a) Pyrene	08310	TAL Metals	MHSLTO
	TRIP BLANK.														
001	10MW20			W	5/21/03	1420	X	X	X	X	X	X		X	
002	10MW17			W		1135	X	X	X	X	X	X		X	
003	10MW10			W		0935	X	X	X	X	X	X		X	
004	10MW03			W		1350	X	X	X	X	X	X		X	
005	10MW05			W		1200	X	X	X	X	X	X		X	
006	10MW09			W		0840	X	X	X	X	X	X		X	
007	10MW19			W		1010	X	X	X	X	X	X		X	
008	10TB03052103			W	—	—	X	X	X						

Invoiced

cial Instructions:

Methods for Analysis + TAL metals 6010B17000.

TCL VOC by 8260B

Bromoform, Dibromochloromethane, & Cumene will be 25 ml Lipurge.

EDB by 504

Methane by RSK175

TCL SVOC by 8270C

Benzo(a) Pyrene by 8310

DATE/REVISIONS:

1.

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
Magilton	[signature]	5/21/03	1630
	[signature]	5-21-03	1650

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ✓
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Lionville Laboratory Use Only

03061-59

Custody Transfer Record

FIELD PERSONNEL: COMPLETE ONLY

Client: EA Eng. - Willow Grove

Est. Final Proj. Sampling Date: Site 11 Water 6/2/03

Project #: 29600.74 6100 2132 6(104-003-001

Project Contact/Phone #: Maria Magilton (302) 325-3560

Lionville Laboratory Project Manager: Mark Haslett

QC: SW846 Del: SPCC TAT: 2 WKS

Date Rec'd: 6/3/03 Date Due: 6-17-03

Refrigerator #			1		1	1	2	2		2									
#/Type Container	Liquid		2 see bottles			GL	GL	GL		2L									
	Solid																		
Volume	Liquid		40 see bottles			40	950	950		1L									
	Solid																		
Preservatives			— see bottles																

ANALYSES REQUESTED →

ORGANIC						INORG	
VOA	Cumene, BNA, Dibromochloromethane	Pest/PCB	Herb			Metal	CN

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL 0ust D VOC	Cumene, Dibromochloromethane	EDB 0504	Methane 0RSCC	TCL 0ust H SVOC	Benzo(a) Pyrene 0810		TAL Metals	MHSLTC							
S - Soil	001	11 Dup 01			W	6/2/03	[redacted]	X3	X	X2	X2	X2	X1		X1								
SE - Sediment	002	11 MW 235			W	6/2/03	1640	X3	X	X2	X2	X2	X1		X1								
SO - Solid	003	11 TB04060203			W	6/2/03	—	X3	X	X1	X3												
SL - Sludge																							
W - Water																							
O - Oil																							
A - Air																							
DS - Drum Solids																							
DL - Drum Liquids																							
L - EP/TCLP Leachate																							
WI - Wipe																							
X - Other																							
F - Fish																							

Faxed to Mark Haslett at Lionville with change in Methods of Analysis

Special Instructions: Methods of Analysis:

- TCL VOC 8260B (Bromoform, Dibromochloromethane, + cumene will be 25mL purge)
- EDB by 504
- Methane by RSK 175
- TCL SVOC by 8270C (Benzo(a) pyrene by 8310)

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___ see below 2) Ambient or Chilled 3) Received in Good Condition (Y) or N 4) Samples Properly Preserved (Y) or N 5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was: 1) Present on Outer Package (Y) or N 2) Unbroken on Outer Package (Y) or N 3) Present on Sample Y or (N) 4) Unbroken on Sample Y or (N)

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 3.4 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES:

Relinquished by	Received by	Date	Time
[illegible]		6/2/03	1830
[illegible]	[illegible]	6/3/03	0955

Relinquished by	Received by	Date	Time

8161848672 15

Faxed

e Laboratory Use Only
061566

2050

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1 cooler

EA Eng. - Willow Grove

inal Proj. Sampling Date: Site 10 Water 6/3/03

ct #: 29600074.74 6100 2132

ct Contact/Phone #: Maria Magilton (302) 325-3560

ille Laboratory Project Manager: Mark Haslett

SW846 Del SPCC TAT 14 days

Rec'd 6-4-03 Date Due 6-18-03

Refrigerator #		A-C		DE		FG		HI		J		K											
		1		1		1		2		2		2											
#/Type Container	Liquid	see bottles																					
	Solid																						
Volume	Liquid	see bottles																					
	Solid																						
Preservatives				see bottles																			
ANALYSES REQUESTED		ORGANIC												INORG									
		VOA	BNA	Pest/PCB	Herb									Metal	CN								

Lionville Laboratory Use Only

IX S:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL 8260B VOC	Bromoform Dibromochloromethane	EDB 504	Methane RSK175	TCL SVOC 8270C	Benzo(a) pyrene 8310	TAL Metals 6010B	HSL 6010								
Soil	001	10MW27			W	6/3/03	1430	X (3)	X	X (2)	X (2)	X (2)	X 1	X 1									
Sediment	002	10MW28			W	↓	1300	X (3)	X	X (2)	X (2)	X (2)	X 1	X 1									
Solid	003	10TB07060303			W	—	—	X (3)	X	X (2)	X (1)												
Sludge																							
Water																							
Oil																							
Air																							
Drum Solids																							
Drum Liquids																							
EP/TCLP																							
Leachate																							
Wipe																							
Other																							
Fish																							

called Mark Haslett (Lionville) changed lab sheet to analyze.

Invoiced.

cial Instructions: Methods for analysis:
L VOC 8260B (Bromoform, Dibromochloromethane, Cumene, will be 25 mL purge)
AL Metals 6010B 17000
DB by 504
lethane by RSK 175
CL SVOC by 8270C
• Benzo(a) pyrene 003 by 8310

DATE/REVISIONS:
1. 1 40mL Methane TB made in
2. field.
3.
4. Rec'd Sample with TB Blank
5. ID on label
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or
Hand Delivered ___
Airbill # See Bill
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample Y or (N)
4) Unbroken on Sample Y or (N)
COC Record Present Upon Sample Rec'd (Y) or N
Cooler Temp. 4.2 °C

Relinquished by	Received by	Date	Time
[signature]		6/3/03	1700

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? (Y) or N
NOTES:

3170

Laboratory Use

16L567

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVL LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

2 coolers

EA Eng. - Willow Grove

inal Proj. Sampling Date Site 11 Water 6/3/03

t # 2960074.74 6100 2132 60104-003-001

t Contact/Phone # Maria Magilton (302) 325-3560

ille Laboratory Project Manager Mark Haslett

SW846 Del SPEC TAT 2 weeks

Rec'd 6/4/03 Date Due 6-18-03

		A-I	J-O	P-U	V-AA	BB-DD	EE-GG
Refrigerator #		1	1	1	2	2	2
#/Type Container	Liquid	see bottles					
	Solid						
Volume	Liquid	see bottles					
	Solid						
Preservatives		see bottles					

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

Lionville Laboratory Use Only

X S: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum, Solids, Drum, Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL VOC 0624D	Bromoform, Cumene, Dibromochloromethane	EDB 0504	Methane OPTIC	TCL SVOC 0625H	Benzo(a)pyrene 08310	TAL Metals MNSLY3
	001	11MW23			W	6/3/03	1020	X9	X✓	X6	X6	X6	X3	X3
		11MW23	✓		W	↓	↓	X	X	X	X	X	X	X
		11MW23		✓	W	↓	↓	X	X	X	X	X	X	X
	002	11TB05060303			W	—	—	X3	X✓	X2	X2			
	003	11FB01060303			W	6/3/03	0810	X3	X✓	X2	X2	X2	X1	X1
	004	11RB01060303			W	↓	0800	X3	X✓	X2	X2	X2	X1	X1
	005	11TB06060303			W	—	—	X3	X✓	X2	X2			

Invoiced

cial Instructions: Methods for analysis:
L VOC 8260B (Bromoform, Dibromochloromethane Cumene, will be 25mL purge)
L Metals 6010B 17000
DB by 504
ethane by RSK175
CL SVOC by 8270C
• Benzo(a)pyrene by 8310

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or
Hand Delivered
Airbill # see below
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 1.2 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[signature]		6/3/03	1700
[signature]	[signature]	6/4/03	0825

Relinquished by	Received by	Date	Time

816184867248 / #ERC-02-407 / 1°C

nville Laboratory Use Only

)306L570

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A-I-1 J-O P-U VAA BB CC DD EE, FF, GG 2 coolers

LVLI LIONVILLE LABORATORY INC.

lent EA Eng. - Willow Grove

st. Final Proj. Sampling Date Site 10 water 6/4/03

oject # 29600.74 6100 2132

oject Contact/Phone # Maria Magilton (302) 325-3560

onville Laboratory Project Manager Mark Hastett

C SW846 Del SPLC TAT 2 weeks

ate Rec'd 6.4.03 Date Due 6-18-03

Refrigerator #		1		1	1	2	2		2												
#/Type Container	Liquid	40	see	bottles			ag		P												
	Solid			40	40	ag															
Volume	Liquid	see	bottles						1L												
	Solid	HCl	HCl	HCl	HCl	950	950														
Preservatives		see	bottles				—		HNO3												
ANALYSES REQUESTED →		ORGANIC							INORG												
		VOA	BNA	Pest/PCB	Herb				Metal	CN											

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	TCL VOC 0620D	Bromoform Cumene Dibromochloromethane	EDB 0504	Methane OPTIC	TCL SVOC 0625H	Benzo(a) pyrene 0831a	TAL Metals MHSLTO
- Soil E - Sediment D - Solid - Sludge - Water - Oil - Air S - Drum Solids L - Drum Liquids - EP/TCLP Leachate II - Wipe - Other - Fish	001	10MW25			W	6/4/03	1315	X (3)	X	X (2)	X (2)	X (2)	X (1)	X (1)
	002	10MW24			W		1330	X (9)	X	X (6)	X (6)	X (6)	X (3)	X (3)
		10MW24	✓		W		1330	X	X	X	X	X	X	X
		10MW24		✓	W		1330	X	X	X	X	X	X	X
	003	10TB07060403			W	—	—	X (3)	X	X (2)	X (2)			

Special Instructions: Methods for Analysis:
TCL VOC by 8260B
Bromoform, Dibromochloromethane + cumene will be 25mL purge. • Benzo(a) pyrene by 8310
EDB by 504
Methane by RSK 175 • TAL Metals 6010B 17000.
TCL SVOC by 8270C

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ✓
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 20 °C

Relinquished by	Received by	Date	Time
[signature]	[signature]	6/4/03	1200

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

NA/3.0 #1207

Invoiced

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1 cooler

LIONVILLE LABORATORY INC.

Client: EA Eng.
Est. Final Pr j. Sampling Dat: Site 10 6/5/03
Project #: 29600.74 6100 2132
Proj ct Contact/Phone #: Maria Magilton (302) 325-3560
Lionville Laborat ry Project Manager: Mark Haslett
QC _____ Del _____ TAT: 2 weeks

Date Rec'd _____ Date Due _____

Refrigerator #		
#/Type Container	Liquid	see bottles
	Solid	
Volume	Liquid	see bottles
	Solid	
Preservatives		see bottles

ANALYSES REQUESTED →

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA: TCL VOC	BNA: Bromoform, Cumene, Dibromochloromethane	Pest/PCB: EDB	Herb: Methane	TCL SVOC	Benzo(a) pyrene	INORG Metal: TAL Metals	CN
	10MW04			W	6/5/03	0910	X	X	X	X	X	X	X	
	10MW26			W	↓	1005	X	X	X	X	X	X	X	
	10TB08060503			W	↓	—	X	X	X	X				

Lionville Laboratory Use Only

Special Instructions: Methods for Analysis:
- TCL VOC by 8260B
- Bromoform, Dibromochloromethane, cumene will be 25mL purge
- EDB by 504
- Methane by RSK 175
- TCL SVOC by 8270C
- Benzo(a)pyrene by 8310
- TAL Metals by 6010B 17000

DATE/REVISIONS:
1. TB prepared in the field.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. _____ °C

ville Laboratory Use Only

3064 603 - 49.09

Custody Transfer Record/Lab Work Request

Page 1 of 2

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

1 cooler

ent EA Eng. Willow Grove

. Final Pr j. Sampling Date 6/10/03 60104-003-001-

ject # 29600.74 6100 2132 9999-00

ject Contact/Ph ne # Maria Magilton (302) 325-3560

nville Laboratory Project Manager Mark Haslett

SW846 Del SPEC TAT 2 weeks

te Rec'd 6/10/03 Date Due 6-24-03

		AB	CD							E
Refrigerator #		1	2							2
#/Type Container	Liquid	2 see bottles	2 ASC							1PL
	Solid									
Volume	Liquid	40 see bottles	950							500
	Solid									
Preservatives		see bottles								—

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA TCLP VOC ITCLV	BNA TCLP SVOC ITCLP	Pest/PCB TCLP Pest. ITCLP	Herb TCLP Herb. ITCLP	LEACH ATCS 0624T	ITCLP	INORG Metal TCLP Metals	CN Reactive I CNRE	ISFRC Reactive Sulfide	ZCORP Corrosivity	Ignitability IEGN
001	IDW-1			W	6/9/03	1410	X2	X2	X✓	X✓			X✓	X1	X✓	X✓	X✓
002	IDW-2 KW			W	6/9/03	1430	X2	X2	X✓	X✓			X✓	X1	X✓	X✓	X✓
003	IDW-23			W	6/9/03	1455	X2	X2	X✓	X✓			X✓	X1	X✓	X✓	X✓
004	IDW-4			W	6/9/03	1515	X2	X2	X✓	X✓			X✓	X1	X✓	X✓	X✓
005	IDW-5			W	6/9/03	1545	X2	X2	X✓	X✓			X✓	X1	X✓	X✓	X✓
~~006~~ MM.	~~10TB09060903~~			~~W~~	—	—	~~X2~~	~~X0~~	~~X0~~	~~X0~~							
007	IDW-1 tclv of 001			L	*						✓						
008	2 002										✓						
009	3 003										✓						
010	4 004										✓						

TRIX DES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

Lionville Laboratory Use Only

ecial Instructions:
No methods per M. Haslett.
TB included as per Carol Schrenkel.

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

not needed for disposal & made in the field!

talked to Mark Haslett on 6/11/03 Trash the Trip Blank

Relinquished by	Received by	Date	Time
[signature]		6/9/03	1630
edEX	[signature]	6/10/03	0950

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 816184867010

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # ___ see below
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 1.1 °C

le Laboratory Use Only

06L603

Custody Transfer Record/Lab Work Request

LVL LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

t EA Eng Willow Grove

Final Proj. Sampling Date

ect # See page 1

ect Contact/Phone #

ville Laboratory Project Manager

Del TAT

Rec'd Date Due

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		
ANALYSES REQUESTED →		

LEACHATES

	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA 0624T	BNA 0625T	Pest/PCB 0608T	Herb OHBGT	RCRA RCRATCLP	INORG Metal	CN
RIX ES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	011	IDW-5 tclp of 005			L	*		✓						
	012	IDW-1 tclp of 001							✓	✓	✓	✓		
	013	2 002							✓	✓	✓	✓		
	014	3 003							✓	✓	✓	✓		
	015	4 004							✓	✓	✓	✓		
	016	5 005							✓	✓	✓	✓		

Lionville Laboratory Use Only

cial Instructions:

DATE/REVISIONS:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. ___ °C

Lionville Laboratory Use Only

0306L~~604~~

Custody Transfer Record/Lab Work R quest

Page 1 of 3

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Cli nt: EA Eng. Willow Grove

Est. Final Pr j. Sampling Date: 6/10/03 IDW

Project #: 29600.74 6100 2132

Pr ject Contact/Phone #: Maria Magilton (302)325-3560

Lionville Laboratory Project Manager: Mark Haslett

QC: SW846 Del: SPEC TAT: 2 weeks

Date Rec'd: 6/10/03 Date Due: 6-24-03

Refrigerator #		A 2
#/Type Container	Liquid	~~see~~ KW
	Solid	see bottles
Volume	Liquid	
	Solid	see bottles
Preservatives		see bottles

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC: TCLP VOA (IT)	TCLP BNA (IT)	~~Pest PCB~~	~~Herb~~ KW	LEACHATES	INORG: Metal	CN
							Lionville Laboratory Use Only						
							TCLP VOC	TCLP SVOC	TCLP Herb.	TCLP Pest.	0624T	TCLP Metals	
001	IDW-6			S	6/10/03	0750	1 X	✓X	✓X	✓X		✓X	
002	IDW-7					0810	1	✓	✓	✓		✓	
003	IDW-8					0820	1	✓	✓	✓		✓	
004	IDW-9					0835	1	✓	✓	✓		✓	
005	IDW-10					0845	1	✓	✓	✓		✓	
006	IDW-11					0920	1	✓	✓	✓		✓	
007	IDW-12					0940	1	✓	✓	✓		✓	
008	IDW-13					0950	1	✓	✓	✓		✓	
009	IDW-6 tclp of 001			L	*						✓		
010	IDW-7 tclp of 002			⊥	⊥						✓		

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions:
Not necessary to list methods per Mark Haslett.

DATE/REVISIONS:
* 1. See labelron
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ✓
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Temper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. 12.3 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
[signature]	J Perry	6/10/03	1210

Relinquished by	Received by	Date	Time

Enrolled MM

Lionville Laboratory Use Only

0306L60

Custody Transfer Record/Lab Work Request

Page ___ of ___

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: EA Eng. Willow Grove

Est. Final Proj. Sampling Date: ___

Project #: see page 1

Project Contact/Phone #: ___

Lionville Laboratory Project Manager: ___

QC: ___ Del: ___ TAT: ___

Date Rec'd: ___ Date Due: ___

Refrigerator #: ___

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives: ___

ANALYSES REQUESTED →

LEACHATES

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA 0624T	BNA 0625T	Pest/PCB 0608T	Herb OHBGT	INORG Metal RCRATCW	CN
011	IDW-8 tclp, F 003			L	X		✓					
012	9 004						✓					
013	10 005						✓					
014	11 006						✓					
015	12 007						✓					
016	13 008						✓					
017	IDW-6 tclp, F 001							✓	✓	✓	✓	
018	7 002							✓	✓	✓	✓	
019	8 003							✓	✓	✓	✓	
020	9 004							✓	✓	✓	✓	

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions:

DATE/REVISIONS:
1. ___
2. ___
3. ___
4. ___
5. ___
6. ___

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

nville Laborato... Use Only
0306L004

Custody Transfer Record/Lab Work Request

Page 3 of 3

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

llent EA Eng Willow Grove
st. Final Proj. Sampling Date
roject # see page 1
r ject Contact/Phone #
Lionville Laboratory Project Manager
QC _____ Del _____ TAT _____

Date Rec'd _____ Date Due _____

Refrigerator #		
#/Type Container	Liquid	
	Solid	
Volume	Liquid	
	Solid	
Preservatives		

LEACHATES

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

Lionville Laboratory Use Only

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625T	0608T	OHBGT	RCRATCW
021	IDW-10 tclp of 005			L	*		✓	✓	✓	✓
022	11 006						✓	✓	✓	✓
023	12 007						✓	✓	✓	✓
024	13 008						✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. _____ °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

2004

Lionville Laboratory Use Only

0402L857

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client EA Engineering - Willow Grove

Est. Final Proj. Sampling Date 2/24/2004

Project # 29600.74 6100/60104-003-001-9999-00

Project Contact/Phone # Maria Magilton 302-325-3560

Lionville Laboratory Project Manager Mark Haslet

QC SW846 Del Special TAT 14 Days

Date Rec'd 2.20.04 Date Due 3/5/04

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED →

* See bottles for preservative

* 6 coolers

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA (TCL VOC, Bromoform, Dibromochloromethane, Cumene)	BNA (EDB)	Pest/PCB (1,1,2,2 Tetra chloroethane)	Herb (TCL SVOC)	Selected PAHs	Hexa chloroethane, hexachlorobenzene, butadiene	Pentachlorophenol	Metal (TAL metals)	CN
							ORGANIC							INORG	
							0624H	~~0504~~ 08010	08021	0625H	08310	08121	0HBOX	MHSLTO	
001	10MW12			AQ	2/19/04	1300	X	X	X	X	X	X	X	X	
002	10MW24			↓	↓	1550	X	X	X	X	X	X	X	X	
003	10MW2R			↓	↓	1510	X	X	X	X	X	X	X	X	
004	10MW16			↓	↓	1645	X	X	X	X	X	X	X	X	
005	10MW14			↓	↓	1300	X	X	X	X	X	X	X	X	
006	TB-021904			↓	↓	—	X		X						
007	FB-021904			↓	↓	1730	X	X	X	X	X	X	X	X	

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Special Instructions:
- TCL VOC, Bromoform, Dibromochloromethane, + Cumene by SW846 8260B
- EDB by SW 846 8011
- 1,1,2,2-Tetra.. by SW846 8021
- TCL SVOC by SW846 8270C
- PAHS (see Mark Haslet) by SW846 8310
- Hexachloros by SW 846 8121
- Pentachlorophenol by SW846 8151
- TAL Metals by SW846 6010B

DATE/REVISIONS:
08010 = EDB method 08011
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
M. Magilton	[signature]	2/19/04	1900
[signature]	[signature]	2.20.04	0755

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Temper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. ___ °C

ille Laboratory Use Only

1026883

Custody Transfer

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt EA Engineering - Willow Grove

Final Proj. Sampling Date 2/24/2004

ject # 29600.74 0100 / 60104-003-001-9999-00

ject Contact/Phone # Maria Magilton 302-325-3560

nville Laboratory Project Manager Mark Haslet

SW846 Del SPEC TAT 14 DAYS

te Rec'd 2/23/04 Date Due 3/8/04

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives: A-I

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA (A-I) 0624H	BNA (J-O) 08010 (*)	Pest PCB (P-X) 08021	Herb (Y-DD) 0625H	Selected PAHs (EE-) 08310	Hexachlorobenzene, Hexachlorobenzene, Pentachlorophenol (HH-AM) 08121	OHBS-X (NN-SS)	TAL metals (TT-YY) MHSLTO
001	10MW03			AQ	2/20/04	1340	X3	X2	X3	X2	X1	X2	X2	X1
002	10MW28					1015	X3	X2	X3	X2	X1	X2	X2	X1
003	RB-022004					1445	X3	X2	X3	X2	X1	X2	X2	X1
004	TB-022004					—	X3		X3					
005	10MW27					1455	X3	X2	X3	X2	X1	X2	X2	X1
006	10MW20					1340	X3	X2	X3	X2	X1	X2	X2	X1
007	10MW25	✓	✓			850	X9	X6	X9	X6	X3	X6	X6	X3
008	10MWDUP					—	X3	X2	X3	X2	X1	X2	X2	X1

Lionville Laboratory Use Only

* see bottles for preservatives.

9 coolers.

TRIX CODES:
- Soil
- Sediment
- Solid
- Sludge
- Water
- Oil
- Air
- S - Drum Solids
- L - Drum Liquids
- EP/TCLP Leachate
- Wipe
- Other
- Fish

DATE/REVISIONS:

(*) 1. 08010 = EDB by 08011

2.

3.

4.

5.

6.

Special Instructions:
- TCL VOC, Bromoform, Dibromochloromethane, + Cumene by SW 846 8260B.
- EDB by SW846 8011
- 1,1,2,2 - Tetra... by SW846 8021
- TCL SVOC by SW 846 8270C
- PAHs (see Mark Haslet) by SW 8468310
- Hexachloros by SW 846 8121
- Pentachlorophenol by SW 846 8151
- TAL metals by SW 846 6010B

Relinquished by	Received by	Date	Time
M. Magilton		2/20/04	1800
[signature]	[signature]	2/23/04	0735

Relinquished by	Received by	Date	Time

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered Airbill # [signature]
2) Ambient or Chilled [signature]
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. _____ °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Custody Transfer Record/Lab Work Request

402L370

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORY INC.

nt EA Engineering - Willow Grove

Final Proj. Sampling Date 24 Feb. 2004

ect # 29600.74 6100/60104-003-001-9999-00

ject Contact/Phone # Maria Magilton 302-540-1284

nville Laboratory Project Manager Mark Hasler

SW846 Del SPEC TAT 14 Days.

e Rec'd 2-24-04 Date Due 3/9/04

Refrigerator #

#/Type Container Liquid / Solid

Volume Liquid / Solid

Preservatives

ANALYSES REQUESTED →

ORGANIC								INORG	
VOA	~~BNA~~	~~Pest/PCB~~	~~Herb~~	Selected PAHs	Hexachlorobenzene hexachlorobenzene	Pentachlorophenol	TAL metals	Metal	CN
TCL VOC, Bromoform, Dibromochloromethane	EDB	1,1,2,2 Tetrachloro	TCL SVOC						

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624D (A-I)	08010 (J-O) (*)	(P-X)	0625H (Y-DD)	08310 (EE-GG)	08121 (HH-MM)	OHBCX (NN-SS)	MHSLTO (TT-VV)
001	10MW04			AQ	2/23/04	1050	1X	2X	3X	2X	1X	2X	2X	1X
002	10MW19	✓	✓	↓	↓	1450	X9	X6	X9	6X	3X	6X	X5	X3
003	10MW05					1525	X3	X2	X3	X2	1X	2X	2X	1X
004	10MW06					1655	X3	X2	X3	X2	X1	X1	X2	X1
005	TB-022304			↓	↓	—	X3		X3					

TRIX
IES:
Soil
Sediment
- Solid
Sludge
Water
Oil
Air
- Drum
Solids
- Drum
Liquids
EP/TCLP
Leachate
- Wipe
Other
Fish

DATE/REVISIONS: (*) 08010 = EDB by 08011

pecial Instructions:

TCL VOC, Bromoform, Dibromochloromethane, + Cumene by SW846 8260B
EDB by SW 846 8011
1,1,2,2-Tetra... by SW846 8021
TCL SVOC by SW846 8270C
PAHs (See Mark Hasler) by SW 846 8310
Hexa... by SW846 8121
Pentachlorophenol by SW 846 8151
TAL metals by SW 846 6010B.

Relinquished by	Received by	Date	Time
M Magilton		2/23/04	2000
Fed Ex	[illegible]	2/24/04	0745

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ____ °C

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request

Page 1 of 1

LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: EA Engineering
Est. Final Proj. Sampling Dat: 25 Feb. 2004
Project #: 29600.74 6100
Proj ct C ntact/Ph ne #: Maria Magilton 302-540-1284
Lionville Laborat ry Project Manager: Mark Haslett
QC _____ Del _____ TAT 14 Days

Date Rec'd _____ Date Due _____

Refrigerator #																	
#/Type Container	Liquid																* See bottles for
	Solid																preservatives
Volume	Liquid																
	Solid																* 9 coolers
Preservatives																	
ANALYSES REQUESTED		ORGANIC								INORG							
		VOA	BNA	Pest/ PCB	Herb					Metal	CN						
		TCL VOC, Bromoform, Dibromochloromethane, Cumene	EDB	1,1,2,2-Tetrachloroethane	TCL SVOC	Selected PAHs	Hexachloroethane, hexachlorobenzene, hexachlorobutadiene	Pentachlorophenol	TAL metals								

Lionville Laboratory Use Only

MATRIX CODES: S - Soil, SE - Sediment, SO - Solid, SL - Sludge, W - Water, O - Oil, A - Air, DS - Drum Solids, DL - Drum Liquids, L - EP/TCLP Leachate, WI - Wipe, X - Other, F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Selected PAHs	Hexachloroethane, hexachlorobenzene, hexachlorobutadiene	Pentachlorophenol	Metal	CN
		10MW15				2/24	950	X	X	X	X	X	X	X	X	
		10MW21					1140	X	X	X	X	X	X	X	X	
		10MW20					1250	X	X	X	X	X	X	X	X	
		10MW10					1040	X	X	X	X	X	X	X	X	
		10MW17					945	X	X	X	X	X	X	X	X	
		10MW7					1155	X	X	X	X	X	X	X	X	
		10mw1					1345	X	X	X	X	X	X	X	X	
		10mw08					1650	X	X	X	X	X	X	X	X	
		10mw18					1650	X	X	X	X	X	X	X	X	
		TB-022404				—	—	X		X						

BK bottles broke KM

Special Instructions:

- TCL VOC, Bromoform, Dibromochloromethane, + Cumene by SW846 8260B
- EDB by SW 846 8011
- 1,1,2,2-Tetra... by SW846 8021
- TCL SVOC by SW 846 8270C
- PAHS (see mark Haslet) by SW 846 ~~8310~~
- Hexachloros by SW 846 8121
- Pentachlorophenol by SW846 8151

DATE/REVISIONS:

1. TAL metals by SW 846 6010B
2. _____
3. _____
4. _____
5. _____
6. _____

Relinquished by	Received by	Date	Time
M. Magilton		2/24/04	1900

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. _____ °C

Laboratory Use Only
102L909
HL909

Custody Transfer Record/Lab Work Order

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

EA Engineering - Willow Grove
Project Name: 25 Feb 2004
Project Sampling Date: 29 Feb 04 - 6100 (6104) 6103 (6001) 9999-00
Contact/Phone: Maria Magilton 302 540 1284
Laboratory Project Manager: Mark Haslett
Due: SPEC TAT: 14 DAYS
Rec'd 2.25.04 Date Due 3/10/04

Refrigerator #
#/Type Container
Volume
Preservatives
ANALYSES REQUESTED

ORGANIC: VOA, BNA, Pest/PCB, Herb
INORG: Metal, CN

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06274 D	08010 (*)		06254	08310	08121	04BBK	MASTO
001	10MW15			W	2/24/04	950	X	X	X	X	X	X	X	X
002	10MW21					1140	X	X	X	X	X	X	X	X
003	10MW26					1259	X	X	X	X	X	X	X	X
004	10MW10					1040	X	X	X	X	X	X	X	X
005	10MW17					945	X	X	X	X	X	X	X	X
006	10MW7					1155	X	X	X	X	X	X	X	X
007	10MW1					1345	X	X	X	X	X	X	X	X
008	10MW08					1650	X	X	X	X	X	X	X	X
009	10MW18					1650	X	X	X	X	X	X	X	X
010	FB-022404						X		X					

DATE/REVISIONS:

(*) 08010 = EDB by 08011

Special Instructions:
- TCL VOC, Bromoform, Dibromochloromethane, + Cumene by SW846 8260B
- EDB by SW846 8011
- 1,1,1,2,2-Tetra... by SW846 8021
- TCL SVOC by SW846 8270C
- PAHs (see Mark Haslett) by SW846 8310
- Hexachloros by SW846 8121
- Pentachlorophenol by SW846 8151
- TAL metals by SW846 6010B

2/25/04 1. ~~Due to broken bottles, 007, 009 on hold per pm - until add vol can be received~~
2. 2/25/04 007, 009 - OHBBK cancelled due to broken samples
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
M. Magilton		2/24/04	1900
[illegible]	[illegible] Smith	2/25/04	0955

Relinquished by	Received by	Date	Time

Lionville Laboratory Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. ____ °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

ille Laboratory Use O

1021917

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVL LIONVILLE LABORATORY INC.

nt EA Engineering - Willow Grove

Final Proj. Sampling Date 25 Feb 2004

ect # 29600.74 6100/60104-003-001-9999-00

ect Contact/Phone # Maria Magilton 302-325-3560

ville Laboratory Project Manager Mark Haslet

SW846 Del Spec TAT 14 Days

e Rec'd 2/26/04 Date Due 3/11/04

Refrigerator #

#/Type Container: Liquid / Solid

Volume: Liquid / Solid

Preservatives

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624D (TCL VOC, Bromoform, Dibromochloro)	08010 (EDB)		0625H (TCL SVOC)	08310 (Selected PAHs)	08121 (Hexachlorobenzene, hexachlorobenzene, butane)	0HBEX (Pentachlorophenol)	MHSLTD (TAL metals)	LEACH (1)	ITCLV (TCLP VOC)	ITCLP (TCLP Herb)	TCLP Pest	TCLP SVOC	TCLP Metals	INORG (1) (Reactive Cyanide, Sulfide, Corrosivity)	0624T (Ignitability)
001	10MW09			AQ	2/25/04	0925	X	X	X	X	X	X	X	X								
002	IDW-022504			↓	"	830										X	X	X	X	X	X	
003	TB-022504			↓	~~"~~	—	X		X													✓
004	IDW-022504 TCLV of 002			L	*										✓							
005	⊥ TCLP of 002			⊥																		

Lionville Laboratory Use Only

RIX ES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish

ecial Instructions: *See Labchron (*) 08010 = 08011 (for EDB)

TCL VOC, Bromoform, Dibromochloromethane, +Cumene by SW846 8260B.

EDB by SW846 8011

1,1,2,2-Tetra ... by SW846 8021

TCL SVOC by SW846 ~~8021~~ MN 8270C

PAHS (See mark Haslet) by SW846 8310

Hexachloros.. by SW846 8121

Pentachlorophenol by SW846 8151

DATE/REVISIONS:

1. • TAL metals by SW846 6010B
2.
3. • TCLP, Reactive, Cor, Ignit (See mark Haslet for methods)
4.
5. INORG (1) = ICNRE, ISFRE, IIGN, ICORC
6. LEACH (1) = 0HBGT, 0608T, 0625T, RCRATC

Relinquished by	Received by	Date	Time
M. Magilton		2/25/04	1400
FedEx	Spring (for VH)	2/26/04	0950

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. ___ °C

SPC

ille Laboratory Us[redacted]y
02L025

Custody Transfer Record/Lab [redacted]k Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVL LIONVILLE LABORATORY INC.

nt	EA Engineering - Willow Grove.
Final Proj. Sampling Date	2/27/2004
ect #	29600.74 6100 / 60104-003-001
ect Contact/Phone #	Maria Magilton 302-325-
nville Laboratory Project Manager	Mark Haslet 3560
SW846 Del Spec	TAT 14 Days
e Rec'd 2/27/04	Date Due 3/12/04

Refrigerator #		VOC, Bromodichloromethane, Dibromochloromethane, Chloroform	EDB	1,1,2,2-Tetrachloroethane	TCL SVOC	PAHs	Selected Hexachlorobenzene, hexachlorobutadiene, hexachloroethane	Penta chlorophenol	TAL Metals			* See bottles for preservatives					
#/Type Container	Liquid																
	Solid																
Volume	Liquid																
	Solid											* 4 coolers					
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG			* ~~Resampled~~ MM					
		VOA							Metal	CN		* Hand delivered					

Lionville Laboratory Use Only

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	A-I 08240	J-O 08010*	P-X	Y-DD 8325H	EE-GG 8310	HH-MM 8121	NN-SS CHBGX	TT-VV MHSLTO
Soil Sediment Solid Sludge Water Oil Air Drum Solids Drum Liquids EP/TCLP Leachate Wipe Other Fish	001	10MW25	✓	✓	AQ	2/27/04	100	4 X	6 X	0 X	6 X	3 X	6 X	6 X	3 X
	002	10MW18			AQ		1000							X2	
	003	10MW01			AQ		1130							X2	
	004	10MW20			AQ		1125	3 X	4 X	0 X	X2	X1	X2	X2	X1
	005	10MW27			AQ		1015	3 X	4 X	0 X	X2	X1	X2	X2	X1
	006	RB-022704			AQ		1115	3 X	2 X	0 X	X2	X1	X2	X2	X1
	007	TB-022704			AQ	↓	—	3 X		0 X					

Special Instructions:
TCL VOC, Bromoform, Dibromochloromethane
+ Chloroform by SW846 8260B
EDB by SW846 8011
1,1,2,2-Tetra... by SW846 8021
TCL SVOC by SW846 8270C
PAHs (See Mark Haslet) by SW846 8310
Hexachloro... by SW846 8121

DATE/REVISIONS:
1. Pentachlorophenol by SW846 8151
2.
3. TAL metals by SW846 6010B
4. *8010 = 8011 (for EDB)
5.
6.

Relinquished by	Received by	Date	Time
L. Morgan	J Perry	2/27/04	1350

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Lionville Laboratory Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received In Good Condition Y or N
4) Samples Properly Preserved Y or N
5) Received Within Holding Times Y or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N
Cooler Temp. ___ °C

APPENDIX F

2003 AND 2004 DATA VALIDATION REPORTS

2003

ENVIRONMENTAL
Data Services, Inc.

TCL VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L438

Client: EA Engineering, Science & Technology, Inc. Date: August 14, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW12	0305L438-001	Water
10MW12 RE	0305L438-001 RE	Water
10MW14	0305L438-002	Water
10MW14 RE	0305L438-002 RE	Water
10TB01051903	0305L438-003	Water
10MW16	0305L438-004	Water
10MW16 RE	0305L438-004 RE	Water
10MW01	0305L438-005	Water
10MW01 RE	0305L438-005 RE	Water
10MW07	0305L438-006	Water
10MW07 RE	0305L438-006 RE	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Note: One of the coolers was received at 10.4°C. No action was taken on this basis.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 05/06/03 exhibited a low mean RRF value for 2-butanone of 0.016. 2-Butanone has been rejected (R) in all samples.

Continuing Calibration - The continuing calibration analyzed on 05/21/03 exhibited low RRF values for 2-butanone and 2-hexanone of 0.018 and 0.0499, respectively. 2-Hexanone has been rejected (R) in all samples. 2-Butanone has already been rejected in all samples and no further qualifications were required.

Surrogates - Sample 10MW12 exhibited high surrogate recoveries for bromofluorobenzene and 1,2-dichloroethane-d_4 of 131% and 164%, respectively. Positive results have been qualified (J) in this sample.

Sample 10MW12 RE exhibited a low surrogate recovery for bromofluorobenzene of 20% and a high surrogate recovery for 1,2-dichloroethane-d_4 of 138%. All associated results have been qualified (J/UJ) in this sample.

Samples 10MW14, 10MW14 RE, 10MW16, 10MW01, and 10MW07 exhibited high surrogate recoveries for 1,2-dichloroethane-d_4 of 134%, 132%, 150%, 204%, and 135%, respectively. Positive results have been qualified (J) in these samples.

Samples 10MW16 RE and 10MW07 RE exhibited low surrogate recoveries for bromofluorobenzene of 30% and 20%, respectively. All associated results have been qualified (J/UJ) in these samples.

Sample 10MW01 RE exhibited a low surrogate recovery for bromofluorobenzene of 22% and a high surrogate recovery for 1,2-dichloroethane-d_4 of 165%. All associated results have been qualified (J/UJ) in this sample.

MS/MSD - A MS/MSD sample was not analyzed from this data package.

Laboratory Control Sample - LCS sample VBLKTD exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK104-MB1 (05/21/03) exhibited methylene chloride contamination at 0.2 ug/L. Methylene chloride has been qualified (B) in samples 10MW12 RE, 10MW14 RE, 10MW16 RE, 10MW01 RE, and 10MW07 RE.

Trip, Field, Equipment Blank - Trip blank 11TB01051903 exhibited methylene chloride and toluene contamination at 10 ug/L and 0.1 ug/L. Toluene has been qualified (B) in samples 10MW12 RE and 10MW14 RE. Methylene chloride was non-detect or has already been qualified in the associated samples and no further qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J) and all "known" TICs were qualified (NJ).

Compound Quantitation - Several samples were reanalyzed due to surrogate problems. See the Form Is to see which analysis should be used for reporting purposes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the surrogate, method blank, field blank, and TICs sections of this report with the exception of one analyte rejected in all samples due to the initial calibration and one analyte rejected in all samples due to the continuing calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052110

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	0.3	~~J~~ J
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.6	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.2	~~J~~ J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/14/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052110

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	10	J

FORM 1 V-2 1/87 Rev.

08/11/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052110

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 16

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.342	50	J
2.	ALKANE	13.618	30	J
3.	ALKANE	15.066	50	J
4.	ALKANE	15.647	200	J
5.	ALKANE	16.908	70	J
6.	ALKANE	17.459	100	J
7.	ALKANE	17.646	200	J
8.	ALKANE	17.912	6	J
9.	ALKANE	18.139	30	J
10.	ALKANE	18.927	8	J
11.	UNKNOWN	19.400	9	J
12.	CYCLOALKANE	19.616	10	J
13.	UNKNOWN	20.986	4	J
14.	C3-ALKYLBENZENE	22.059	20	J
15.	C4-ALKYLBENZENE	23.852	10	J
16.	AROMATIC	24.768	8	J

08/11/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW12RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052115

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00 See original analyze

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U UJ
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	1	~~J~~ B
67-64-1	Acetone	5	U UJ
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U R
71-55-6	1,1,1-Trichloroethane	1	U UJ
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.6	J J
10061-02-6	Trans-1,3-Dichloropropene	1	U UJ
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U R
127-18-4	Tetrachloroethene	1	U UJ
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J B
108-90-7	Chlorobenzene	1	U UJ
100-41-4	Ethylbenzene	0.3	J J
100-42-5	Styrene	1	U UJ
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

FORM 1 V-1 1/87 Rev.

08/14/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW12RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052115

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

See original analysis

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	10	J

FORM 1 V-2 1/87 Rev.

08/11/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW12RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052115

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. ____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

See original analysis

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 15

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	10.240	8	J
2.	ALKANE	13.609	20	J
3.	ALKANE	15.057	40	J
4.	ALKANE	15.658	200	J
5.	ALKANE	16.899	60	J
6.	ALKANE	17.460	100	J
7.	ALKANE	17.647	100	J
8.	ALKANE	17.913	10	J
9.	UNKNOWN	18.918	7	J
10.	UNKNOWN	19.401	8	J
11.	CYCLOALKANE	19.608	9	J
12.	C3-ALKENYLBENZENE	23.666	20	J
13.	C4-ALKYLBENZENE	23.863	20	J
14.	UNKNOWN	24.483	10	J
15.	AROMATIC	24.769	10	J

05/14/03

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052111

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	0.4	~~J~~ J
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	5	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052111

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	3	J

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052111

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 17

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.108	20	J
2.	ALKANE	11.359	20	J
3.	ALKANE	13.614	9	J
4.	ALKANE	15.062	20	J
5.	ALKANE	15.663	100	J
6.	ALKANE	16.914	30	J
7.	ALKANE	17.466	50	J
8.	UNKNOWN	17.643	70	J
9.	ALKANE	18.146	20	J
10.	UNKNOWN	21.317	6	J
11.	UNKNOWN	22.204	8	J
12.	AROMATIC	23.662	8	J
13.	UNKNOWN	24.085	8	J
14.	UNKNOWN	24.489	20	J
15.	UNKNOWN	24.765	10	J
16.	C4-ALKYLBENZENE	25.021	10	J
17.	AROMATIC	26.489	10	J

J

08/11/03

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW14RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052113

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

See original analyz

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	~~JB~~ B
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	0.5	~~J~~ J
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	2	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	~~J~~ B
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	5	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW14RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052113

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	3	J

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See original analy

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1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW14RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052113

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

See original analysis

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 24

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	12.008	5	J J
2.	ALKANE	15.061	30	J
3.	ALKANE	15.662	100	J
4.	ALKANE	16.903	40	J
5.	ALKANE	17.465	70	J
6.	ALKANE	17.652	100	J
7.	UNKNOWN	17.938	8	J
8.	ALKANE	18.144	30	J
9.	CYCLOALKANE	18.785	6	J
10.	CYCLOALKANE	19.612	9	J
11.	UNKNOWN	19.770	5	J
12.	UNKNOWN	20.981	5	J
13.	ALKANE	21.119	5	J
14.	UNKNOWN	21.306	10	J
15.	UNKNOWN	21.592	9	J
16.	UNKNOWN	21.946	8	J
17.	UNKNOWN	22.193	10	J
18.	C3-ALKYLBENZENE	23.660	8	J
19.	UNKNOWN	23.759	10	J
20.	UNKNOWN	24.094	7	J
21.	C4-ALKYLBENZENE	24.242	6	J
22.	C4-ALKENYLBENZENE	24.488	20	J
23.	UNKNOWN	24.744	8	J
24.	ALKANE	26.970	10	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB01051903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052106

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	10	~~B~~
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB01051903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052106

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB01051903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052106

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052107

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.7	~~U~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	10	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

05/14/03

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052107

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	28	J

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08/14/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052107

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 26

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.984	20	J J
2.	UNKNOWN	8.122	400	J
3.	ALKANE	11.353	100	J
4.	ALKANE	12.003	50	J
5.	CYCLOALKANE	13.776	20	J
6.	ALKANE	15.047	40	J
7.	UNKNOWN	15.332	10	J
8.	ALKANE	15.648	100	J
9.	CYCLOALKANE	16.879	100	J
10.	ALKANE	17.460	50	J
11.	ALKANE	17.647	80	J
12.	CYCLOALKANE	18.277	6	J
13.	CYCLOALKANE	19.548	7	J
14.	C3-ALKYLBENZENE	22.060	40	J
15.	AROMATIC	23.656	30	J
16.	C4-ALKYLBENZENE	23.862	6	J
17.	C4-ALKYLBENZENE	24.247	20	J
18.	C4-ALKENYLBENZENE	24.384	7	J
19.	C4-ALKENYLBENZENE	24.493	20	J
20.	UNKNOWN	24.759	7	J
21.	C4-ALKYLBENZENE	24.907	10	J
22.	AROMATIC	25.537	6	J
23.	C4-ALKYLBENZENE	25.823	20	J
24.	AROMATIC	26.226	10	J
25.	UNKNOWN	26.483	4	J
26.	AROMATIC	26.788	5	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW16RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052117

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/22/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U UJ
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	B B
67-64-1	Acetone	5	U UJ
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U R
71-55-6	1,1,1-Trichloroethane	1	U UJ
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.6	J J
10061-02-6	Trans-1,3-Dichloropropene	1	U UJ
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U R
127-18-4	Tetrachloroethene	1	U UJ
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	10	J
100-42-5	Styrene	1	U UJ
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

See original analysis

OS/[illegible]

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW16RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052117

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/22/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	29	J

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See original analysis

08/14/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW16RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052117

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/22/03 SQL

Column: (pack/cap) CAP Dilution Factor: 1.00 Original analysis

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 26

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.112	300	J
2.	ALKANE	11.342	90	J
3.	ALKANE	11.992	40	J
4.	UNKNOWN	13.618	10	J
5.	ALKANE	15.046	30	J
6.	UNKNOWN	15.322	10	J
7.	ALKANE	15.647	100	J
8.	CYCLOALKANE	16.878	90	J
9.	ALKANE	17.459	40	J
10.	ALKANE	17.646	70	J
11.	CYCLOALKANE	18.277	6	J
12.	CYCLOALKANE	19.548	8	J
13.	C3-ALKYLBENZENE	22.059	40	J
14.	AROMATIC	23.655	30	J
15.	C4-ALKYLBENZENE	23.862	6	J
16.	C4-ALKYLBENZENE	23.970	6	J
17.	C4-ALKYLBENZENE	24.246	20	J
18.	C4-ALKENYLBENZENE	24.384	7	J
19.	AROMATIC	24.492	20	J
20.	AROMATIC	24.758	7	J
21.	C4-ALKYLBENZENE	24.916	10	J
22.	AROMATIC	25.536	5	J
23.	C4-ALKYLBENZENE	25.812	20	J
24.	AROMATIC	26.226	10	J
25.	AROMATIC	26.472	5	J
26.	AROMATIC	26.787	5	J

08/11/03

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052108

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.6	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.2	~~J~~ J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

05/[illegible]

FORM 1 V-1 1/87 Rev.

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052108

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	0.7	~~U~~ J

FORM 1 V-2 1/87 Rev.

DS/Wilson

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052108

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 22

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.122	20	J J
2.	UNKNOWN	10.221	9	J
3.	ALKANE	12.003	4	J
4.	ALKANE	13.619	60	J
5.	ALKANE	15.057	70	J
6.	ALKANE	15.658	300	J
7.	ALKANE	16.919	90	J
8.	CYCLOALKANE	17.234	5	J
9.	ALKANE	17.470	200	J
10.	ALKANE	17.648	200	J
11.	ALKANE	17.914	10	J
12.	UNKNOWN	19.401	20	J
13.	CYCLOALKANE	19.608	10	J
14.	CYCLOALKANE	20.987	7	J
15.	UNKNOWN	21.302	3	J
16.	C4-ALKYLBENZENE	23.439	6	J
17.	C4-ALKYLBENZENE	23.863	10	J
18.	C4-ALKYLBENZENE	24.395	10	J
19.	UNKNOWN	24.582	4	J
20.	AROMATIC	24.769	10	J
21.	C4-ALKENYLBENZENE	25.853	6	J
22.	AROMATIC	26.808	10	J

odlwdm

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW01RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052116

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/22/03

Column: (pack/cap) CAP Dilution Factor: 1.00

See original analysis

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U WJ
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	1	~~J~~B B
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U WJ
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~R
71-55-6	1,1,1-Trichloroethane	1	U WJ
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.5	~~U~~J
10061-02-6	Trans-1,3-Dichloropropene	1	U WJ
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~R
127-18-4	Tetrachloroethene	1	U WJ
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.1	~~U~~J
100-42-5	Styrene	1	U WJ
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

osluka

FORM 1 V-1 1/87 Rev.

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW01RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052116

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/22/03

Column: (pack/cap) CAP Dilution Factor: 1.00

See original analysis

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	0.6	J

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05/14/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW01RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052116

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. ____ Date Analyzed: 05/22/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 23

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

See original analysis

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	10.240	8	J J
2.	ALKANE	11.993	3	J
3.	ALKANE	13.618	50	J
4.	ALKANE	15.056	60	J
5.	ALKANE	15.647	300	J
6.	ALKANE	16.918	70	J
7.	ALKANE	17.460	100	J
8.	ALKANE	17.647	200	J
9.	ALKANE	17.923	10	J
10.	CYCLOALKANE	18.504	7	J
11.	UNKNOWN	19.134	3	J
12.	UNKNOWN	19.400	10	J
13.	CYCLOALKANE	19.607	7	J
14.	UNKNOWN	20.838	2	J
15.	UNKNOWN	20.976	4	J
16. 5911046	NONANE, 3-METHYL-	21.094	3	NJ NJ
17.	UNKNOWN	21.291	4	J J
18.	C4-ALKYLBENZENE	23.439	6	J
19.	C4-ALKYLBENZENE	23.862	10	J
20.	C4-ALKENYLBENZENE	24.394	20	J
21.	AROMATIC	24.768	10	J
22.	C4-ALKENYLBENZENE	25.852	4	J
23.	UNKNOWN	28.127	5	J

adlula

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052109

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.4	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

Oshuelon

FORM 1 V-1 1/87 Rev.

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052109

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	2	J

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08/11/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052109

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 23

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.102	30	~~J~~
2.	ALKANE	11.352	30	
3.	ALKANE	12.002	10	
4.	UNKNOWN	13.608	10	
5.	ALKANE	15.056	20	
6.	UNKNOWN	15.322	5	
7.	ALKANE	15.657	90	
8.	CYCLOALKANE	16.878	30	
9.	ALKANE	17.459	40	
10.	ALKANE	17.647	80	
11.	ALKANE	18.159	7	
12.	CYCLOALKANE	18.277	3	
13.	C3-ALKYLBENZENE	22.749	2	
14.	C4-ALKYLBENZENE	23.537	2	
15.	C3-ALKENYLBENZENE	23.655	4	
16.	C4-ALKYLBENZENE	24.089	2	
17.	C4-ALKYLBENZENE	24.246	4	
18.	C4-ALKENYLBENZENE	24.492	7	
19.	UNKNOWN	24.758	4	
20.	C4-ALKYLBENZENE	25.005	5	
21.	C4-ALKYLBENZENE	25.802	6	
22.	AROMATIC	26.216	3	
23.	AROMATIC	26.482	3	

osluka

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW07RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052114

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U UJ
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	~~JB~~ B
67-64-1	Acetone	5	U UJ
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U UJ
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.4	J J
10061-02-6	Trans-1,3-Dichloropropene	1	U UJ
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U UJ
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	1	U UJ
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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See original analysis

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW07RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052114

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	2	J

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see original analysis

08/11/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW07RE

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L438-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k052114

Level: (low/med) LOW Date Received: 05/20/03

% Moisture: not dec. _____ Date Analyzed: 05/21/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 24

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.233	3	J
2.	ALKANE	12.006	10	J
3.	ALKANE	13.631	10	J
4.	ALKANE	15.060	20	J
5.	UNKNOWN	15.345	5	J
6.	ALKANE	15.651	80	J
7.	UNKNOWN	16.882	30	J
8.	ALKANE	17.463	30	J
9.	ALKANE	17.640	60	J
10.	ALKANE	18.152	4	J
11.	CYCLOALKANE	18.280	4	J
12.	CYCLOALKANE	19.610	4	J
13.	UNKNOWN	20.615	3	J
14.	C3-ALKYLBENZENE	22.752	2	J
15.	C3-ALKYLBENZENE	23.334	10	J
16.	C4-ALKYLBENZENE	23.540	2	J
17.	AROMATIC	23.974	2	J
18.	C4-ALKYLBENZENE	24.250	3	J
19.	C4-ALKENYLBENZENE	24.486	4	J
20.	UNKNOWN	24.772	3	J
21.	C4-ALKYLBENZENE	24.910	2	J
22.	C4-ALKYLBENZENE	25.008	3	J
23.	C4-ALKYLBENZENE	25.806	4	J
24.	AROMATIC	28.702	3	J

See original analysis

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS & BROMOFORM, DIBROMOCHLOROMETHANE & CUMENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L457

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW15	0305L457-001	Water
10MW15 MS	0305L457-001 MS	Water
10MW15 MSD	0305L457-001 MSD	Water
10MW2R	0305L457-002	Water
10TB02052003	0305L457-003	Water
10FB01052003	0305L457-004	Water
10RB01052003	0305L457-005	Water
10MW06	0305L457-006	Water
10MW18	0305L457-007	Water
10MW08	0305L457-008	Water
10MW21	0305L457-009	Water
10DUP01	0305L457-010	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/01/03 exhibited low mean RRF values for 2-butanone and 2-hexanone of 0.016 and 0.048, respectively. Both compounds have been rejected (R) in all samples.

Continuing Calibration - The continuing calibration analyzed on 06/02/03 exhibited a high %D value for bromomethane of 37.1% and low RRF values for 2-butanone and 2-hexanone of 0.015 and 0.041, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

The continuing calibration analyzed on 06/03/03 exhibited a high %D value for bromomethane of 48.4% and low RRF values for 2-butanone and 2-hexanone of 0.015 and 0.043, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

Surrogates - Samples 10MW08 and 10DUP01 exhibited high surrogate recoveries for 1,2-dichloroethane-d_4 of 143% and 154%, respectively. Positive results have been qualified (J) in both samples.

MS/MSD - MS/MSD sample 10MW15 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS samples VBLKTJ and VBLKTR exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK110-MB1 (06/02/03) exhibited xylene (total) contamination at 0.1 ug/L. Xylene (total) has been qualified (B) in samples 10MW2R.

Method blank 03LVK111-MB1 was free of contamination. No qualifications were required.

Method blank 03LVK112-MB1 (06/03/03) exhibited methylene chloride contamination at 0.6 ug/L. Methylene chloride has been qualified (B) in sample 10MW06.

Trip, Field, Equipment Blank - Trip blank 10TB02052003 exhibited methylene chloride contamination at 10 ug/L, however, methylene chloride is non-detect or already qualified in all associated samples and no qualifications were required.

Field blank 10FB01052003 exhibited chloroform, dibromochloromethane and bromoform contamination at 2 ug/L, 0.1 ug/L and 0.4 ug/L, respectively. All three compounds have been qualified (B) in sample 10MW21.

Rinsate blank 10RB01052003 exhibited chloroform and bromoform contamination at 2 ug/L and 0.2 ug/L, respectively, however, all associated results are non-detect or already qualified due to the field blank and no qualifications were required.

Field Duplicates - Field duplicate results are summarized below. No qualifications were required.

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
Toluene	0.1	0.2	67%
Ethylbenzene	3	4	29%
Isopropylbenzene	5	9	57%
Benzene	0.7	0.9	25%

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations and all laboratory artifacts were crossed out and rejected (R).

Compound Quantitation - Sample 10MW06 was analyzed at a dilution due to high concentration of target analytes in the sample. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the surrogate, method blank, field blank, and TICs sections of this report with the exception of two analytes rejected in all samples due to the initial calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060211

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.2	J
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060211

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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G8/26/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060211

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	21.742	3	J R

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08/26/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060117

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.7	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	3	
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	0.2	~~JB~~ B
106-93-4	1,2-Dibromoethane	1	U

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08/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060117

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	5	

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1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060117

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 23

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.130	8	J
2.	ALKANE	11.343	10	J
3.	ALKANE	13.620	10	J
4.	ALKANE	15.059	20	J
5.	ALKANE	15.651	100	J
6.	ALKANE	16.913	30	J
7.	ALKANE	17.465	60	J
8.	ALKANE	17.652	90	J
9.	ALKANE	18.145	20	J
10.	UNKNOWN	18.933	10	J
11.	CYCLOALKANE	19.613	10	J
12.	UNKNOWN	19.761	8	J
13.	CYCLOALKANE	20.589	10	J
14.	UNKNOWN	21.299	20	J
15.	UNKNOWN	22.196	10	J
16.	C4-ALKYLBENZENE	23.537	4	J
17.	AROMATIC	23.970	5	J
18.	UNKNOWN	24.089	7	J
19.	C4-ALKYLBENZENE	24.246	10	J
20.	C4-ALKENYLBENZENE	24.493	30	J
21.	UNKNOWN	24.749	10	J
22.	UNKNOWN	25.725	50	J
23.	AROMATIC	26.809	30	J

08/26/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB02052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060210

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	10	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB02052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060210

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB02052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060210

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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08/26/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060209

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	2	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.1	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.4	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060209

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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G 8/26/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060209

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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G8126U32

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060208

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	2	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.2	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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08/26/03

1B.
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060208

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/26/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060208

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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05126432

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060311

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 5.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	~~JB~~ B
67-64-1	Acetone	25	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	25	~~U~~ R
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	25	U
591-78-6	2-Hexanone	25	~~U~~ R
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U
106-93-4	1,2-Dibromoethane	5	U

08/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060311

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 5.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	5	J

FORM 1 V-2 1/87 Rev.

08/26/03c

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060311

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 5.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 13

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.37	40	J
2.	ALKANE	13.638	20	J
3.	ALKANE	15.077	50	J
4.	ALKANE	15.668	300	J
5.	CYCLOALKANE	17.235	7	J
6.	ALKANE	17.472	100	J
7.	ALKANE	17.659	200	J
8.	UNKNOWN	17.945	20	J
9.	CYCLOALKANE	18.793	10	J
10.	CYCLOALKANE	19.621	10	J
11.	UNKNOWN	19.779	9	J
12.	C3-ALKYLBENZENE	21.563	10	J
13.	UNKNOWN	24.747	200	J

08/26/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060212

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

G8/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060212

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
98-82-8	Isopropylbenzene	1	U	

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G8126603c

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060212

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.374	2	J
2.	UNKNOWN	13.936	2	J
3.	ALKANE	15.090	2	J
4.	ALKANE	15.671	50	J
5.	ALKANE	17.061	2	J
6.	ALKANE	17.485	30	J
7.	ALKANE	17.662	30	J
8.	UNKNOWN	24.188	3	J
9.	UNKNOWN	24.523	2	J
10.	AROMATIC	24.612	1	J
11.	UNKNOWN	24.809	2	J
12.	AROMATIC	25.213	1	J

08/26/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060213

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.4	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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08/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060213

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	9	J

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08/26/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060213

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 24

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.141	70	J
2.	ALKANE	11.354	50	J
3.	ALKANE	12.015	3	J
4.	ALKANE	13.631	20	J
5.	ALKANE	15.080	30	J
6.	ALKANE	15.672	200	J
7.	UNKNOWN	16.904	70	J
8.	ALKANE	17.485	80	J
9.	ALKANE	17.663	100	J
10.	ALKANE	17.929	7	J
11.	ALKANE	18.156	10	J
12.	CYCLOALKANE	18.294	5	J
13.	CYCLOALKANE	18.806	3	J
14.	UNKNOWN	18.934	4	J
15.	UNKNOWN	19.614	7	J
16.	UNKNOWN	20.630	3	J
17.	C3-ALKYLBENZENE	22.069	20	J
18.	C4-ALKYLBENZENE	23.548	7	J
19.	C4-ALKYLBENZENE	23.883	6	J
20.	C4-ALKYLBENZENE	24.257	10	J
21.	C4-ALKENYLBENZENE	24.405	5	J
22.	C4-ALKENYLBENZENE	24.504	10	J
23.	C4-ALKYLBENZENE	24.928	5	J
24.	C4-ALKENYLBENZENE	25.844	9	J

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-009

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060306

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	0.1	J
67-66-3	Chloroform	0.8	~~J~~ B
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.2	J
124-48-1	Dibromochloromethane	0.1	~~J~~ B
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.2	~~J~~ B
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	0.6	J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

FORM 1 V-1 1/87 Rev.

05/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-009

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060306

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08/26/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-009

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060306

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-010

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060215

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.9	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.2	~~J~~ J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	4	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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08126603

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-010

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060215

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	9	J

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08/26/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L457-010

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060215

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/03/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.160	40	J
2.	ALKANE	11.363	30	J
3.	ALKANE	13.611	20	J
4.	ALKANE	15.070	30	J
5.	ALKANE	15.661	200	J
6.	ALKANE	17.465	100	J
7.	ALKANE	17.652	200	J
8.	ALKANE	18.145	50	J
9.	CYCLOALKANE	18.786	60	J
10.	UNKNOWN	18.934	70	J
11.	ALKANE	19.308	60	J
12.	CYCLOALKANE	19.614	70	J
13.	CYCLOALKANE	20.590	100	J
14.	UNKNOWN	20.974	70	J
15.	ALKANE	21.112	100	J
16.	UNKNOWN	21.299	200	J
17.	UNKNOWN	22.186	60	J
18.	UNKNOWN	23.754	70	J
19.	UNKNOWN	23.970	40	J
20.	UNKNOWN	24.089	100	J
21.	UNKNOWN	24.483	100	J
22.	UNKNOWN	24.739	80	J

08/26/03

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS & BROMOFORM, DIBROMOCHLOROMETHANE & CUMENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L463

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW20	0305L463-001	Water
10MW17	0305L463-002	Water
10MW10	0305L463-003	Water
10MW03	0305L463-004	Water
10MW05	0305L463-005	Water
10MW09	0305L463-006	Water
10MW19	0305L463-007	Water
10TB03052103	0305L463-008	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/01/03 exhibited low mean RRF values for 2-butanone and 2-hexanone of 0.016 and 0.048, respectively. Both compounds have been rejected (R) in all samples.

Continuing Calibration - The continuing calibration analyzed on 06/02/03 exhibited a high %D value for bromomethane of 37.1% and low RRF values for 2-butanone and 2-hexanone of 0.015 and 0.041, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

Surrogates - Samples 10MW20, 10MW17 and 10MW09 exhibited high surrogate recoveries for 1,2-dichloroethane-d_4 of 144%, 152% and 155%, respectively. Positive results have been qualified (J) in all three samples.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample VBLKTJ exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK110-MB1 (06/02/03) exhibited xylene (total) contamination at 0.1 ug/L, however, all associated results are non-detect and no qualifications were required.

Method blank 03LVK111-MB1 was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB03052103 exhibited methylene chloride and toluene contamination at 9 ug/L and 0.1 ug/L, respectively. Toluene has been qualified (B) in samples 10MW20 and 10MW09. All other associated results are non-detect and no further qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations and all laboratory artifacts were crossed out and rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the surrogate, field blank and TICs sections of this report with the exception of two analytes rejected in all samples due to the initial calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060110

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.3	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	~~J~~ B
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060110

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	3	J

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060110

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.348	30	J
2.	UNKNOWN	13.615	20	J
3.	ALKANE	14.601	8	J
4.	ALKANE	15.054	50	J
5.	ALKANE	15.646	200	J
6.	ALKANE	17.460	100	J
7.	ALKANE	17.647	200	J
8.	UNKNOWN	17.923	10	J
9.	UNKNOWN	18.150	20	J
10.	CYCLOALKANE	18.781	9	J
11.	UNKNOWN	19.609	8	J
12.	UNKNOWN	20.604	5	J
13.	C4-ALKYLBENZENE	23.542	8	J
14.	C4-ALKYLBENZENE	24.103	9	J
15.	C4-ALKYLBENZENE	24.241	10	J
16.	C4-ALKENYLBENZENE	24.409	20	J
17.	UNKNOWN	24.586	9	J
18.	AROMATIC	24.764	10	J
19.	C4-ALKYLBENZENE	24.902	8	J
20.	C4-ALKYLBENZENE	25.020	10	J
21.	C4-ALKYLBENZENE	25.858	20	J
22.	AROMATIC	26.489	8	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060111

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.4	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.2	~~J~~ J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060111

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	10	J

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060111

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.228	20	J
2.	UNKNOWN	11.342	100	J
3.	ALKANE	13.609	60	J
4.	ALKANE	14.595	10	J
5.	ALKANE	15.058	80	J
6.	ALKANE	15.650	300	J
7.	CYCLOALKANE	17.237	10	J
8.	ALKANE	17.463	100	J
9.	ALKANE	17.651	200	J
10.	ALKANE	17.917	20	J
11.	ALKANE	18.144	20	J
12.	CYCLOALKANE	18.508	7	J
13.	UNKNOWN	18.922	6	J
14.	UNKNOWN	19.612	9	J
15.	UNKNOWN	20.618	6	J
16.	CYCLOALKANE	20.982	7	J
17.	AROMATIC	23.654	20	J
18.	C4-ALKENYLBENZENE	24.393	10	J
19.	C4-ALKENYLBENZENE	24.492	20	J
20.	AROMATIC	24.768	10	J
21.	C4-ALKYLBENZENE	24.906	10	J
22.	AROMATIC	25.862	20	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060207

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	0.2	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.4	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.8	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060207

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060207

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 127004	2-PROPANOL, 1-CHLORO-	18.608	2	~~NJ~~ J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060113

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.2	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.7	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060113

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060113

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060114

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	0.2	J
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.2	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.3	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060114

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060114

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.332	2	~~J~~

08/26/03

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060115

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.5	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	~~J~~ B
108-90-7	Chlorobenzene	0.3	~~J~~ J
100-41-4	Ethylbenzene	0.2	~~J~~ J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060115

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	15	J

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08/26/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060115

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 25

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.134	100	J
2.	UNKNOWN	10.234	20	J
3.	ALKANE	11.348	100	J
4.	ALKANE	13.605	40	J
5.	ALKANE	14.600	9	J
6.	ALKANE	15.064	50	J
7.	UNKNOWN	15.320	10	J
8.	ALKANE	15.645	200	J
9.	CYCLOALKANE	16.878	70	J
10.	ALKANE	17.459	80	J
11.	ALKANE	17.646	100	J
12.	ALKANE	17.913	8	J
13.	ALKANE	18.149	8	J
14.	CYCLOALKANE	18.277	7	J
15.	CYCLOALKANE	18.918	6	J
16.	UNKNOWN	19.401	5	J
17.	CYCLOALKANE	19.549	9	J
18.	C3-ALKYLBENZENE	21.550	20	J
19.	C3-ALKYLBENZENE	22.062	30	J
20.	C4-ALKYLBENZENE	24.251	10	J
21.	AROMATIC	24.389	10	J
22.	C4-ALKENYLBENZENE	24.487	20	J
23.	AROMATIC	24.773	10	J
24.	C4-ALKYLBENZENE	24.911	10	J
25.	C4-ALKENYLBENZENE	25.848	20	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060116

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.2	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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08/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060116

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	

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08/26/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060116

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 25

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.144	5	J
2.	UNKNOWN	10.233	7	J
3.	ALKANE	11.347	20	J
4.	UNKNOWN	12.008	20	J
5.	ALKANE	13.614	10	J
6.	ALKANE	15.063	30	J
7.	ALKANE	15.655	60	J
8.	CYCLOALKANE	16.828	20	J
9.	CYCLOALKANE	17.242	6	J
10.	ALKANE	17.459	20	J
11.	ALKANE	17.646	30	J
12.	UNKNOWN	18.277	5	J
13.	CYCLOALKANE	18.533	7	J
14.	UNKNOWN	18.937	10	J
15.	C4-ALKYLBENZENE	22.939	20	J
16.	C3-ALKENYLBENZENE	23.659	30	J
17.	C4-ALKYLBENZENE	23.866	8	J
18.	C4-ALKENYLBENZENE	24.388	30	J
19.	AROMATIC	24.773	10	J
20.	C4-ALKYLBENZENE	24.911	10	J
21.	AROMATIC	25.414	6	J
22.	AROMATIC	25.561	10	J
23.	AROMATIC	25.867	20	J
24.	AROMATIC	26.794	20	J
25.	AROMATIC	27.769	10	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB03052103

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060109

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	9	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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08/26/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB03052103

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060109

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/26/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB03052103

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L463-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060109

Level: (low/med) LOW Date Received: 05/21/03

% Moisture: not dec. _____ Date Analyzed: 06/02/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/26/03

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS & BROMOFORM, DIBROMOCHLOROMETHANE & CUMENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L566

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW27	0306L566-001	Water
10MW28	0306L566-002	Water
10TB07060303	0306L566-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/01/03 exhibited low mean RRF values for 2-butanone and 2-hexanone of 0.016 and 0.048, respectively. Both compounds have been rejected (R) in all samples.

Continuing Calibration - The continuing calibration analyzed on 06/09/03 exhibited a high %D value for bromomethane of 37.8% and low RRF values for 2-butanone and 2-hexanone of 0.016 and 0.040, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample VBLKUX exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK120-MB1 was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB07060303 exhibited methylene chloride and toluene contamination at 11 ug/L and 0.1 ug/L, respectively, however, all associated results are non-detect and no qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - TICs were not present in the samples.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid with the exception of two analytes rejected in both samples due to the initial calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060907

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	2	
75-34-3	1,1-Dichloroethane	0.5	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	3	
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.1	J
124-48-1	Dibromochloromethane	0.2	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.7	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060907

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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05/27/03a

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060907

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

05/27/03

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060906

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	0.4	J
75-34-3	1,1-Dichloroethane	0.5	J
540-59-0	1,2-Dichloroethene (total)	0.2	J
67-66-3	Chloroform	0.2	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	UR
71-55-6	1,1,1-Trichloroethane	0.9	J
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	
124-48-1	Dibromochloromethane	0.3	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.3	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	UR
127-18-4	Tetrachloroethene	5	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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05/27/03

1B

VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060906

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/27/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060906

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

05127103<

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB07060303

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060905

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	11	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	UR
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	UR
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB07060303

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060905

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/27/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB07060303

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L566-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060905

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS & BROMOFORM, DIBROMOCHLOROMETHANE & CUMENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L570

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW25	0306L570-001	Water
10MW24	0306L570-002	Water
10MW24 MS	0306L570-002 MS	Water
10MW24 MSD	0306L570-002 MSD	Water
10TB07060403	0306L570-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/01/03 exhibited low mean RRF values for 2-butanone and 2-hexanone of 0.016 and 0.048, respectively. Both compounds have been rejected (R) in all samples.

Continuing Calibration - The continuing calibration analyzed on 06/09/03 exhibited a high %D value for bromomethane of 37.8% and low RRF values for 2-butanone and 2-hexanone of 0.016 and 0.040, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

The continuing calibration analyzed on 06/10/03 exhibited a high %D value for bromomethane of 49.0% and low RRF values for 2-butanone and 2-hexanone of 0.014 and 0.040, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

Surrogates - Sample 10MW24 exhibited a high recovery for surrogate compound 1,2-dichloroethane-d4 of 148%. Positive results have been qualified (J) in this sample.

MS/MSD - MS/MSD sample 10MW24 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS samples VBLKUW and VBLKUX exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK120-MB1 was free of contamination. No qualifications were required.

Method blank 03LVK121-MB1 exhibited methylene chloride contamination at 1 ug/L, however, all associated results are non-detect and no qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB07060403 exhibited chloroform, dibromochloromethane and bromoform contamination at 2 ug/L, 0.2 ug/L and 0.4 ug/L, respectively. Dibromochloromethane has been qualified (B) in sample 10MW25. Bromoform has been qualified (B) in samples 10MW25 and 10MW24. All other associated results are non-detect and no further qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations and all "known" TICs were qualified (NJ).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the surrogate, field blank and TICs sections of this report with the exception of two analytes rejected in both samples due to the initial calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061005

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1:00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	
540-59-0	1,2-Dichloroethene (total)	1	J
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.4	J
124-48-1	Dibromochloromethane	0.3	~~J~~ B
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.6	~~J~~ B
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	0.4	J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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08/27/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061005

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/27/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061005

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 16

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.214	9	~~J~~
2. 354234	ETHANE, 1,2-DICHLORO-1,1,2-T	10.146	1	~~NJ~~
3.	ALKANE	11.418	5	~~J~~
4.	ALKANE	12.078	3	~~J~~
5.	ALKANE	13.685	2	~~J~~
6.	ALKANE	15.114	6	~~J~~
7.	ALKANE	15.716	20	~~J~~
8.	CYCLOALKANE	16.948	6	~~J~~
9.	ALKANE	17.519	10	~~J~~
10.	ALKANE	17.697	20	~~J~~
11.	ALKANE	18.200	2	~~J~~
12.	CYCLOALKANE	18.348	1	~~J~~
13.	CYCLOALKANE	18.978	1	~~J~~
14.	CYCLOALKANE	20.654	1	~~J~~
15.	UNKNOWN	21.374	1	~~J~~
16.	C4-ALKENYLBENZENE	24.558	2	~~J~~

08/27/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060914

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	0.7	~~J~~ J
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	10	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.6	~~J~~ B
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	36	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	21	J
106-93-4	1,2-Dibromoethane	1	U

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08/24/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060914

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	12	J

FORM 1 V-2 1/87 Rev.

08/27/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060914

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 22

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.210	200	J
2.	ALKANE	11.433	100	J
3.	ALKANE	12.064	50	J
4.	ALKANE	13.680	20	J
5.	CYCLOALKANE	13.838	100	J
6. 110827	CYCLOHEXANE	15.080	100	~~NJ~~ NJ
7.	ALKANE	15.287	40	J
8.	ALKANE	15.711	200	J
9.	CYCLOALKANE	16.933	200	J
10.	CYCLOALKANE	17.199	20	J
11.	ALKANE	17.515	60	J
12.	ALKANE	17.702	100	J
13.	UNKNOWN	17.978	10	J
14.	CYCLOALKANE	19.595	20	J
15.	C3-ALKYLBENZENE	22.108	4	J
16.	C3-ALKYLBENZENE	22.305	6	J
17.	C3-ALKYLBENZENE	22.798	10	J
18.	C3-ALKYLBENZENE	23.715	9	J
19.	C4-ALKYLBENZENE	24.306	6	J
20.	AROMATIC	24.553	8	J
21.	C4-ALKYLBENZENE	25.884	8	J
22.	AROMATIC	26.298	4	J

08/27/03

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB07060403

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060913

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	2	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.2	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.4	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/21/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB07060403

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060913

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08/27/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB07060403

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L570-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k060913

Level: (low/med) LOW Date Received: 06/04/03

% Moisture: not dec. _____ Date Analyzed: 06/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/22/03

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS & BROMOFORM, DIBROMOCHLOROMETHANE & CUMENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L586

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW04	0306L586-001	Water
10MW26	0306L586-002	Water
10TB08060503	0306L586-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/01/03 exhibited low mean RRF values for 2-butanone and 2-hexanone of 0.016 and 0.048, respectively. Both compounds have been rejected (R) in all samples.

Continuing Calibration - The continuing calibration analyzed on 06/10/03 exhibited a high %D value for bromomethane of 49.0% and low RRF values for 2-butanone and 2-hexanone of 0.014 and 0.040, respectively. However, bromomethane is non-detect in all associated samples and 2-butanone and 2-hexanone have already been rejected in all samples and no further qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample VBLKUW exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK121-MB1 exhibited methylene chloride contamination at 1 ug/L. Methylene chloride has been qualified (B) in samples 10MW26 and 10TB08060503.

Trip, Field, Equipment Blank - Trip blank 10TB08060503 exhibited chloroform and toluene contamination at 1 ug/L and 0.1 ug/L, respectively. Chloroform has been qualified (B) in sample 10MW26. All other associated results are non-detect and no further qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank, field blank and TICs sections of this report with the exception of two analytes rejected in both samples due to the initial calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061008

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.2	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.4	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

FORM 1 V-1 1/87 Rev.

08/28/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061008

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08128163 2

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061008

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

68/28/03

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061007

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	0.2	~~JB~~ B
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	0.5	~~J~~ B
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.1	J
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	0.2	J
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

FORM 1 V-1 1/87 Rev.

08128L034

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061007

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08128634

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061007

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/28/03

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB08060503

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061006

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	0.4	~~JB~~ B
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.1	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

FORM 1 V-1 1/87 Rev.

08/28/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB08060503

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061006

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08/28/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB08060503

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0306L586-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k061006

Level: (low/med) LOW Date Received: 06/06/03

% Moisture: not dec. _____ Date Analyzed: 06/10/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	9.791	2	~~J~~ J

08/28/03

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L438

Client: EA Engineering, Science & Technology, Inc. Date: August 25, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW12	0305L438-001	Water
10MW14	0305L438-002	Water
10TB01051903	0305L438-003	Water
10MW16	0305L438-004	Water
10MW01	0305L438-005	Water
10MW07	0305L438-006	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Note: One of the coolers was received at 10.4°C. No action was taken on this basis.

Initial Calibration - The initial calibration analyzed on 06/02/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/02/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample PBLKVCLEM521-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - Method blank 03LEM521-MB1 (06/02/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB01051903 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-001

Sample wt/vol: 38.4 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/25/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-002

Sample wt/vol: 38.2 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec.. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/25/03 cc

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10TB01051903

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-003

Sample wt/vol: 38.2 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08125203a

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-004

Sample wt/vol: 38.1 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/25/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-005

Sample wt/vol: 38.4 (g/mL) ML

Lab File ID: BLKO8330.01

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/25/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-006

Sample wt/vol: 38.7 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

081250

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L457

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW15	0305L457-001	Water
10MW15 MS	0305L457-001 MS	Water
10MW15 MSD	0305L457-001 MSD	Water
10MW2R	0305L457-002	Water
10TB02052003	0305L457-003	Water
10FB01052003	0305L457-004	Water
10RB01052003	0305L457-005	Water
10MW06	0305L457-006	Water
10MW18	0305L457-007	Water
10MW08	0305L457-008	Water
10MW21	0305L457-009	Water
10DUP01	0305L457-010	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/02/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/02/03 exhibited acceptable %D values. No qualifications were required.

The continuing calibration analyzed on 06/03/03 exhibited a high %D value for EDB of 22.2%, however, all associated results are non-detect and no qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10MW15 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS sample PBLKVDLEM522-MB1 exhibited acceptable %R values. No qualifications were required.

Method Blank - Method blank 03LEM522-MB1 (06/03/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB02052003 was free of contamination. No qualifications were required.

Field blank 10FB01052003 was free of contamination. No qualifications were required.

Rinsate blank 10RB01052003 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized below. No qualifications were required.

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
EDB	ND	ND	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-001

Sample wt/vol: 37.9 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/26/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-002

Sample wt/vol: 38.1 (g/mL) ML

Lab File ID: BLKO8330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

68/264Dn

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10TB02052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-003

Sample wt/vol: 38.3 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/20/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-004

Sample wt/vol: 38.0 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/26/02

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-005

Sample wt/vol: 38.5 (g/mL) ML

Lab File ID: BLKO8330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/26/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 38.5 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/26/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-007

Sample wt/vol: 38.0 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/26/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-008

Sample wt/vol: 38.0 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/26/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-009

Sample wt/vol: 38.1 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/26/03

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 38.0 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/26/03

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L463

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW20	0305L463-001	Water
10MW17	0305L463-002	Water
10MW10	0305L463-003	Water
10MW03	0305L463-004	Water
10MW05	0305L463-005	Water
10MW09	0305L463-006	Water
10MW19	0305L463-007	Water
10TB03052103	0305L463-008	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/02/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/02/03 and 06/03/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample PBLKVCLEM521-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - Method blank 03LEM521-MB1 (06/03/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB03052103 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-001

Sample wt/vol: 38.6 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/27/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-002

Sample wt/vol: 38.3 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/27/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-003

Sample wt/vol: 38.1 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/02/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/27/03

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-004

Sample wt/vol: 38.4 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08127603

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-005

Sample wt/vol: 38.3 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08127603

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-006

Sample wt/vol: 37.9 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08127034

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-007

Sample wt/vol: 37.8 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

FORM 1 PEST

12/88 Rev.

08/27/03L

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10TB03052103

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-008

Sample wt/vol: 38.3 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/02/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/03

GPC Cleanup: (Y/N) N pH: 1.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/27/03

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L566

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW27	0306L566-001	Water
10MW28	0306L566-002	Water
10TB07060303	0306L566-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/16/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/16/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample PBLKWFLEM523-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - Method blank 03LEM523-MB1 (06/16/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB07060303 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-001

Sample wt/vol: 37.8 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/16/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

FORM 1 PEST

12/88 Rev.

08/27/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-002

Sample wt/vol: 37.4 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/16/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

FORM 1 PEST 12/88 Rev.

08/27/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10TB07060303

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-003

Sample wt/vol: 38.2 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/16/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/27/03

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L570

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW25	0306L570-001	Water
10MW24	0306L570-002	Water
10MW24 MS	0306L570-002 MS	Water
10MW24 MSD	0306L570-002 MSD	Water
10TB07060403	0306L570-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/16/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/16/03 and 06/17/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10MW24 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS/LCSD sample PBLKWFLEM523-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - Method blank 03LEM523-MB1 (06/16/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB07060403 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-001

Sample wt/vol: 38.3 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/16/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

08/28/03
IL

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-002

Sample wt/vol: 37.4 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. ____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/16/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

FORM 1 PEST

12/88 Rev.

08/28/03 u

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10TB07060403

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-003

Sample wt/vol: 38.0 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/17/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST 12/88 Rev.

05/28/03

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L586

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW04	0306L586-001	Water
10MW26	0306L586-002	Water
10TB08060503	0306L586-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/16/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/16/03 and 06/17/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample PBLKWFLEM523-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - Method blank 03LEM523-MB1 (06/16/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB08060503 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-001

Sample wt/vol: 38.2 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. ____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/17/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.018	U

FORM 1 PEST

12/88 Rev.

08/28/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-002

Sample wt/vol: 37.7 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/17/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

FORM 1 PEST 12/88 Rev.

08/28/03

1D
PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10TB08060503

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-003

Sample wt/vol: 37.3 (g/mL) ML

Lab File ID: BLKOOPPB.02

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____ dec.

Date Extracted: 06/16/03

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/17/03

GPC Cleanup: (Y/N) N pH: 2.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

FORM 1 PEST 12/88 Rev.

08/28/03

ENVIRONMENTAL
Data Services, Inc.

METHANE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L438

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW12	0305L438-001	Water
10MW14	0305L438-002	Water
10TB01051903	0305L438-003	Water
10MW16	0305L438-004	Water
10MW01	0305L438-005	Water
10MW07	0305L438-006	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Note: One of the coolers was received at 10.4°C. No action was taken on this basis.

Initial Calibration - The initial calibration analyzed on 02/18/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/30/03 and 06/02/03 exhibited acceptable %D values. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample TBLKJHLVE602-MB1 exhibited a high LCSD %R for methane of 151% and a high RPD of 40. Methane has been qualified (K) in all samples except 10TB01051903.

Laboratory Duplicates - Laboratory duplicate samples were not analyzed from this data package.

Method Blank - Method blanks 03LVE530-MB1 (05/30/03) and 03LVE602-MB1 (06/02/03) were free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 11TB01051903 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples were valid within the constraints as identified with the data quality flags as presented in the LCS section of this report. Ten percent of calculations for the samples in this data package were verified for the level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, in conjunction with method specific criteria were used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-001

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. ____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 10.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	5.5	K

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GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-002

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. ____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 10.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	1.2	K

12/88 Rev.

08/26/03
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CLIENT SAMPLE NO.

GC VOLATILES SHEET

10TB01051903

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-003

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. ____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

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CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-004

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. ____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	11	K

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CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-005

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. ____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	18	K

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08/20/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-006

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 30.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	6.4	K

12/88 Rev.

08/26/03

ENVIRONMENTAL
Data Services, Inc.

METHANE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L457

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW15	0305L457-001	Water
10MW15 MS	0305L457-001 MS	Water
10MW15 MSD	0305L457-001 MSD	Water
10MW2R	0305L457-002	Water
10TB02052003	0305L457-003	Water
10FB01052003	0305L457-004	Water
10RB01052003	0305L457-005	Water
10MW06	0305L457-006	Water
10MW18	0305L457-007	Water
10MW08	0305L457-008	Water
10MW21	0305L457-009	Water
10DUP01	0305L457-010	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 02/18/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/30/03 and 06/02/03 exhibited acceptable %D values. No qualifications were required.

MS/MSD - MS/MSD sample 10MW15 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS sample TBLKJTLVE530-MB1 exhibited acceptable %R values. No qualifications were required.

LCS/LCSD sample TBLKJILWE530-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

LCS/LCSD sample TBLKJHLVE602-MB1 exhibited a high LCSD %R for methane of 151% and a high RPD of 40. Methane has been qualified (K) in samples 10MW2R, 10MW06, 10MW18, 10MW08 and 10DUP01.

Laboratory Duplicates - Laboratory duplicate samples were not analyzed from this data package.

Method Blank - Method blanks 03LVE530-MB1 (05/30/03), 03LWE530-MB1 (05/30/03) and 03LVE602-MB1 (06/02/03) were free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB02052003 was free of contamination. No qualifications were required.

Field blank 10FB01052003 was free of contamination. No qualifications were required.

Rinsate blank 10RB01052003 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized below. No qualifications were required.

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
Methane	1.7	21	170%

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples were valid within the constraints as identified with the data quality flags as presented in the LCS section of this report. Ten percent of calculations for the samples in this data package were verified for the level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, in conjunction with method specific criteria were used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-001

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

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05/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-002

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	1.7	K

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08/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10TB02052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-003

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND			
74-82-8	Methane	0.0050	U	

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08/20/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-004

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND			
74-82-8	Methane	0.0050	U	

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08126B2

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-005

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	4.8	K

12/88 Rev.

08/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-007

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	1.4	K

12/88 Rev.

05/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-008

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND			
74-82-8	Methane	1.6	K	

12/88 Rev.

08/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-009

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

05/26/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	21	K

12/88 Rev.

08/26/03

ENVIRONMENTAL
Data Services, Inc.

METHANE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L463

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW20	0305L463-001	Water
10MW17	0305L463-002	Water
10MW10	0305L463-003	Water
10MW03	0305L463-004	Water
10MW05	0305L463-005	Water
10MW09	0305L463-006	Water
10MW19	0305L463-007	Water
10TB03052103	0305L463-008	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 02/18/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/30/03 and 06/02/03 exhibited acceptable %D values. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample TBLKJJLVE530-MB1 exhibited acceptable %R values. No qualifications were required.

LCS/LCSD sample TBLKJILWE530-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

LCS/LCSD sample TBLKJHLVE602-MB1 exhibited a high LCSD %R for methane of 151% and a high RPD of 40. Methane has been qualified (K) in samples 10MW20, 10MW17 and 10MW09.

Laboratory Duplicates - Laboratory duplicate samples were not analyzed from this data package.

Method Blank - Method blanks 03LVE530-MB1 (05/30/03), 03LWE530-MB1 (05/30/03) and 03LVE602-MB1 (06/02/03) were free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB03052103 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples were valid within the constraints as identified with the data quality flags as presented in the LCS section of this report. Ten percent of calculations for the samples in this data package were verified for the level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, in conjunction with method specific criteria were used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-001

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 30.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	19	K

12/88 Rev.

01/27/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-002

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	23	K

12/88 Rev.

08127034

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-003

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/27/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-004

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND			
74-82-8	Methane	0.0050	U	

12/88 Rev.

08/27/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-005

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.030	

12/88 Rev.

08/27/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-006

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	15	K

12/88 Rev.

0827163L

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-007

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.62	

12/88 Rev.

08127634

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10TB03052103

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-008

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/02/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

GS/27/03

ENVIRONMENTAL
Data Services, Inc.

METHANE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L566

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW27	0306L566-001	Water
10MW28	0306L566-002	Water
10TB07060303	0306L566-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 02/18/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/11/03 exhibited acceptable %D values. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample TBLKJVLVE611-MB1 exhibited acceptable %R values. No qualifications were required.

Laboratory Duplicates - Laboratory duplicate samples were not analyzed from this data package.

Method Blank - Method blank 03LVE611-MB1 (06/11/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB07060303 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples were valid. Ten percent of calculations for the samples in this data package were verified for the level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, in conjunction with method specific criteria were used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-001

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	
74-82-8	Methane	0.0050	U

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GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-002

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/27/03 cc

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10TB07060303

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-003

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/27/03a

ENVIRONMENTAL
Data Services, Inc.

METHANE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L570

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW25	0306L570-001	Water
10MW24	0306L570-002	Water
10MW24 MS	0306L570-002 MS	Water
10MW24 MSD	0306L570-002 MSD	Water
10TB07060403	0306L570-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 02/18/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/11/03 exhibited acceptable %D values. No qualifications were required.

MS/MSD - MS/MSD sample 10MW24 exhibited recoveries greater than 4X the spike amount. No qualifications were required.

Laboratory Control Sample - LCS sample TBLKJVLVE611-MB1 exhibited acceptable %R values. No qualifications were required.

Laboratory Duplicates - Laboratory duplicate samples were not analyzed from this data package.

Method Blank - Method blank 03LVE611-MB1 (06/11/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB07060403 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Sample 10MW24 was analyzed at a 50X dilution due to the high concentration in the sample. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples were valid. Ten percent of calculations for the samples in this data package were verified for the level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, in conjunction with method specific criteria were used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-001

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.088	

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GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-002

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 50.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	4.8	

12/88 Rev.

08/28/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10TB07060403

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-003

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/28/03

ENVIRONMENTAL
Data Services, Inc.

METHANE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L586

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW04	0306L586-001	Water
10MW26	0306L586-002	Water
10TB08060503	0306L586-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 02/18/03 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/11/03 exhibited acceptable %D values. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample TBLKJWLWE611-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Duplicates - Laboratory duplicate samples were not analyzed from this data package.

Method Blank - Method blank 03LWE611-MB1 (06/11/03) was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB08060503 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples were valid. Ten percent of calculations for the samples in this data package were verified for the level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, in conjunction with method specific criteria were used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-001

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/28/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-002

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/28/03

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10TB08060503

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-003

Sample wt/vol: 0.300 (g/mL) ML

Lab File ID: BLKLACHJ

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____

Date Analyzed: 06/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) MG/L

CAS NO.	COMPOUND		
74-82-8	Methane	0.0050	U

12/88 Rev.

08/28/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L438

Client: EA Engineering, Science & Technology, Inc. Date: August 25, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW12	0305L438-001	Water
10MW14	0305L438-002	Water
10MW16	0305L438-004	Water
10MW01	0305L438-005	Water
10MW07	0305L438-006	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

Note: The samples were received at 10.4°C. No action was taken on this basis.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 06/05/03 and 06/08/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/06/03 and 06/08/03 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - Samples 10MW14 and 10MW01 exhibited high recoveries for surrogate compound phenol-d5, however, no qualifications are required for only one surrogate outside of QC criteria.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample SBLKUCLE0605-MB1 exhibited high %R values for 4-nitrophenol and 2,4-dinitrotoluene of 87%/106% and ok/106%, respectively, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0605-MB1 (05/21/03) exhibited di-n-butylphthalate and bis(2-ethylhexyl)phthalate contamination at 0.7 ug/L and 0.7 ug/L, respectively. Bis(2-ethylhexyl)phthalate has been qualified (B) in samples 10MW14 and 10MW01. Di-n-butylphthalate is non-detect in all associated samples and no further qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations, all laboratory artifacts were crossed out and rejected (R), and TICs present in the blanks as well as in the samples were qualified (B).

Compound Quantitation - Sample 10MW12 was analyzed at a 3X dilution due to high concentrations of target analytes. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TICs sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-001

Sample wt/vol: 900 (g/mL) ML

Lab File ID: A060813

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 3.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	33	U
111-44-4	bis(2-Chloroethyl)ether	33	U
95-57-8	2-Chlorophenol	33	U
541-73-1	1,3-Dichlorobenzene	33	U
106-46-7	1,4-Dichlorobenzene	33	U
95-50-1	1,2-Dichlorobenzene	33	U
95-48-7	2-Methylphenol	33	U
108-60-1	2,2'-oxybis(1-Chloropropane)	33	U
106-44-5	4-Methylphenol	33	U
621-64-7	N-Nitroso-di-n-propylamine	33	U
67-72-1	Hexachloroethane	33	U
98-95-3	Nitrobenzene	33	U
78-59-1	Isophorone	33	U
88-75-5	2-Nitrophenol	33	U
105-67-9	2,4-Dimethylphenol	33	U
111-91-1	bis(2-Chloroethoxy)methane	33	U
120-83-2	2,4-Dichlorophenol	33	U
120-82-1	1,2,4-Trichlorobenzene	33	U
91-20-3	Naphthalene	33	U
106-47-8	4-Chloroaniline	33	U
87-68-3	Hexachlorobutadiene	33	U
59-50-7	4-Chloro-3-methylphenol	33	U
91-57-6	2-Methylnaphthalene	33	U
77-47-4	Hexachlorocyclopentadiene	33	U
88-06-2	2,4,6-Trichlorophenol	33	U
95-95-4	2,4,5-Trichlorophenol	83	U
91-58-7	2-Chloronaphthalene	33	U
88-74-4	2-Nitroaniline	83	U
131-11-3	Dimethylphthalate	33	U
208-96-8	Acenaphthylene	33	U
606-20-2	2,6-Dinitrotoluene	33	U
99-09-2	3-Nitroaniline	83	U
83-32-9	Acenaphthene	33	U

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-001

Sample wt/vol: 900 (g/mL) ML

Lab File ID: A060813

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 3.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	83	U
100-02-7	4-Nitrophenol	83	U
132-64-9	Dibenzofuran	33	U
121-14-2	2,4-Dinitrotoluene	33	U
84-66-2	Diethylphthalate	33	U
7005-72-3	4-Chlorophenyl-phenylether	33	U
86-73-7	Fluorene	33	U
100-01-6	4-Nitroaniline	83	U
534-52-1	4,6-Dinitro-2-methylphenol	83	U
86-30-6	N-Nitrosodiphenylamine (1)	33	U
101-55-3	4-Bromophenyl-phenylether	33	U
118-74-1	Hexachlorobenzene	33	U
87-86-5	Pentachlorophenol	83	U
85-01-8	Phenanthrene	27	J
120-12-7	Anthracene	33	U
86-74-8	Carbazole	33	U
84-74-2	Di-n-butylphthalate	33	U
206-44-0	Fluoranthene	31	J
129-00-0	Pyrene	25	J
85-68-7	Butylbenzylphthalate	33	U
91-94-1	3,3'-Dichlorobenzidine	33	U
56-55-3	Benzo(a)anthracene	33	U
218-01-9	Chrysene	33	U
117-81-7	bis(2-Ethylhexyl)phthalate	110	~~B~~
117-84-0	Di-n-octyl phthalate	33	U
205-99-2	Benzo(b)fluoranthene	33	U
207-08-9	Benzo(k)fluoranthene	33	U
50-32-8	Benzo(a)pyrene	33	U
193-39-5	Indeno(1,2,3-cd)pyrene	33	U
53-70-3	Dibenz(a,h)anthracene	33	U
191-24-2	Benzo(g,h,i)perylene	33	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-001

Sample wt/vol: 900 (g/mL) ML

Lab File ID: A060813

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 3.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.003	20	J
2.	ALKANE	4.491	10	J
3.	ALKANE	4.643	20	J
4.	UNKNOWN	5.631	30	J
5.	UNKNOWN	8.039	10	J
6.	UNKNOWN	8.369	10	J
7.	UNKNOWN	8.917	10	J
8.	UNKNOWN	9.988	10	J
9.	UNKNOWN	10.286	10	J
10.	DIETHYLBENZENE	10.671	9	J
11.	UNKNOWN	11.247	50	J
12.	UNKNOWN	11.293	50	J
13.	UNKNOWN	11.353	30	J
14.	UNKNOWN	12.082	30	J
15.	UNKNOWN	12.215	10	J
16.	UNKNOWN	12.851	100	J
17.	ALKANE	13.111	10	J
18.	UNKNOWN	13.509	10	J
19.	ALKANE	13.988	20	J
20.	ALKANE	15.469	10	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-002

Sample wt/vol: 920 (g/mL) ML

Lab File ID: D060605

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	1	J
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	27	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	27	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	27	U
83-32-9	Acenaphthene	11	U

08/25/03
66

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-002

Sample wt/vol: 920 (g/mL) ML

Lab File ID: D060605

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	27	U
100-02-7	4-Nitrophenol	27	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	27	U
534-52-1	4,6-Dinitro-2-methylphenol	27	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	27	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	~~JB~~ B
117-84-0	Di-n-octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

RFW (v3.3)

08/25/03

67

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-002

Sample wt/vol: 920 (g/mL) ML

Lab File ID: D060605

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	2.296	7	J
2.	UNKNOWN	4.765	8	J
3.	UNKNOWN	6.035	8	J
4.	DIETHYLBENZENE	7.652	10	J
5.	UNKNOWN	7.817	20	J
6.	UNKNOWN	8.469	9	J
7.	UNKNOWN	8.556	7	J
8.	UNKNOWN	8.617	8	J
9.	C4-ALKYBENZENE	8.773	10	J
10.	UNKNOWN	9.208	7	J
11.	UNKNOWN	9.799	7	J
12.	UNKNOWN	10.391	8	J
13.	ALKANE	10.956	10	J
14.	UNKNOWN	11.486	7	J
15.	UNKNOWN	11.538	7	J
16.	ALKANE	11.599	8	J
17.	ALKANE	12.390	10	J
18.	DIMETHYLNAPHTHALENE	13.294	7	J
19.	ALKANE	13.494	8	J
20.	PHTHALATE	28.405	9	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-004

Sample wt/vol: 910 (g/mL) ML

Lab File ID: D060606

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	75	
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	51	
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	27	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	27	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	27	U
83-32-9	Acenaphthene	11	U

08/25/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-004

Sample wt/vol: 910 (g/mL) ML

Lab File ID: D060606

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	27	U
100-02-7	4-Nitrophenol	27	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	27	U
534-52-1	4,6-Dinitro-2-methylphenol	27	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	27	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	3	J
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

08/25/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-004

Sample wt/vol: 910 (g/mL) ML

Lab File ID: D060606

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.132	8	~~J~~ J
2.	UNKNOWN	3.471	5	~~J~~
3.	C3-ALKYLBENZENE	5.479	10	~~J~~
4. 103-65-1	PROPYLBENZENE	6.001	10	~~JN~~ NJ
5.	UNKNOWN	6.940	6	~~J~~ J
6.	UNKNOWN	7.235	7	~~J~~
7. 496-11-7	INDANE	7.488	30	~~JN~~ NJ
8.	UNKNOWN	8.035	90	~~J~~ J
9.	C4-ALKYLBENZENE	8.261	20	~~J~~
10.	UNKNOWN	8.618	20	~~J~~
11.	C4-ALKYLBENZENE	8.774	20	~~J~~
12.	UNKNOWN	9.183	8	~~J~~
13.	UNKNOWN	9.261	7	~~J~~
14.	C4-ALKYLBENZENE	9.374	20	~~J~~
15.	UNKNOWN	9.574	20	~~J~~
16. 90-12-0	1-METHYLNAPHTHALENE	11.843	10	~~JN~~ NJ
17.	DIMETHYLBENZOIC ACUD	12.252	5	~~J~~ J
18.	UNKNOWN	14.356	7	~~J~~
19.	UNKNOWN	14.991	6	~~J~~
20.	UNKNOWN	16.339	6	~~J~~

08/25/03

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-005

Sample wt/vol: 940 (g/mL) ML

Lab File ID: D060607

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	27	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	27	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	27	U
83-32-9	Acenaphthene	11	U

08/25/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-005

Sample wt/vol: 940 (g/mL) ML

Lab File ID: D060607

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	27	U
100-02-7	4-Nitrophenol	27	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	27	U
534-52-1	4,6-Dinitro-2-methylphenol	27	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	27	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.8	~~JB~~ B
117-84-0	Di-n-octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

08/25/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-005

Sample wt/vol: 940 (g/mL) ML

Lab File ID: D060607

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	2.196	10	~~J~~ J
2.	ALKANE	2.292	20	~~J~~
3.	UNKNOWN	3.135	40	~~J~~
4.	UNKNOWN	6.943	9	~~J~~
5.	UNKNOWN	7.308	10	~~J~~
6.	UNKNOWN	8.291	300	~~J~~
7.	UNKNOWN	8.482	10	~~J~~
8.	UNKNOWN	8.647	20	~~J~~
9.	UNKNOWN	8.812	80	~~J~~
10.	UNKNOWN	8.847	20	~~J~~
11.	UNKNOWN	8.978	90	~~J~~
12.	UNKNOWN	9.264	20	~~J~~
13.	UNKNOWN	9.404	10	~~J~~
14.	UNKNOWN	10.360	20	~~J~~
15.	UNKNOWN	11.064	9	~~J~~
16.	UNKNOWN	12.734	7	~~J~~
17.	UNKNOWN	12.881	7	~~J~~
18.	UNKNOWN	13.542	10	~~J~~
19.	UNKNOWN	14.698	8	~~J~~
20.	UNKNOWN	17.585	7	~~J~~

08/25/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-006

Sample wt/vol: 920 (g/mL) ML

Lab File ID: D060608

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	27	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	27	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	27	U
83-32-9	Acenaphthene	11	U

08125413

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-006

Sample wt/vol: 920 (g/mL) ML

Lab File ID: D060608

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	27	U
100-02-7	4-Nitrophenol	27	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	27	U
534-52-1	4,6-Dinitro-2-methylphenol	27	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	27	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/25/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L438-006

Sample wt/vol: 920 (g/mL) ML

Lab File ID: D060608

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/21/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.948	3	~~J~~ J
2.	UNKNOWN	3.131	3	~~J~~
3.	UNKNOWN	3.461	6	~~J~~
4.	UNKNOWN	7.826	50	~~J~~
5.	UNKNOWN	8.391	8	~~J~~
6.	UNKNOWN	8.452	8	~~J~~
7.	UNKNOWN	8.982	4	~~J~~
8.	UNKNOWN	9.808	3	~~J~~
9.	ALKANE	10.112	3	~~J~~
10.	ALKANE	10.947	5	~~J~~
11.	UNKNOWN	11.825	4	~~J~~
12.	ALKANE	12.390	4	~~J~~
13.	UNKNOWN	12.912	2	~~J~~
14.	UNKNOWN	18.850	3	~~J~~ J

08/25/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L457

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW15	0305L457-001	Water
10MW15 MS	0305L457-001 MS	Water
10MW15 MSD	0305L457-001 MSD	Water
10MW2R	0305L457-002	Water
10FB01052003	0305L457-004	Water
10RB01052003	0305L457-005	Water
10MW06	0305L457-006	Water
10MW18	0305L457-007	Water
10MW08	0305L457-008	Water
10MW21	0305L457-009	Water
10DUP01	0305L457-010	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/08/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/08/03 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibration analyzed on 06/09/03 exhibited a high %D value for 2,4-dinitrophenol of 25.9%, however, all associated results are non-detect and no qualifications were required.

The continuing calibration analyzed on 06/10/03 exhibited high %D values for 2,4-dinitrophenol, 4-nitrophenol and indeno(1,2,3-cd)pyrene of 27.7%, 26.3% and 28.6%, however, all associated results are non-detect and no qualifications were required.

Surrogates - Sample 10MW18 exhibited a high recovery for surrogate compound 2,4,6-tribromophenol of 127%, however, no qualifications are required for only one surrogate outside of QC criteria.

Sample 10MW15 exhibited a low recovery for surrogate compound 2-fluorophenol of 8%. All acid compounds have been rejected (R) in this sample.

Sample 10MW2R exhibited high recoveries for acid surrogate phenol-d5 of 95% and base/neutral surrogate nitrobenzene-d5 of 116%, however, no qualifications are required for only one surrogate per fraction out side of QC criteria.

Sample 10DUP01 exhibited high recoveries for acid surrogates phenol-d5 and 2-fluorophenol of 96% and 103%, respectively, and base/neutral surrogate terphenyl-d14 of 226%. However, all acid compounds are non-detect and no qualifications are required for only one surrogate per fraction (base/neutral) outside of QC criteria.

MS/MSD - MS/MSD sample 10MW15 exhibited high MSD %R values for 4-chloro-3-methylphenol and 4-nitrophenol of 99% and 88%, respectively, however, both compounds are non-detect in this sample and no qualifications were required.

Laboratory Control Sample - LCS sample SBLKUFLE0616-MB1 exhibited a high %R value for 4-nitrophenol of 88%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - Sample 10MW2R exhibited low area counts for internal standards IS3 and IS4. All associated results have been qualified (UJ) in this sample.

Sample 10DUP01 exhibited a high area count for internal standard IS2, however, all associated compounds are non-detect and no qualifications were required.

Method Blank - Method blank 03LE0616-MB1 (05/23/03) was free of contamination. No qualifications were required.

Field, Equipment Blank - Field blank 10FB01052003 exhibited di-n-butylphthalate and bis(2-ethylhexyl)phthalate contamination at 2 ug/L and 0.7 ug/L, respectively. Di-n-butylphthalate has been qualified (B) in samples 10MW15, 10MW2R, 10MW06 and 10MW08. Bis(2-ethylhexyl)phthalate has been qualified (B) in samples 10MW15, 10MW06, 10MW18 and 10MW08.

Rinsate blank 10RB01052003 exhibited di-n-butylphthalate and bis(2-ethylhexyl)phthalate contamination at 0.8 ug/L and 0.6 ug/L, respectively, respectively, however, all associated results are non-detect or already qualified due to the field blank and no qualifications were required.

Field Duplicates - Field duplicate results are summarized below. The RPD was not evaluated since the duplicate sample was analyzed at a 10X dilution.

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
Bis(2-ethylhexyl)phthalate	13	190	NC
Pyrene	ND	74	NC

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations, all laboratory artifacts were crossed out and rejected (R), and TICs present in the blanks as well as in the samples were qualified (B).

Compound Quantitation - Sample 10DUP01 was analyzed at a 10X dilution due to high concentrations of target analytes. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the internal standard, field blank and TICs sections of this report with the exception of rejected results due to the severely low surrogate recovery in one sample. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060818

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	~~U~~ R
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	~~U~~ R
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	~~U~~ R
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	~~U~~ R
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	~~U~~ R
105-67-9	2,4-Dimethylphenol	10	~~U~~ R
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	~~U~~ R
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	~~U~~ R
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	~~U~~ R
95-95-4	2,4,5-Trichlorophenol	25	~~U~~ R
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060818

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	~~U~~ R
100-02-7	4-Nitrophenol	25	~~U~~ R
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	~~U~~ R
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	~~U~~ R
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.9	~~J~~ B
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.8	~~J~~ B
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060818

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060821

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	~~U~~ UJ
88-06-2	2,4,6-Trichlorophenol	10	~~U~~
95-95-4	2,4,5-Trichlorophenol	25	~~U~~
91-58-7	2-Chloronaphthalene	10	~~U~~
88-74-4	2-Nitroaniline	25	~~U~~
131-11-3	Dimethylphthalate	10	~~U~~
208-96-8	Acenaphthylene	10	~~U~~
606-20-2	2,6-Dinitrotoluene	10	~~U~~
99-09-2	3-Nitroaniline	25	~~U~~
83-32-9	Acenaphthene	10	~~U~~

08/26/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060821

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.8	J B
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	13	
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

68/26/03c

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060821

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.919	10	J
2.	UNKNOWN	9.065	10	J
3.	ALKANE	9.993	20	J
4.	UNKNOWN	10.590	30	J
5.	UNKNOWN	11.022	10	J
6.	UNKNOWN	11.248	10	J
7.	UNKNOWN	11.361	20	J
8.	ALKANE	11.594	30	J
9.	UNKNOWN	11.874	10	J
10.	UNKNOWN	12.107	20	J
11.	ALKANE	13.121	60	J
12.	UNKNOWN	13.248	10	J
13.	UNKNOWN	13.515	20	J
14.	CYCLOALKANE	13.729	10	J
15.	ALKANE	14.003	70	J
16.	ALKANE	14.659	10	J
17.	CYCLOALKANE	15.229	10	J
18.	ALKANE	15.483	50	J
19.	ALKANE	16.604	40	J
20.	UNKNOWN	16.731	10	J

08/2calm

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060822

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060822

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	2	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

G8/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060822

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	24.687	5	~~J~~ J

FORM 1 SV-TIC RFW (v3.3)

68126483c

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060823

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08261603

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060823

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.8	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.6	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

68/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060823

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060904

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060904

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1	~~J~~ B
206-44-0	Fluoranthene	9	J
129-00-0	Pyrene	7	J
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.6	~~J~~ B
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060904

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.990	20	J
2.	ALKANE	4.492	10	J
3.	ALKANE	4.644	20	J
4.	UNKNOWN KETONE	5.238	8	J
5.	UNKNOWN	8.044	10	J
6.	ALKANE	8.910	9	J
7.	ALKANE	9.982	9	J
8.	UNKNOWN	10.580	20	J
9.	UNKNOWN	11.350	40	J
10.	UNKNOWN	11.390	20	J
11.	UNKNOWN	11.583	20	J
12.	C4-ALKYLBENZENE	11.869	20	J
13.	C4-ALKYLBENZENE	11.949	30	J
14.	UNKNOWN	11.996	20	J
15.	UNKNOWN	12.102	9	J
16.	ALKANE	13.115	20	J
17.	UNKNOWN	13.716	10	J
18.	ALKANE	13.989	30	J
19.	ALKANE	15.473	20	J
20.	ALKANE	16.598	10	J

G8/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060905

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	1	J
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060905

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	JB
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/26/03

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060905

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 6

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.131	5	J
2.	UNKNOWN	11.187	3	J
3.	UNKNOWN	12.932	5	J
4.	UNKNOWN	13.276	9	J
5.	UNKNOWN	14.633	9	J
6.	UNKNOWN	14.984	2	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060906

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	3	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	5	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060906

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.9	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	JB
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

RFW (v3.3)

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060906

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	4.493	4	~~J~~ J
2.	UNKNOWN	4.645	6	~~J~~
3.	UNKNOWN	5.245	5	~~J~~ J
~~4.~~	~~SILOXANE~~	~~9.257~~	~~2~~	~~J~~ R
5.	UNKNOWN	10.348	3	~~J~~ J
6.	DIETHYLBENZENE	10.666	3	~~J~~
7.	DIETHYLBENZENE	10.917	2	~~J~~
8.	C4-ALKYLBENZENE	11.313	10	~~J~~
9.	UNKNOWN	11.737	3	~~J~~
10.	C4-ALKYLBENZENE	11.856	7	~~J~~
11.	C4-ALKYLBENZENE	12.531	20	~~J~~
12.	UNKNOWN	13.868	9	~~J~~
13.	UNKNOWN	14.629	5	~~J~~
14.	UNKNOWN	15.450	2	~~J~~
15.	DIMETHYLNAPHTHALENE	16.418	3	~~J~~ J
16.	UNKNOWN	16.531	3	~~J~~
17.	DIMETHYLNAPHTHALENE	16.643	2	~~J~~
18.	DIMETHYLNAPHTHALENE	16.697	3	~~J~~

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060907

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060907

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08126634

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060907

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	31.590	20	~~J~~ J

FORM 1 SV-TIC

RFW (v3.3)

08/26/03

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A061008

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/10/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	100	U
111-44-4	bis(2-Chloroethyl)ether	100	U
95-57-8	2-Chlorophenol	100	U
541-73-1	1,3-Dichlorobenzene	100	U
106-46-7	1,4-Dichlorobenzene	100	U
95-50-1	1,2-Dichlorobenzene	100	U
95-48-7	2-Methylphenol	100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	100	U
106-44-5	4-Methylphenol	100	U
621-64-7	N-Nitroso-di-n-propylamine	100	U
67-72-1	Hexachloroethane	100	U
98-95-3	Nitrobenzene	100	U
78-59-1	Isophorone	100	U
88-75-5	2-Nitrophenol	100	U
105-67-9	2,4-Dimethylphenol	100	U
111-91-1	bis(2-Chloroethoxy)methane	100	U
120-83-2	2,4-Dichlorophenol	100	U
120-82-1	1,2,4-Trichlorobenzene	100	U
91-20-3	Naphthalene	100	U
106-47-8	4-Chloroaniline	100	U
87-68-3	Hexachlorobutadiene	100	U
59-50-7	4-Chloro-3-methylphenol	100	U
91-57-6	2-Methylnaphthalene	100	U
77-47-4	Hexachlorocyclopentadiene	100	U
88-06-2	2,4,6-Trichlorophenol	100	U
95-95-4	2,4,5-Trichlorophenol	250	U
91-58-7	2-Chloronaphthalene	100	U
88-74-4	2-Nitroaniline	250	U
131-11-3	Dimethylphthalate	100	U
208-96-8	Acenaphthylene	100	U
606-20-2	2,6-Dinitrotoluene	100	U
99-09-2	3-Nitroaniline	250	U
83-32-9	Acenaphthene	100	U

08/26/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A061008

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/10/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	250	U
100-02-7	4-Nitrophenol	250	U
132-64-9	Dibenzofuran	100	U
121-14-2	2,4-Dinitrotoluene	100	U
84-66-2	Diethylphthalate	100	U
7005-72-3	4-Chlorophenyl-phenylether	100	U
86-73-7	Fluorene	100	U
100-01-6	4-Nitroaniline	250	U
534-52-1	4,6-Dinitro-2-methylphenol	250	U
86-30-6	N-Nitrosodiphenylamine (1)	100	U
101-55-3	4-Bromophenyl-phenylether	100	U
118-74-1	Hexachlorobenzene	100	U
87-86-5	Pentachlorophenol	250	U
85-01-8	Phenanthrene	100	U
120-12-7	Anthracene	100	U
86-74-8	Carbazole	100	U
84-74-2	Di-n-butylphthalate	100	U
206-44-0	Fluoranthene	100	U
129-00-0	Pyrene	74	J
85-68-7	Butylbenzylphthalate	100	U
91-94-1	3,3'-Dichlorobenzidine	100	U
56-55-3	Benzo(a)anthracene	100	U
218-01-9	Chrysene	100	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	
117-84-0	Di-n-octyl phthalate	100	U
205-99-2	Benzo(b)fluoranthene	100	U
207-08-9	Benzo(k)fluoranthene	100	U
50-32-8	Benzo(a)pyrene	100	U
193-39-5	Indeno(1,2,3-cd)pyrene	100	U
53-70-3	Dibenz(a,h)anthracene	100	U
191-24-2	Benzo(g,h,i)perylene	100	U

(1) - Cannot be separated from Diphenylamine

08126603

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A061008

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/10/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	4.620	200	J
2.	ALKANE	5.184	300	J
3.	ALKANE	8.891	400	J
4.	UNKNOWN	9.037	300	J
5.	ALKANE	9.971	700	J
6.	UNKNOWN	11.154	200	J
7.	UNKNOWN	11.227	400	J
8.	ALKANE	11.580	700	J
9.	UNKNOWN	12.094	30	J
10.	ALKANE	13.122	200	J
11.	UNKNOWN	13.718	40	J
12.	ALKANE	14.000	200	J
13.	ALKANE	14.651	30	J
14.	UNKNOWN	15.215	30	J
15.	UNKNOWN	15.383	200	J
16.	ALKANE	15.470	2000	J
17.	UNKNOWN	15.524	300	J
18.	ALKANE	15.820	200	J
19.	UNKNOWN	15.947	500	J
20.	ALKANE	16.593	900	J

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L463

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW20	0305L463-001	Water
10MW17	0305L463-002	Water
10MW10	0305L463-003	Water
10MW03	0305L463-004	Water
10MW05	0305L463-005	Water
10MW09	0305L463-006	Water
10MW19	0305L463-007	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 06/05/03 and 06/08/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/06/03 and 06/08/03 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibration analyzed on 06/07/03 exhibited a high %D value for 4-nitrophenol of 49.1%, however, all associated results are non-detect and no qualifications were required.

Surrogates - Sample 10MW05 exhibited a high recovery for surrogate compound 2,4,6-tribromophenol of 129%, however, no qualifications are required for only one surrogate outside of QC criteria.

Sample 10MW03 exhibited high recoveries for acid surrogates 2-fluorophenol and 2,4,6-tribromophenol of 101% and 142%, respectively. However, all acid compounds are non-detect and no qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample SBLKUFLE0616-MB1 exhibited a high %R value for 4-nitrophenol of 88%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - Sample 10MW09 exhibited low area counts for internal standards IS4, IS5 and IS6. All associated results have been qualified (J/UJ) in this sample.

Method Blank - Method blank 03LE0616-MB1 (05/23/03) was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations, all laboratory artifacts were crossed out and rejected (R), and TICs present in the blanks as well as in the samples were qualified (B).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the internal standard and TICs sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060611

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	0.8	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	0.9	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/2004

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060611

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.6	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

RFW (v3.3)

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060611

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	2.23	8	~~J~~ J
2.	ALKANE	2.325	10	~~J~~
3.	ALKANE	6.038	5	~~J~~
4.	C3-ALKYLBENZENE	6.725	6	~~J~~
5.	DIETHYLBENZENE	7.655	4	~~J~~
6.	C4-ALKYLBENZENE	8.124	7	~~J~~
7.	C4-ALKYLBENZENE	8.255	7	~~J~~
8.	UNKNOWN	8.620	7	~~J~~
9.	UNKNOWN	8.724	3	~~J~~
10.	C4-ALKYLBENZENE	8.768	6	~~J~~
11.	C4-ALKYLBENZENE	8.846	5	~~J~~
12.	UNKNOWN	9.376	8	~~J~~
13.	UNKNOWN	9.576	4	~~J~~
14.	UNKNOWN	10.028	7	~~J~~
15.	UNKNOWN	10.385	6	~~J~~
16.	ALKANE	10.950	5	~~J~~
17.	UNKNOWN	11.489	5	~~J~~
18.	UNKNOWN	11.533	6	~~J~~
19. 90-12-0	1-METHYLNAPHTHALENE	11.837	3	~~JN~~ NJ
20.	ALKANE	12.393	6	~~J~~ J

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060612

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	2	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	0.7	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08120603

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060612

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

RFW (v3.3)

08/26/03

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060612

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	2.218	20	J
2.	ALKANE	2.314	20	J
3.	UNKNOWN	3.131	10	J
4.	UNKNOWN KETONE	3.653	5	J
5.	UNKNOWN	3.870	4	J
6.	UNKNOWN KETONE	5.200	5	J
7.	C3-ALKYLBENZENE	5.479	4	J
8.	UNKNOWN	5.783	4	J
9.	C3-ALKYLBENZENE	6.009	6	J
10.	UNKNOWN	6.166	4	J
11.	UNKNOWN	6.878	5	J
12.	UNKNOWN	7.296	7	J
13.	DIETHYLBENZENE	7.652	10	J
14.	UNKNOWN	8.226	200	J
15.	UNKNOWN	8.478	5	J
16.	UNKNOWN	8.765	90	J
17.	UNKNOWN	8.939	60	J
18.	UNKNOWN	9.269	20	J
19.	UNKNOWN	9.330	8	J
20.	UNKNOWN	9.374	10	J

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060613

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060613

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.5	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/26/03c

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D060613

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/06/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/26/03

FORM 1 SV-TIC RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060814

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060814

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060814

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

0512662

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060815

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

FORM 1 SV-1 RFW (v3.3)

08/26/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060815

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060815

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060716

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	1	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	3	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/26/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060716

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U UJ
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1	J J
206-44-0	Fluoranthene	10	U UJ
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J J
117-84-0	Di-n-octyl phthalate	10	U UJ
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/26/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060716

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/07/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	4.674	10	~~J~~ J
2.	ALKANE	4.813	20	~~J~~
3.	UNKNOWN	5.419	7	~~J~~
4.	UNKNOWN	5.795	20	~~J~~
5.	ALKANE	8.209	4	~~J~~
6.	C3-ALKYLBENZENE	8.539	6	~~J~~
7.	UNKNOWN	10.442	10	~~J~~
8.	UNKNOWN	10.754	40	~~J~~
9.	UNKNOWN	10.794	30	~~J~~
10.	UNKNOWN	11.488	50	~~J~~
11.	UNKNOWN	11.568	70	~~J~~
12.	C4-ALKYLBENZENE	12.039	6	~~J~~
13.	UNKNOWN	12.072	7	~~J~~
14.	UNKNOWN	12.165	4	~~J~~
15.	UNKNOWN	12.257	20	~~J~~
16.	UNKNOWN	12.562	4	~~J~~
17.	UNKNOWN	12.701	10	~~J~~
18.	UNKNOWN	12.947	4	~~J~~
19.	UNKNOWN	13.982	4	~~J~~
20. 90-12-0	1-METHYLNAPHTHALENE	15.342	5	JNJ

08/26/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060817

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060817

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.8	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/26/03
CC

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L463-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: A060817

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/23/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/08/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.491	2	J
2.	UNKNOWN	4.643	2	J
3.	UNKNOWN	5.916	3	J
4.	UNKNOWN	5.976	3	J
5.	UNKNOWN	6.286	4	J
6.	C4-ALKYLBENZENE	9.950	3	J
7.	UNKNOWN	10.579	10	J
8.	DIETHYLBENZENE	10.790	5	J
9.	DIETHYLBENZENE	10.923	4	J
10.	UNKNOWN	11.339	7	J
11.	UNKNOWN	11.578	4	J
12.	C4-ALKYLBENZENE	11.869	8	J
13.	UNKNOWN	12.280	3	J
14.	UNKNOWN	12.538	9	J
15.	UNKNOWN	12.670	2	J
16.	UNKNOWN	13.002	4	J
17.	UNKNOWN	13.612	2	J
18.	UNKNOWN	14.076	5	J
19.	C5-ALKYLBENZENE	14.526	3	J
20.	UNKNOWN	16.217	3	J

08/26/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L566

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW27	0306L566-001	Water
10MW28	0306L566-002	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/16/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/19/03 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample SBLKVGLE0692-MB1 exhibited a high LCS %R value for 4-nitrophenol of 83%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0692-MB1 (06/06/03) was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - Target VOC analytes reported as SVOC TICs were crossed out and rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L566-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D061916

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/27/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L566-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D061916

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08127163

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L566-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D061916

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/27/03

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L566-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D061917

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N) __

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

08/27/03 cc

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L566-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D061917

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

RFW (v3.3)

08127463 u

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L566-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D061917

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/19/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1. 127-18-4~~	TETRACHLOROETHYLENE	~~4.944~~	~~2~~	~~JN~~ R

FORM 1 SV-TIC RFW (v3.3)

08/27/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L570

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW25	0306L570-001	Water
10MW24	0306L570-002	Water
10MW24 MS	0306L570-002 MS	Water
10MW24 MSD	0306L570-002 MSD	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/16/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/20/03 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10MW24 exhibited high MS/MSD %R values for 4-nitrophenol of 85%/103%, however, this compound is non-detect in this sample and no qualifications were required.

Laboratory Control Sample - LCS/LCSD sample SBLKVGLE0692-MB1 exhibited a high LCS %R value for 4-nitrophenol of 83%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0692-MB1 (06/06/03) was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations and all "known" TICs were qualified (NJ).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L570-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062016

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/20/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

08128L02

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L570-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062016

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/20/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/28/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L570-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062016

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/20/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/28/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L570-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062017

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/20/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	21	
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	29	
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

08/28/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L570-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062017

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/20/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/28/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L570-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062017

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/20/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.179	10	~~J~~ J
2.	ALKANE	3.378	8	~~J~~
3.	ALKANE	3.616	8	~~J~~
4.	UNKNOWN	4.253	7	~~J~~
5.	C2-ALKYLBENZENE	5.964	20	~~J~~
6.	C3-ALKYLBENZENE	7.178	9	~~J~~
7. 103-65-1	PROPYLBENZENE	7.728	10	~~JN~~ NJ
8.	C3-ALKYLBENZENE	7.902	9	~~J~~ J
9.	C3-ALKYLBENZENE	7.990	10	~~J~~
10.	UNKNOWN	8.269	10	~~J~~
11.	C3-ALKYLBENZENE	9.020	20	~~J~~
12. 496-11-7	INDANE	9.299	20	~~JN~~ NJ
13.	C4-ALKYLBENZENE	9.552	8	~~J~~ J
14.	C4-ALKYLBENZENE	9.945	8	~~J~~
15.	C4-ALKYLBENZENE	10.059	20	~~J~~
16.	C4-ALKYLBENZENE	10.670	7	~~J~~
17.	C4-ALKYLBENZENE	11.229	20	~~J~~
18.	UNKNOWN	11.700	7	~~J~~
19. 90-12-0	1-METHYLNAPHTHALENE	13.796	10	~~JN~~ NJ
20.	DIMETHYLNAPHTHALENE	15.262	9	~~J~~ J

08/28/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L586

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW04	0306L586-001	Water
10MW26	0306L586-002	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 06/16/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/21/03 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample SBLKVJLE0707-MB1 exhibited a high LCS %R value for 4-nitrophenol of 86% and a high RPD value for pentachlorophenol of 52%, however, all associated results are non-detect and no qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0707-MB1 (06/09/03) exhibited di-n-butylphthalate and bis(2-ethylhexyl)phthalate contamination at 0.6 ug/L and 2 ug/L, respectively. Di-n-butylphthalate and bis(2-ethylhexyl)phthalate have been qualified (B) in both samples.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TICs sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L586-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062108

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/09/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

08/28/03 a

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L586-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062108

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/09/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.7	~~JB~~ B
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	~~JB~~ B
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/28/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L586-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062108

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/09/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08281034

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L586-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062109

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/09/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

08128034

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L586-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062109

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/09/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.7	~~JB~~ B
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	~~JB~~ B
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/28/03
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0306L586-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: D062109

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 06/09/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/21/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	16.191	2	J-U

08/28/03

FORM 1 SV-TIC RFW (v3.3)

ENVIRONMENTAL
Data Services, Inc.

BENZO(A)PYRENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L438

Client: EA Engineering, Science & Technology, Inc. Date: August 25, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW12	0305L438-001	Water
10MW14	0305L438-002	Water
10MW16	0305L438-004	Water
10MW01	0305L438-005	Water
10MW07	0305L438-006	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

Note: The samples were received at 10.4°C. No action was taken on this basis.

Initial Calibration - The initial calibration analyzed on 11/04/02 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/30/03 and 05/31/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS/LCSD sample BUCLE0606-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Method Blank - Method blank 03LE0606-MB1 was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-001

Sample wt/vol: 940 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. ____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.17	

12/88 Rev.

08/25/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.24	U

12/88 Rev.

08/25/03

CLIENT SAMPLE NO.

10MW16

ORGANICS ANALYSIS SHEET

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L438-004

Sample wt/vol: 930 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/20/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.25	U

12/88 Rev.

08/25/03

CLIENT SAMPLE NO.

10MW01

ORGANICS ANALYSIS SHEET

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Sample wt/vol: 970 (g/mL) ML

Level: (low/med) LOW

% Moisture: not dec. _____

Column: (pack/cap) CAP

Lab Sample ID: 0305L438-005

Lab File ID: BLK08330

Date Received: 05/20/03

Date Analyzed: 05/31/03

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.24	U

12/88 Rev.

08/25/03

CLIENT SAMPLE NO.

10MW07

ORGANICS ANALYSIS SHEET

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Sample wt/vol: 900 (g/mL) ML

Level: (low/med) LOW

% Moisture: not dec. _____

Column: (pack/cap) CAP

Lab Sample ID: 0305L438-006

Lab File ID: BLK08330

Date Received: 05/20/03

Date Analyzed: 05/31/03

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.26	U

12/88 Rev.

08/25/03

ENVIRONMENTAL
Data Services, Inc.

BENZO(A)PYRENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L457

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW15	0305L457-001	Water
10MW15 MS	0305L457-001 MS	Water
10MW15 MSD	0305L457-001 MSD	Water
10MW2R	0305L457-002	Water
10FB01052003	0305L457-004	Water
10RB01052003	0305L457-005	Water
10MW06	0305L457-006	Water
10MW06RE	0305L457-006RE	Water
10MW18	0305L457-007	Water
10MW08	0305L457-008	Water
10MW21	0305L457-009	Water
10DUP01	0305L457-010	Water
10DUP01RE	0305L457-010RE	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples with the exception of samples 10MW06RE and 10DUP01RE which were extracted 7 days outside of holding time. Benzo(a)pyrene has been qualified (J/UJ) in these samples.

Initial Calibration - The initial calibration analyzed on 11/14/02 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/30/03, 05/31/03 and 06/05/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - Samples 10MW06 and 10DUP01 exhibited low recoveries for surrogate compound triphenylene of 50% and 46%, respectively. Benzo(a)pyrene has been qualified (L/UL) in these samples.

MS/MSD - MS/MSD sample 10MW15 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS samples BLKLE0615-MB1 and BLKLE0668-MB1 exhibited acceptable %R values. No qualifications were required.

Method Blank - Method blanks 03LE0615-MB1 and 03LE0668-MB1 were free of contamination. No qualifications were required.

Field, Equipment Blank - Field blank 10FB01052003 was free of contamination. No qualifications were required.

Rinsate blank 10RB01052003 was free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized below. No qualifications were required.

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
Benzo(a)pyrene	ND	0.27	NC

Compound Quantitation - Two samples were re-extracted and reanalyzed due to low surrogate recoveries in the original analysis. Since the aliquots were taken from different sample bottles for the re-extraction, the results are different between the original and reanalysis samples. The positive results for each sample should be used for reporting purposes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the holding time and surrogate sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKO8330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. ____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/26/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
50-32-8	Benzo(a)pyrene	0.23	U	

12/88 Rev.

08/26/03a

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10FB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/26/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10RB01052003

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/26/03

CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKO8330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
50-32-8	Benzo(a)pyrene	0.23	~~U~~ UL

12/88 Rev.

see reanalysis results

08/26/03 LG

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW06RE

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-006

Sample wt/vol: 970 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/05/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.26	J

12/88 Rev.

06/13/03

08126L03L

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/26/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/26/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/26/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec.

Date Analyzed: 05/30/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.27	L

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08126634

CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10DUP01RE

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L457-010

Sample wt/vol: 970 (g/mL) ML

Lab File ID: BLKO8330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 06/05/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.24	~~U~~

UJ 6/13/3

12/88 Rev.

See original analysis

08/26/03

ENVIRONMENTAL
Data Services, Inc.

BENZO(A)PYRENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L463

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW20	0305L463-001	Water
10MW17	0305L463-002	Water
10MW10	0305L463-003	Water
10MW03	0305L463-004	Water
10MW05	0305L463-005	Water
10MW09	0305L463-006	Water
10MW19	0305L463-007	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples with the exception of samples 10MW06RE and 10DUP01RE which were extracted 7 days outside of holding time. Benzo(a)pyrene has been qualified (J/UJ) in these samples.

Initial Calibration - The initial calibration analyzed on 11/14/02 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/30/03 and 05/31/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample BLKLE0615-MB1 exhibited acceptable %R values. No qualifications were required.

Method Blank - Method blank 03LE0615-MB1 was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/27/03

CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08276034

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/27/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

05/27/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

06/27/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. _____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
50-32-8	Benzo(a)pyrene	0.23	U	

12/88 Rev.

08/27/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0305L463-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 05/21/03

% Moisture: not dec. ____

Date Analyzed: 05/31/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/27/03

ENVIRONMENTAL
Data Services, Inc.

BENZO(A)PYRENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L566

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW27	0306L566-001	Water
10MW28	0306L566-002	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 11/14/02 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 06/13/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample BLKLE0689-MB1 exhibited acceptable %R values. No qualifications were required.

Method Blank - Method blank 03LE0689-MB1 was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/13/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08/27/03

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L566-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/13/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.23	U

12/88 Rev.

08127163a

ENVIRONMENTAL
Data Services, Inc.

BENZO(A)PYRENE
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L586

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW04	0306L586-001	Water
10MW26	0306L586-002	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 11/14/02 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/13/03 and 06/14/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed with this data package.

Laboratory Control Sample - LCS sample BLKLE0690-MB1 exhibited acceptable %R values. No qualifications were required.

Method Blank - Method blank 03LE0690-MB1 was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-001

Sample wt/vol: 970 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____

Date Analyzed: 06/14/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.24	U

12/88 Rev.

08128132

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L586-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 06/06/03

% Moisture: not dec. _____

Date Analyzed: 06/14/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.24	U

12/88 Rev.

08/28/03

ENVIRONMENTAL
Data Services, Inc.

BENZO(A)PYRENE

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L570

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW25	0306L570-001	Water
10MW24	0306L570-002	Water
10MW24 MS	0306L570-002 MS	Water
10MW24 MSD	0306L570-002 MSD	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 11/14/02 exhibited acceptable correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 06/13/03 and 06/14/03 exhibited acceptable %D values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10MW24 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS sample BLKLE0690-MB1 exhibited acceptable %R values. No qualifications were required.

Method Blank - Method blank 03LE0690-MB1 was free of contamination. No qualifications were required.

Field, Equipment Blank - Field QC samples were not associated with the samples in this data package.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-001

Sample wt/vol: 900 (g/mL) ML

Lab File ID: BLK08330.

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/14/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.26	U

12/88 Rev.

08/28/03 u

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0306L570-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 06/04/03

% Moisture: not dec. _____

Date Analyzed: 06/14/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
50-32-8	Benzo(a)pyrene	0.24	U

12/88 Rev.

08/28/03

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L438

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW12	0305L438-001	Water
10MW14	0305L438-002	Water
10MW16	0305L438-004	Water
10MW01	0305L438-005	Water
10MW07	0305L438-006	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Note: The samples were received at 10.4°C. No action was taken on this basis.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited high %R values for antimony and manganese, however, all associated results are non-detect or greater than 2X the IDL and no qualifications were required.

The CRDL standards exhibited a low %R value for mercury. Mercury has been qualified (UL) in all samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Aluminum and beryllium have been qualified (B) in samples 10MW12, 10MW14, 10MW16, 10MW01 and 10MW07.
- Antimony has been qualified (B) in samples 10MW14 and 10MW01.
- Vanadium has been qualified (B) in samples 10MW12, 10MW01 and 10MW07.

Field and Equipment Blank - Field QC samples were not associated with the samples in this data package.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample REFERENCE exhibited acceptable %R values. No qualifications were required.

Matrix Duplicate - Matrix duplicate sample REFERENCE exhibited a high RPD value for manganese of 81.9. Manganese has been qualified (J) in all samples.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample REFERENCE exhibited a high %D value for zinc of 18%. Zinc has been qualified (J) in all samples.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL, method and calibration blanks, matrix duplicate and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW12

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW01

Matrix (soil/water): WATER Lab Sample ID: 0305L438-001

Level (low/med): LOW__ Date Received: 05/20/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	58.6		B	P_
7440-36-0	Antimony_	2.2	U		P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	823			P_
7440-41-7	Beryllium	0.25		B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	43200			P_
7440-47-3	Chromium_	1.0	U		P_
7440-48-4	Cobalt___	1.5			P_
7440-50-8	Copper___	1.7			P_
7439-89-6	Iron____	22000			P_
7439-92-1	Lead____	2.3	U		P_
7439-95-4	Magnesium	26400			P_
7439-96-5	Manganese	21700		J	P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	3100			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	21800			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.12		B	P_
7440-66-6	Zinc____	116		J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW12

FORM I - IN

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW14

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW01

Matrix (soil/water): WATER Lab Sample ID: 0305L438-002

Level (low/med): LOW__ Date Received: 05/20/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	70.6	_	B	P_
7440-36-0	Antimony_	4.2	_	B	P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	722	_		P_
7440-41-7	Beryllium	0.25	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	46700			P_
7440-47-3	Chromium_	1.0	U		P_
7440-48-4	Cobalt___	4.2	_		P_
7440-50-8	Copper___	2.1	_		P_
7439-89-6	Iron_____	4990	_		P_
7439-92-1	Lead_____	5.4	_		P_
7439-95-4	Magnesium	18300	_		P_
7439-96-5	Manganese	32900		J	P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	2160			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	17700			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.10	U		P_
7440-66-6	Zinc_____	28.0	_	J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW14

FORM I - IN

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW16

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: 10MW01

Matrix (soil/water): WATER Lab Sample ID: 0305L438-004

Level (low/med): LOW Date Received: 05/20/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.5		B	P
7440-36-0	Antimony	2.2	U		P
7440-38-2	Arsenic	4.0			P
7440-39-3	Barium	1620			P
7440-41-7	Beryllium	0.26		B	P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	48000			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.0	U		P
7440-50-8	Copper	1.4			P
7439-89-6	Iron	25700			P
7439-92-1	Lead	3.2			P
7439-95-4	Magnesium	26800			P
7439-96-5	Manganese	12800		J	P
7439-97-6	Mercury	0.10	U	UL	AV
7440-02-0	Nickel	1.7			P
7440-09-7	Potassium	2830			P
7782-49-2	Selenium	4.2	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	13800			P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	179		J	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW16

FORM I - IN

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW01

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW01

Matrix (soil/water): WATER Lab Sample ID: 0305L438-005

Level (low/med): LOW__ Date Received: 05/20/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	83.7	_	B	P_
7440-36-0	Antimony_	2.5	_	B	P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	787	_		P_
7440-41-7	Beryllium	0.30	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	56400			P_
7440-47-3	Chromium_	1.0	U		P_
7440-48-4	Cobalt___	1.1	_		P_
7440-50-8	Copper___	1.5	_		P_
7439-89-6	Iron____	5270			P_
7439-92-1	Lead____	2.3	U		P_
7439-95-4	Magnesium	24300	_		P_
7439-96-5	Manganese	23700		J	P_
7439-97-6	Mercury__	0.10	~~U~~	UL	AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	1180			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	14300			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.58	_	B	P_
7440-66-6	Zinc____	20.3	_	J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW01

FORM I - IN

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW07

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.:

SDG No.: 10MW01

Matrix (soil/water): WATER

Lab Sample ID: 0305L438-006

Level (low/med): LOW

Date Received: 05/20/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	60.4		B	P
7440-36-0	Antimony	2.2	U		P
7440-38-2	Arsenic	3.3	U		P
7440-39-3	Barium	468			P
7440-41-7	Beryllium	0.25		B	P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	73700			P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.0	U		P
7440-50-8	Copper	1.3			P
7439-89-6	Iron	4000			P
7439-92-1	Lead	3.8			P
7439-95-4	Magnesium	20600			P
7439-96-5	Manganese	1450		J	P
7439-97-6	Mercury	0.10	U	UL	AV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2690			P
7782-49-2	Selenium	4.2	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	5990			P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	1.0		B	P
7440-66-6	Zinc	75.3		J	P

Color Before:

Color After:

Clarity Before:

Clarity After:

Texture:

Artifacts:

Comments:

10MW07

FORM I - IN

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L457

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW15	0305L457-001	Water
10MW15 MS	0305L457-001 MS	Water
10MW15 MSD	0305L457-001 MSD	Water
10MW2R	0305L457-002	Water
10FB01052003	0305L457-004	Water
10RB01052003	0305L457-005	Water
10MW06	0305L457-006	Water
10MW18	0305L457-007	Water
10MW08	0305L457-008	Water
10MW21	0305L457-009	Water
10DUP01	0305L457-010	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited high %R values for antimony and manganese, however, all associated results are non-detect or greater than 2X the IDL and no qualifications were required.

The CRDL standards exhibited a low %R value for mercury. Mercury has been qualified (UL) in all samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Aluminum and beryllium have been qualified (B) in all samples.
- Antimony has been qualified (B) in samples 10MW2R and 10MW06.

- Calcium has been qualified (B) in samples 10FB01052003 and 10RB01052003.
- Manganese has been qualified (B) in samples 10MW15, 10FB01052003, 10RB01052003 and 10MW21.
- Sodium has been qualified (B) in sample 10FB01052003.
- Vanadium has been qualified (B) in samples 10MW2R, 10FB01052003, 10MW06, 10MW21 and 10DUP01.

Field and Equipment Blank - Field blank 10FB01052003 exhibited barium, magnesium and zinc contamination at 0.42 ug/L, 9.8 ug/L and 2.9 ug/L, respectively, however, all associated results are greater than 5X the blank concentration and no qualifications were required.

Rinsate blank 10RB01052003 exhibited barium, iron, magnesium, sodium and zinc contamination at 0.55 ug/L, 53.6 ug/L, 17.9 ug/L, 136 ug/L and 2.4 ug/L, respectively, however, all associated results are non-detect or greater than 5X the blank concentration and no qualifications were required.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample 10MW15 exhibited acceptable %R values. No qualifications were required.

Matrix Duplicate - Matrix duplicate sample 10MW15 exhibited a high RPD value for manganese of 81.9. Manganese has been qualified (J) in all samples.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample 10MW15 exhibited a high %D value for zinc of 18%. Zinc has been qualified (J) in all samples.

Field Duplicates - Field duplicate results are summarized below. No qualifications were required.

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
Barium	973	946	3%
Calcium	40100	41500	3%
Copper	1.7	0.99	53%
Iron	15600	15600	0%
Lead	8.3	7.8	6%

Compound	10MW2R ug/L	10DUP01 ug/L	RPD
Magnesium	20400	21000	3%
Manganese	12700	13300	5%
Nickel	ND	2.5	NC
Potassium	5750	6180	7%
Sodium	18200	16800	8%
Zinc	94.7	44.7	72%

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL, method and calibration blanks, matrix duplicate and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW15

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-001

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	39.8	_	B	P_
7440-36-0	Antimony_	2.2	U		P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	229	_		P_
7440-41-7	Beryllium	0.30	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	20800	_		P_
7440-47-3	Chromium_	1.0	_	*	P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	1.2	_	*	P_
7439-89-6	Iron____	25.8	U		P_
7439-92-1	Lead____	2.3	U		P_
7439-95-4	Magnesium	9870	_		P_
7439-96-5	Manganese	1.2	_	B*	P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	2280	_		P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	13600	_		P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.10	U		P_
7440-66-6	Zinc____	87.8	_	EJ	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW15

FORM I - IN

08/26/03

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW2R

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____ SDG No.: FB0105

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ Lab Sample ID: 0305L457-002

Matrix (soil/water): WATER Date Received: 05/21/03

Level (low/med): LOW__

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	64.1	_	B	P_
7440-36-0	Antimony_	2.4	_	B	P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	973	_		P_
7440-41-7	Beryllium	0.36	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	40100			P_
7440-47-3	Chromium_	1.0	U	*	P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	1.7	_	*	P_
7439-89-6	Iron____	15600	_		P_
7439-92-1	Lead____	8.3	_		P_
7439-95-4	Magnesium	20400	_		P_
7439-96-5	Manganese	12700	_	* J	P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	5750			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	18200			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.19	_	B	P_
7440-66-6	Zinc____	94.7	_	~~B~~ J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW2R

FORM I - IN

08/26/03

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB0105

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-004

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	35.5		B	P
7440-36-0	Antimony_	2.2	U		P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	0.42			P
7440-41-7	Beryllium	0.28		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	45.6		B	P
7440-47-3	Chromium_	1.0	U	*	P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.60	U	*	P
7439-89-6	Iron____	25.8	U		P
7439-92-1	Lead____	2.3	U		P
7439-95-4	Magnesium	9.8			P
7439-96-5	Manganese	1.2		B *	P
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	1.3	U		P
7440-09-7	Potassium	40.0	U		P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	45.4		B	P
7440-28-0	Thallium_	4.5	U		P
7440-62-2	Vanadium_	0.25		B	P
7440-66-6	Zinc____	2.9		E J	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10FB01052003

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08/26/03

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

RB0105

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-005

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	45.2	_	B	P_
7440-36-0	Antimony_	2.2	U		P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	0.55	_		P_
7440-41-7	Beryllium	0.32	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	75.3		B	P_
7440-47-3	Chromium_	1.0	U	*	P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	0.60	U	*	P_
7439-89-6	Iron_____	53.6			P_
7439-92-1	Lead_____	2.3	U		P_
7439-95-4	Magnesium	17.9	_		P_
7439-96-5	Manganese	0.47	_	B*	P_
7439-97-6	Mercury__	0.10	~~U~~	UL	AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	40.0	U		P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	136			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.10	U		P_
7440-66-6	Zinc_____	2.4	_	EJ	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10RB01052003

FORM I - IN

08/26/03

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW06

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-006

Level (low/med): LOW Date Received: 05/21/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	69.9		B	P
7440-36-0	Antimony	2.6		B	P
7440-38-2	Arsenic	3.6			P
7440-39-3	Barium	646			P
7440-41-7	Beryllium	0.39		B	P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	58100			P
7440-47-3	Chromium	1.0	U	*	P
7440-48-4	Cobalt	1.0	U		P
7440-50-8	Copper	0.76		*	P
7439-89-6	Iron	18100			P
7439-92-1	Lead	2.3	U		P
7439-95-4	Magnesium	34000			P
7439-96-5	Manganese	15900		*J	P
7439-97-6	Mercury	0.10	U	UL	AV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2380			P
7782-49-2	Selenium	4.2	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	0.55		B	P
7440-66-6	Zinc	81.9		E J	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW06

FORM I - IN

08/26/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW18

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-007

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	138		B	P
7440-36-0	Antimony_	2.2	U		P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	577			P
7440-41-7	Beryllium	0.43		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	38800			P
7440-47-3	Chromium_	1.0	U	*	P
7440-48-4	Cobalt___	19.7			P
7440-50-8	Copper___	0.88		*	P
7439-89-6	Iron____	4900			P
7439-92-1	Lead____	2.3	U		P
7439-95-4	Magnesium	15800			P
7439-96-5	Manganese	9670		*J	P
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	16.9			P
7440-09-7	Potassium	1810			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	23900			P
7440-28-0	Thallium_	4.5	U		P
7440-62-2	Vanadium_	0.10	U		P
7440-66-6	Zinc____	138		EJ	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW18

FORM I - IN

08126492

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW08

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-008

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	73.8		B	P_
7440-36-0	Antimony_	2.2	U		P_
7440-38-2	Arsenic__	7.6			P_
7440-39-3	Barium___	1170			P_
7440-41-7	Beryllium	0.44		B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	35400			P_
7440-47-3	Chromium_	1.0	U	*	P_
7440-48-4	Cobalt___	9.8			P_
7440-50-8	Copper___	0.60	U	*	P_
7439-89-6	Iron____	8120			P_
7439-92-1	Lead____	2.3	U		P_
7439-95-4	Magnesium	12900			P_
7439-96-5	Manganese	12100		*J	P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	2.7			P_
7440-09-7	Potassium	1630			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	16700			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.10	U		P_
7440-66-6	Zinc____	44.0		EJ	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW08

FORM I - IN

08/26/02

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW21

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-009

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	43.4		B	P
7440-36-0	Antimony_	2.2	U		P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	308			P
7440-41-7	Beryllium	0.42		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	38800			P
7440-47-3	Chromium_	1.2		*	P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.60	U	*	P
7439-89-6	Iron____	25.8	U		P
7439-92-1	Lead____	2.3	U		P
7439-95-4	Magnesium	18300			P
7439-96-5	Manganese	1.9		B *	P
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	1.3	U		P
7440-09-7	Potassium	5310			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	26600			P
7440-28-0	Thallium_	4.5	U		P
7440-62-2	Vanadium_	0.21		B	P
7440-66-6	Zinc_____	129		~~E~~J	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW21

FORM I - IN

08120403

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10DUP

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0105

Matrix (soil/water): WATER Lab Sample ID: 0305L457-010

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	187		B	P
7440-36-0	Antimony_	2.2	U		P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	946			P
7440-41-7	Beryllium	0.49		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	41500			P
7440-47-3	Chromium_	1.0	U	*	P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.99		*	P
7439-89-6	Iron____	15600			P
7439-92-1	Lead____	7.8			P
7439-95-4	Magnesium	21000			P
7439-96-5	Manganese	13300		*J	P
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	2.5			P
7440-09-7	Potassium	6180			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	16800			P
7440-28-0	Thallium_	4.5	U		P
7440-62-2	Vanadium_	0.31		B	P
7440-66-6	Zinc____	44.7		EJ	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10DUP01

FORM I - IN

08/26/03

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L463

Client: EA Engineering, Science & Technology, Inc. Date: August 26, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW20	0305L463-001	Water
10MW20 MSD	0305L463-001 MSD	Water
10MW17	0305L463-002	Water
10MW17 MS	0305L463-002 MS	Water
10MW10	0305L463-003	Water
10MW03	0305L463-004	Water
10MW05	0305L463-005	Water
10MW09	0305L463-006	Water
10MW19	0305L463-007	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited a high %R value for arsenic. Arsenic has been qualified (K) in sample 10MW17.

The CRDL standards exhibited a low %R value for thallium. Thallium has been qualified (UL) in all samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Aluminum and beryllium have been qualified (B) in all samples.
- Copper has been qualified (B) in samples 10MW20, 10MW17 and 10MW05.
- Manganese has been qualified (B) in samples 10MW10 and 10MW03.
- Vanadium has been qualified (B) in samples 10MW20, 10MW17, 10MW10, 10MW03, 10MW05 and 10MW09.

Field and Equipment Blank - Field QC samples were not associated with the samples in this data package.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample 10MW17 exhibited acceptable %R values. No qualifications were required.

Matrix Duplicate - Matrix duplicate sample 10MW20 exhibited a high RPD value for nickel of 170.5. Nickel has been qualified (J) in samples 10MW20, 10MW10, 10MW03, 10MW09 and 10MW19.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample 10MW17 exhibited a high %D value for zinc of 18.6%. Zinc has been qualified (J) in all samples.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL, method and calibration blanks, matrix duplicate and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW20

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-001

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	51.1		B	P
7440-36-0	Antimony_	3.1		*	P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	683			P
7440-41-7	Beryllium	0.15		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	45900			P
7440-47-3	Chromium_	1.2		*	P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.93		B*	P
7439-89-6	Iron____	11300			P
7439-92-1	Lead____	2.9		*	P
7439-95-4	Magnesium	20400			P
7439-96-5	Manganese	15800			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	18.6		*J	P
7440-09-7	Potassium	3580			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	21900			P
7440-28-0	Thallium_	4.5	U	UL	P
7440-62-2	Vanadium_	0.52		B	P
7440-66-6	Zinc____	70.3		J E	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW20

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08/20/03

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW17

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-002

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	42.9	_	B	P_
7440-36-0	Antimony_	2.6	_	*	P_
7440-38-2	Arsenic__	4.9	_	K	P_
7440-39-3	Barium___	706	_		P_
7440-41-7	Beryllium	0.15	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	28500			P_
7440-47-3	Chromium_	1.0	U	*	P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	0.69	_	B*	P_
7439-89-6	Iron____	17700			P_
7439-92-1	Lead____	2.3	U	*	P_
7439-95-4	Magnesium	13500	_		P_
7439-96-5	Manganese	13500	_		P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.3	U	*	P_
7440-09-7	Potassium	1230			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	13900			P_
7440-28-0	Thallium_	4.5	U	UL	P_
7440-62-2	Vanadium_	0.47	_	B	P_
7440-66-6	Zinc____	90.4	_	JE	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW17

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW10

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-003

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	50.5		B	P
7440-36-0	Antimony_	3.5		*	P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	261			P
7440-41-7	Beryllium	0.28		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	46000			P
7440-47-3	Chromium_	1.0	U	*	P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.60	U	*	P
7439-89-6	Iron____	25.8	U		P
7439-92-1	Lead____	2.3	U	*	P
7439-95-4	Magnesium	20700			P
7439-96-5	Manganese	4.3		B	P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	6.1		* J	P
7440-09-7	Potassium	1890			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	45800			P
7440-28-0	Thallium_	4.5	U	UL	P
7440-62-2	Vanadium_	0.21		B	P
7440-66-6	Zinc____	202		J E	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW10

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08/26/03

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW03

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-004

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	52.4		B	P
7440-36-0	Antimony_	2.2	U	*	P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	369			P
7440-41-7	Beryllium	0.31		B	P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	41500			P
7440-47-3	Chromium_	1.1		*	P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.60	U	*	P
7439-89-6	Iron____	25.8	U		P
7439-92-1	Lead____	2.3	U	*	P
7439-95-4	Magnesium	21000			P
7439-96-5	Manganese	3.1		B	P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.6		*J	P
7440-09-7	Potassium	7250			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	35600			P
7440-28-0	Thallium_	4.5	~~U~~	uc	P
7440-62-2	Vanadium_	0.47		B	P
7440-66-6	Zinc____	195		J ~~E~~	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW03

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW05

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-005

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	52.9		B	P_
7440-36-0	Antimony_	2.2	U	*	P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	227			P_
7440-41-7	Beryllium	0.29		B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	64100			P_
7440-47-3	Chromium_	1.0	U	*	P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	1.2		B*	P_
7439-89-6	Iron_____	48.1			P_
7439-92-1	Lead_____	2.3	U	*	P_
7439-95-4	Magnesium	14200			P_
7439-96-5	Manganese	21.7			P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.3	U	*	P_
7440-09-7	Potassium	4530			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	5360			P_
7440-28-0	Thallium_	4.5	U	UL	P_
7440-62-2	Vanadium_	0.34		B	P_
7440-66-6	Zinc_____	57.6		J E	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW05

FORM I - IN

08/26/03

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW09

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-006

Level (low/med): LOW__ Date Received: 05/21/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	77.7	_	B	P_
7440-36-0	Antimony_	2.2	U	*	P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	1450	_		P_
7440-41-7	Beryllium	0.31	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	45800			P_
7440-47-3	Chromium_	1.0	U	*	P_
7440-48-4	Cobalt___	4.0			P_
7440-50-8	Copper___	0.60	U	*	P_
7439-89-6	Iron_____	15800			P_
7439-92-1	Lead_____	2.3	U	*	P_
7439-95-4	Magnesium	20800	_		P_
7439-96-5	Manganese	19300			P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.7	_	* J	P_
7440-09-7	Potassium	1820	_		P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	27100			P_
7440-28-0	Thallium_	4.5	U	UL	P_
7440-62-2	Vanadium_	0.47	_	B	P_
7440-66-6	Zinc_____	99.3	_	J E	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW09

FORM I - IN

08/26/03 L

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW19

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: 10MW03

Matrix (soil/water): WATER Lab Sample ID: 0305L463-007

Level (low/med): LOW Date Received: 05/21/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.6		B *	P
7440-36-0	Antimony	2.2	U	*	P
7440-38-2	Arsenic	3.3	U		P
7440-39-3	Barium	625			P
7440-41-7	Beryllium	0.31		B	P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	42400			P
7440-47-3	Chromium	1.0	U	*	P
7440-48-4	Cobalt	2.7			P
7440-50-8	Copper	0.60	U	*	P
7439-89-6	Iron	7110			P
7439-92-1	Lead	2.3	U	*	P
7439-95-4	Magnesium	14900			P
7439-96-5	Manganese	9920			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	3.1		* J	P
7440-09-7	Potassium	2020			P
7782-49-2	Selenium	4.2	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	22400			P
7440-28-0	Thallium	4.5	U	UC	P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	106		J E	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW19

FORM I - IN

08/26/03

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L566

Client: EA Engineering, Science & Technology, Inc. Date: August 27, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW27	0306L566-001	Water
10MW28	0306L566-002	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited high %R values for aluminum and lead, however, all associated results are non-detect or greater than 2X the IDL and no qualifications were required.

The CRDL standards exhibited a low %R value for mercury. Mercury has been qualified (UL) in both samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Aluminum, beryllium and vanadium have been qualified (B) in both samples.
- Cadmium and lead have been qualified (B) in sample 10MW28.

Field and Equipment Blank - Field QC samples were not associated with the samples in this data package.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample REFERENCE exhibited acceptable %R values. No qualifications were required.

Matrix Duplicate - Matrix duplicate sample REFERENCE exhibited a high RPD value for zinc of 24.7. Zinc has been qualified (J) in both samples.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample REFERENCE exhibited acceptable %D values. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Sample 10MW28 was analyzed at a dilution due to high concentrations of target analytes in the sample. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank and matrix duplicate sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW27

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: MW27__

Matrix (soil/water): WATER Lab Sample ID: 0306L566-001

Level (low/med): LOW__ Date Received: 06/04/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	36.2	_	B	P_
7440-36-0	Antimony_	2.2	U		P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	307	_		P_
7440-41-7	Beryllium	0.31	_	B	P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	20900	_		P_
7440-47-3	Chromium_	2.2	_		P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	0.60	U		P_
7439-89-6	Iron_____	25.8	U		P_
7439-92-1	Lead____	2.3	U		P_
7439-95-4	Magnesium	7730	_		P_
7439-96-5	Manganese	9.8	_		P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	5.4	_		P_
7440-09-7	Potassium	1520			P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	17200			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.41	_	B	P_
7440-66-6	Zinc_____	188	_	J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW27

FORM I - IN

08/27/03 a

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW28

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI_____ Case No.: WILLO SAS No.: _____ SDG No.: MW27__
Matrix (soil/water): WATER Lab Sample ID: 0306L566-002
Level (low/med): LOW__ Date Received: 06/04/03
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	57.0		B	P_
7440-36-0	Antimony_	2.2	U		P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	476			P_
7440-41-7	Beryllium	0.28		B	P_
7440-43-9	Cadmium__	0.44		B	P_
7440-70-2	Calcium__	61900			P_
7440-47-3	Chromium_	2.1			P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	0.60	U		P_
7439-89-6	Iron_____	25.8	U		P_
7439-92-1	Lead_____	2.8		B	P_
7439-95-4	Magnesium	18800			P_
7439-96-5	Manganese	114			P_
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	3.3			P_
7440-09-7	Potassium	2430			P_
7782-49-2	Selenium_	5.3			P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	23800			P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.72		B	P_
7440-66-6	Zinc_____	86.5		J	P_

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW28

FORM I - IN

08/27/03

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L570

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW25	0306L570-001	Water
10MW24	0306L570-002	Water
10MW24 MS	0306L570-002 MS	Water
10MW24 MSD	0306L570-002 MSD	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited high %R values for aluminum and lead, however, all associated results are non-detect or greater than 2X the IDL and no qualifications were required.

The CRDL standards exhibited a low %R value for mercury. Mercury has been qualified (UL) in both samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Aluminum and vanadium have been qualified (B) in sample 10MW25.
- Beryllium and lead have been qualified (B) in both samples.
- Zinc has been qualified (B) in sample 10MW24.

Field and Equipment Blank - Field QC samples were not associated with the samples in this data package.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample 10MW24 exhibited acceptable %R values. No qualifications were required.

Matrix Duplicate - Matrix duplicate sample 10MW24 exhibited acceptable RPD values. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample 10MW24 exhibited a high %D value for zinc of 18.3%. Zinc has been qualified (J) in sample 10MW25.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Both samples were analyzed at a dilution due to high concentrations of target analytes in the sample. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW25

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: MW24

Matrix (soil/water): WATER Lab Sample ID: 0306L570-001

Level (low/med): LOW Date Received: 06/04/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	51.8		B	P
7440-36-0	Antimony	2.2	U		P
7440-38-2	Arsenic	3.3	U		P
7440-39-3	Barium	297			P
7440-41-7	Beryllium	0.27		B*	P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	63100			P
7440-47-3	Chromium	1.6			P
7440-48-4	Cobalt	1.0	U		P
7440-50-8	Copper	0.60	U		P
7439-89-6	Iron	42.7			P
7439-92-1	Lead	3.1		B	P
7439-95-4	Magnesium	13200			P
7439-96-5	Manganese	285			P
7439-97-6	Mercury	0.10	U	UL	AV
7440-02-0	Nickel	2.4		*	P
7440-09-7	Potassium	1890			P
7782-49-2	Selenium	4.2	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	18600			P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	1.0		B	P
7440-66-6	Zinc	87.0		J E	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW25

FORM I - IN

08/28/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW24

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: MW24

Matrix (soil/water): WATER Lab Sample ID: 0306L570-002

Level (low/med): LOW Date Received: 06/04/03

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2510			P
7440-36-0	Antimony	2.2	U		P
7440-38-2	Arsenic	3.3	U		P
7440-39-3	Barium	299			P
7440-41-7	Beryllium	0.24		B *	P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	61500			P
7440-47-3	Chromium	5.0			P
7440-48-4	Cobalt	1.0	U	*	P
7440-50-8	Copper	6.1			P
7439-89-6	Iron	28.1			P
7439-92-1	Lead	3.1		B	P
7439-95-4	Magnesium	276			P
7439-96-5	Manganese	0.66			P
7439-97-6	Mercury	0.10	U	UL	AV
7440-02-0	Nickel	2.1		*	P
7440-09-7	Potassium	34300			P
7782-49-2	Selenium	4.2	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	35100			P
7440-28-0	Thallium	4.5	U		P
7440-62-2	Vanadium	3.4			P
7440-66-6	Zinc	31.8		B E	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW24

FORM I - IN

08128103

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0306L586

Client: EA Engineering, Science & Technology, Inc. Date: August 28, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10MW04	0306L586-001	Water
10MW26	0306L586-002	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited high %R values for aluminum and lead, however, all associated results are non-detect or greater than 2X the IDL and no qualifications were required.

The CRDL standards exhibited a low %R value for mercury. Mercury has been qualified (UL) in both samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Copper and vanadium have been qualified (B) in both samples.
- Aluminum and manganese have been qualified (B) in sample 10MW04.

Field and Equipment Blank - Field QC samples were not associated with the samples in this data package.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample REFERENCE exhibited acceptable %R values. No qualifications were required.

Matrix Duplicate - Matrix duplicate sample REFERENCE exhibited a high RPD value for zinc of 24.8. Zinc has been qualified (J) in both samples.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample REFERENCE exhibited acceptable %D values. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed with this data package.

Compound Quantitation - Sample 10MW26 was analyzed at a dilution due to high concentrations of target analytes in the sample. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank and matrix duplicate sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW04

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: MW04__

Matrix (soil/water): WATER Lab Sample ID: 0306L586-001

Level (low/med): LOW__ Date Received: 06/06/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	13.6		B	P
7440-36-0	Antimony_	2.2	U		P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	281			P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	40500			P
7440-47-3	Chromium_	2.5			P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	0.96		B	P
7439-89-6	Iron_____	37.2			P
7439-92-1	Lead_____	2.3	U		P
7439-95-4	Magnesium	17200			P
7439-96-5	Manganese	2.2		B	P
7439-97-6	Mercury__	0.10	~~U~~	Cu	AV
7440-02-0	Nickel___	3.6			P
7440-09-7	Potassium	1890			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	17200			P
7440-28-0	Thallium_	4.5	U		P
7440-62-2	Vanadium_	0.50		B	P
7440-66-6	Zinc_____	158		J	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW04

FORM I - IN

08/28/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW26

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: MW04__

Matrix (soil/water): WATER Lab Sample ID: 0306L586-002

Level (low/med): LOW__ Date Received: 06/06/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	13.1	U		P
7440-36-0	Antimony_	2.2	U		P
7440-38-2	Arsenic__	3.3	U		P
7440-39-3	Barium___	456			P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium__	0.40	U		P
7440-70-2	Calcium__	67500			P
7440-47-3	Chromium_	25.2			P
7440-48-4	Cobalt___	1.0	U		P
7440-50-8	Copper___	1.8		B	P
7439-89-6	Iron____	25.8	U		P
7439-92-1	Lead____	2.3	U		P
7439-95-4	Magnesium	20600			P
7439-96-5	Manganese	61.1			P
7439-97-6	Mercury__	0.10	U	UL	AV
7440-02-0	Nickel___	3.0			P
7440-09-7	Potassium	29000			P
7782-49-2	Selenium_	4.2	U		P
7440-22-4	Silver___	1.2	U		P
7440-23-5	Sodium___	28300			P
7440-28-0	Thallium_	4.5	U		P
7440-62-2	Vanadium_	0.51		B	P
7440-66-6	Zinc____	152		J	P

08/28/03

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW26

FORM I - IN

2004

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12	0402L857-001	Water
2	10MW24	0402L857-002	Water
3	10MW2R	0402L857-003	Water
4	10MW16	0402L857-004	Water
5	10MW14	0402L857-005	Water
6	TB-021904	0402L857-006	Water
7	FB-021904	0402L857-007	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW24	1,2-Dichloroethane-d4	131%	J

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TB-021904	Methylene Chloride	9	45	None	All ND
FB-021904	Acetone	11	55	B	2
	Chloroform	1	5	None	All ND

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations and all "known" TICs were qualified (NJ).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the surrogate, field blank and TIC sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Cod : Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022916

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.5	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	7	

FORM 1 V-1 1/87 Rev.

04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Cod : Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022916

Lev 1: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

FORM 1 V-2 1/87 Rev.

04123104a

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW12

b Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-001

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k022916

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Numb r TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.363	60	J
2.	ALKANE	13.627	20	J
3.	ALKANE	15.044	40	J
4.	ALKANE	15.625	200	J
5.	ALKANE	17.426	90	J
6.	ALKANE	17.604	100	J
7.	ALKANE	18.106	20	J
8.	UNKNOWN	19.356	20	J
9.	UNKNOWN	22.889	20	J
10.	AROMATIC	23.578	20	J
11.	C4-ALKYLBENZENE	23.785	20	J
12.	C4-ALKENYLBENZENE	25.773	20	J

0402310044

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022917

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
74-87-3	Chloromethane	2	U	
74-83-9	Bromomethane	2	U	
75-01-4	Vinyl Chloride	2	U	
75-00-3	Chloroethane	2	U	
75-09-2	Methylene Chloride	2	U	
67-64-1	Acetone	6		B
75-15-0	Carbon Disulfide	0.3	~~J~~	J
75-35-4	1,1-Dichloroethene	1	U	
75-34-3	1,1-Dichloroethane	1	U	
540-59-0	1,2-Dichloroethene (total)	1	U	
67-66-3	Chloroform	1	U	
107-06-2	1,2-Dichloroethane	1	U	
78-93-3	2-Butanone	5	U	
71-55-6	1,1,1-Trichloroethane	1	U	
56-23-5	Carbon Tetrachloride	1	U	
75-27-4	Bromodichloromethane	1	U	
78-87-5	1,2-Dichloropropane	1	U	
10061-01-5	cis-1,3-Dichloropropene	1	U	
79-01-6	Trichloroethene	1	U	
124-48-1	Dibromochloromethane	1	U	
79-00-5	1,1,2-Trichloroethane	1	U	
71-43-2	Benzene	5		J
10061-02-6	Trans-1,3-Dichloropropene	1	U	
75-25-2	Bromoform	1	U	
108-10-1	4-Methyl-2-pentanone	5	U	
591-78-6	2-Hexanone	5	U	
127-18-4	Tetrachloroethene	1	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U	
108-88-3	Toluene	1	U	
108-90-7	Chlorobenzene	0.3	~~J~~	J
100-41-4	Ethylbenzene	2		J
100-42-5	Styrene	1	U	
1330-20-7	Xylene (total)	0.1	~~J~~	J
98-82-8	Isopropylbenzene	0.8	~~J~~	J

FORM 1 V-1 1/87 Rev.

04/23/04
CW

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022917

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
108-67-8	1,3,5-Trimethylbenzene	5		J
95-63-6	1,2,4-Trimethylbenzene	1	U	

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04/23/04
CL

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW24

Lab Name: Lionvill Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022917

Lev l: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.148	200	~~J~~ J
2.	ALKANE	11.367	100	~~J~~
3.	ALKANE	12.007	30	~~J~~
4. 108087	PENTANE, 2,4-DIMETHYL-	13.621	40	~~NJ~~ NJ
5.	CYCLOALKANE	13.779	30	~~J~~ J
6.	CYCLOALKANE	15.029	70	~~J~~
7.	ALKANE	15.206	30	~~J~~
8.	ALKANE	15.629	200	~~J~~
9.	CYCLOALKANE	16.850	100	~~J~~
10.	ALKANE	17.421	80	~~J~~
11.	ALKANE	17.608	100	~~J~~
12.	CYCLOALKANE	18.238	20	~~J~~

04/23/04 CC

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Cod : Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022914

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.7	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.8	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	0.4	J
98-82-8	Isopropylbenzene	6	

04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022914

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	3	
95-63-6	1,2,4-Trimethylbenzene	4	

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04/23/04
CG

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022914

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.139	30	J
2.	ALKANE	11.367	40	J
3.	ALKANE	13.631	30	J
4.	ALKANE	15.039	30	J
5.	ALKANE	15.629	100	J
6.	ALKANE	17.421	60	J
7.	ALKANE	17.608	90	J
8.	AROMATIC	23.592	20	J
9.	UNKNOWN	24.409	20	J
10.	AROMATIC	24.685	10	J
11.	AROMATIC	25.768	30	J
12.	AROMATIC	26.476	20	J

J

FORM 1 VOA-TIC 1/87 Rev.

04/23/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022918

L vel: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.5	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	4	
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	0.2	J
98-82-8	Isopropylbenzene	31	

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04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Cod : Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022918

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	

FORM 1 V-2 1/87 Rev.

04/23/04
CL

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022918

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.150	400	J
2.	ALKANE	11.359	100	J
3.	ALKANE	12.009	60	J
4.	UNKNOWN	15.040	40	J
5.	ALKANE	15.631	100	J
6.	CYCLOALKANE	16.842	100	J
7.	ALKANE	17.423	50	J
8.	ALKANE	17.600	80	J
9.	AROMATIC	22.000	50	J
10.	AROMATIC	23.584	50	J
11.	AROMATIC	24.411	40	J
12.	C4-ALKENYLBENZENE	25.740	50	J

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04/23/04 CG

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022915

Lev 1: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.5	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	2	
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	0.1	J
98-82-8	Isopropylbenzene	4	

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04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-005

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k022915

Level: (low/med) LOW Date Received: 02/20/04

% Moistur : not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	0.8	J
95-63-6	1,2,4-Trimethylbenzene	2	

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04123104

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022915

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 12

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.153	20	J
2.	ALKANE	11.362	40	J
3.	ALKANE	13.626	20	J
4.	ALKANE	15.044	30	J
5.	ALKANE	15.624	100	J
6.	ALKANE	16.874	30	J
7.	ALKANE	17.416	50	J
8.	ALKANE	17.603	70	J
9.	ALKANE	18.105	10	J
10.	AROMATIC	24.414	10	J
11.	AROMATIC	25.763	20	J
12.	C5-ALKYLBENZENE	26.481	10	J

04/23/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-021904

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022907

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	9	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-021904

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022907

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/23/04

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-021904

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022907

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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04/23/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022908

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	11	
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022908

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/23/04
CV

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Cod : Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L857-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k022908

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ Date Analyzed: 02/29/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

04/23/04 (a)

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03	0402L883-001	Water
2	10MW28	0402L883-002	Water
3	TB-022004	0402L883-004	Water
4	10MWDUP	0402L883-008	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/01/04	Bromomethane	49%	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TB-022004	Methylene Chloride	7	35	None	All ND

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
1,1-Dichloroethene	4	3	29%	None
1,1-Dichloroethane	0.7	0.8	13%	None
Chloroform	0.2	0.1	67%	None
1,1,1-Trichloroethane	6	5	18%	None
Carbon Tetrachloride	ND	0.2	NC	None
Trichloroethene	0.2	0.1	67%	None

Tentatively Identified Compounds (TICs) - TICs were not present in the samples.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030107

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	0.2	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/23/04
CC

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030107

Lev 1: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/23/04

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030107

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 R v.

04/23/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030109

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	0.1	J
75-34-3	1,1-Dichloroethane	0.2	J
540-59-0	1,2-Dichloroethene (total)	0.2	J
67-66-3	Chloroform	0.2	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	0.5	J
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	2	
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	3	
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

30

04/23/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030109

Lev 1: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030109

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022004

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030106

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	7	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

03/23/04
CC

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022004

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030106

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/23/04
CC

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022004

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030106

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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04/23/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030111

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	3	
75-34-3	1,1-Dichloroethane	0.8	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	0.1	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	5	
56-23-5	Carbon Tetrachloride	0.2	J
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.1	J
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/23/04
cv

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030111

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/23/04
cc

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L883-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030111

Lev 1: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04123104C

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04	0402L890-001	Water
2	10MW19	0402L890-002	Water
3	10MW05	0402L890-003	Water
4	10MW06	0402L890-004	Water
6	TB-022304	0402L890-005	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/01/04	Bromomethane	%D=49.1%	None	All ND
03/01/04	Bromomethane Acetone	%D=31.5 %D=25.2	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination except the following.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
04LVK060	Methylene Chloride	0.8	4.0	B	4

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TB-022304	Methylene Chloride	8	40	None	All ND or Already Qualified

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations.

Compound Quantitation - Sample 10MW06 exhibited isopropylbenzene with an incorrect laboratory qualifier (E) and was crossed off by the reviewer.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TIC sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030113

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	0.3	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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04/26/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030113

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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CG

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-001

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k030113

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	9.735	1	J J

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CL

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030126

L vel: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	0.3	J

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1B

VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030126

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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CO

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030126

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.423	20	~~J~~ J
2.	ALKANE	15.114	30	~~J~~
3.	UNKNOWN	15.695	40	~~J~~
4.	ALKANE	17.476	10	~~J~~
5.	ALKANE	17.663	20	~~J~~
6.	UNKNOWN	18.943	10	~~J~~
7.	C4-ALKYLBENZENE	22.920	8	~~J~~
8.	AROMATIC	23.648	10	~~J~~
9.	C4-ALKYLBENZENE	23.855	6	~~J~~
10.	C4-ALKENYLBENZENE	24.376	20	~~J~~
11.	AROMATIC	24.760	8	~~J~~ J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030125

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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CO

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030125

Lev 1: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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CV

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW05

Lab Nam : Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030125

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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CL

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030127

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	0.4	~~BJ~~ B
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.2	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.1	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	3	~~E~~ ✓

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CO

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030127

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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LV

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030127

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 11

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	11.428	40	J
2.	ALKANE	13.682	20	J
3.	ALKANE	15.110	30	J
4.	ALKANE	15.680	100	J
5.	ALKANE	16.930	30	J
6.	ALKANE	17.482	50	J
7.	ALKANE	17.659	70	J
8.	ALKANE	18.161	7	J
9.	CYCLOALKANE	18.791	6	J
10.	C3-ALKYLBENZENE	22.059	6	J
11.	AROMATIC	23.653	20	J

04/26/04
LV

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022304

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030112

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	8	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/26/04
LC

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022304

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030112

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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LV

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022304

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L890-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030112

Level: (low/med) LOW Date Received: 02/24/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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LV

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15 ✓	0402L909-001	Water
2	10MW21 ✓	0402L909-002	Water
3	10MW26 ✓	0402L909-003	Water
4	10MW10 ✓	0402L909-004	Water
5	10MW17 ✓	0402L909-005	Water
6	10MW07 ✓	0402L909-006	Water
7	10MW01 ✓	0402L909-007	Water
8	10MW08 ✓	0402L909-008	Water
9	10MW18 ✓	0402L909-009	Water
10	TB-022404 ✓	0402L909-010	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/01/04	Bromomethane	%D=49.1	None	All ND
03/02/04	Bromomethane	%D=50.7	UJ	1, 2, 3, 5
	Methylene Chloride	%D=30.4	None	All ND
03/04/04	Bromomethane	%D=29.8	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW01	1,2-Dichloroethane-d4	150%	J
10MW08	1,2-Dichloroethane-d4	185%	J

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination except the following.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
04LVK061	Methylene Chloride	0.6	3.0	None	All ND
04LVK063	Methylene Chloride	0.8	4.0	None	All ND

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TB-022404	Methylene Chloride	7	35	None	All ND

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the continuing calibration, surrogate and TIC sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030210

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ 45
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.2	J
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/27/04
CL

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030210

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/27/04
CL

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW15

Lab Name: Li nville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030210

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030211

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	0.1	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	0.2	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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1B

VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030211

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030211

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030212

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	0.4	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	0.1	J
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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CL

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030212

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-003

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k030212

Lev 1: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-004

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k030406

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	0.3	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/27/04
CW

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030406

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030406

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Numb r TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030218

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.3	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	0.1	J
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	11	

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030218

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/27/04
CW

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030218

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.216	20	~~J~~ J
2.	ALKANE	10.352	10	~~J~~
3.	ALKANE	11.455	80	~~J~~
4.	ALKANE	13.719	40	~~J~~
5.	ALKANE	15.136	50	~~J~~
6.	ALKANE	15.717	300	~~J~~
7.	ALKANE	16.957	70	~~J~~
8.	ALKANE	17.508	100	~~J~~
9.	ALKANE	17.685	200	~~J~~
10.	ALKANE	18.178	20	~~J~~
11.	C3-ALKYLBENZENE	22.075	10	~~J~~
12.	C4-ALKYLBENZENE	22.981	10	~~J~~ J

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04/27/04
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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030408

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.2	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.8	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	2	

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030408

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	0.1	J
95-63-6	1,2,4-Trimethylbenzene	2	

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030408

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.227	30	J
2.	ALKANE	11.426	30	J
3.	ALKANE	12.095	10	J
4.	ALKANE	13.699	20	J
5.	ALKANE	15.107	30	J
6.	ALKANE	15.698	90	J
7.	ALKANE	16.928	10	J
8.	ALKANE	17.489	40	J
9.	ALKANE	17.666	70	J
10.	C3-ALKYLBENZENE	23.336	8	J

04/27/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030410

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.7	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	0.2	~~J~~ J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	0.8	~~J~~ J

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CG

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030410

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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CG

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030410

Level: (low/med) LOW Date Received: 02/25/04

% M isture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.229	20	~~J~~ J
2.	ALKANE	11.438	90	~~J~~
3.	ALKANE	13.702	50	~~J~~
4.	ALKANE	13.988	10	~~J~~
5.	ALKANE	15.120	70	~~J~~
6.	ALKANE	15.700	300	~~J~~
7.	ALKANE	16.950	70	~~J~~
8.	ALKANE	17.492	100	~~J~~
9.	ALKANE	17.679	200	~~J~~
10.	ALKANE	17.945	10	~~J~~
11.	ALKANE	18.171	20	~~J~~
12.	C4-ALKYLBENZENE	24.392	10	~~J~~ J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030412

Lev 1: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.5	~~J~~ J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	17	J

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1B

VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030412

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	0.9	~~J~~ J

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G

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-008

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030412

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.218	600	J
2.	ALKANE	11.446	500	J
3.	ALKANE	13.700	200	J
4.	ALKANE	13.986	20	J
5.	ALKANE	15.118	200	J
6.	ALKANE	15.708	400	J
7.	CYCLOALKANE	16.919	200	J
8.	ALKANE	17.490	200	J
9.	ALKANE	17.677	200	J
10.	ALKANE	18.169	10	J
11.	CYCLOALKANE	19.577	10	J
12.	C3-ALKYLBENZENE	22.067	20	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-009

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030407

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-009

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030407

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-009

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030407

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/04/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	13.998	5	J
2.	ALKANE	15.700	60	J
3.	ALKANE	17.069	2	J
4.	ALKANE	17.492	30	J
5.	ALKANE	17.669	20	J
6.	UNKNOWN	18.870	2	J
7.	TERPENE	24.490	2	J
8.	UNKNOWN	24.776	2	J

J

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CC

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022404

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-010

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030117

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	7	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022404

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-010

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030117

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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CC

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022404

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L909-010

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030117

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 29, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09 ✓	0402L917-001	Water
2	TB-022504 ✓	0402L917-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/01/04	Bromomethane	%D=49.1	None	All ND
03/0104 (1539)	Bromomethane	%D=31.5	None	All ND
	Acetone	%D=25.2	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination except the following.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
VBLKWX	Methylene Chloride	0.8	4.0	None	All ND

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TB-022504	Methylene Chloride	8	40	None	All ND

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TIC section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L917-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030130

Level: (low/med) LOW Date Received: 02/26/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.1	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	0.3	J
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	3	

04/29/04
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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L917-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030130

Level: (low/med) LOW Date Received: 02/26/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L917-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030130

Level: (low/med) LOW Date Received: 02/26/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	8.228	20	J
2.	UNKNOWN	10.344	8	J
3.	ALKANE	11.437	60	J
4.	ALKANE	13.711	20	J
5.	ALKANE	13.996	7	J
6.	ALKANE	15.118	30	J
7.	ALKANE	15.709	100	J
8.	UNKNOWN	17.057	7	J
9.	ALKANE	17.490	50	J
10.	ALKANE	17.668	80	J
11.	UNKNOWN	18.160	7	J
12.	CYCLOALKANE	18.800	9	J
13.	UNKNOWN	19.420	8	J
14.	C3-ALKYLBENZENE	22.067	5	J
15.	AROMATIC	24.764	6	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022504

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L917-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030118

Level: (low/med) LOW Date Received: 02/26/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	8	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/29/04
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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022504

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L917-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030118

Level: (low/med) LOW Date Received: 02/26/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022504

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L917-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030118

Level: (low/med) LOW Date Received: 02/26/04

% Moisture: not dec. _____ Date Analyzed: 03/01/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L925

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW25	0402L925-001	Water
1MS	10MW25MS	0402L925-001MS	Water
1MSD	10MW25MSD	0402L925-001MSD	Water
2	10MW20	0402L925-004	Water
3	10MW27	0402L925-005	Water
4	RB-022704	0402L925-006	Water
5	TB-022704	0402L925-007	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/02/04	Bromomethane	50.7%	UJ	All Samples
	Methylene Chloride	30.4%	J	TB-022704

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination except the following.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
04LVK061	Methylene Chloride	0.6	6.0	B	None - ALL ND or >10X

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
TB-022704	Methylene Chloride	8	80	None	All ND
RB-022704	None - ND	--	--	--	--

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 ug/L	10MWDUP (SDG 0402L883) ug/L	RPD	Qualifier
1,1-Dichloroethene	4	3	29%	None
1,1-Dichloroethane	0.7	0.8	13%	None
Chloroform	0.2	0.1	67%	None
1,1,1-Trichloroethane	6	5	18%	None
Carbon Tetrachloride	ND	0.2	NC	None
Trichloroethene	0.2	0.1	67%	None

Tentatively Identified Compounds (TICs) - All "known" TICs were qualified (NJ).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the continuing calibration and TIC sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-001

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k030208

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	0.1	J
75-34-3	1,1-Dichloroethane	1	
540-59-0	1,2-Dichloroethene (total)	1	J
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.4	J
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	0.4	J
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030208

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030208

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1. 354234	ETHANE, 1,2-DICHLORO-1,1,2-T	10.191	2	~~NJ~~	NJ
2.	ALKANE	17.505	2	~~J~~	J
3.	ALKANE	17.682	1	~~J~~	J

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VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Cod : Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030216

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	0.1	J
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	0.1	J
100-41-4	Ethylbenzene	0.5	J
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030216

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	2	

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030216

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	10.367	4	J J
2.	ALKANE	11.469	20	J
3.	ALKANE	13.733	20	J
4.	ALKANE	15.151	40	J
5.	ALKANE	15.722	200	J
6.	ALKANE	16.972	50	J
7.	ALKANE	17.513	90	J
8.	ALKANE	17.690	100	J
9.	ALKANE	17.966	8	J
10.	ALKANE	18.192	20	J
11.	CYCLOALKANE	18.822	9	J
12.	CYCLOALKANE	19.649	10	J

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030209

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	4	
75-34-3	1,1-Dichloroethane	0.7	J
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	0.2	J
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	6	
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	0.2	J
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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1B

VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030209

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030209

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

04/30/04

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030206

Lev 1: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	~~U~~ UJ
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

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cil 3/01/04

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030206

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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CH 3/04 a

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030206

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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04130104
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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022704

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030207

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	9	~~B~~ J
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	U
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	0.3	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
98-82-8	Isopropylbenzene	1	U

04/30/04 a

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

TB-022704

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-007

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k030207

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U

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04/30/04

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022704

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0402L925-007

Sampl wt/vol: 25.0 (g/mL) ML Lab File ID: k030207

Level: (low/med) LOW Date Received: 02/27/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12	0402L857-001	Water
2	10MW24	0402L857-002	Water
3	10MW2R	0402L857-003	Water
4	10MW16	0402L857-004	Water
5	10MW14	0402L857-005	Water
7	FB-021904	0402L857-007	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
FB-021904		170%	None - ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB-021904	None - ND	--	--	--	--

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-001

Sample wt/vol: 36.6 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/01/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/23/04
CL

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 36.2 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/01/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

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04/23/04
CW

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 35.9 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/01/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

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04/23/04
CL

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/01/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

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04/23/04
CL

CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

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04/23/04
CG

GC VOLATILES SHEET

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 36.0 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/23/04
LC

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03	0402L883-001	Water
2	10MW28	0402L883-002	Water
3	10MWDUP	0402L883-008	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER Lab Sample ID: 0402L883-001

Sample wt/vol: 36.1 (g/mL) ML Lab File ID: BLK08330

Level: (low/med) LOW Date Received: 02/23/04

% Moisture: not dec. _____ Date Analyzed: 03/02/04

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

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04/23/04
CA

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 35.7 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.020	U

12/88 Rev.

04/23/04
CA

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: BA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 35.6 (g/mL) ML

Lab File ID: BLKO8330

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
106-93-4	1,2-Dibromoethane	0.020	U

12/88 Rev.

04/23/04

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04	0402L890-001	Water
2	10MW19	0402L890-002	Water
2MS	10MW19MS	0402L890-002MS	Water
2MSD	10MW19MSD	0402L890-002MSD	Water
3	10MW05	0402L890-003	Water
4	10MW06	0402L890-004	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 36.0 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4--------	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/26/04
CG

CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 36.4 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/26/04
LO

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/26/04
CW

CLIENT SAMPLE NO.

GC VOLATILES SHEET

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 36.0 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. ____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4--------	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/26/04
CL

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15	0402L909-001	Water
2	10MW21	0402L909-002	Water
3	10MW26	0402L909-003	Water
4	10MW10	0402L909-004	Water
5	10MW17	0402L909-005	Water
6	10MW07	0402L909-006	Water
7	10MW01	0402L909-007	Water
8	10MW08	0402L909-008	Water
9	10MW18	0402L909-009	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 36.6 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CW

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 36.2 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CW

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CV

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-004

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CO

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-005

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. ____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CO

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 35.6 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.020	U

12/88 Rev.

04/27/04
CV

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-007

Sample wt/vol: 36.1 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CV

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 36.5 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/27/04
CO

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-009

Sample wt/vol: 35.9 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/22/04
CC

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09	0402L917-001	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 36.2 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/30/04
CC

ENVIRONMENTAL
Data Services, Inc.

1,2-DIBROMOETHANE (EDB)

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L925

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW25	0402L925-001	Water
1MS	10MW25MS	0402L925-001MS	Water
1MSD	10MW25MSD	0402L925-001MSD	Water
2	10MW20	0402L925-004	Water
3	10MW27	0402L925-005	Water
4	RB-022704	0402L925-006	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
RB-022704	None - ND	--	--	--	--

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 ug/L	10MWDUP (SDG 0402L883) ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-001

Sample wt/vol: 35.9 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

04/30/04
a

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-004

Sample wt/vol: 35.5 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.020	U

12/88 Rev.

04130104
a

GC VOLATILES SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-005

Sample wt/vol: 36.2 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
106-93-4	1,2-Dibromoethane	0.019	U	

12/88 Rev.

04/30/04
CK

GC VOLATILES SHEET

CLIENT SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-006

Sample wt/vol: 36.4 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____

Date Analyzed: 03/02/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
106-93-4	1,2-Dibromoethane	0.019	U

12/88 Rev.

0C2130104
a

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12 ✓	0402L857-001	Water
2	10MW24 ✓	0402L857-002	Water
3	10MW2R	0402L857-003	Water
4	10MW16	0402L857-004	Water
5	10MW14	0402L857-005	Water
6	FB-021904 ✓	0402L857-007	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/05/04	4-Chloroaniline 3-Nitroaniline	%D=28.3 %D=29.4	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
SBLKKNLE0215	4-Nitrophenol	85%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination except the following.

Blank ID	Compound	Conc. ug/L	Action Level ug/kL	Qualifier	Affected Samples
04LE0215-MB1	2-Methylnaphthalene	0.9	4.5	B	3

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB-021904	None - ND	--	--	--	--

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all aldol condensation products were rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TIC sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030113

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/01/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/23/04
CW

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030113

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/01/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	0.5	J
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	17	
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/23/04 CC

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030113

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/01/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	5.228	20	~~J~~	J
2.	ALDOL CONDENSATE	5.717	20	~~JA~~	R
3.	ALDOL CONDENSATE	5.857	20	~~JA~~	R
4.	ALDOL CONDENSATE	6.354	10	~~JA~~	R
5.	UNKNOWN	6.721	30	~~J~~	J
6.	ALDOL CONDENSATE	9.062	9	~~JA~~	R
7.	UNKNOWN	9.542	6	~~J~~	J
8.	UNKNOWN	10.093	6	~~J~~	
9.	UNKNOWN	10.468	6	~~J~~	
10.	UNKNOWN	11.280	10	~~J~~	
11.	DIETHYLBENZENE	11.935	5	~~J~~	
12.	UNKNOWN	12.337	70	~~J~~	
13.	UNKNOWN	12.416	50	~~J~~	
14.	UNKNOWN	12.547	6	~~J~~	
15.	UNKNOWN	13.106	10	~~J~~	
16.	UNKNOWN	14.093	7	~~J~~	
17.	DIHYDROTRIMETHYLINDENE	14.512	5	~~J~~	
18.	ALKANE	14.975	5	~~J~~	
19.	ALKANE	16.460	6	~~J~~	
20.	UNKNOWN	20.093	7	~~J~~	

04/23/04 cc
:0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030114

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/01/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 11

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	2	J
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/23/04
CC

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030114

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/01/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 11

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/23/04 CC

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030114

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N) __

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/01/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 11

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	5.216	8	~~J~~	J
2.	ALDOL CONDENSATE	5.705	9	~~JA~~	R
3.	ALDOL CONDENSATE	5.854	10	~~JA~~	R
4.	ALDOL CONDENSATE	7.993	10	~~JA~~	R
5.	UNKNOWN	9.758	7	J	J
6.	UNKNOWN	9.941	7	J	
7.	TRIMETHYLBENZENE	11.304	7	J	
8.	UNKNOWN	11.426	10	J	
9.	UNKNOWN	11.828	10	J	
10.	UNKNOWN	12.151	6	J	
11.	ALKYLBENZENE	13.557	10	J	
12.	UNKNOWN	13.819	10	J	
13.	UNKNOWN	15.208	50	J	
14.	METHYLNAPHTHALENE	16.230	6	J	
15.	UNKNOWN	16.457	10	J	
16.	UNKNOWN	16.527	9	J	
17.	DIMETHYLNAPHTHALENE	17.496	8	J	
18.	UNKNOWN	18.771	7	J	
19.	UNKNOWN	22.614	10	J	
20.	UNKNOWN	24.972	6	J	

04/23/04

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 980 (g/mL) ML

Lab File ID: D030503

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q	
108-95-2	Phenol	10	U	
111-44-4	bis(2-Chloroethyl)ether	10	U	
95-57-8	2-Chlorophenol	10	U	
541-73-1	1,3-Dichlorobenzene	10	U	
106-46-7	1,4-Dichlorobenzene	10	U	
95-50-1	1,2-Dichlorobenzene	10	U	
95-48-7	2-Methylphenol	10	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U	
106-44-5	4-Methylphenol	10	U	
621-64-7	N-Nitroso-di-n-propylamine	10	U	
67-72-1	Hexachloroethane	10	U	
98-95-3	Nitrobenzene	10	U	
78-59-1	Isophorone	10	U	
88-75-5	2-Nitrophenol	10	U	
105-67-9	2,4-Dimethylphenol	10	U	
111-91-1	bis(2-Chloroethoxy)methane	10	U	
120-83-2	2,4-Dichlorophenol	10	U	
120-82-1	1,2,4-Trichlorobenzene	10	U	
91-20-3	Naphthalene	1	J	
106-47-8	4-Chloroaniline	10	U	
87-68-3	Hexachlorobutadiene	10	U	
59-50-7	4-Chloro-3-methylphenol	10	U	
91-57-6	2-Methylnaphthalene	0.5	~~JB~~	B
77-47-4	Hexachlorocyclopentadiene	10	U	
88-06-2	2,4,6-Trichlorophenol	10	U	
95-95-4	2,4,5-Trichlorophenol	26	U	
91-58-7	2-Chloronaphthalene	10	U	
88-74-4	2-Nitroaniline	26	U	
131-11-3	Dimethylphthalate	10	U	
208-96-8	Acenaphthylene	10	U	
606-20-2	2,6-Dinitrotoluene	10	U	
99-09-2	3-Nitroaniline	26	U	
83-32-9	Acenaphthene	10	U	

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 980 (g/mL) ML

Lab File ID: D030503

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/23/04
C

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 980 (g/mL) ML

Lab File ID: D030503

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	4.991	7	~~J~~	J
2.	ALDOL CONDENSATE	5.471	8	~~JA~~	R
3.	ALDOL CONDENSATE	5.611	10	~~JA~~	R
4.	UNKNOWN	6.493	6	J	J
5.	ETHYLMETHYLBENZENE	10.240	6	J	
6.	TRIMETHYLBENZENE	11.061	10	J	
7.	UNKNOWN	11.166	10	J	
8.	DIETHYLBENZENE	11.436	6	J	
9.	DIETHYLBENZENE	11.698	4	J	
10.	METHYLPRPOPYLBENZENE	11.786	6	J	
11.	ETHYLDIMETHYLBENZENE	11.943	9	J	
12.	ETHYLDIMETHYLBENZENE	12.091	50	J	
13.	UNKNOWN	12.144	10	J	
14.	UNKNOWN	12.345	5	J	
15.	DIMETHYLETHYLBENZENE	12.642	10	J	
16.	DIMETHYLETHYLBENZENE	12.729	6	J	
17.	UNKNOWN	13.323	10	J	
18.	UNKNOWN	17.978	4	J	
19.	UNKNOWN	18.563	9	J	
20.	UNKNOWN	19.908	20	J	

04/23/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030504

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	79	
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	68	~~B~~
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/23/04
a

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030504

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	0.6	J
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	5	J
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.9	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

04/23/04

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030504

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	4.992	10	~~J~~	J
2.	ALDOL CONDENSATE	5.613	10	~~JA~~	R
3.	METHYLETHYLBENZENE	9.167	20	~~J~~	J
4. 103-65-1	PROPYLBENZENE	9.735	20	~~JN~~	NJ
5.	UNKNOWN	11.150	10	J	J
6.	UNKNOWN	11.307	40	J	J
7. 496-11-7	INDANE	11.377	30	~~JN~~	NJ
8.	DIMETHYLETHYLBENZENE	12.093	90	J	J
9.	UNKNOWN	12.172	10	J	
10.	UNKNOWN	12.233	50	J	
11.	DIMETHYLETHYLBENZENE	12.652	30	J	
12.	ALKANE	12.722	20	J	
13.	ALKYLBENZENE	13.325	50	J	
14.	UNKNOWN	13.473	30	J	
15.	UNKNOWN	13.578	30	J	
16.	PAH	15.989	50	J	
17.	FLUOROBIPHENYL	16.582	40	J	
18.	PAH	17.465	10	J	
19.	UNKNOWN	18.574	20	J	
20.	UNKNOWN	19.919	10	J	

FORM 1 SV-TIC RFW (v3.3)

04/23/04

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030505

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	0.6	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/23/04
0

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030505

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/23/04 a

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030505

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	5.001	4	~~J~~	J
2.	ALDOL CONDENSATE	5.473	6	~~JA~~	R
3.	ALDOL CONDENSATE	5.621	7	~~JA~~	R
4.	ALDOL CONDENSATE	10.731	4	~~JA~~	R
5.	UNKNOWN	11.141	30	J	J
6.	UNKNOWN	11.237	10	J	
7.	UNKNOWN	11.796	3	J	
8.	UNKNOWN	11.988	10	J	
9.	UNKNOWN	12.049	10	J	
10.	DIMETHYLETHYLBENZENE	12.102	9	J	
11.	ALKYLBENZENE	12.652	6	J	
12.	UNKNOWN	12.713	8	J	
13.	UNKNOWN	13.028	4	J	
14.	UNKNOWN	13.333	5	J	
15.	UNKNOWN	14.600	4	J	
16.	DIMETHYLNAPHTHALENE	17.237	5	J	
17.	ALKANE	17.351	3	J	
18.	DIMETHYLNAPHTHALENE	17.464	4	J	
19.	UNKNOWN	17.814	3	J	
20.	UNKNOWN	18.539	4	J	

04/23/04

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030506

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/23/04
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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030506

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/23/04
C

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030506

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.140	10	~~J~~ J

FORM 1 SV-TIC

RFW (v3.3)

04/23/04

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ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03	0402L883-001	Water
2	10MW28	0402L883-002	Water
3	10MWDUP	0402L883-008	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/05/04	4-Chloroaniline 3-Nitroaniline	%D=28.3 %D=29.4	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
SBLKKNLE0215	4-Nitrophenol	85%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination except the following.

Blank ID	Compound	Conc. ug/kg	Action Level ug/kg	Qualifier	Affected Samples
04LE0215-MB1	2-Methylnaphthalene	0.9	4.5	None	All ND

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
Bis(2-ethylhexyl)phthalate	9	ND	NC	None

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TIC section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030507

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N) __

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	25	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	25	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	25	U
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene		

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04/26/04

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-001

Sample wt/vol: .990 (g/mL) ML

Lab File ID: D030507

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/29/04

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030507

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04/26/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030508

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/26/04 CW

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030508

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

04/26/04

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030508

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	18.004	7	J
2.	UNKNOWN	20.231	3	J

04/28/04

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030509

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/12/04
CV

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030509

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/26/04

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030509

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/25/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 9

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.295	7	J
2.	UNKNOWN	7.159	3	J
3.	UNKNOWN	8.959	9	J
4.	UNKNOWN	9.029	2	J
5.	UNKNOWN	9.491	4	J
6.	UNKNOWN	9.588	2	J
7.	UNKNOWN	14.051	3	J
8.	UNKNOWN	15.448	10	J
9.	UNKNOWN	20.199	4	J

FORM 1 SV-TIC RFW (v3.3)

04/26/04
LV

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04	0402L890-001	Water
2	10MW19	0402L890-002	Water
2MS	10MW19MS	0402L890-002MS	Water
2MSD	10MW19MSD	0402L890-002MSD	Water
3	10MW05	0402L890-003	Water
4	10MW06	0402L890-004	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/04/04	4-Chloroaniline 3-Nitroaniline	%D=28.2 %D=29.4	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	MS/MSD %R/RPD	Qualifier
10MW19	4-Chloro-3-methylphenol	98%/ok	None - ND
	4-Nitrophenol	110%/90%	None - ND
	Pentachlorophenol	104%/ok	None - ND
	1,2,4-Trichlorobenzene	ok/ok/29%	None

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
SBLKKTLE0238	4-Nitrophenol	81%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J) and all aldol condensation products were rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TIC section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030510

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04126104
CA

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030510

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

04/20/04
C-

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030510

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	12.382	4	~~J~~

FORM 1 SV-TIC RFW (v3.3)

04/26/04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030511

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/26/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030511

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/26/04 a

43

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030511

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 18

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.483	3	~~J~~ R
2.	ALDOL CONDENSATE	5.623	3	~~J~~ R
3.	UNKNOWN	6.793	4	~~J~~ J
4.	ALKYLBENZENE	11.580	4	~~J~~
5.	ALKYLBENZENE	11.719	3	~~J~~
6.	UNKNOWN	11.798	2	~~J~~
7.	UNKNOWN	12.147	7	~~J~~
8.	UNKNOWN	12.383	7	~~J~~
9.	ALKYLBENZENE	12.663	5	~~J~~
10.	UNKNOWN	13.335	3	~~J~~
11.	UNKNOWN	13.798	3	~~J~~
12.	UNKNOWN	14.418	2	~~J~~
13.	DIHYDRODIMETHYLINDENE	14.890	5	~~J~~
14.	UNKNOWN	15.335	2	~~J~~
15.	UNKNOWN	17.038	4	~~J~~
16.	DIMETHYL NAPHTHALENE	18.017	2	~~J~~
17.	UNKNOWN	19.065	2	~~J~~
18.	UNKNOWN	19.912	2	~~J~~ J

04/26/04

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030514

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	0.7	J
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04126104a

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030514

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/26/04

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D030514

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/05/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	10.052	2	J
2.	UNKNOWN	13.720	3	J
3.	UNKNOWN	14.061	6	J
4.	UNKNOWN	15.432	3	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: C030810

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/08/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	25	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	25	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	25	U
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	10	U

04/26/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: C030810

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/08/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	1	J
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: C030810

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/08/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 20

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		ALDOL CONDENSATE	6.092	9	~~J~~ R
2.		UNKNOWN	10.687	7	~~J~~ J
3.		UNKNOWN	11.637	50	~~J~~
4.		UNKNOWN	11.741	30	~~J~~
5.		UNKNOWN	12.406	7	~~J~~
6.		UNKNOWN	12.596	60	~~J~~
7.		UNKNOWN	12.656	20	~~J~~
8.		ALKANE	13.209	40	~~J~~
9.		ALKYLBENZENE	13.278	30	~~J~~
10.		UNKNOWN	13.969	7	~~J~~
11.		ALKANE	14.461	6	~~J~~
12.		UNKNOWN	14.513	7	~~J~~
13.		UNKNOWN	14.556	7	~~J~~
14.		UNKNOWN	14.902	6	~~J~~
15.		ALKANE	15.351	10	~~J~~
16.		UNKNOWN	15.558	6	~~J~~
17.		UNKNOWN	16.275	7	~~J~~
18.		ALKANE	16.854	10	~~J~~
19.		UNKNOWN	19.134	9	~~J~~
20.		UNKNOWN	20.438	6	~~J~~

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ENVIRONMENTAL
Data Services, Inc.

POLYNUCLEAR AROMATIC COMPOUNDS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15	0402L909-001	Water
2	10MW21	0402L909-002	Water
3	10MW26	0402L909-003	Water
4	10MW10	0402L909-004	Water
5	10MW17	0402L909-005	Water
6	10MW07	0402L909-006	Water
7	10MW01	0402L909-007	Water
8	10MW08	0402L909-008	Water
9	10MW18	0402L909-009	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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CLIENT SAMPLE NO.

10MW21

ORGANICS ANALYSIS SHEET

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec.

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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CLIENT SAMPLE NO.

10MW26

ORGANICS ANALYSIS SHEET

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.21	
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene ✓	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene ✓	3.54	U
191-24-2	Benzo(ghi)perylene ✓	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15	0402L909-001	Water
2	10MW21	0402L909-002	Water
3	10MW26	0402L909-003	Water
4	10MW10	0402L909-004	Water
5	10MW17	0402L909-005	Water
6	10MW07	0402L909-006	Water
7	10MW01	0402L909-007	Water
8	10MW08	0402L909-008	Water
9	10MW18	0402L909-009	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/10/04	Indeno(1,2,3-cd)pyrene	%D=28.6	None	All ND
	Dibenz(a,h)anthracene	%D=29.3		
	Benzo(g,h,i)perylene	%D=25.2		

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW10	Terphenyl-d14	142%	None - ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
SBLKKTLE0238	4-Nitrophenol	81%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria except the following.

Sample ID	Internal Standard	Area Count	Qualifier
10MW01	IS6-Perylene-d12	Low	UJ - IS6 Associated Compounds

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all aldol condensation products were rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the internal standard and TIC sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031005

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/27/04

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031005

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04 CO

29

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031005

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04122104
CG

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031006

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO..	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031006

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04
CO 37

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031006

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04/27/04 Ca

38

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031007

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

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CV
44

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031007

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04 45

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031007

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04/27/04

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031008

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

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C 52

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031008

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04
C-53

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031008

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

04/27/04

C 51

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031009

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	2	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	1	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/27/04
CO
60

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031009

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04
CO
61

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031009

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENDSATE	4.863	5	~~JA~~ R
2.	ALDOL CONDENSATE	5.282	30	~~JA~~ R
3.	ALDOL CONDENSATE	5.412	50	~~JA~~ R
4.	UNKNOWN	5.892	6	J J
5.	ALDOL CONDENSATE	5.927	7	JA R
6.	UNKNOWN	6.275	6	J J
7.	ALDOL CONDENSATE	8.567	6	~~JA~~ R
8.	METHYLETHYLBENZENE	8.889	7	J NJ
9. 103-65-1	PROPYL-BENZENE	9.447	7	~~JN~~ NJ
10.	UNKNOWN	10.502	4	J J
11.	UNKNOWN	10.763	4	J J
12.	DIETHYLBENZENE	11.138	5	J NJ
13.	UNKNOWN	11.417	6	J J
14.	UNKNOWN	11.643	7	J
15.	UNKNOWN	11.739	30	J
16.	UNKNOWN	11.809	20	J
17.	UNKNOWN	12.218	4	J
18.	UNKNOWN	12.549	6	J
19.	UNKNOWN	13.020	10	J
20.	UNKNOWN	14.902	70	J

04/27/04
CG 62

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031010

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04127404
CC

94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031010

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	0.7	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

04127W4 CL

95

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031010

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.270	8	~~JA~~ R
2.	ALDOL CONDENSATE	5.409	10	~~JA~~
3.	ALDOL CONDENSATE	5.932	3	~~JA~~
4.	UNKNOWN	6.272	3	J J
5.	UNKNOWN	10.899	40	J
6.	UNKNOWN	11.597	4	J
7.	UNKNOWN	11.658	3	J
8.	UNKNOWN	15.562	4	J

04/27/04
CO
96

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031011

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04127104
C

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031011

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene ✓	10	U
218-01-9	Chrysene ✓	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	~~U~~ UJ
205-99-2	Benzo(b)fluoranthene ✓	10	~~U~~ UJ
207-08-9	Benzo(k)fluoranthene	10	~~U~~
50-32-8	Benzo(a)pyrene ✓	10	~~U~~
193-39-5	Indeno(1,2,3-cd)pyrene ✓	10	~~U~~
53-70-3	Dibenz(a,h)anthracene	10	~~U~~
191-24-2	Benzo(g,h,i)perylene ✓	10	~~U~~

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

04/27/04 CL

114

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031011

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.860	5	~~JA~~ R
2.	ALDOL CONDENSATE	5.270	30	~~JA~~ R
3.	ALDOL CONDENSATE	5.409	40	~~JA~~ R
4.	UNKNOWN	5.888	7	~~J~~ J
5.	ALDOL CONDENSATE	5.923	4	~~JA~~ R
6.	UNKNOWN	6.272	9	~~J~~ J
7.	ALDOL CONDENSATE	8.564	6	~~JA~~ R
8.	UNKNOWN	9.880	3	~~J~~ J
9.	UNKNOWN	10.760	5	~~J~~ ↓
10.	UNKNOWN	10.943	40	~~J~~ ↓
11.	DIETHYLBENZENE	11.405	3	~~J~~ NJ
12.	UNKNOWN	11.727	20	~~J~~ J
13.	UNKNOWN	11.788	9	~~J~~ ↓
14.	UNKNOWN	11.823	4	~~J~~ ↓
15.	ALKANE	12.311	8	~~J~~ ↓
16.	UNKNOWN	12.555	7	~~J~~ ↓
17.	UNKNOWN	13.966	4	~~J~~ ↓
18.	UNKNOWN	18.245	6	~~J~~ ↓
19.	UNKNOWN	19.631	20	~~J~~ ↓
20.	UNKNOWN	20.075	4	~~J~~ ↓

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031012

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	4	J
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	7	J
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/27/04
CO

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031012

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: ____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04
CV

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031012

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.799	10	~~JA~~ R
2.	ALDOL CONDENSATE	4.869	10	~~JA~~ R
3.	ALDOL CONDENSATE	5.278	60	~~JA~~ R
4.	ALDOL CONDENSATE	5.417	70	~~JA~~ R
5.	UNKNOWN	5.888	9	~~J~~ J
6.	UNKNOWN	5.932	8	~~J~~ J
7.	UNKNOWN	8.563	5	~~J~~ J
8.	TRIMETHYLBENZENE	8.886	8	~~J~~ NJ
9.	ALKANE	9.409	5	~~J~~ J
10.	DIETHYLBENZENE	11.143	6	~~J~~ NJ
11.	ETHYLDIMETHYLBENZENE	11.796	10	~~J~~ NJ
12.	UNKNOWN	12.276	5	~~J~~ J
13.	ALKYL BENZENE	12.345	6	~~J~~ J
14.	UNKNOWN	12.807	6	~~J~~ J
15.	ALKYL BENZENE	13.008	20	~~J~~ J
16.	ALKANE	14.899	8	~~J~~ J
17.	METHYLNAPHTHALENE	15.657	7	~~J~~ NJ
18.	DIMETHYLNAPHTHALENE	16.912	5	~~J~~ ↓
19.	DIMETHYLNAPHTHALENE	17.138	5	~~J~~ ↓
20.	DIMETHYLNAPHTHALENE	17.199	4	~~J~~ ↓

04/27/04 CO

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031013

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/27/04
CV

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031013

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/27/04 cc

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L909-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: N031013

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.280	5	~~JA~~ R
2.	ALDOL CONDENSATE	5.410	3	~~JA~~ R
3.	UNKNOWN	12.556	4	~~J~~ J

FORM 1 SV-TIC

RFW (v3.3)

04/27/04

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 29, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09	0402L917-001	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
SBLKKTLE0238	4-Nitrophenol	81%	None	All ND

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J), all "known" TICs were qualified (NJ) and all aldol condensation products were rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TIC section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D031007

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

04/29/04

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D031007

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

04/29/04

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: D031007

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 02/28/04

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/10/04

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	4.477	20	J	J
2.	ALDOL CONDENSATE	4.949	10	JA	R
3.	ALDOL CONDENSATE	5.089	20	JA	R
4.	ALDOL CONDENSATE	5.630	4	JA	R
5.	UNKNOWN	5.761	2	J	J
6.	ALKANE	5.988	10	J	J
7.	UNKNOWN	7.219	3	J	J
8.	ALDOL CONDENSATE	8.328	5	JA	R
9.	UNKNOWN	8.817	4	J	J
10.	ALDOL CONDENSATE	10.537	6	JA	R
11.	UNKNOWN	10.886	3	J	J
12.	UNKNOWN	11.541	60	J	
13.	UNKNOWN	11.584	9	J	
14.	ALKANE	12.099	5	J	
15.	UNKNOWN	12.335	10	J	
16.	UNKNOWN	12.789	3	J	
17.	DIHYDROTRIMETHYLINDENE	13.732	3	J	NJ
18.	UNKNOWN	14.614	3	J	J
19.	PAH	15.417	3	J	
20.	UNKNOWN	19.424	8	J	

04/29/04

ENVIRONMENTAL
Data Services, Inc.

POLYNUCLEAR AROMATIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12 ✓	0402L857-001	Water
2	10MW24 ✓	0402L857-002	Water
3	10MW2R ✓	0402L857-003	Water
4	10MW16 ✓	0402L857-004	Water
5	10MW14 ✓	0402L857-005	Water
6	FB-021904 ✓	0402L857-007	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB-021904	None - ND	--	--	--	--

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ENVIRONMENTAL
Data Services, Inc.

POLYNUCLEAR AROMATIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03 ✓	0402L883-001	Water
2	10MW28 ✓	0402L883-002	Water
3	10MWDUP ✓	0402L883-008	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3---------	Benzo(a)anthracene	3.54	U
218-01-9--------	Chrysene	1.90	U
205-99-2--------	Benzo(b)fluoranthrene	1.20	U
50-32-8---------	Benzo(a)pyrene	0.20	U
193-39-5--------	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2--------	Benzo(ghi)perylene	0.25	U

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ENVIRONMENTAL
Data Services, Inc.

POLYNUCLEAR AROMATIC COMPOUNDS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04	0402L890-001	Water
2	10MW19	0402L890-002	Water
2MS	10MW19MS	0402L890-002MS	Water
2MSD	10MW19MSD	0402L890-002MSD	Water
3	10MW05	0402L890-003	Water
4	10MW06	0402L890-004	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	MS/MSD %R/RPD	Qualifier
10MW19	Chrysene	Ok/ok/34%	None

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3---------	Benzo(a)anthracene	3.54	U
218-01-9--------	Chrysene	1.92	U
205-99-2--------	Benzo(b)fluoranthrene	1.21	U
50-32-8---------	Benzo(a)pyrene	0.20	U
193-39-5--------	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2--------	Benzo(ghi)perylene	0.25	U

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CLIENT SAMPLE NO.

ORGANICS ANALYSIS SHEET

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. ____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3---------	Benzo(a)anthracene	3.54	U
218-01-9--------	Chrysene	1.92	U
205-99-2--------	Benzo(b)fluoranthrene	1.21	U
50-32-8---------	Benzo(a)pyrene	0.20	U
193-39-5--------	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2--------	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3---------	Benzo(a)anthracene	3.54	U
218-01-9--------	Chrysene	1.92	U
205-99-2--------	Benzo(b)fluoranthrene	1.21	U
50-32-8---------	Benzo(a)pyrene	0.20	U
193-39-5--------	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2--------	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.92	U
205-99-2	Benzo(b)fluoranthrene	1.21	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ENVIRONMENTAL
Data Services, Inc.

POLYNUCLEAR AROMATIC COMPOUNDS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 29, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09	0402L917-001 ✓	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ENVIRONMENTAL
Data Services, Inc.

POLYNUCLEAR AROMATIC COMPOUNDS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L925

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW25 ✓	0402L925-001	Water
1MS	10MW25MS	0402L925-001MS	Water
1MSD	10MW25MSD	0402L925-001MSD	Water
2	10MW20 ✓	0402L925-004	Water
3	10MW27 ✓	0402L925-005	Water
4	RB-022704 ✓	0402L925-006	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days for all samples.

Initial Calibration - The initial calibrations exhibited acceptable %RSD and mean RRF values.

Continuing Calibration - The continuing calibrations exhibited acceptable %D and RRF values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
RB-022704	None - ND	--	--	--	--

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 ug/L	10MWDUP (SDG 0402L883) ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

CLIENT SAMPLE NO.

10MW25

ORGANICS ANALYSIS SHEET

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. ____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKO8330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec.

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____

Date Analyzed: 03/03/04

Column: (pack/cap) CAP

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
56-55-3	Benzo(a)anthracene	3.54	U
218-01-9	Chrysene	1.90	U
205-99-2	Benzo(b)fluoranthrene	1.20	U
50-32-8	Benzo(a)pyrene	0.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	3.54	U
191-24-2	Benzo(ghi)perylene	0.25	U

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ENVIRONMENTAL
Data Services, Inc.

CHLORINATED HERBICDES

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12	0402L857-001	Water
2	10MW24	0402L857-002	Water
3	10MW2R	0402L857-003	Water
4	10MW16	0402L857-004	Water
5	10MW14	0402L857-005	Water
6	FB-021904	0402L857-007	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB-021904	None - ND	--	--	--	--

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER Lab Sample ID: 0402L857-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: BLK08330.01

Level: (low/med) LOW Date Received: 02/20/04

% Moisture: not dec. _____ dec. Date Extracted: 02/24/04

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
CAS NO.	COMPOUND	(ug/L or ug/Kg) ug/L	
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/24/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 11

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. ____ dec.

Date Extracted: 02/24/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/24/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/24/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/24/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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ENVIRONMENTAL
Data Services, Inc.

CHLORINATED HERBICDES

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03	0402L883-001	Water
2	10MW28	0402L883-002	Water
3	10MWDUP	0402L883-008	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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ENVIRONMENTAL
Data Services, Inc.

CHLORINATED HERBICDES

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04	0402L890-001	Water
2	10MW19	0402L890-002	Water
2MS	10MW19MS	0402L890-002MS	Water
2MSD	10MW19MSD	0402L890-002MSD	Water
3	10MW05	0402L890-003	Water
4	10MW06	0402L890-004	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1--------	Hexachlorobenzene	0.050	U
87-68-3---------	Hexachlorobutadiene	0.050	U
67-72-1---------	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. ____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/25/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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ENVIRONMENTAL
Data Services, Inc.

CHLORINATED HERBICDES

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15	0402L909-001	Water
2	10MW21	0402L909-002	Water
3	10MW26	0402L909-003	Water
4	10MW10	0402L909-004	Water
5	10MW17	0402L909-005	Water
6	10MW07	0402L909-006	Water
7	10MW01	0402L909-007	Water
8	10MW08	0402L909-008	Water
9	10MW18	0402L909-009	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER Lab Sample ID: 0402L909-004

Sample wt/vol: 990 (g/mL) ML Lab File ID: BLK08330.01

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ dec. Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKQ8330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER Lab Sample ID: 0402L909-007

Sample wt/vol: 990 (g/mL) ML Lab File ID: BLK08330.01

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ dec. Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-009

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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ENVIRONMENTAL
Data Services, Inc.

CHLORINATED HERBICDES

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09	0402L917-001	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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ENVIRONMENTAL
Data Services, Inc.

CHLORINATED HERBICDES

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L925

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW25	0402L925-001	Water
1MS	10MW25MS	0402L925-001MS	Water
1MSD	10MW25MSD	0402L925-001MSD	Water
2	10MW20	0402L925-004	Water
3	10MW27	0402L925-005	Water
4	RB-022704	0402L925-006	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
RB-022704	None - ND	--	--	--	--

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 ug/L	10MWDUP (SDG 0402L883) ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKO8330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/01/04

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
118-74-1	Hexachlorobenzene	0.050	U
87-68-3	Hexachlorobutadiene	0.050	U
67-72-1	Hexachloethane	0.050	U

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ENVIRONMENTAL
Data Services, Inc.

PENTACHLOROPHENOL

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12 ✓	0402L857-001	Water
2	10MW24 ✓	0402L857-002	Water
3	10MW2R ✓	0402L857-003	Water
4	10MW16 ✓	0402L857-004	Water
5	10MW14 ✓	0402L857-005	Water
6	FB-021904 ✓	0402L857-007	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW12	DCAA	133%	None - ND
10MW24	DCAA	133%	None - ND
10MW16	DCAA	121%	None - ND
10MW14	DCAA	126%	None - ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB-021904	None - ND	--	--	--	--

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW12

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW24

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 12

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
87-86-5	Pentachlorophenol	0.91	U	

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW2R

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-003

Sample wt/vol: 980 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.92	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW16

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-004

Sample wt/vol: .990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW14

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
87-86-5	Pentachlorophenol	0.91	U	

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

FB-021904

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L857-007

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/20/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
87-86-5	Pentachlorophenol	0.91	U

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ENVIRONMENTAL
Data Services, Inc.

PENTACHLOROPHENOL

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03 ✓	0402L883-001	Water
2	10MW28 ✓	0402L883-002	Water
3	10MWDUP ✓	0402L883-008	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MWDUP	DCAA	136%	None - ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW03

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-001

Sample wt/vol: 980 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/02/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
87-86-5	Pentachlorophenol	0.92	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW28

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKQ8330.01

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MWDUP

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L883-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/23/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/26/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/03/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
87-86-5	Pentachlorophenol	0.91	U	

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ENVIRONMENTAL
Data Services, Inc.

PENTACHLOROPHENOL

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04	0402L890-001	Water
2	10MW19	0402L890-002	Water
2MS	10MW19MS	0402L890-002MS	Water
2MSD	10MW19MSD	0402L890-002MSD	Water
3	10MW05	0402L890-003	Water
4	10MW06	0402L890-004	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW19	DCAA	148%	None - ND
10MW06	DCAA	126%	None - ND

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	MS/MSD %R/RPD	Qualifier
10MW19	Pentachlorophenol	13%/13%	UL

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the MS/MSD section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW04

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW19

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	~~U~~ UJ

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW05

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKO8330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW06

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L890-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/24/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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ENVIRONMENTAL
Data Services, Inc.

PENTACHLOROPHENOL

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15	0402L909-001	Water
2	10MW21	0402L909-002	Water
3	10MW26	0402L909-003	Water
4	10MW10	0402L909-004	Water
5	10MW17	0402L909-005	Water
6	10MW07	0402L909-006	Water
7	10MW01	0402L909-007	Water
8	10MW08	0402L909-008	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW15	DCAA	138%	None - ND
10MW21	DCAA	150%	None - ND
10MW26	DCAA	128%	None - ND
10MW10	DCAA	147%	None - ND
10MW08	DCAA	136%	None - ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW15

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW21

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW26

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW10

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER Lab Sample ID: 0402L909-004

Sample wt/vol: 990 (g/mL) ML Lab File ID: BLK08330.01

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ dec. Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW17

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER Lab Sample ID: 0402L909-005

Sample wt/vol: 990 (g/mL) ML Lab File ID: BLK08330.01

Level: (low/med) LOW Date Received: 02/25/04

% Moisture: not dec. _____ dec. Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW07

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKQ8330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW08

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L909-008

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/25/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

FORM 1 PEST

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ENVIRONMENTAL
Data Services, Inc.

PENTACHLOROPHENOL

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09	0402L917-001	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D values.

Surrogates - All samples exhibited acceptable surrogate recoveries except the following.

Sample ID	Surrogate	%R	Qualifier
10MW09	DCAA	134%	None - ND

MS/MSD - A MS/MSD sample was not analyzed.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC samples were not analyzed.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW09

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L917-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/26/04

% Moisture: not dec. _____ dec.

Date Extracted: 02/29/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/04/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND			
87-86-5	Pentachlorophenol	0.91	U	

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ENVIRONMENTAL
Data Services, Inc.

PENTACHLOROPHENOL

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L925

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW25	0402L925-001	Water
1MS	10MW25MS	0402L925-001MS	Water
1MSD	10MW25MSD	0402L925-001MSD	Water
2	10MW18	0402L925-002	Water
3	10MW01	0402L925-003	Water
4	10MW20	0402L925-004	Water
5	10MW27	0402L925-005	Water
6	RB-022704	0402L925-006	Water

Holding Times - All samples were extracted within 7 days for water samples and analyzed within 40 days.

Initial Calibration - The initial calibrations exhibited acceptable %RSD values.

Calibration Verification - The continuing calibrations exhibited acceptable %D and RRF values except the following.

CCAL Date	Compound	%D/RRF	Qualifier	Affected Samples
03/06/04 (532)	PCP	%D=ok/20.9	None	All ND
03/06/04 (122)	PCP	%D=ok/22.1	None	All ND

Surrogates - All samples exhibited acceptable surrogate recoveries.

MS/MSD - The MS/MSD sample exhibited acceptable %R and RPD values.

Laboratory Control Sample - The LCS sample(s) exhibited acceptable %R values.

Method Blank - The method blanks were free of contamination.

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
RB-022704	None - ND	--	--	--	--

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 ug/L	10MWDUP (SDG 0402L993) ug/L	RPD	Qualifier
None	ND	ND	--	--

Compound Identification - Retention times were acceptable and no further action was taken.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW25

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/03/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/06/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW18

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-002

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/03/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/06/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-003

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLKO8330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/03/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/06/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW20

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-004

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/03/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/06/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10MW27

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/03/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/06/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	
87-86-5	Pentachlorophenol	0.91	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

RB-022704

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: WATER

Lab Sample ID: 0402L925-006

Sample wt/vol: 990 (g/mL) ML

Lab File ID: BLK08330.01

Level: (low/med) LOW

Date Received: 02/27/04

% Moisture: not dec. _____ dec.

Date Extracted: 03/03/04

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 03/06/04

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
87-86-5	Pentachlorophenol	0.91	U

FORM 1 PEST

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ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L857

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW12	0402L857-001	Water
2	10MW24	0402L857-002	Water
3	10MW2R	0402L857-003	Water
4	10MW16	0402L857-004	Water
5	10MW14	0402L857-005	Water
6	FB-021904	0402L857-007	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except those noted below. The associated samples were qualified as indicated unless >2X the CRDL or already qualified.

Compound	%R - High/Low	Qualifier	Affected Samples
Aluminum	High	K	6
Antimony	High	K	1, 3, 5
Beryllium	High	K	5
Nickel	High	K	3, 5
Silver	High	K	2, 3, 4, 5

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Arsenic	6.5	8.125	B	1, 4
Barium	0.3	0.375	B	6
Chromium	0.126	0.63	B	6
Magnesium	2.25	11.25	B	6
Sodium	24.468	122.34	B	6

Field and Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB-021904	Aluminum	12.4	62	B	1, 3, 4, 5
	Calcium	46.4	232	None	>5X
	Iron	2.8	14	None	>5X
	Manganese	0.42	2.1	B	2
	Potassium	11.2	56	None	>5X
	Zinc	5.9	29.5	B	2, 5

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike - The matrix spike sample was not included in the data package.

Matrix Duplicate - The matrix duplicate sample was not included in the data package.

LCS - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample was not included in the data package.

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank and field blank section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW12

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: FB0219

Matrix (soil/water): WATER Lab Sample ID: 0402L857-001

Level (low/med): LOW Date Received: 02/20/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28.5		B	P
7440-36-0	Antimony	0.90		K	P
7440-38-2	Arsenic	3.0		B	P
7440-39-3	Barium	1040			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.13			P
7440-70-2	Calcium	39800			P
7440-47-3	Chromium	1.8			P
7440-48-4	Cobalt	0.40			P
7440-50-8	Copper	1.8			P
7439-89-6	Iron	23900			P
7439-92-1	Lead	2.0			P
7439-95-4	Magnesium	25100			P
7439-96-5	Manganese	18600			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.52			P
7440-09-7	Potassium	1960			P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.37			P
7440-23-5	Sodium	28800			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	105			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW12

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW24

Lab Name: LIONVILLE_LABORATORY Contract: 60104
Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: FB0219
Matrix (soil/water): WATER Lab Sample ID: 0402L857-002
Level (low/med): LOW Date Received: 02/20/04
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2710			P
7440-36-0	Antimony	1.8			P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	341			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.10			P
7440-70-2	Calcium	30300			P
7440-47-3	Chromium	23.3			P
7440-48-4	Cobalt	1.7			P
7440-50-8	Copper	4.6			P
7439-89-6	Iron	33.3			P
7439-92-1	Lead	4.4			P
7439-95-4	Magnesium	66.4			P
7439-96-5	Manganese	0.62		B	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	3.2			P
7440-09-7	Potassium	44800			P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.20		K	P
7440-23-5	Sodium	86800			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	2.4			P
7440-66-6	Zinc	14.8		B	P

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
10MW24

FORM I - IN

04/23/04
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U.S. EPA

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW2R

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0219
Matrix (soil/water): WATER Lab Sample ID: 0402L857-003
Level (low/med): LOW__ Date Received: 02/20/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.3	_	B	P
7440-36-0	Antimony_	1.2	_	K	P
7440-38-2	Arsenic__	0.85	U		P
7440-39-3	Barium___	1180			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium__	0.11	_		P
7440-70-2	Calcium__	40300	_		P
7440-47-3	Chromium_	0.12	U		P
7440-48-4	Cobalt___	0.15	U		P
7440-50-8	Copper___	1.2	_		P
7439-89-6	Iron_____	18000	_		P
7439-92-1	Lead_____	5.1	_		P
7439-95-4	Magnesium	20300	_		P
7439-96-5	Manganese	11700	_		P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	0.36	_	K	P
7440-09-7	Potassium	6640			P
7782-49-2	Selenium_	0.85	U		P
7440-22-4	Silver___	0.25	_	K	P
7440-23-5	Sodium___	18300	_		P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.12	U		P
7440-66-6	Zinc_____	119	_		P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW2R

FORM I - IN

04/23/04

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW16

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0219

Matrix (soil/water): WATER Lab Sample ID: 0402L857-004

Level (low/med): LOW__ Date Received: 02/20/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30.6		B	P
7440-36-0	Antimony	1.6			P
7440-38-2	Arsenic	5.4		B	P
7440-39-3	Barium	1590			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.11			P
7440-70-2	Calcium	47400			P
7440-47-3	Chromium	0.12	U		P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	0.84			P
7439-89-6	Iron	25500			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	26000			P
7439-96-5	Manganese	11800			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.62			P
7440-09-7	Potassium	2930			P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.27		K	P
7440-23-5	Sodium	13400			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	146			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW16

FORM I - IN

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW14

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0219

Matrix (soil/water): WATER Lab Sample ID: 0402L857-005

Level (low/med): LOW__ Date Received: 02/20/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30.0		B	P
7440-36-0	Antimony	0.79		K	P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	539			P
7440-41-7	Beryllium	0.06		K	P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	50300			P
7440-47-3	Chromium	0.12	U		P
7440-48-4	Cobalt	1.7			P
7440-50-8	Copper	1.6			P
7439-89-6	Iron	3300			P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	18100			P
7439-96-5	Manganese	23300			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.28		K	P
7440-09-7	Potassium	3230			P
7782-49-2	Selenium	1.6			P
7440-22-4	Silver	0.64		K	P
7440-23-5	Sodium	16200			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	28.3		B	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW14

FORM I - IN

04/23/04

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB0219

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: FB0219

Matrix (soil/water): WATER Lab Sample ID: 0402L857-007

Level (low/med): LOW__ Date Received: 02/20/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	12.4		K	P_
7440-36-0	Antimony_	0.68	U		P_
7440-38-2	Arsenic__	0.85	U		P_
7440-39-3	Barium___	0.27		B	P_
7440-41-7	Beryllium	0.05	U		P_
7440-43-9	Cadmium__	0.10	U		P_
7440-70-2	Calcium__	46.4			P_
7440-47-3	Chromium_	0.20		B	P_
7440-48-4	Cobalt___	0.15	U		P_
7440-50-8	Copper___	0.30	U		P_
7439-89-6	Iron_____	2.8			P_
7439-92-1	Lead_____	0.50	U		P_
7439-95-4	Magnesium	9.9		B	P_
7439-96-5	Manganese	0.42			P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	0.25	U		P_
7440-09-7	Potassium	11.2			P_
7782-49-2	Selenium_	0.85	U		P_
7440-22-4	Silver___	0.15	U		P_
7440-23-5	Sodium___	87.7		B	P_
7440-28-0	Thallium_	1.0	U		P_
7440-62-2	Vanadium_	0.12	U		P_
7440-66-6	Zinc_____	5.9			P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

FB-021904

FORM I - IN

04123104a

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L883

Client: EA Engineering, Science & Technology, Inc. Date: April 23, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW03 ✓	0402L883-001	Water
2	10MW28 ✓	0402L883-002	Water
3	10MWDUP ✓	0402L883-008	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except those noted below. The associated samples were qualified as indicated unless >2X the CRDL or already qualified.

Compound	%R - High/Low	Qualifier	Affected Samples
Antimony	High	K	2, 3
Silver	High	K	1

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Arsenic	6.5	8.125	B	2

Field and Equipment Blank - Field QC samples were not analyzed.

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike - The matrix spike sample was not included in the data package.

Matrix Duplicate - The matrix duplicate sample was not included in the data package.

LCS - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample was not included in the data package.

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 (SDG 0402L925) ug/L	10MWDUP ug/L	RPD	Qualifier
Aluminum	8.6U	19.1	NC	None
Antimony	0.98	0.87	12	None
Barium	387	217	56	None
Beryllium	0.05U	0.16	NC	None
Calcium	23100	25800	11	None
Chromium	1.3	1.5	14	None
Copper	0.61	1.6	90	None
Iron	14.6B	23.6	NC	None
Magnesium	8740	9380	7	None
Manganese	8.3	8.2	1	None
Nickel	4.9	5.2	6	None
Potassium	1490	1850	22	None
Selenium	0.85U	1.2	NC	None
Sodium	21800	21900	1	None
Zinc	187	52.9	112	None

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard and method and calibration blank sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW03

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0220
Matrix (soil/water): WATER Lab Sample ID: 0402L883-001
Level (low/med): LOW__ Date Received: 02/23/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	35.2			P
7440-36-0	Antimony	1.4			P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	306			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	36100			P
7440-47-3	Chromium	0.76			P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	1.0			P
7439-89-6	Iron	24.3			P
7439-92-1	Lead	0.50	U		P
7439-95-4	Magnesium	17900			P
7439-96-5	Manganese	9.3			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	1.1			P
7440-09-7	Potassium	6850			P
7782-49-2	Selenium	2.1			P
7440-22-4	Silver	0.16		K	P
7440-23-5	Sodium	33500			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	145			P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW03

FORM I - IN

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW28

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0220

Matrix (soil/water): WATER Lab Sample ID: 0402L883-002

Level (low/med): LOW__ Date Received: 02/23/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	19.3			P
7440-36-0	Antimony_	0.81			P
7440-38-2	Arsenic__	1.1		B	P
7440-39-3	Barium___	474			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium__	0.10	U		P
7440-70-2	Calcium__	56500			P
7440-47-3	Chromium_	1.5			P
7440-48-4	Cobalt___	0.15	U		P
7440-50-8	Copper___	0.49			P
7439-89-6	Iron____	29.1			P
7439-92-1	Lead____	0.50	U		P
7439-95-4	Magnesium	17900			P
7439-96-5	Manganese	2.3			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	3.1			P
7440-09-7	Potassium	1630			P
7782-49-2	Selenium_	1.1			P
7440-22-4	Silver___	0.15	U		P
7440-23-5	Sodium___	14200			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.58			P
7440-66-6	Zinc____	77.5			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW28

FORM I - IN

04/23/04

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MWDU

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI___ Case No.: WILLO SAS No.: _____ SDG No.: RB0220

Matrix (soil/water): WATER Lab Sample ID: 0402L883-008

Level (low/med): LOW__ Date Received: 02/23/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	19.1	_		P_
7440-36-0	Antimony_	0.87	_	K	P_
7440-38-2	Arsenic__	0.85	U		P_
7440-39-3	Barium___	217	_		P_
7440-41-7	Beryllium	0.16	_		P_
7440-43-9	Cadmium__	0.10	U		P_
7440-70-2	Calcium__	25800	_		P_
7440-47-3	Chromium_	1.5	_		P_
7440-48-4	Cobalt___	0.15	U		P_
7440-50-8	Copper___	1.6	_		P_
7439-89-6	Iron____	23.6	_		P_
7439-92-1	Lead____	0.50	U		P_
7439-95-4	Magnesium	9380	_		P_
7439-96-5	Manganese	8.2	_		P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	5.2	_		P_
7440-09-7	Potassium	1850	_		P_
7782-49-2	Selenium_	1.2	_		P_
7440-22-4	Silver___	0.15	U		P_
7440-23-5	Sodium___	21900	_		P_
7440-28-0	Thallium_	1.0	U		P_
7440-62-2	Vanadium_	0.12	U		P_
7440-66-6	Zinc____	52.9	_		P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MWDUP

FORM I - IN

04/23/04

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L890

Client: EA Engineering, Science & Technology, Inc. Date: April 26, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW04 ✓	0402L890-001	Water
2	10MW19 ✓	0402L890-002	Water
2MS	10MW19MS	0402L890-002MS	Water
2MSD	10MW19MSD	0402L890-002MSD	Water
3	10MW05 ✓	0402L890-003	Water
4	10MW06 ✓	0402L890-004	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except those noted below. The associated samples were qualified as indicated unless >2X the CRDL or already qualified.

Compound	%R - High/Low	Qualifier	Affected Samples
Silver	High	K	2, 4

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Aluminum	78.2	97.75	B	1, 2, 3, 4
Arsenic	4.3	5.375	B	2, 4
Cadmium	10.6	53	B	2
Chromium	0.326	1.63	B	1, 2, 3, 4

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Cobalt	0.156	0.78	B	4
Copper	2.2	2.75	B	1, 2, 3, 4
Iron	4.07	20.35	B	1, 3
Lead	1.27	6.37	B	4
Nickel	1.1	1.375	B	3, 4

Field and Equipment Blank - Field QC samples were not analyzed.

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike - The matrix spike sample was not included in the data package.

Matrix Duplicate - The matrix duplicate sample(s) exhibited acceptable RPD values except the following.

MSD Sample ID	Compound	RPD	Qualifier	Affected Samples
10MW19	Zinc	35.8%	J	All Samples

LCS - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

ICP Sample ID	Compound	%D	Qualifier	Affected Samples
10MW19	Potassium	11.9%	J	All Samples
	Zinc	12.6%	None	None - Already Qualified

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - All samples were analyzed at dilutions due to high concentrations of target analytes.

Sample 10MW06 did not report the iron results on the Form I. The reviewer added the iron result to the Form I from the raw data.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank, matrix duplicate and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW04

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW04
Matrix (soil/water): WATER Lab Sample ID: 0402L890-001
Level (low/med): LOW__ Date Received: 02/24/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.3		B	P
7440-36-0	Antimony	1.2			P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	281			P
7440-41-7	Beryllium	0.11			P
7440-43-9	Cadmium	0.10	U	*	P
7440-70-2	Calcium	44500			P
7440-47-3	Chromium	0.90		B*	P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	1.8		B*	P
7439-89-6	Iron	11.3		B	P
7439-92-1	Lead	0.50	U		P
7439-95-4	Magnesium	18300			P
7439-96-5	Manganese	2.1		N	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	2.3			P
7440-09-7	Potassium	2510		J E	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.15	U	*	P
7440-23-5	Sodium	24400			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	96.1		J E*	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW04

FORM I - IN

U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW19

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____ SDG No.: 10MW04

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ Lab Sample ID: 0402L890-002

Matrix (soil/water): WATER Date Received: 02/24/04

Level (low/med): LOW__

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	24.2		B	P
7440-36-0	Antimony_	0.68	U		P
7440-38-2	Arsenic__	2.0		B	P
7440-39-3	Barium___	546			P
7440-41-7	Beryllium	0.10			P
7440-43-9	Cadmium__	0.11		B*	P
7440-70-2	Calcium__	42400			P
7440-47-3	Chromium_	0.40		B*	P
7440-48-4	Cobalt___	2.8			P
7440-50-8	Copper___	0.74		B*	P
7439-89-6	Iron_____	6690			P
7439-92-1	Lead_____	0.50	U		P
7439-95-4	Magnesium	14900			P
7439-96-5	Manganese	10600		N	P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	2.6			P
7440-09-7	Potassium	2270		JE	P
7782-49-2	Selenium_	0.85	U		P
7440-22-4	Silver___	0.19		K*	P
7440-23-5	Sodium___	20900			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.12	U		P
7440-66-6	Zinc_____	9.6		JE*	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW19

FORM I - IN

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U.S. EPA

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW05

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW04

Matrix (soil/water): WATER Lab Sample ID: 0402L890-003

Level (low/med): LOW__ Date Received: 02/24/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	30.8	_	B	P_
7440-36-0	Antimony_	1.4	_		P_
7440-38-2	Arsenic__	0.85	U		P_
7440-39-3	Barium___	374	_		P_
7440-41-7	Beryllium	0.07	_		P_
7440-43-9	Cadmium__	0.10	U	*	P_
7440-70-2	Calcium__	67400	_		P_
7440-47-3	Chromium_	0.66	_	B*	P_
7440-48-4	Cobalt___	0.15	U		P_
7440-50-8	Copper___	0.91	_	B*	P_
7439-89-6	Iron____	11.3	_	B	P_
7439-92-1	Lead____	0.50	U		P_
7439-95-4	Magnesium	14800	_		P_
7439-96-5	Manganese	1.5	_	N	P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	0.72	_	B	P_
7440-09-7	Potassium	4590	_	JE	P_
7782-49-2	Selenium_	0.85	U		P_
7440-22-4	Silver___	0.15	U	*	P_
7440-23-5	Sodium___	8420	_		P_
7440-28-0	Thallium_	1.0	U		P_
7440-62-2	Vanadium_	0.27	_		P_
7440-66-6	Zinc____	114	_	JE*	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW05

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW06

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: 10MW04

Matrix (soil/water): WATER Lab Sample ID: 0402L890-004

Level (low/med): LOW Date Received: 02/24/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	38.0		B	P
7440-36-0	Antimony	0.70			P
7440-38-2	Arsenic	2.2		B	P
7440-39-3	Barium	695			P
7440-41-7	Beryllium	0.08			P
7440-43-9	Cadmium	0.10	U	*	P
7440-70-2	Calcium	54900			P
7440-47-3	Chromium	0.99		B *	P
7440-48-4	Cobalt	0.67		B	P
7440-50-8	Copper	0.82		B *	P
7439-89-6	Iron	16200			NR
7439-92-1	Lead	1.3			P
7439-95-4	Magnesium	32500			P
7439-96-5	Manganese	13600		N	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	1.1		B	P
7440-09-7	Potassium	4720		J E	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.27		K *	P
7440-23-5	Sodium	10400			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	69.9		J E*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW06

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04/26/04

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L909

Client: EA Engineering, Science & Technology, Inc. Date: April 27, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW15	0402L909-001	Water
2	10MW21	0402L909-002	Water
3	10MW26	0402L909-003	Water
4	10MW10	0402L909-004	Water
5	10MW17	0402L909-005	Water
6	10MW07	0402L909-006	Water
7	10MW01	0402L909-007	Water
8	10MW08	0402L909-008	Water
9	10MW18	0402L909-009	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except those noted below. The associated samples were qualified as indicated unless >2X the CRDL or already qualified.

Compound	%R - High/Low	Qualifier	Affected Samples
Silver	High	K	8

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Aluminum	78.2	97.75	B	All Samples

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Arsenic	4.3	5.375	B	5, 7, 9
Chromium	0.326	1.63	B	1, 2, 3, 4, 6
Cobalt	0.156	0.78	B	6
Copper	2.2	2.75	B	1, 2, 5, 7, 8, 9
Iron	4.07	20.35	B	1, 2, 3 4
Lead	1.27	6.37	B	5, 6, 7, 8, 9

Field and Equipment Blank - Field QC samples were not analyzed.

ICP Interference Check Sample - All %R values were acceptable.

Matrix Spike - The matrix spike sample was not included in the data package.

Matrix Duplicate - The matrix duplicate sample(s) exhibited acceptable RPD values except the following.

MSD Sample ID	Compound	RPD	Qualifier	Affected Samples
10MW19 (SDG 0402L890)	Zinc	35.8%	J	All Samples

LCS - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

ICP Sample ID	Compound	%D	Qualifier	Affected Samples
10MW19	Potassium	11.9%	J	All Samples
(SDG 0402L890)	Zinc	12.6%	None	None - Already Qualified

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - All samples were analyzed at dilutions due to high concentrations of target analytes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank, matrix duplicate and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW15

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_

Matrix (soil/water): WATER Lab Sample ID: 0402L909-001

Level (low/med): LOW__ Date Received: 02/25/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	40.6		B	P
7440-36-0	Antimony_	0.68	U		P
7440-38-2	Arsenic__	0.85	U		P
7440-39-3	Barium__	365			P
7440-41-7	Beryllium	0.08			P
7440-43-9	Cadmium__	0.10	U		P
7440-70-2	Calcium__	25100			P
7440-47-3	Chromium_	0.79		B	P
7440-48-4	Cobalt___	0.15	U		P
7440-50-8	Copper___	0.51		B	P
7439-89-6	Iron____	13.6		B	P
7439-92-1	Lead____	0.50	U		P
7439-95-4	Magnesium	11400			P
7439-96-5	Manganese	1.8			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.6			P
7440-09-7	Potassium	2800		J	P
7782-49-2	Selenium_	0.85	U		P
7440-22-4	Silver___	0.15	U		P
7440-23-5	Sodium___	21100			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.12	U		P
7440-66-6	Zinc____	121		J	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW15

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW21

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_

Matrix (soil/water): WATER Lab Sample ID: 0402L909-002

Level (low/med): LOW__ Date Received: 02/25/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	35.0	_	B	P_
7440-36-0	Antimony_	1.1			P_
7440-38-2	Arsenic__	0.85	U		P_
7440-39-3	Barium___	392	_		P_
7440-41-7	Beryllium	0.07			P_
7440-43-9	Cadmium__	0.10	U		P_
7440-70-2	Calcium__	39700	_		P_
7440-47-3	Chromium_	1.1	_	B	P_
7440-48-4	Cobalt___	0.15	U		P_
7440-50-8	Copper___	0.51	_	B	P_
7439-89-6	Iron____	7.0	_	B	P_
7439-92-1	Lead____	0.50	U		P_
7439-95-4	Magnesium	19200	_		P_
7439-96-5	Manganese	0.63			P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	0.89			P_
7440-09-7	Potassium	5760	_	J	P_
7782-49-2	Selenium_	2.1	_		P_
7440-22-4	Silver___	0.15	U		P_
7440-23-5	Sodium___	34200			P_
7440-28-0	Thallium_	1.0	U		P_
7440-62-2	Vanadium_	0.12	U		P_
7440-66-6	Zinc_____	166	_	J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW21

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW26

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: 10MW1

Matrix (soil/water): WATER Lab Sample ID: 0402L909-003

Level (low/med): LOW Date Received: 02/25/04

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	43.8		B	P
7440-36-0	Antimony	0.84			P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	505			P
7440-41-7	Beryllium	0.06			P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	67800			P
7440-47-3	Chromium	0.79		B	P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	0.30	U		P
7439-89-6	Iron	17.5		B	P
7439-92-1	Lead	0.50	U		P
7439-95-4	Magnesium	20100			P
7439-96-5	Manganese	3.4			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.93			P
7440-09-7	Potassium	2360		J	P
7782-49-2	Selenium	1.4			P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	19500			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.46			P
7440-66-6	Zinc	123		J	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10MW26

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW10

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_
Matrix (soil/water): WATER Lab Sample ID: 0402L909-004
Level (low/med): LOW__ Date Received: 02/25/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	36.9		B	P
7440-36-0	Antimony	0.99			P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	292			P
7440-41-7	Beryllium	0.09			P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	46400			P
7440-47-3	Chromium	1.1		B	P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	0.30	U		P
7439-89-6	Iron	8.4		B	P
7439-92-1	Lead	0.50	U		P
7439-95-4	Magnesium	20200			P
7439-96-5	Manganese	1.3			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	4.2			P
7440-09-7	Potassium	1920		J	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	40600			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	168		J	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW10

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW17

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_
Matrix (soil/water): WATER Lab Sample ID: 0402L909-005
Level (low/med): LOW__ Date Received: 02/25/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	43.1		B	P
7440-36-0	Antimony	0.68	U		P
7440-38-2	Arsenic	1.5		B	P
7440-39-3	Barium	823			P
7440-41-7	Beryllium	0.07			P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	28700			P
7440-47-3	Chromium	0.12	U		P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	0.60		B	P
7439-89-6	Iron	14900			P
7439-92-1	Lead	1.6		B	P
7439-95-4	Magnesium	13100			P
7439-96-5	Manganese	14800			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.25	U		P
7440-09-7	Potassium	1530		J	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	13000			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.18			P
7440-66-6	Zinc	47.5		J	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW17

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW7

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_
Matrix (soil/water): WATER Lab Sample ID: 0402L909-006
Level (low/med): LOW__ Date Received: 02/25/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	37.7		B	P
7440-36-0	Antimony_	0.68	U		P
7440-38-2	Arsenic__	0.85	U		P
7440-39-3	Barium___	391			P
7440-41-7	Beryllium	0.07			P
7440-43-9	Cadmium__	0.10	U		P
7440-70-2	Calcium__	71700			P
7440-47-3	Chromium_	1.4		B	P
7440-48-4	Cobalt___	0.29		B	P
7440-50-8	Copper___	0.30	U		P
7439-89-6	Iron_____	4000			P
7439-92-1	Lead_____	5.8		B	P
7439-95-4	Magnesium	21100			P
7439-96-5	Manganese	1680			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.1			P
7440-09-7	Potassium	2840		J	P
7782-49-2	Selenium_	0.85	U		P
7440-22-4	Silver___	0.15	U		P
7440-23-5	Sodium___	6830			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.53			P
7440-66-6	Zinc_____	13.9		J	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW7

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW1

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_

Matrix (soil/water): WATER Lab Sample ID: 0402L909-007

Level (low/med): LOW__ Date Received: 02/25/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	46.4		B	P
7440-36-0	Antimony_	0.68	U		P
7440-38-2	Arsenic__	0.90		B	P
7440-39-3	Barium___	1000			P
7440-41-7	Beryllium	0.14			P
7440-43-9	Cadmium__	0.10	U		P
7440-70-2	Calcium__	51800			P
7440-47-3	Chromium_	0.12	U		P
7440-48-4	Cobalt___	11.3			P
7440-50-8	Copper___	0.71		B	P
7439-89-6	Iron_____	5930			P
7439-92-1	Lead_____	1.8		B	P
7439-95-4	Magnesium	23800			P
7439-96-5	Manganese	22000			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	2.0			P
7440-09-7	Potassium	1390		J	P
7782-49-2	Selenium_	1.5			P
7440-22-4	Silver___	0.32			P
7440-23-5	Sodium___	13800			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.12	U		P
7440-66-6	Zinc_____	8.4		J	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW1

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10M08

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_
Matrix (soil/water): WATER Lab Sample ID: 0402L909-008
Level (low/med): LOW__ Date Received: 02/25/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.4		B	P
7440-36-0	Antimony	0.75			P
7440-38-2	Arsenic	9.1			P
7440-39-3	Barium	1240			P
7440-41-7	Beryllium	0.07			P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	34800			P
7440-47-3	Chromium	19.3			P
7440-48-4	Cobalt	8.9			P
7440-50-8	Copper	0.91		B	P
7439-89-6	Iron	7580			P
7439-92-1	Lead	1.5		B	P
7439-95-4	Magnesium	12500			P
7439-96-5	Manganese	11700			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	14.0			P
7440-09-7	Potassium	1640		J	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.16		K	P
7440-23-5	Sodium	18400			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.14			P
7440-66-6	Zinc	112		J	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW08

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10M18

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 10MW1_

Matrix (soil/water): WATER Lab Sample ID: 0402L909-009

Level (low/med): LOW__ Date Received: 02/25/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	45.0	_	B	P_
7440-36-0	Antimony_	0.72	_		P_
7440-38-2	Arsenic__	1.1	_	B	P_
7440-39-3	Barium___	594	_		P_
7440-41-7	Beryllium	0.09	_		P_
7440-43-9	Cadmium__	0.10	U		P_
7440-70-2	Calcium__	43000			P_
7440-47-3	Chromium_	0.12	U		P_
7440-48-4	Cobalt___	19.4	_		P_
7440-50-8	Copper___	0.44	_	B	P_
7439-89-6	Iron____	4040	_		P_
7439-92-1	Lead____	1.1	_	B	P_
7439-95-4	Magnesium	18400	_		P_
7439-96-5	Manganese	12100	_		P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	13.0	_		P_
7440-09-7	Potassium	1830	_	J	P_
7782-49-2	Selenium_	0.85	U		P_
7440-22-4	Silver___	0.15	U		P_
7440-23-5	Sodium___	23900			P_
7440-28-0	Thallium_	1.0	U		P_
7440-62-2	Vanadium_	0.12	U		P_
7440-66-6	Zinc____	102	_	J	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW18

FORM I - IN

04/27/04

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L917

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW09	0402L917-001	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited several %R values outside QC criteria, however, all associated results were non-detect, >2X the CRDL or already qualified.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Arsenic	3.8	4.75	B	1
Chromium	0.18	0.92	B	1

Field and Equipment Blank - Field QC samples were not analyzed.

ICP Interference Check Sample - All %R values were acceptable except the following.

Compound	%R	Qualifier	Associated Results
Sodium	120.6%	None	All < Check Sample

Matrix Spike - The matrix spike sample was not included in the data package.

Matrix Duplicate - The matrix duplicate sample(s) exhibited acceptable RPD values.

LCS - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

ICP Sample ID	Compound	%D	Qualifier	Affected Samples
10MW25 (SDG 0402L925)	Potassium	12.2%	J	All Samples

Field Duplicates - Field duplicate samples were not analyzed.

Compound Quantitation - All samples were analyzed at dilutions due to high concentrations of target analytes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method and calibration blank and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW09

Lab Name: LIONVILLE_LABORATORY Contract: 60104
Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: 10MW09
Matrix (soil/water): WATER Lab Sample ID: 0402L917-001
Level (low/med): LOW Date Received: 02/26/04
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.5			P
7440-36-0	Antimony	0.68	U		P
7440-38-2	Arsenic	2.2		B	P
7440-39-3	Barium	900			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.16			P
7440-70-2	Calcium	56100			P
7440-47-3	Chromium	0.44		B	P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	1.2			P
7439-89-6	Iron	20500			P
7439-92-1	Lead	0.62			P
7439-95-4	Magnesium	25300			P
7439-96-5	Manganese	20900			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	2.5			P
7440-09-7	Potassium	1920		J	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.81			P
7440-23-5	Sodium	33800			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.13			P
7440-66-6	Zinc	93.1			P

Color Before: Clarity Before: Texture:
Color After: Clarity After: Artifacts:

Comments:
10MW09

FORM I - IN

04/30/04

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0402L925

Client: EA Engineering, Science & Technology, Inc. Date: April 30, 2004

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	10MW25 ✓	0402L925-001 ✓	Water
1MS	10MW25MS	0402L925-001MS	Water
1MSD	10MW25MSD	0402L925-001MSD	Water
2	10MW20 ✓	0402L925-004 ✓	Water
3	10MW27 ✓	0402L925-005 ✓	Water
4	RB-022704 ✓	0402L925-006	Water

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Calibration - The ICV and CCV %R values were acceptable.

CRDL Standard - The CRDL standards exhibited acceptable %R values except those noted below. The associated samples were qualified as indicated unless >2X the CRDL or already qualified.

Compound	%R - High/Low	Qualifier	Affected Samples
Copper	High	K	1

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Arsenic	3.8	4.75	B	2
Barium	0.5	0.625	B	4
Calcium	7.755	38.775	B	4
Chromium	0.184	0.92	B	1, 2, 4

Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
Magnesium	1.48	7.4	B	4
Manganese	0.06	0.3	B	4
Potassium	5.262	26.31	B	4
Zinc	1.973	9.865	B	4

Trip, Field, Equipment Blank - Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
RB-022704	Iron	6.4	32	B	3
	Sodium	133	665	None	All >5X

ICP Interference Check Sample - All %R values were acceptable except the following.

Compound	%R	Qualifier	Associated Results
Sodium	120.6%	None	All < Check Sample

Matrix Spike - The matrix spike sample was not included in the data package.

Matrix Duplicate - The matrix duplicate sample was not included in the data package.

LCS - The LCS samples exhibited acceptable %R values.

ICP Serial Dilution - The ICP serial dilution sample exhibited acceptable %D values.

ICP Sample ID	Compound	%D	Qualifier	Affected Samples
10MW25	Potassium	12.2%	J	1, 2, 3

Field Duplicates - Field duplicate results are summarized below.

Compound	10MW27 ug/L	10MWDUP (SDG 0402L883) ug/L	RPD	Qualifier
Aluminum	8.6U	19.1	NC	None
Antimony	0.98	0.87	12	None
Barium	387	217	56	None
Beryllium	0.05U	0.16	NC	None
Calcium	23100	25800	11	None

Compound	10MW27 ug/L	10MWDUP (SDG 0402L883) ug/L	RPD	Qualifier
Chromium	1.3	1.5	14	None
Copper	0.61	1.6	4	None
Iron	14.6B	23.6	NC	None
Magnesium	8740	9380	7	None
Manganese	8.3	8.2	1	None
Nickel	4.9	5.2	6	None
Potassium	1490	1850	22	None
Selenium	0.85U	1.2	NC	None
Sodium	21800	21900	1	None
Zinc	187	52.9	112	None

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL standard, method and calibration blank, field blank and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW25

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0227

Matrix (soil/water): WATER Lab Sample ID: 0402L925-001

Level (low/med): LOW__ Date Received: 02/27/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	22.6		*	P
7440-36-0	Antimony_	0.68	U		P
7440-38-2	Arsenic__	0.85	U		P
7440-39-3	Barium___	444			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium__	0.10	U		P
7440-70-2	Calcium__	67300			P
7440-47-3	Chromium_	0.46		B	P
7440-48-4	Cobalt___	0.37			P
7440-50-8	Copper___	0.47		K*	P
7439-89-6	Iron____	68.1			P
7439-92-1	Lead____	0.50	U		P
7439-95-4	Magnesium	13600			P
7439-96-5	Manganese	71.8			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.1			P
7440-09-7	Potassium	1460		EJ	P
7782-49-2	Selenium_	0.85	U		P
7440-22-4	Silver___	0.15	U		P
7440-23-5	Sodium___	19200			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.41			P
7440-66-6	Zinc____	108			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW25

FORM I - IN

04130104

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW20

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI_____ Case No.: WILLO SAS No.: _____ SDG No.: RB0227

Matrix (soil/water): WATER Lab Sample ID: 0402L925-004

Level (low/med): LOW__ Date Received: 02/27/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9.1		*	P
7440-36-0	Antimony	0.94			P
7440-38-2	Arsenic	0.94		B	P
7440-39-3	Barium	761			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	45600			P
7440-47-3	Chromium	0.52		B	P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	0.80		*	P
7439-89-6	Iron	10400			P
7439-92-1	Lead	2.6			P
7439-95-4	Magnesium	18700			P
7439-96-5	Manganese	15400			P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.25	U		P
7440-09-7	Potassium	3720		~~E~~ J	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.37			P
7440-23-5	Sodium	17200			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.29			P
7440-66-6	Zinc	46.4			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10MW20

FORM I - IN

04/30/04

U.S. EPA

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10MW27

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____
Lab Code: LVLI_____ Case No.: WILLO SAS No.: _____ SDG No.: RB0227
Matrix (soil/water): WATER Lab Sample ID: 0402L925-005
Level (low/med): LOW__ Date Received: 02/27/04
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	8.6	U	*	P
7440-36-0	Antimony_	0.98			P
7440-38-2	Arsenic__	0.85	U		P
7440-39-3	Barium___	387			P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium__	0.10	U		P
7440-70-2	Calcium__	23100			P
7440-47-3	Chromium_	1.3			P
7440-48-4	Cobalt___	0.15	U		P
7440-50-8	Copper___	0.61		*	P
7439-89-6	Iron_____	14.6		B	P
7439-92-1	Lead_____	0.50	U		P
7439-95-4	Magnesium	8740			P
7439-96-5	Manganese	8.3			P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	4.9			P
7440-09-7	Potassium	1490		~~E~~ J	P
7782-49-2	Selenium_	0.85	U		P
7440-22-4	Silver___	0.15	U		P
7440-23-5	Sodium___	21800			P
7440-28-0	Thallium_	1.0	U		P
7440-62-2	Vanadium_	0.12	U		P
7440-66-6	Zinc_____	187			P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
10MW27

FORM I - IN

04/30/04
CA

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

RB0227

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0227

Matrix (soil/water): WATER Lab Sample ID: 0402L925-006

Level (low/med): LOW__ Date Received: 02/27/04

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8.6	U	*	P
7440-36-0	Antimony	0.68	U		P
7440-38-2	Arsenic	0.85	U		P
7440-39-3	Barium	0.12		B	P
7440-41-7	Beryllium	0.05	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	26.0		B	P
7440-47-3	Chromium	0.27		B	P
7440-48-4	Cobalt	0.15	U		P
7440-50-8	Copper	0.30	U	*	P
7439-89-6	Iron	6.4			P
7439-92-1	Lead	0.50	U		P
7439-95-4	Magnesium	3.5		B	P
7439-96-5	Manganese	0.08		B	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	0.25	U		P
7440-09-7	Potassium	17.8		BE	P
7782-49-2	Selenium	0.85	U		P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	133			P
7440-28-0	Thallium	1.0	U		P
7440-62-2	Vanadium	0.12	U		P
7440-66-6	Zinc	3.0		B	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

RB-022704

FORM I - IN

04130004

APPENDIX G

2003 AND 2004 WASTE MANIFESTS

WASTE MANAGEMENT DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Part 121 of Act 451, 1994, as amended.

Failure to file may subject you to criminal and/or civil penalties under Sections 324.11151 or 324.12116 MCL.

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PA4170000158 — Manifest Document No. 52660

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

A. State Manifest Document Number: MI 8752660

B. State Generator's ID: See Sect 15

C. State Transporter's ID: VAD990713 014

D. Transporter's Phone: 732-462-1001

E. State Transporter's ID:

F. Transporter's Phone:

G. State Facility's ID:

H. Facility's Phone: 800-282-9251

3. Generator's Name and Mailing Address
Naval Air Station Joint Reserve Base-Willow Grove
Bldg#78, Env. Div., Route 611, Willow Grove, PA 19090

4. Generator's Phone (215) 443-6939

5. Transporter 1 Company Name: Freehold Cartage, Inc.

6. US EPA ID Number: NJD054126164

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address
Perma-Fix of Michigan, Inc.
18550 Allen Road
Brownstown, MI 48192

10. US EPA ID Number: MID098963194

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	Non RCRA, Non DOT Regulated Material (Purge Water)	23	DM	1650D	P	0291
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
A: WIL15818 JOB#WLM-KSWA-2301

K. Handling Codes a. b. c. d.

15. Special Handling Instructions and Additional Information
Site: IR Site 10 & 11, Route 611, Willow Grove, PA 19090
Emergency Contact: Capitol Environmental, (302) 652-8999

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quanity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: James R. Elwood — Signature — Date: Month 07 Day 02 Year 03

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JOHN J. TREMBLY — Signature — Date: Month 07 Day 02 Year 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Date: Month Day Year 07 02 03

GENERATOR

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EQ 5110

DEQ WASTE MANAGEMENT DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Part 121 of Act 451, 1994, as amended.
Failure to file may subject you to criminal and/or civil penalties under Sections 324.11151 or 324.12116 MCL.

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PA4170000158 — Manifest Document No. 52659
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Naval Air StationJoint Reserve Base-Willow Grove
Bldg#78, Env. Div., Route 611, Willow Grove, PA 19090

4. Generator's Phone (215) 443-6939

A. State Manifest Document Number: MI 8752659
B. State Generator's ID: See Sect 15

5. Transporter 1 Company Name: St Joseph Motor Lines
6. US EPA ID Number: PAD987358587
C. State Transporter's ID: PAA40390
D. Transporter's Phone: 800-221-2564

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Perma-Fix of Michigan, Inc.
18550 Allen Road
Brownstown, MI 48192
10. US EPA ID Number: MID096963194
G. State Facility's ID:
H. Facility's Phone: 800-282-9251

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non RCRA, Non DOT Regulated Material (Drill Cuttings)	50 ~~49~~	Dm	24500	P	0291
b. Non RCRA, Non DOT Regulated Material (PPE & Debris)	14	Dm	3200	P	NA ~~None~~ JA
c.					
d.					

J. Additional Descriptions for Materials Listed Above
A: WIL15817
B: WIL15816
JOB#WILM-KSWA-2301

K. Handling Codes: a. b. c. d.

15. Special Handling Instructions and Additional Information
Site: IR Site 10 & 11, Route 611, Willow Grove, PA 19090
Emergency Contact: Capitol Environmental, (302) 652-8999

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: James R Edmond — Signature: [signature] — Date (Month Day Year): 07 02 03

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PATRICK DALY — Signature: [signature] — Date (Month Day Year): 07 02 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: — Signature: — Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Elizabeth Krajcz — Signature: Elizabeth Krajcz — Date (Month Day Year): 07 03 03

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev 19/88) To be mailed by WASTE MANAGEMENT DIVISION MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: PA4170000158
Manifest Doc. No.: 70203
2. Page 1 of 1

3. Generator's Name and Mailing Address
Naval Air Station Joint Reserve Base-Willow Grove
Bldg#78-Env. Div. Route 611, Easton Rd., Willow Grove, PA 19090

4. Generator's Phone (215 443-6939

See Sect 15

5. Transporter 1 Company Name: SJ Transportation Company
6. US EPA ID Number: NJD071629976
A. Transporter's Phone: 856-769-2741

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
Cycle Chem, Inc.
550 Industrial Drive
Lewisberry, PA 17339-9537
10. US EPA ID Number: PAD067098822
C. Facility's Phone: 717 938-4700

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non DOT, Non RCRA, Non Regulated Material (Hay)	001	CM	1.0	Y
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
App# CAP031ALD

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Site: IR Site 10 & 11, Route 611, Willow Grove, PA 19190
Emergency Contact: Capitol Environmental Services (302) 652-8999 Job # WILM-KSWA-2301-

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: James R. Edmond
Signature:
Month 07 Day 02 Year 03

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Arend Kuschow
Signature:
Month 07 Day 02 Year 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Annie E. Hied
Signature: Annie E. Hied
Month 07 Day 02 Year 03

GENERATOR
TRANSPORTER
FACILITY

TRANSPORTER #1

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: PA417000158
Manifest Document No.: 40104
2. Page 1 of 1

3. Generator's Name and Mailing Address
Naval Air Station Joint Reserve Base-Willow Grove
Bldg#78, ENV. Div., Route 611, Willow Grove, PA 19090
4. Generator's Phone (215) 443-6939

Site: See Sect 15

5. Transporter 1 Company Name: St. Joseph Motor Lines
6. US EPA ID Number: PAD987358587
A. Transporter's Phone: 800 221-2554

7. Transporter 2 Company Name:
8. US EPA ID Number:
B. Transporter's Phone:

9. Designated Facility Name and Site Address
Vexor Technology, Inc.
955 West Smith Road
Medina, OH 44256
10. US EPA ID Number: OHD077772895
C. Facility's Phone: 330 721-9773

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non RCRA, Non DOT Regulated Material (Purge and Decon waters)	004	DM	220	g
b. Non RCRA, Non DOT Regulated Material (Debris-groundwater, Tubing & PPE)	003	DM	165	g
c. ~~Non RCRA/Non DOT Regulated Material (Empty Drums)~~	~~XXX~~	DM	XX	
d.				

D. Additional Descriptions for Materials Listed Above
A: App# VEX2488
B: App# VEX2490
C: App# VEX2490

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Site: IR Site 10 & 11, Route 611, Willow Grove, PA 19090
Emergency Contact: Capitol Environmental (302) 652-8999 Job#WILM-KSWA-2301

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: James Edmond
Signature:
Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Randy Fry C
Signature: Randy Fry
Month Day Year: 05 13 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name:
Signature:
Month Day Year

GENERATOR

TRANSPORTER

FACILITY

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

GENERATOR'S COPY

12-BLC-M5

APPENDIX H

2003 BORE LOGS

EA Engineering, Science, and Technology, Inc.	BORING NUMBER 10MW24	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF SHEETS 1

PROJECT NASJRB Site 10 and 11, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 328549.766 ' N 2695182.404' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT ngth split spoon OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; parking lot in the vicinity of the EA sheds	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/1/2003	DATE COMPLETED 5/5/2003
OVERBURDEN THICKNESS 14'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 14' to 70'	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 70 '	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Asphalt to dark reddish brown (5YR3/3) fine sand and clay mixture, surface water at soil surface to dry	0	10SB240204 AT 1220 2 ft to 4 ft	2 - 4	9	
	Dark reddish brown (5YR3/3) fine sand with traces of hard clay, traces of silt, dry	0		4 - 6	12	
	Dark reddish brown (5YR3/3) fine sand with traces of clay, traces of fine silt, dry	0		6 - 8	8	
	Dark reddish brown (5YR3/3) fine sand with traces of hard and fine silt, dry	0		8 - 10	7	
	Dark reddish brown (5YR3/3) fine sand with traces of fine silver sand, traces of fine silt, dry	0		10 - 12	8	
	Dark reddish brown (5YR3/3) fine sand with traces of fine silver sand, traces of fine silt, dry	0	10 SB241214 AT 1340 12 ft to 14 ft	12 - 14	8	
	Reddish Brown (5YR4/4) Sandstone, wet (competent bedrock)	0		14 - 19	NA	
	Dark reddish brown (5YR3/3) shale, sandstone, water	0		19 - 50	NA	
	Dark gray (5YR 4/1) shale with traces of sandstone, wet	0		50- 60	NA	
	Dark reddish brown (5YR3/3) shale with traces of sandstone, wet	0		60 - 70	NA	

EA Engineering, Science, and Technology, Inc.

BORING NUMBER	10MW25
DRILL SUBCONTRACTOR	Eichelbergers, Inc.
SHEET	1 OF 2 SHEETS
PROJECT	NASJRB Site 10 and 11, Willow Grove, PA
SURFACE ELEVATION	NA
COORDINATES	328831.958' N 2695352.549' E
NAME OF DRILLER	Jesse Trish
MANUFACTURER'S DESIGNATION OF DRILL	Air Rotary with Split Spoon/Inger Soil Rand
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	2 ft length split spoon
TYPE OF LINER USED, IF APPLICABLE	
SURFACE ELEVATION AND CONDITIONS	NA;grass area
DIRECT READING PARAMETERS: VOC- PID, ppm	0
DATE STARTED	5/2/2003
DATE COMPLETED	5/6/2003
OVERBURDEN THICKNESS	22'
DEPTH GROUNDWATER ENCOUNTERED	see below
DEPTH DRILLED INTO ROCK	22' to 121'
DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED	see below
TOTAL DEPTH OF HOLE	121'
OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	see below
WELL INSTALLED?	yes
IF SO COMPLETE CONSTRUCTION DIAGRAM	
SAMPLE TYPE:	grab/composite
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS	see below
SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS	no screening done
SCREENING ANALYSIS	no screening done
DISPOSITION OF HOLE	
IF NOT A WELL, BACKFILLED WITH:	
GEOLOGIST	Maria Magilton

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Dark reddish brown (5YR3/3) fine sand and gravel mixture, dry	0	not enough to sample	0 - 2	5	
	Dark reddish brown (5YR3/3) fine sand and clay mixture, dry, hard	0	10SB250204 AT 0745 2 ft to 4 ft	2 - 4	12	
	Dark reddish brown (5YR3/3) with some yellowish red (5YR4/6) throughout, fine sand and stiff clay mixture, dry	0		4 - 6	0 (1st attempt) 3 (2nd attempt)	
	Dark reddish brown (5YR3/3) with some yellowish red (5YR4/6) throughout, fine sand and medium stiff clay mixture, dry	0.2	10SB250608 10DUP01 AT 0755 6 ft to 8 ft	6 - 8	24	
	Yellowish red (5YR4/6) to dark reddish brown (5YR3/4) fine sand and stiff clay mixture, dry	0		8 - 10	24	
	Dark reddish brown (5YR 3/4) fine sand and clay mixture, dry, brittle	0		10 - 12	24	
	Dark reddish brown (5YR3/4) fine sand and very stiff clay mixture, traces of fine silver sand, dry	0		12 - 14	24	
	Dark reddish brown (5YR 3/4) fine sand and very stiff clay mixture, dry, traces of fine silver sand	0		14 - 16	24	
	Dark reddish brown (5YR3/4) fine sand and hard clay mixture, dry, traces of fine silver sand	0		16 - 18	9	
	Dark reddish brown (5YR3/4) fine sand and hard clay mixture, dry	0		18 - 20	5	

(CONTINUATION SHEET) 10MW25	COMPONENT-AREA	GRID/BIASED POINT LOCATION

PROJECT	GEOLOGIST	SHEET 2 OF 2 SHEETS
NASJRB Site 10 and 11, Willow Grove, PA	Maria Magilton	

	DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)		ANALYTICAL SAMPLE DESIGNATION	DEPTH (FT)	RECOVERY (IN.)	REMARKS
		Dark reddish brown (5YR3/4) fine sand with taces of clay and fine silt, dry		0		20-22	6	
		Dark reddish brown (5YR3/4) and reddish brown (5YR4/4) sandstone with some shale, dry (competent bedrock)		0		22-27	NA	
		Dark reddish brown (5YR3/4) and reddish brown sandstone/shale/siltstone		0		27-85	NA	
		Dark reddish brown (5YR3/4), reddish brown (5YR4/4), and dark gray (5YR 4/1) siltstone and shale with traces of sanstone		0		85-95	NA	
		Dark reddish brown (5YR3/4), reddish brown (5YR4/4), and dark gray (5YR4/1) sandstone/siltstone/shale		0		95-121	NA	

PROJECT: NASJRB Site 10 and 11, Willow Grove, PA	HOLE NO.: 10MW25

EA Engineering, Science, and Technology, Inc.	BORING NUMBER 10MW26	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF SHEETS 2

PROJECT NASJRB Site 10 and 11, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 328812.158' N 2695936.231' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 ft length split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; close to a storage shed, weeds, grass	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/2/2003	DATE COMPLETED 5/6/2003
OVERBURDEN THICKNESS 16'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 16' to 120 '	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 120'	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)		ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Pale brown (10YR 6/3) fine sand, traces of silt, dry		0	not enough to sample	0 - 2	2	
	Dark yellowish brown (10YR4/4) fine sand and clay mixture, dry		0	10SB260204 AT 1050 2 ft to 4 ft	2 - 4	7	
	Dark yellowish brown (10YR4/4) fine sand and stiff clay mixture, slightly moist		0		4 - 6	19	
	Dark yellowish brown (10YR4/4) fine sand, dry		0		6 - 8	24	
	Dark yellowish brown (10YR4/4) fine sand, dry		0		8 - 10	18	
	Dark yellowish brown (5YR4/4) and Dark grayish brown (10YR4/2) fine sand, dry		0		10 - 12	19	
	No Recovery				12 - 14	0	
	Dark yellowish brown (10YR4/4), dark grayish brown (10YR4/2), and dark gray (10YR4/1) fine sand with traces of clay to sandstone (at about 16'), dry		0	10SB261416 at 1145 14 ft to 16 ft	14-16	20	
	Saturated, Dark yellowish brown (10YR4/4) , dark grayish brown (10YR 4/2), and dark gray (10YR4/1) siltstone, shale, sandstone		0		16 - 44	NA	
	Saturated, Dark yellowish brown (10YR4/4) , dark grayish brown (10YR 4/2), and dark gray (10YR4/1) siltstone, shale, sandstone		0		44 - 75	NA	

(CONTINUATION SHEET) 10MW26	COMPONENT-AREA	GRID/BIASED POINT LOCATION

PROJECT	GEOLOGIST	SHEET 2 OF 2 SHEETS
NASJRB Site 10 and 11, Willow Grove, PA	Maria Magilton	

	DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)		ANALYTICAL SAMPLE DESIGNATION	DEPTH (FT)	RECOVERY (IN.)	REMARKS
		Saturated, Dark yellowish brown (10YR4/4) , dark grayish brown (10YR 4/2), and dark gray (10YR4/1) siltstone, shale, sandstone		0		75-120	NA	

PROJECT: NASJRB Site 10 and 11, Willow Grove, PA	HOLE NO.: 10MW26

EA Engineering, Science, and Technology, Inc.	BORING NUMBER 10MW27	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF SHEETS 1

PROJECT NASJRB Site 10 and 11, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 329623.974' N 2696773.106' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 ft length split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; grass area adjacent to gas station and Bldg. 78	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/9/2003	DATE COMPLETED 5/9/2003
10'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 10' to 40'	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 40'	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Strong brown (7.5YR5/6) fine sand with traces of clay, dry	0	10SB270105 AT 0845 1 ft to 5 ft	0 - 5	NA	soft dig area
	Reddish brown (5YR4/4) fine sand and hard clay mixture, dry	0		4 - 6	24	
	Reddish brown (5YR4/4) fine sand and soft clay mixture, dry	0		6 - 8	24	
	Reddish brown (5YR4/4) fine sand, trace of soft clay, dry bedrock encountered at about 10' - 11'	0	10SB270810 AT 0915 8 ft to 10 ft	8 - 10	24	24
	Weathered to competent bedrock at about 10' to 11' Reddish brown (5YR4/4) Sandstone	0		10 - 15	NA	
	Reddish brown (5YR4/4) sandstone/siltstone, dry water at about 30 ' bgs	0		15 - 32	NA	
	Reddish brown (5YR4/4) sandstone/siltstone, wet	0		32 - 40	NA	

PROJECT: NASJRB Site 10 and 11, Willow Grove, PA	HOLE NO.: 10MW27

EA Engineering, Science, and Technology, Inc.	BORING NUMBER 10MW28	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF 1 SHEETS

PROJECT NASJRB Site 10 and 11, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 329562.107' N 2696732.654' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZE AND TYPES OF DRILLING AND SAMPLING EQUIPMENT [illegible]ngth split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; grass area adjacent to gas station and Bldg. 78	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/9/2003	DATE COMPLETED 5/12/2003
OVERBURDEN THICKNESS 10'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 10' to 120'	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 120'	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Strong brown (7.5YR 5/6) fine sand with traces of clay to reddish brown (5YR4/4) fine sand and clay mixture, dry	0	10SB280105 AT 0745 MS/MSD 1 ft to 5 ft	0 - 5	NA	soft dig area
	Reddish brown (5YR4/4) fine sand and stiff clay mixture, dry	0		4 - 6	24	
	Reddish brown (5YR4/4) fine sand to weathered sandstone at about 9' - 10', to competent bedrock, dry	0	10SB280608 AT 0815 6 ft to 8 ft	6 - 10	20	
	Reddish brown (5YR4/4) sandstone with traces of siltstone, dry	0		10 - 16		
	Reddish brown (5YR4/4) sandstone with traces of siltstone, dry	0		16 - 28		
	Reddish brown (5YR4/4) sandstone with traces of siltstone, water encountered at about 30 ft bgs	0		28 - 57		
	Reddish brown (5YR4/4) siltstone/sandstone	0		57 - 76		
	Reddish brown (5YR4/4) siltstone/sandstone	0		76 - 96		
	Reddish brown (5YR4/4) siltstone/sandstone	0		96 - 120		

APPENDIX I

HISTORIC BORE LOGS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-1
Coordinates:

Surface Elevation: 309.30
Casing Above Surface: 311.55
Reference Elevation: 311.18
Reference Description: TOP OF PVC

Start Date: 4/4/89 Completion Date: 4/5/89

Location: NAS, Willow Grove
Job No. 10388.03
Client: Northern Division, NAVFAC
Drilling Method: Mayhew 500, Air Rotary, 5, 8, 10 inch bit,

Sampling Method: Split Spoon, 300 lb hammer, 30 in drop, variable spoon size, continuous sampling

SURFACE CONDITIONS: FLAT, GRASS COVERED

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	PID PPM	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
							0	CL	Mottled grayish-brown, moist, sandy clay, with a little gravel, CL, medium stiff
SS	24	22	1	1	4/4/4/9	0	1	CL	Dark brown, moist, silty clay, SC, stiff
							2		
SS	24	24	2	3	7/9/11/13	0	3	CL	Orange-brown, dry, silty clay, with fragments of red ss, CL, very stiff
							4		
							5		
SS	24	12	3	5.5	11/17/25/31	0	6	SC	Reddish-brown, dry, clayey, mg sand with some silt, SC, very dense sandstone/shale saprolite
							7		
SS	24	2	4	7.8	21/17/29/41	0	8		
							9	SP	Tan-cream, dry mg sand with fragments of cream ss, SP, dense
SS	24	12	5	9.5	12/17/25/64	0	10		
							11	SS	Tan-cream fg-mg sandstone, very hard
							12		Water first noted at 12 feet
							13		
							14		
							15		Stable water level at 11.25 feet below ground, 1530, 4/4/89
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-2R
Coordinates:

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 10" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: NA

Start Date: 4-29-91 Completion Date: 4-29-91

SURFACE CONDITIONS: FLAT GRASSY, LOCATED AT NFFW-2

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
									PULL PROTECTIVE CASING ON NFFW-2, CASING BROKE AT 10 FT. DRILL OUT THE REMAINING CASING.
							5		
									SAND PACK, MUD SLURRY UNABLE TO DISTINGUISH LITHOLOGY.
							10		
						20/0			
						150/0	15		BREATHING ZONE MONITORING SHOWED > 15 PPM DONNING RESPIRATORS FOR THE REMAINDER OF THE DRILLING.
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EH ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-2R

Coordinates:

Surface Elevation:

Casing Above Surface:

Reference Elevation:

Reference Description:

Location: NAS WILLOW GROVE

Job No. 10388.07

Client: NAVY

Drilling Method: 10" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: NA

Start Date: 4-29-91 Completion Date: 4-29-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
						200/0			BREATHING ZONE AT 25 PPM
							25		
						200/0			BREATHING ZONE AT >50 PPM.
							30		HARD DRILLING, SANDSTONE UNIT READINGS LEVELING OFF BETWEEN 1 AND 20 PPM.
									READINGS FALLING TO <5 PPM IN BREATHING ZONE REMOVE RESPIRATORS
							35		
									TERMINATE DRILLING AT 37 FT.
							40		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-3
Coordinates:

Surface Elevation: 321.00
Casing Above Surface: 323.07
Reference Elevation: 322.58
Reference Description: Top of PVC

Location: NAS, WILLOW GROVE
Job No. 10388.03
Client: NORTHERN DIVISION, NAVFAC
Drilling Method: MAYHUE 500 AIR & WATER ROTARY
5 1/8, 8 in. bit
Sampling Method: SS, 300 LB HAMMER, 30" DROP

Start Date: 4/10/89 Completion Date: 4/10/89

SURFACE CONDITIONS
WINDY, SPOON SCREENING USELESS

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	PID PPM	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
SS	24	24	1	1	4-6-5-5	0		CL	TAN SILTY CLAY, MOIST, ASPHALT FILL NOTED IN UPPER HALF (DK. BRN. SILTY CLAY, ROOTED) TOP SOIL, MED. STIFF, MED. PLAS.
SS	24	24	2	3	5-5-8-10	0		CL	MOTTLED DR. GRAY WITH IRON STAINED ZONES (4" AT TOP) SILTY CLAY, MOIST, SANDIER IN IRON STAINED PORTION, MED. PLAS.
SS	24	14	3	5	7-9-8-9	0	5	CL	DK. RED SANDY CLAY, DRY, WEATHERED RED SS/SILTST., MICACEOUS, SMALL SS FRAG. V. STIFF, LOW PLAS.
SS	24	20	4	7	6-9-9-8	0		CL	DK. RED SILTY CLAY, MOIST, WEATHERED SILTST./SHALE MICACEOUS, VERY STIFF, LOW PLAS.
SS	24	24	5	9	4-5-8-15	0	10	CL	DK. RED SANDY CLAY, DRY, V. STIFF, WEATHERED SS/SILTST., MED. PLAS.
SS	24	24	6	11	5-6-14-29				WEATHERED RED SHALE/SILTST., DRY
SS	24		7	13	10-19-46-42				FRESH RED SHALE/SILTSTONE, WATER AT BOTTOM OF SPOON
							15		
									DRILLING RATE SLOWS, PROBABLY TAN SS
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-4
Coordinates:

Surface Elevation: 321.61
Casing Above Surface: 324.14
Reference Elevation: 323.86
Reference Description: TOP OF PVC

Location: NAS, WILLOW GROVE
Job No. 10388.03
Client: NORTHERN DIVISION, NAVFAC
Drilling Method: MAYHUE 500 AIR & WATER ROTARY, 5 1/8, 8 IN. BIT
Sampling Method: SS, 300 LB HAMMER, 30" DROP

Start Date: 4/11/89 Completion Date: 4/12/89

SURFACE CONDITIONS
GRASS COVERED, 5% SLOPE TO THE NW

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	PID PPM	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
SS	24	24	1	1	7-5-8-7	0		ML	DK. BRN. CLAYEY SILT WITH ASPHALT FILL, MOIST GRADING INTO MED. OR SANDY CLAY, STIFF
SS	24	20	2	3	3-3-3-3	0		CL	MED. OR SANDY CLAY, MOIST, SOME WATER ON SURFACE MED. STIFF, MED. PLAS.
SS	24	24	3	5	3-3-5-8	0	5	SC CL	OR.-TAN CLAYEY CG SAND AT TOP GRADING INTO GRAY-GRN. SANDY CLAY WITH GRAY SHALE FRAGS AT BASE, DRY, STIFF, MED. PLAS.
SS	24	16	4	7	12-15-12-17	0			WEATHERED RED SHALE AND SILTSTONE, MICACEOUS, DRY, POORLY PRESERVED LAMINAE
SS	24	14	5	9	11-7-11-17	0			WEATHERED RED SHALE AND SILTSTONE, MICACEOUS, DRY
SS	24	22	6	11	9-11-9-13	0	10		
SS	24	22	7	13	8-10-12-17	0			WEATHERED TO A CLAYEY SILT, DRY, CRUMBLY
SS	24	12	8	15	13-17-13-14	0	15		RED WEATHERED FG SS, WEATHERS TO A SILTY SAND WITH A LITTLE CLAY, DRY, CRUMBLY
SS	24	6	9	17	5-16-24-29	0			WEATHERED RED SHALE/SILTSTONE, WEATHERS TO A CLAYEY SILT, DRY, MICACEOUS
SS	24		10	19	10-19-24-26	0	20		WEATHERED RED SHALE AND SILTSTONE, WET WEATHERS TO A CLAYEY SILT, MICACEOUS, SPOON GOT STUCK ON LAST SAMPLE DUE TO WATER SUCTION

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-5
Coordinates:

Surface Elevation: 315.11
Casing Above Surface: 317.38
Reference Elevation: 316.88
Reference Description: Top of PVC

Location: NAS, WILLOW GROVE
Job No. 10388.03
Client: NORTHERN DIVISION, NAVFAC
Drilling Method: MAYHUE 500 AIR & WATER ROTARY, 5 1/8, 8, 10 IN. BIT
Sampling Method: SS, 300 LB HAMMER, 30" DROP

Start Date: 4/12/89 Completion Date: 4/12/89

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	PID PPM	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
								FILL	LT. OR CG SAND WITH GRAVEL & ASPHALT FILL (UPPER 6"), DRY, MEDIUM DENSE
SS	24	20	1	1	17-13-5-7	5		CL	MED. OR. BRN. SILTY CLAY, MOIST, MED. STIFF, MED. PLAS.
SS	24	20	2	3	3-3-5-7	55	5	CL	MOTTLED OR. TAN SANDY CLAY, MOIST, CRUMBLY, STIFF, LOW PLAS.
SS	24	8	3	5	5-6-7-750	40			BRN. SS, HARD
							10		
							15		DRILLING RATE SLOWED DOWN 1645, HARD SS
									WATER FIRST NOTED
							20		T.D. 26' HNU 30-50 PPM IN HOLE 1245

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE FT.
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-6
Coordinates:

Surface Elevation: 317.82
Casing Above Surface: 320.08
Reference Elevation: 319.62
Reference Description: TOP OF PVC

Location: NAS, WILLOW GROVE
Job No. 10388.03
Client: NORTHERN DIVISION, NAVFAC
Drilling Method: MAYHUE 500 AIR ROTARY, 5+1/8", 8", 10" BIT
Sampling Method: SS, 300 LB HAMMER, 30" DROP, SPOON SIZE VARIABLE, CONTINUOUS SAMPLING

Start Date: 4/14/89 Completion Date: 4/14/89

SURFACE CONDITIONS
GROUND, GRASS COVERED, 1% GRADE

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	PID PPM HS/SS	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
								CL	DK. BRN., MOIST SILTY CLAY, ROOTED TOPSOIL, SOFT MED. PLAS.
SS	24	22	1	1	2-2-5-5	0/0		CL	MEDIUM ORANGE-BROWN, MOIST SILTY CLAY, MEDIUM STIFF MEDIUM PLASTICITY
SS	24	12	2	3	9-9-9-11	4/2			MEDIUM ORANGE-BROWN, MOIST SILTY CLAY, VERY STIFF SLIGHT PLASTICITY
SS	24	12	3	5.5	11-19-19-10	7/4	5	SP	LIGHT ORANGE, DRY GRAVELLY SAND WITH FRAGMENTS OF TAN SS, MEDIUM DENSE
SS	24	8	4	7.5	5-15-23-17	10/4		SP	LIGHT YELLOW-BROWN GRAVELLY SAND WITH LARGE (1") FRAGMENTS OF TAN SS, SAPROLITE, DENSE
SS	24	8	5		19-18-72/3"	22	10	SC	MEDIUM REDDISH-ORANGE, DRY CLAYEY SAND, SILTST., SAPROLITE, MED. DENSE
								SP	LIGHT YELLOW GRAVELLY CG SAND WITH FRAGMENTS OF LT. YELLOW SS, SAPROLITE, HARD - ROCK
							15		
							20		PID 21', 25 PPM IN BOREHOLE, 0-1 IN BZ, 1442 DRILLED TO DEPTH OF 22', 0.22 FT OF NAPL AT 16.65', 1632

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-7
Coordinates:

Surface Elevation: 311.61
Casing Above Surface: 314.52
Reference Elevation: 314.08
Reference Description: TOP OF PVC

Location: NAS, WILLOW GROVE
Job No. 10388.03
Client: NORTHERN DIVISION, NAVFAC
Drilling Method: MAYHUE 500 AIR & WATER ROTARY, 5+1/8, 10",

Sampling Method: SS, 30" DROP, VARIABLE SPOON SIZE, CONTINUOUS SAMPLING

Start Date: 4/19/89 Completion Date: 4/19/89

SURFACE CONDITIONS
WET GROUND, 2% GRADE, DEAD GRASS COVER

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	PID PPM BH/HS	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
								CL	BRN. SILT W/ SOME ROOTS, TRACE TO LITTLE GRAVEL, SOFT
SS	24	22	1	1	1-1-3-5	130/96			LIGHT BRN. - ORANGE SILTY CLAY, TRACE TO LITTLE FINE SAND, MOIST, MED. STIFF
								ML	LT. ORANGE-BRN. CLAY SILT W/ TRACE FINE SAND, MOIST MED. STIFF
SS	24	24	2	3	3-4-5-7	/64			DK. RED BRN. SANDY SILT W/ LITTLE GRAVEL, SOME MOTTLING, MOIST, STIFF
									DK. RED BRN. SANDY SILT W/ SOME GRAVEL, MOIST MED. STIFF
SS	24	22	3	5	2-4-7-10	65/82	5	SM	
									DK. RED BRN. SANDY SILT W/ SOME GRAVEL, OCC. LAYERS OF ORANGE FINE-MED SAND, MOIST
SS	24	22	4	7	6-6-7-7-	54/220		ML	DK. PURPLE CLAYEY SILT, TRACE FINE SAND, MOIST, MED. STIFF, MED. PLASTCI. (COLLECTED FOR VOA ANALYSIS)
SS	24	18	5	9	2-4-10-10	16/24			DK. PURPLE-RED BRN. SANDY SILT W/ LITTLE GRAVEL, MOIST, MED. STIFF-STIFF
							10	SM	DK. RED BRN. FINE SANDY SILT W/ LITTLE GRAVEL MOIST, STIFF
SS	24	14	6	11	7-11-12-15	5/150			DK. RED BRN. CLAYEY SILT W/ ROCK FRAGMENTS, VERY STIFF - HARD, MOIST - DRY
SS	20	18	7	12	7-20-34-50/4"	1/200		ML	
							15		
							20		CALIBRATED PID 72 PPM/100 PPM 0 SPAN

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-8

Coordinates:

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-26-91 Completion Date: 4-26-91

SURFACE CONDITIONS: FLAT, GRASSY LOCATED NW OF FUEL TANKS ADJACENT TO SPILLWAY, AND SURFACE DRAINAGE DITCH

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU CGI	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
SS	24	20	1	2.5	3-11-9-12	0/0	X	ML	MOTTLED BROWN AND YELLOWISH BROWN, SLIGHTLY MOIST, CLAYEY SILT, ML, HARD SANDSTONE FRAGMENTS.
SS	24	20	2	5	3-8-11-9	0/0	5 X	ML	REDDISH BROWN, MOIST, SILT W/ SOME SAND, ML, SOME LITHIC FRAGMENTS, AND HYDROCARBON SMELL.
SS	24	16	3	7.5	6-7-11-31	0/0	X	ML	BROWN, MOIST, CLAYEY SILT W/ SAND, ML, MANY LITHIC FRAGMENTS, SOME RELIC FIXTURE.
					35-51/3"		10		SPLIT SPOON REFUSAL AT 8.5 FT. ~~SWITCH TO AIR HAMMER.~~
									CUTTINGS LOG:
								SS	BROWN, MICACEOUS SS/SILTSTONE
							15		
						10/0		SHALE	REDDISH BROWN SHALE, EASIER DRILLING
									WATER DETECTED AT 17 FT.
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-8
Coordinates:

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-26-91 Completion Date: 4-26-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
							20		
						50/0	25	SHALE	REDDISH BROWN, WET SHALE, STRONG HYDROCARBON SMELL
						200/0			TERMINATE BORING AT 28 FT.
							30		
							35		
							40		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-9

Coordinates:

Surface Elevation:

Casing Above Surface:

Reference Elevation:

Reference Description:

Location: NAS WILLOW GROVE

Job No. 10388.07

Client: NAVY

Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-23-91 Completion Date: 4-23-91

SURFACE CONDITIONS: FLAT, PAVED. LOCATED IN SUPPLIES AREA BEHIND BUILDING 340.

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
SS	24	18	1	2.5	6-6-7-21	0/0	X	SAP	DARK REDDISH BROWN, DRY SAPROLITE, STIFF
SS	15	14	2	5	22-44-51/3"	0/0	5	SAP	REDDISH BROWN , DRY, SAPROLITE/SHALE, HARD RELIC STRUCTURE PRESENT. SPOON REFUSAL AT 6 FT., SWITCH TO AIR HAMMER.
							10		LARGE QUANTITIES OF WATER PRESENT, UNABLE TO DISTINGUISH CUTTINGS. HNU READINGS ON MUD PAN BETWEEN 5 AND 20 PPM. SET WELL AT 26 FT.
							15		
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-10

Coordinates:

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-24-91 Completion Date: 4-24-91

SURFACE CONDITIONS: FLAT, PAVED. LOCATED NW OF BUILDING 340.

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
SS	24	18	1	2.5	14-20-26-45	0/0	X	SAP	MOTTLED YELLOWISH BROWN, TO BLUEISH GREY, DRY, SAPROLITE W/ SHALE FRAGMENTS, RELIC TEXTURE, SOFT, NO ODOR.
					50/5"	0/0	5		SPOON REFUSAL AT 4.5 FT., SWITCH TO AIR HAMMER.
									CUTTINGS:
									REDDISH BROWN, S. MOIST, SHALE, NO ODOR.
							10		
						0/0			REDDISH BROWN, S. MOIST, SHALE, NO ODOR.
							15		
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-10

Coordinates:

Surface Elevation:

Casing Above Surface:

Reference Elevation:

Reference Description:

Location: NAS WILLOW GROVE

Job No. 10388.07

Client: NAVY

Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-24-91 Completion Date: 4-24-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
						0/0			BLUEISH/GREY VERY FINE GRAINED SANDSTONE, HARD.
							25		
						0/0			BLUEISH/GREY VERY FINE GRAINED SANDSTONE, HARD.
							30		DRILLING RATE INCREASED, REDDISH BROWN SHALE, SOFT
						5/0	35		WATER AT 35 FT.
							40		TERMINATE DRILLING AT 40 FT.

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-12

Coordinates:

Surface Elevation:

Casing Above Surface:

Reference Elevation:

Reference Description:

Location: NAS WILLOW GROVE

Job No. 10388.07

Client: NAVY

Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-25-91 Completion Date: 4-25-91

SURFACE CONDITIONS: FLAT PAVED, LOCATED AT CROSSROADS BETWEEN BUILDINGS 340 AND 345.

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SOIL DESCRIPTION
SS	24	12	1	2.5	2-4-8-10	0/0	X	ML	WATER AT SURFACE(PERCHED) BROWN, WET, CLAYEY SILT W/ TRACE VERY FINE SAND, MICACEOUS
SS	24	20	2	5	7-9-11-13	8/0	X 5	ML	REDDISH BROWN , S. MOIST, CLAYEY SILT, W/ TRACE VERY FINE SAND, MICACEOUS. HYDROCARBON ODOR.
SS	24	20	3	7.5	2-11-13-14	7/0	X	ML	DARK REDDISH BROWN, S. MOIST, CLAYEY SILT W/ TRACE VERY FINE SAND, MICACEOUS.
SS	24	20	4	10	7-7-7-10	10/0	X 10	ML	DARK REDDISH BROWN, S. MOIST, CLAYEY SILT W/ TRACE VERY FINE SAND, MICACEOUS, HYDROCARBON STAIN.
SS	24	6			7-13-13-26	12/0		SM	POOR RECOVERY, NO SAMPLE TAKEN DARK REDDISH BROWN, S. MOIST, SILTY SAND, SM.
SS	24	6			5-50/5"				SPOON REFUSAL AT 13.5 FT. SWITCH TO AIR HAMMER.
							15		REDDISH BROWN, MOIST, SHALE, MICACEOUS, FISSEL
						20/0			STRONG HYDROCARBON SMELL. WATER AT 17 FT.
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE

AT COMPLETION		FT.
AFTER	HRS.	FT.
AFTER	24 HRS.	FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-12

Coordinates:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 8" AIR HAMMER, MOBILE B-80 DRILL RIG

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Sampling Method: SPLIT SPOON, 140 IB. HAMMER, 30" DROP.

Start Date: 4-25-91 Completion Date: 4-25-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
							20		
						50/0			BREATHING ZONE READINGS BETWEEN 1 AND 20 PPM.
							25		
									TERMINATE DRILLING AT 28 FT.
							30		
							35		
							40		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-14

Coordinates:

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 10" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: NA

Start Date: 4-29-91 Completion Date: 4-30-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS: FLAT PAVED, LOCATED EAST OF BUILDING 345, IN CORNER OF PARKING LOT SOIL DESCRIPTION
								FILL	
						0/0			DARK REDDISH BROWN, S. MOIST, SAPROLITE, MICACEOUS
							5		
						0/0			DARK REDDISH BROWN, S. MOIST, SAPROLITE/SHALE, SOFT MICACEOUS
							10		
						0/0			DARK REDDISH BROWN, SHALE, SLIGHLTLY DARKER, MORE WATER, MOIST, MICACEOUS
							15		
									SLIGHT COLOR CHANGE TO LIGHTER RED.
						2/0			DARK REDDISH BROWN, MOIST SHALE FRAGMENTS.
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-14

Coordinates:

Surface Elevation:

Casing Above Surface:

Reference Elevation:

Reference Description:

Location: NAS WILLOW GROVE

Job No. 10388.07

Client: NAVY

Drilling Method: 10" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: NA

Start Date: 4-29-91 Completion Date: 4-30-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
									DARK REDDISH BROWN, SHALE, SOME CHIPS OF DARK GREY SILTSTONE
						0/0			
							25		
						15/0			DRILL RATE SLOWED.
							30	SS	COLOR CHANGE TO LIGHT BROWN, SAND AND SILT
						25/0			
							35		
						100/0			LIGHT BROWN, MOIST SANDSTONE, HARD.
									4-30-91 WASH HOLE, DARK PRODUCT PRESENT.
						200/0			TERMINATE DRILLING AT 39 FT.
							40		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grove NAS	W. Grove, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 8-in air hammer to TD

Boring No. NFFW-15

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Sheet 1 of 1

Water Lev.				
Time				
Date				
Reference				

Drilling Start	Drilling Finish
14:45	9:00
5-19-93	5-21-93

Surface Conditions: Grassy area west of Bldg. 345, adjacent to new building

Sample Type	Inches Drvn/In. Recvrd	Dpth Ceg.	Samp. /samp. depth	HNU (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
SS	24 / 6		1 / 0	1	9, 19	0	CL	brown organics/silty clay (soil), lg. rock in spoon at 8-in - poor recovery, dry, no odor
					32, 33	1		
SS	24 / 20		2 / 2	1	39, 35	2	ML/ CL	brown-tan organic silt and clay, trace sand, dry, no odor
					35, 39	3		
SS	24 / 24		3 / 4	1	12, 23	4	ML	med.- dark brown silt, some clay, trace fine sand, trace lithic fragments, dry, no odor
					23, 21	5		
SS	24 / 12		4 / 8	2	21, 46	6	ML	reddish brown weathered siltstone with clayey layers, micaceous (silt), trace sand in some zones, dry, hard, no odor
					50/1	7		
SS	24 / 1		5 / 8	1	8, 41	8	ML	as above - spoon refusal at 9.5-ft
					50/5	9		
						10		
							SS	10-15 ft - weathered red-brown siltstone/sandstone
							SS	15-21 ft - as above, but harder (less weathered)
							SS	21-32.5 ft - tan-brown silty sandstone - very hard/wet

Logged by: Bradley C. Blase

Date: 19 May 1993

Drilling Contractor: Environmental Drilling, Inc.

Driller: Scott Hauge

WELL SPECIFICATIONS:

Diam. of casing: 4-in PCV
BOH: 32.5-ft
Screen Interval: 32.5 - 7.5 ft
Riser Interval: 7.5 - (+2.5) ft
Sandpack: 32.5 - 7.0 ft
Bentonite: 7.0 - 3.0 ft
Grout: 3.0 - 0.0 ft
Cover: Steel stickup

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-16
ordinates:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 10" AIR HAMMER, MOBILE B-80 DRILL RIG

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Sampling Method: NA

Start Date: 4-30-91 Completion Date: 4-30-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS: FLAT GRASSY, LOCATED ACROSS FROM FUEL FARM ADJACENT TO SURFACE DRAINAGE DITCH. SOIL DESCRIPTION
								ML	MED. BROWN, MOIST, CLAYEY SILT, ML, SLIGHT PLASTICITY.
							5		
									REDDISH BROWN, MOIST, CLAYEY SILT/ SAPROLITE, ML
								SAP	
							10		
								SS	HARD ROCK AT 12 FT. DARK REDDISH BROWN W/ DARK GREY FRAGMENTS OF VERY FINE GRAINED SANDSTONE, MICACEOUS, HARD.
							15		
									HYDROCARBON SMELL
								SHALE	COLOR CHANGE, MORE REDDISH, EASIER DRILLING, SHALE.
							20		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

LOG OF SOIL BORING

15 LOVETON CIRCLE SPARKS, MARYLAND 21152 TELE: 301-771-4950

BORING NO. NFFW-16

Coordinates:

Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Location: NAS WILLOW GROVE
Job No. 10388.07
Client: NAVY
Drilling Method: 10" AIR HAMMER, MOBILE B-80 DRILL RIG

Sampling Method: NA

Start Date: 4-30-91 Completion Date: 4-30-91

SAMP TYPE	IN DRVN	IN RCVD	SAMP NO.	SAMP DPTH	BLOWS/6"	HNU/ CGI	DEPTH FEET	GRAPH LOG	SURFACE CONDITIONS / SOIL DESCRIPTION
									DARK REDDISH PURPLE, WET, SHALE, HYDROCARBON SMELL.
							25		WATER PRESENT
									STRONG HYDROCARBON SMELL
							30	SS	HARD DRILLING, SANDSTONE.
							35		
									DRILLING TERMINATED AT 38 FT.
							40		

SAMPLER TYPE
SS-DRIVEN SPLIT SPOON
SH-PRESSED SHELBY TUBE
OST-OSTENBURG PISTON SAMPLER
DEN-DENISON CORE BARREL SAMPLER
SPT-STANDARD PENETRATION TEST (ASTM D 1586-84)

GROUND-WATER DEPTH BELOW GRADE
AT COMPLETION FT.
AFTER HRS. FT.
AFTER 24 HRS. FT.

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grov NAS	W. Grove, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 8-in air hammer to TD

Boring No. NFFW-17

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Sheet 1 of 1

					Drilling Start	Drilling Finish
Water Lev.	6.85 ft					
Time	17:45				13:15	17:30
Date	5-20-93				5-19-93	5-20-93
Reference	surface					

Surface Conditions: Asphalt next to airfield/apron, NW of Bldg. 340

Sample Type	Inches Drvn/In. Recvrd	Dpth Csg.	Samp. /samp. depth	PID (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
-	- -		- 0	-		0		
						1		
SS	24 24		1 2	20	6 16	2	CL	12" mixed brown clay/silt/fill 4" red silty clay w/ lithic fragments, dry
					18 33	3	ML	8" grayish brown silt, little clay, dry, no odor
SS	24 6		2 4	50	17 24	4	CL	poor sample - rock in spoon mixed red clay/silt, and gray clayey silt, trace sand, dry
					27 34	5		
SS	24 12		3 6	700	18 33	6	CL	greenish gray-brown-reddish brown silty clay, relic tecture near bottom dry, moderate petroleum odor
					35 48	7		
SS	24 20		4 8	5	5 17	8	ML	4" gray-yellow motiled silty clay 16" reddish brown clayey silt w/ lithic fragments, dry, no odor
					25 50/1	9		
SS	.5 -		5 10	-	50/0.5	10		spoon refusal after 1/2" - at 10-ft
							SH	10 - 16 ft - brittle/soft reddish brown siltstone/shale
							SS	16 - 24 ft - hard brown siltstone/sandstone
								- water with heavy sheen was coming from borehole - use mud-tub to contain water and cuttings - pumped water into nine 55-gal drums to be treated later

Logged by: Bradley C. Blase Date: 19 May 1993

Drilling Contractor: Environmental Drilling, Inc. Driller: Scott Hauge

WELL SPECIFICATIONS:

Diam. of casing:	4-in PCV	Screen Interval:	24 - 4 ft	Sandpack:	24 - 2.5 ft	Grout:	1.0 - 0.0 ft
BOH:	24-ft	Riser Interval:	4 - 0 ft	Bentonite:	2.5 - 1.0 ft	Cover:	steel flushmount

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grove NAS	W. Grove, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 8-in air hammer to TD

Boring No. NFFW-18

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Sheet of

					Drilling Start	Drilling Finish
Water Lev.	11.20 ft					
Time	13:30				11:20	14:00
Date	5-21-93				5-21-93	5-21-93
Reference	surface					

Surface Conditions: Grass underlain by coarse gray gravel, SE of Bldg. 330

Sample Type	Inches Drvn/In. Recvrd	Dpth Cog.	Samp. /samp. depth	PID (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
SS	24 / 16		1 / 0	0	5	0	CL	4" mixed soil/organics/gravel
					14			14" tan-brown silty clay, some sand, dry, med. hard, no odor
					10	1		
					10			
SS	24 / 12		2 / 2	0	12	2	CL	6" tan-gray silty clay, trace organics
					20			6" orange mottled sandy clay, some silt, dry, looks disturbed, fine gravel
					30	3		near bottom (lithic frags), no odor
					30			
SS	13 / 12		3 / 4	0	17	4	SM	6" as above
					40			8" orangish brown silty sand, semi-consolidated, dry, no odor
					50/1	5		
						6		auger refusal at 6-ft
							SS	6 - 16 ft - brown-tan sandstone/siltstone (hit water at 15-ft)
							SH	16 - 20 ft - red-brown siltstone/shale
							SS	20 - 24 - grayish sandstone/siltstone (hard), lg. fracture at 22.5-ft
							SS	24 - 25.5 ft - tan sandstone, fracture at 24.5-ft

Logged by: Bradley C. Blase Date: 21 May 1993

Drilling Contractor: Environmental Drilling, Inc. Driller: Scott Hauge

WELL SPECIFICATIONS:

Diam. of casing:	4-in PCV	Screen Interval:	25.5 - 5.5 ft	Sandpack:	25.5 - 3.5 ft	Grout:	2.0 - 0.0 ft
BOH:	25.5 ft	Riser Interval:	5.5 - (+2.5) ft	Bentonite:	3.5 - 2.0 ft	Cover:	steel stickup

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grove NAS	W. Gr ve, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 8-in air hammer to TD

Boring No. NFFW-19

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Sheet 1 of 1

					Drilling Start	Drilling Finish
Water Lev.	25.5 ft	17.21 ft				
Time	8:20	17:45			8:30	8:00
Date	5-20-93	5-20-93			5-19-93	5-20-93
Reference	surface	TOC				

Surface Conditions: Dirt/clay/fill, 75-ft NW of Bldg. 119

Sample Type	Inches Drvn/In. Recvrd	Dpth Csg.	Samp. /samp. depth	PID (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
SS	24 / 6		1 / 0	5	15, 40	0	CL	mixed lt-dk brown clay, tan sand and silt, trace gravel - poor sample dry, no odor
					48, 25	1		
SS	24 / 20		2 / 2	0	24, 21	2	CL	brown organic silty clay, trace sand and gravel, sl. moist, hard/dense no odor
					18, 21	3		
SS	24 / 24		3 / 4	0	9, 36	4	CL	20" reddish brown silt/clay, med. hard, dry 4" tan silty fine sand/weathered sandstone/siltstone, very hard, dry
					50/1	5		
SS	24 / 6		4 / 6	0	49, 50/2	6	(SS) —	tan-brown weathered sandy siltstone refusal at 6.5-ft
							SS	6.5 - 25 ft - tan sandstone, hard, dry HNU = 5-10 ppm in breathing zone HNU = 20 ppm near borehole
							SS	25 - 30 ft - brown-tan sandy cuttings - appears to be slightly moist HNU = 1-5 ppm in breathing zone HNU = 10 ppm near borehole
							SS	30 - 31 ft - purplish-dk. red siltstone, very hard fracture at 31-ft - good water

Logged by: Bradley C. Blase Date: 21 May 1993

Drilling Contractor: Environmental Drilling, Inc. Driller: Scott Hauge

WELL SPECIFICATIONS:

Diam. of casing:	4-in PCV	Screen Interval:	31 - 11 ft	Sandpack:	31 - 8.9 ft	Grout:	7.2 - 0.0 ft
BOH:	31-ft	Riser Interval:	11 - (+3)	Bentonite:	8.9 - 7.2 ft	Cover:	steel stickup

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grove NAS	W. Grove, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 6-in air hammer to TD

Boring No. NFFW-20

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Sheet 1 of 2

					Drilling Start	Drilling Finish
Water Lev.	27.42 ft					
Time	17:46				10:00	12:00
Date	5-20-93				5-19-93	5-20-93
Reference	TOC					

Surface Conditions: Grass, west of tankfield, at corner of airfield and access road for fuel farm

Sample Type	Inches Drvn/In. Recvrd	Dpth Csg.	Samp. /samp. depth	PID (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
SS	24 / 12		1 / 0	140	15, 28	0	FILL	mixed tan-beige clay/silt/organics, dry; black sand/gravel, some clay, mod. product odor
					30, 37	1		
SS	24 / 20		2 / 2	550	26, 30	2	FILL	6" tan-beige silty sand, dry, strong product odor; 14" reddish brown clay, some silt, hard
					13, 13	3		HNU > 200 ppm in borehole, < 5 ppm in breathing zone
SS	24 / 18		3 / 4	65	6, 8	4	FILL	18" red-brown-tan mixed clay/silt, some sand, slight prod. odor in sandy zones, dry
					12, 12	5		
SS	24 / 20		4 / 6	15	14, 23	6	CL	12" brown-tan mottled organic clay, some silt, sl. moist, soft; 6" brown organic silt/clay (soil), sl. moist
					21, 13	7		2" reddish-brown silty clay, trace lithic fragments, moist
SS	24 / 20		5 / 8	11	5, 18	8	CL	6" brown-reddish organic silty clay, moist, no odor; 14" reddish brown silty clay, relic texture, moist
					12, 25	9		
SS	24 / 22		6 / 10	8	25, 33	10	CL	22" dark red silty clay, slight relic texture (weathered shale/siltstone)
					39, 50/2	11		
SS	24 / 22		7 / 12	4	6, 12	12	CL	22" as above
					13, 23	13		
SS	24 / 24		8 / 14	3	27, 24	14	CL	12" brown-reddish clayey silt, micaceous, med. hard, dry; 12" reddish brown silty clay, mottled with white clay near bottom, dry
					21, 27	15		
SS	24 / 24		9 / 16	2	5, 15	16	CL	24" as above
					23, 25	17		
SS	24 / 10		10 / 18	2	39, 50/4	18	CL	10" reddish-brown silty clay, very hard (weathered siltstone), dry
					- , -	19		

Logged by: Bradley C. Blase Date: 19 May 1993

Drilling Contractor: Environmental Drilling, Inc. Driller: Scott Hauge

WELL SPECIFICATIONS:

Diam. of casing: 4-in PCV Screen Interval: 34 - 14 ft Sandpack: 34 - 11 ft Grout: 9.5 - 0.0 ft
BOH: 34-ft Riser Interval: 14 - (+3) ft Bentonite: 11 - 9.5 ft Cover: steel stickup

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grove NAS	W. Grove, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 8-in air hammer to TD

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Boring No. NFFW-20

Sheet 2 of 2

					Drilling Start	Drilling Finish
Water Lev.	27.42 ft					
Time	17:45				10:00	12:00
Date	5-20-93				5-19-93	5-20-93
Reference	TOC					

Surface Conditions: Grass, west of tankfield, at corner of airfield and access road for fuel farm

Sample Type	Inches Drvn/In. Recvrd	Dpth Csg.	Samp. /samp. depth	PID (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
SS	24 / 10		11 / 20	1	39 / 50/4	20	CL	reddish-brown silty clay, relic texture, very hard, (weathered siltstone)
						21	—	spoon refusal at 21-ft
						22		
						23	SH	21 - 26 ft - dark red siltstone/shale
						24	SS	26 - 34 ft - brown silty sandstone, very hard, heavy vapors at 29-ft
						25		
						26		Notes:
						27		@ 29-30 ft - HNU = 50 ppm in breathing zone, HNU = 200 ppm near borehole don respirators at 10:30
						28		
						29		@ 33 ft - HNU = 5-20 ppm in breathing zone, 50-100 ppm near borehole
						30		@ 34 ft - finish borehole, doff respirators at 11:10
						31		
						32		
						33		
						34		
						35		
						36		
						37		
						38		
						39		
						40		

Logged by: Bradley C. Blase Date: 19 May 1993

Drilling Contractor: Environmental Drilling, Inc. Driller: Scott Hauge

WELL SPECIFICATIONS:

Diam. of casing:	4-in PCV	Screen Interval:	34 - 14 ft	Sandpack:	34 - 11 ft	Grout:	9.5 - 0.0 ft
BOH:	34-ft	Riser Interval:	14 - (+3) ft	Bentonite:	11 - 9.5 ft	Cover:	steel stickup

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Coordinates:
Surface Elevation:
Casing Above Surface:
Reference Elevation:
Reference Description:

Job. No.	Client	Location
12197.06	U.S. Navy, Willow Grove NAS	W. Grove, PA

Drilling Method: Mobile B-80 - 4.25" HSA to refusal, followed by 8-in air hammer to TD

Sampling Method: HSA - 2" x 24" split spoon driven by 140# hammer. Air rotary - grab samples from cuttings

Boring No. NFFW-21

Sheet 1 of 1

					Drilling Start	Drilling Finish
Water Lev.	20.03				11:00	14:40
Time	10:00				5-18-93	5-18-93
Date	5-19-93					
Reference	TOC					

Surface Conditions: Grass, gravel, fill - 150 ft east of fuel farm

Sample Type	Inches Drvn/In. Recvrd	Dpth Cag.	Samp. /samp. depth	PID (ppm)	Blows per 6 in.	Depth in Feet	USCS Log	
SS	24 / 18		1 / 0	0	8, 14	0	FILL	mixed brown organic silt/clay, trace sand/gravel/brick, dry, no odor
					14, 18	1		
SS	24 / 18		2 / 2	2	30, 25	2	FILL	mixed gray-black-brown silt/sand/organics, some gravel, sl. moist, no odor
					15, 24	3		
SS	24 / 24		3 / 4	2	10, 9	4		6" as above
					10, 18	5	CL	18" light brown clayey silt, trace fine sand, dry, no odor
SS	24 / 24		4 / 6	0	18, 18	6	SM	light-med. brown-orange mottled sandy silt, more sand near bottom, trace clay, slightly moist, no odor
					15, 18	7		
SS	24 / 20		5 / 8	0	9, 19	8	SM	light brown-tan sandy silt, trace clay, dry, no odor
					24, 20	9		
SS	24 / 12		6 / 10	0	9, 17	10	CL	6" brown sandy silt/beige silty clay, dry 6" orange-brown clayey silt, trace sand, dry, no odor
					15, 13	11		
SS	24 / 24		7 / 12	0	5, 11	12	CL	6" as above 18" dark purple-reddish silty clay (weathered shale), hard, moist
					13, 16	13		
SS	24 / 16		8 / 14	0	27, 30	14	SH	maroon-dark red mudstone/siltstone (weathered), moist, hard
					50/5	15		spoon refusal at 15.4 ft
							SH	15.4 - 20 ft - fractured/weathered maroon/red mud/siltstone (shale)
							SH	20 - 29 ft - hard red mudstone/siltstone (shale)
							SS	29 - 34 ft - gray-tan sandstone,, trace conglomerate, micaceous, hard

Logged by: Bradley C. Blase Date: 18 May 1993

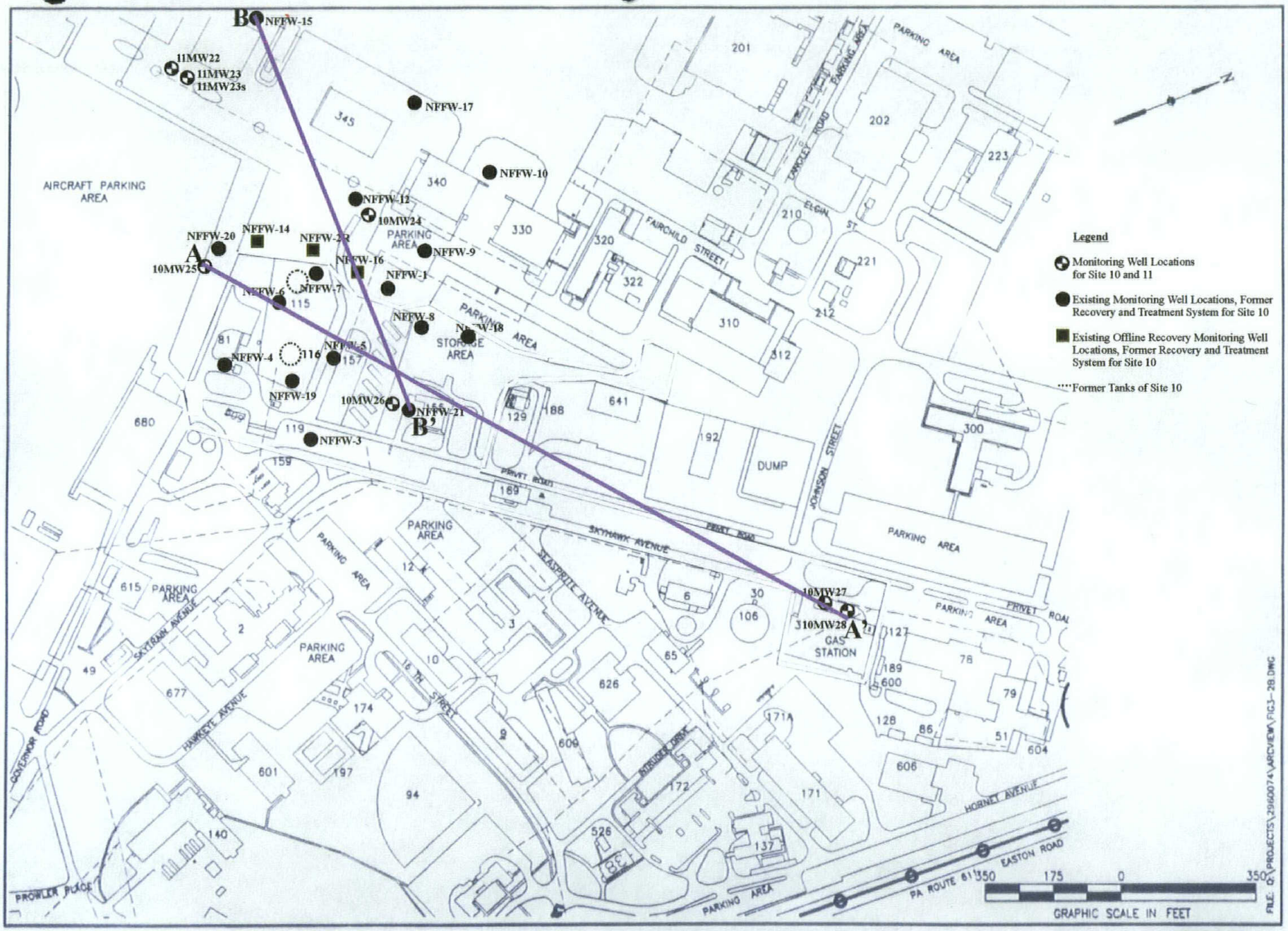
Drilling Contractor: Environmental Drilling, Inc. Driller: Scott Hauge

WELL SPECIFICATIONS:

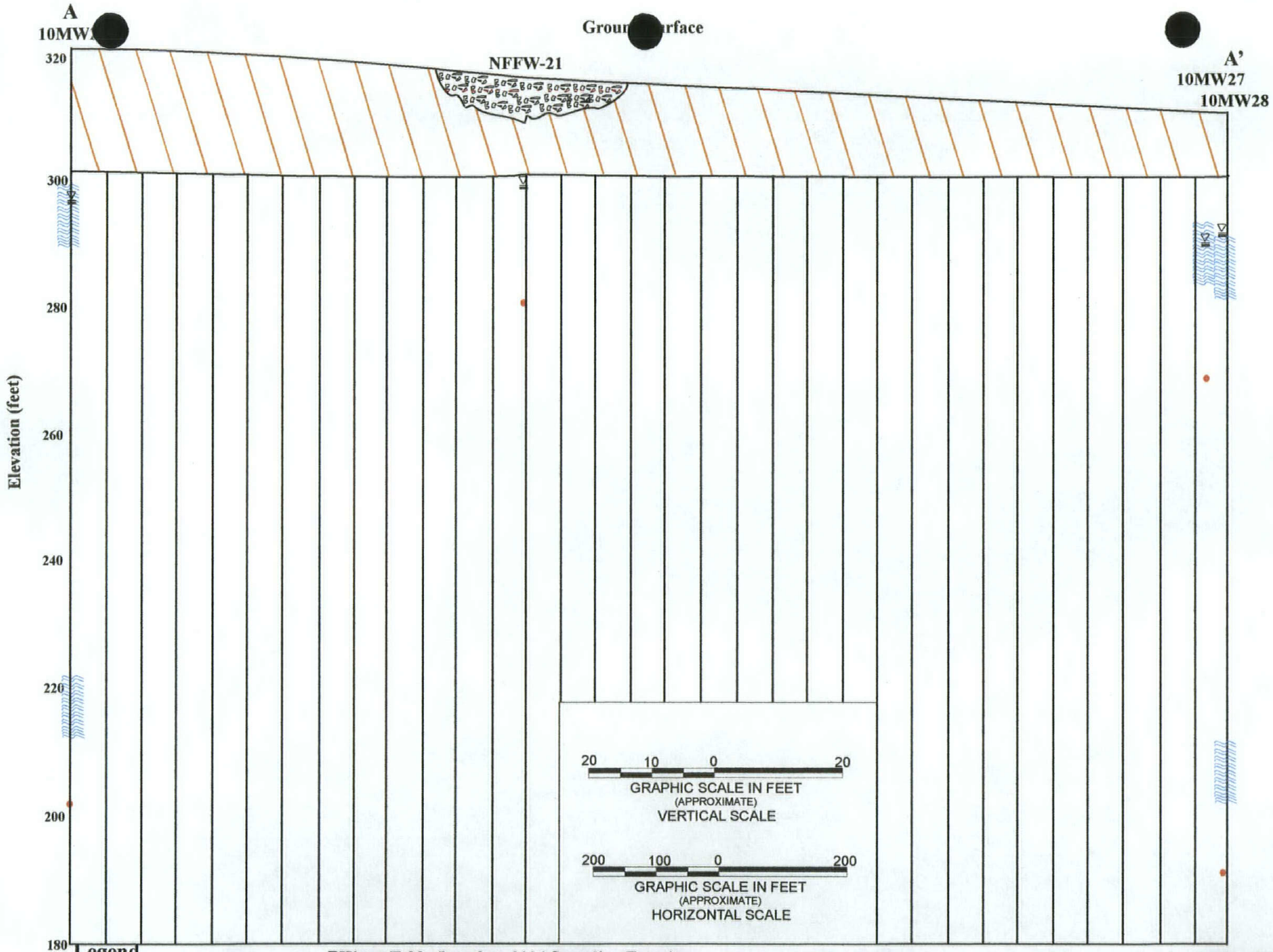
Diam. of casing: 4-in PCV Screen Interval: 34 - 9 ft Sandpack: 34 - 7.7 ft Grout: 6.0 - 0.0 ft
BOH: 34-ft Riser Interval: 9 - (+2.5) ft Bentonite: 7.7 - 6.0 ft Cover: steel stickup

APPENDIX J

CROSS SECTIONS



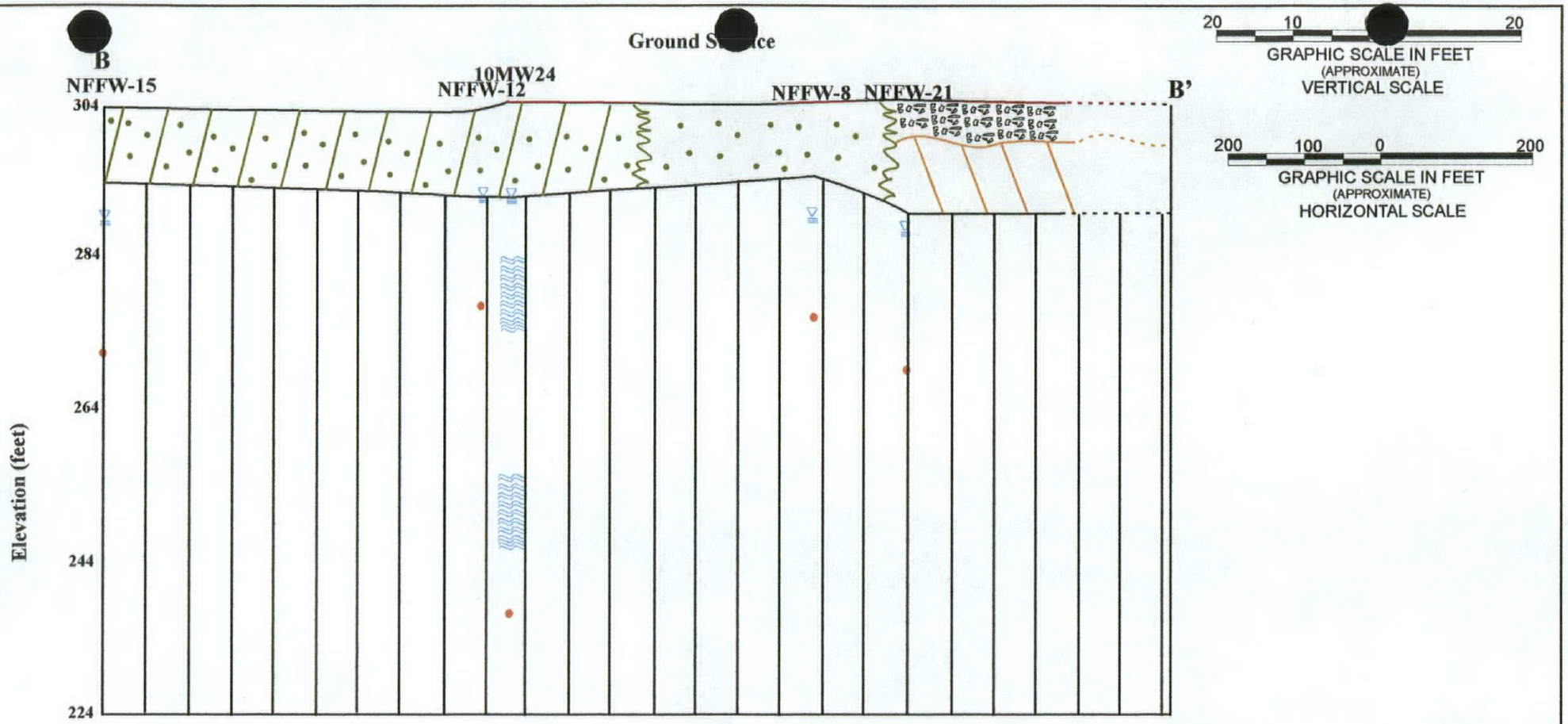
New and existing well locations at IR Site 10 and east of IR Site 10.



Legend

- Sandy Silt to Fine Sand
- Fill
- Interbedded Siltstone, Shale, and Sandstone (Stockton Formation, Middle Arkose Member)
- Water Table (based on 2004 Sampling Event)
- Water Bearing Unit (not available for NFFW-21)
- Boring Termination

Cross section of Site Specific Geology



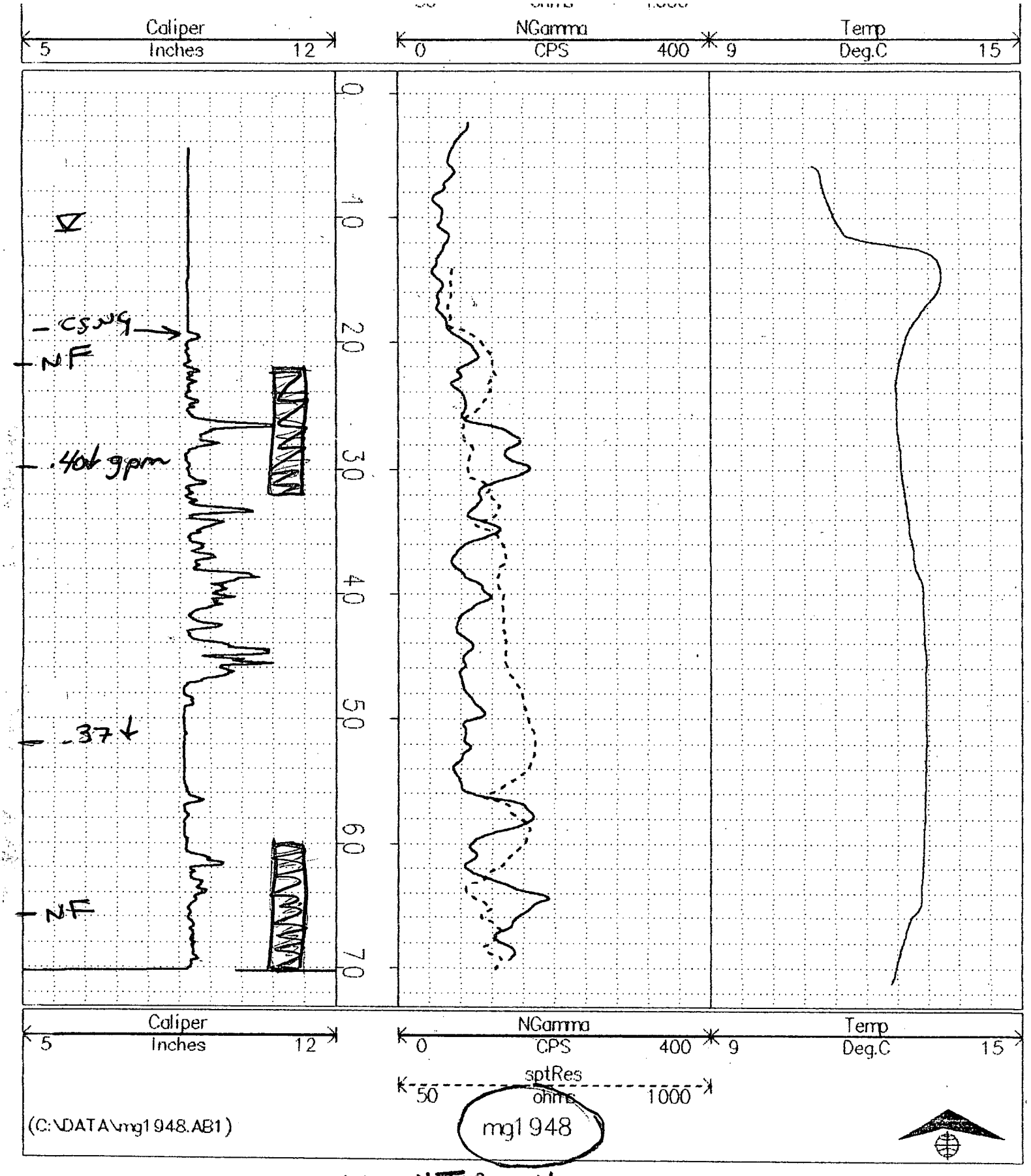
Legend

- Clayey Silt to Silty Clay
- Silt
- Sandy Silt to Fine Sand
- Fill
- Interbedded Siltstone, Shale, and Sandstone (Stockton Formation, Middle Arkose Member)
- Boring Termination
- Water Table (based on 2004 Sampling Event)
- Water Bearing Unit (only available for 10MW24)

Cross section of Site Specific Geology

APPENDIX K

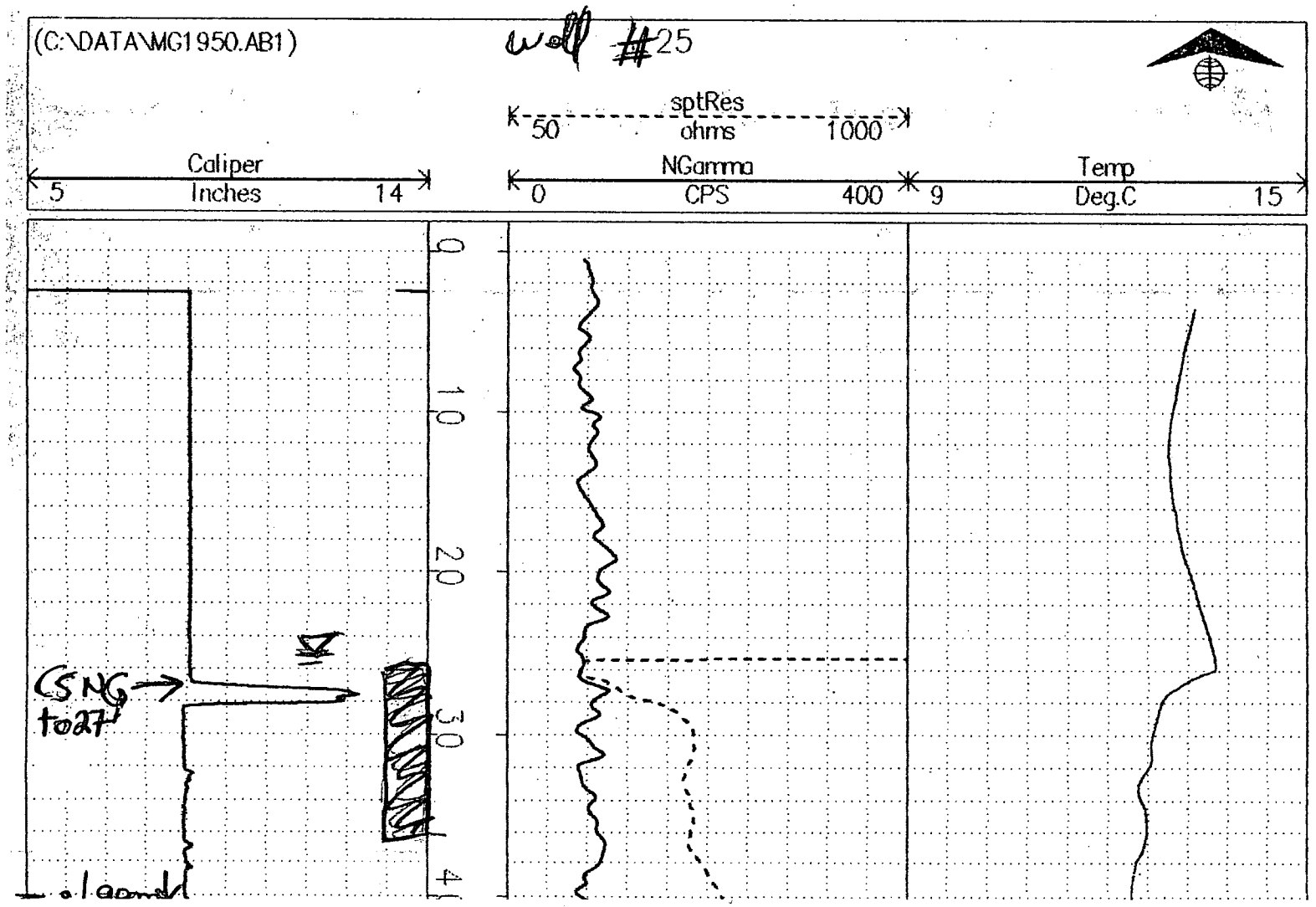
2003 USGS LOGS

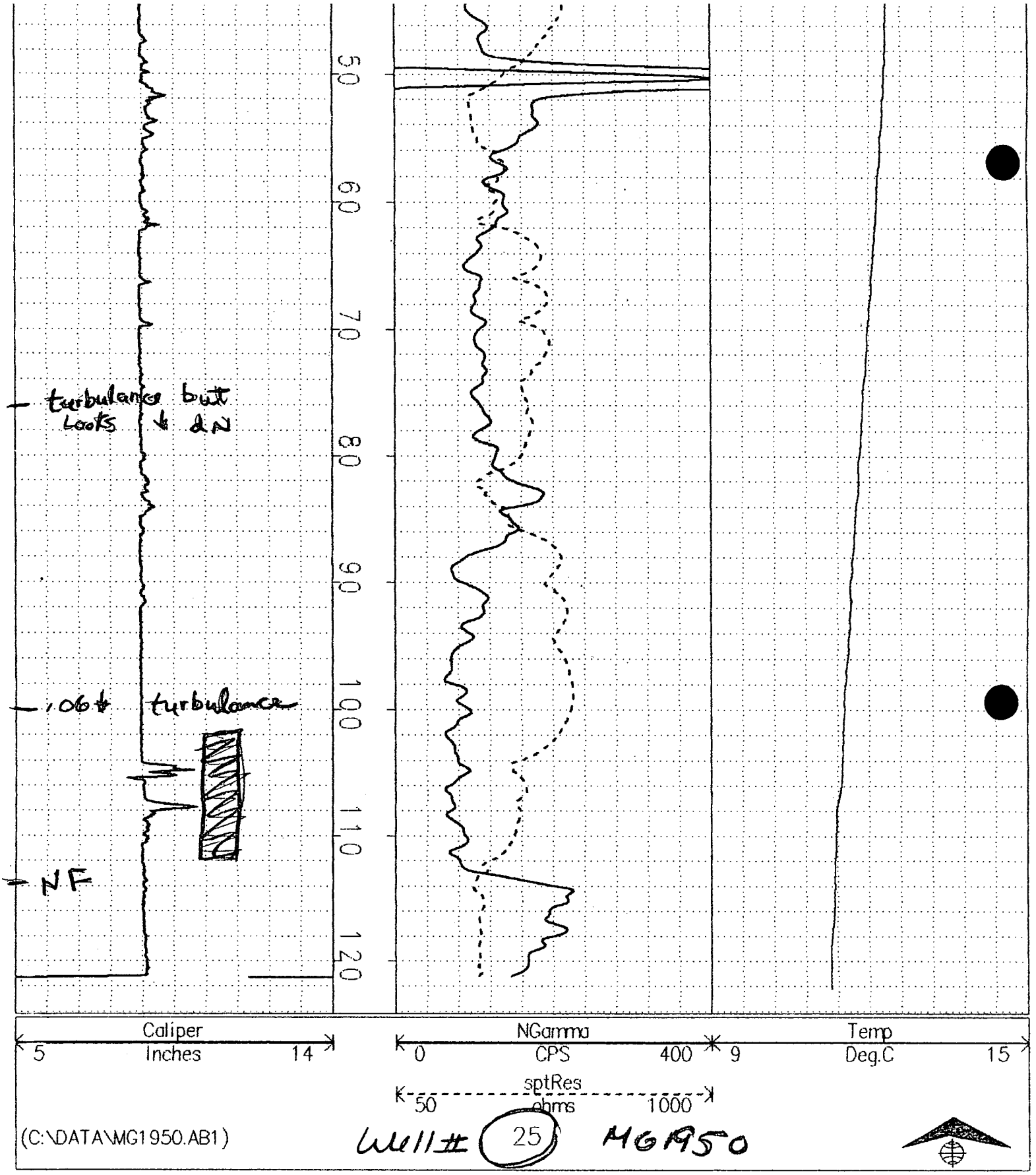


MM ~~NFW~~ -24
MW 5/6/03

MW
MM ~~NFFW~~ -24
5/6/03

MG 1950
5/7/03


(C:\DATA\MG1950.AB1)
well #25
sptRes
50
ohms
1000
Caliper
5
Inches
14
NGamma
0
CPS
400
Temp
9
Deg.C
15
0
10
20
30
40
CSNG
to 27

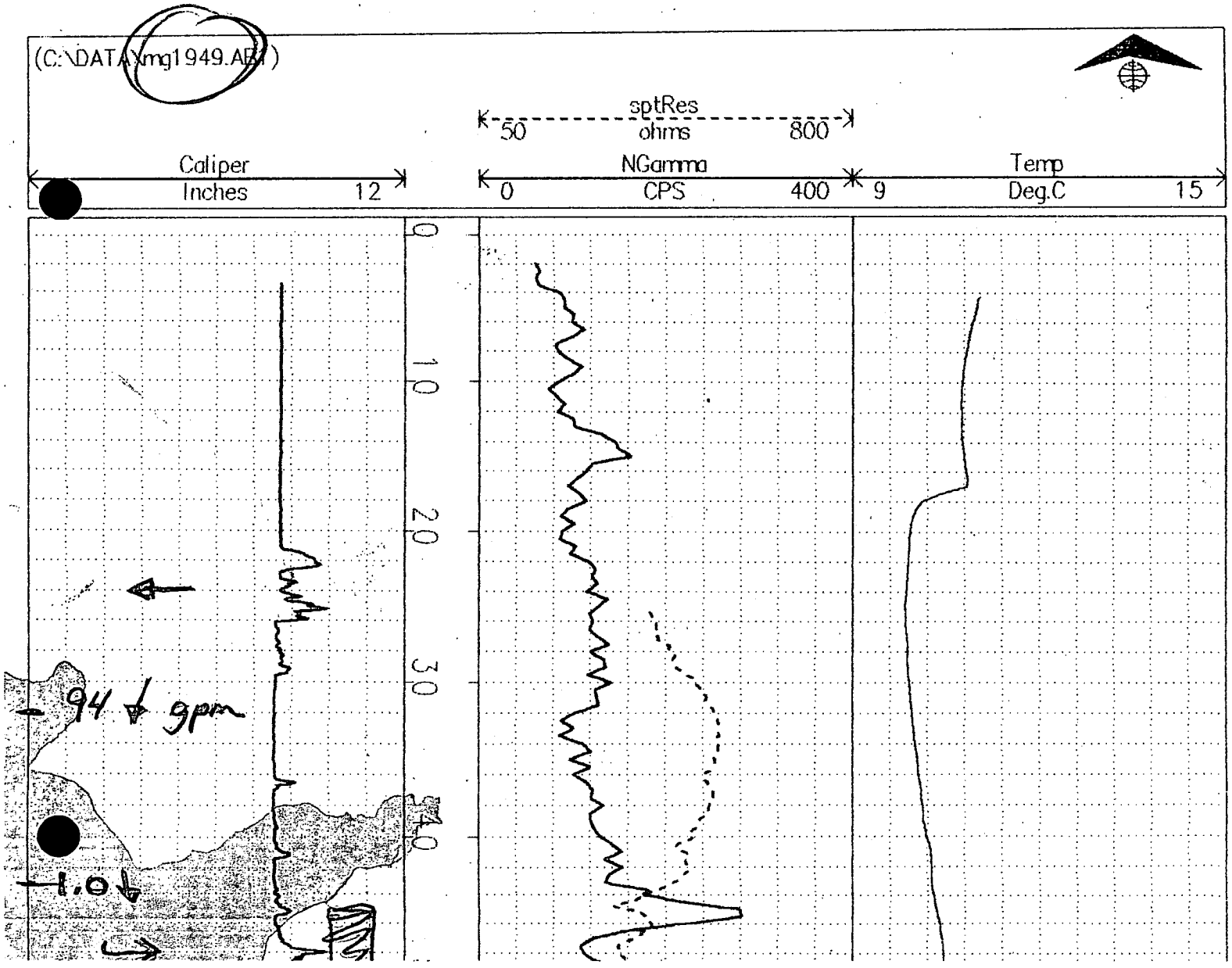

50
60
70
80
90
100
110
120
turbulance but looks ↓ dN
.06↓ turbulance
NF
Caliper
5 Inches 14
NGamma
0 CPS 400
Temp
9 Deg.C 15
sptRes
50 ohms 1000
(C:\DATA\MG1950.AB1)
Well# 25 MG950

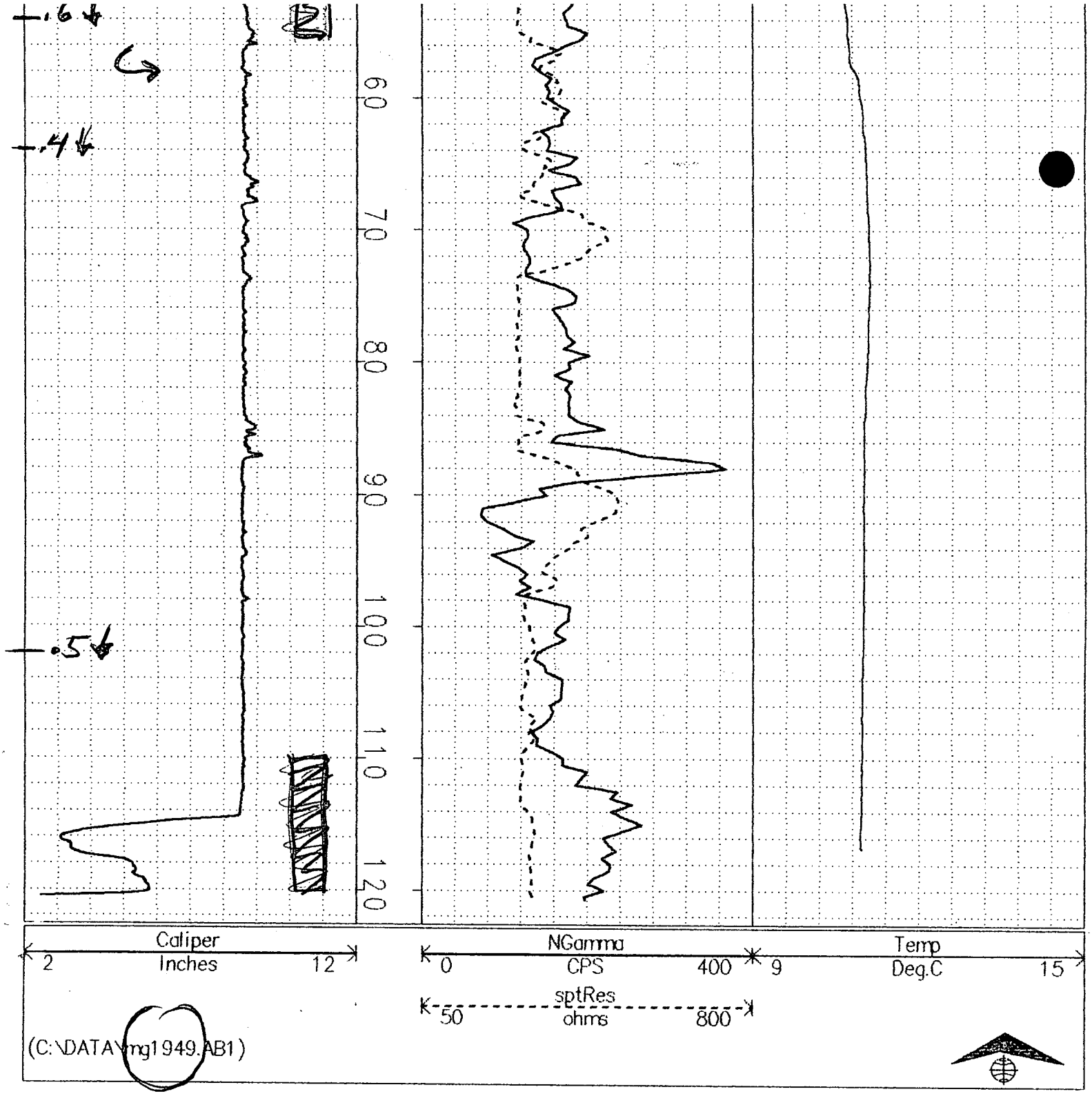
102-112

MW-26

~~NFFA-20~~ MM

5/6/03





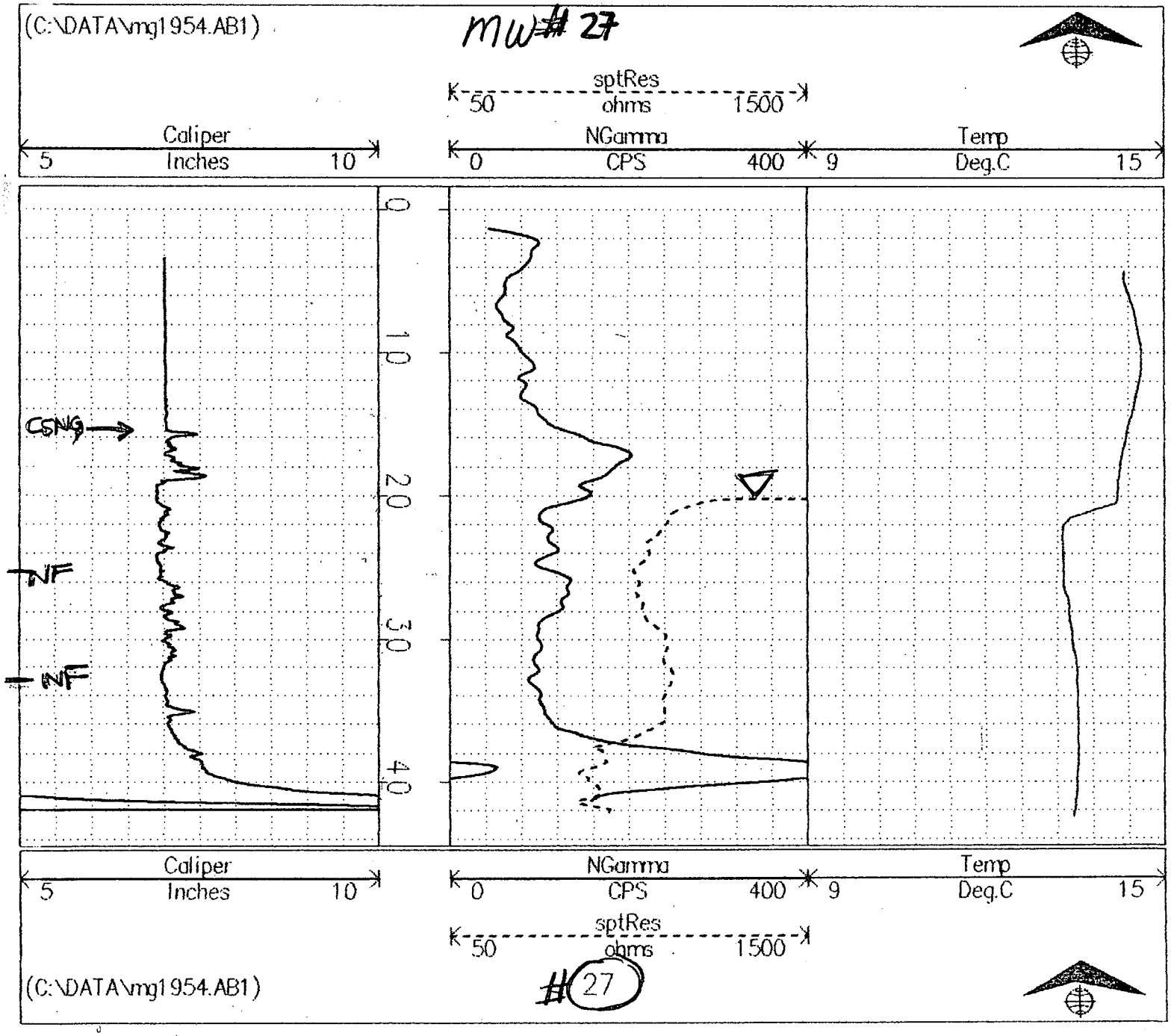
~~NFFU-26~~ MM

5/6/03

MW-26

MG 1954

5/13/03



MG 1953

5/13/03

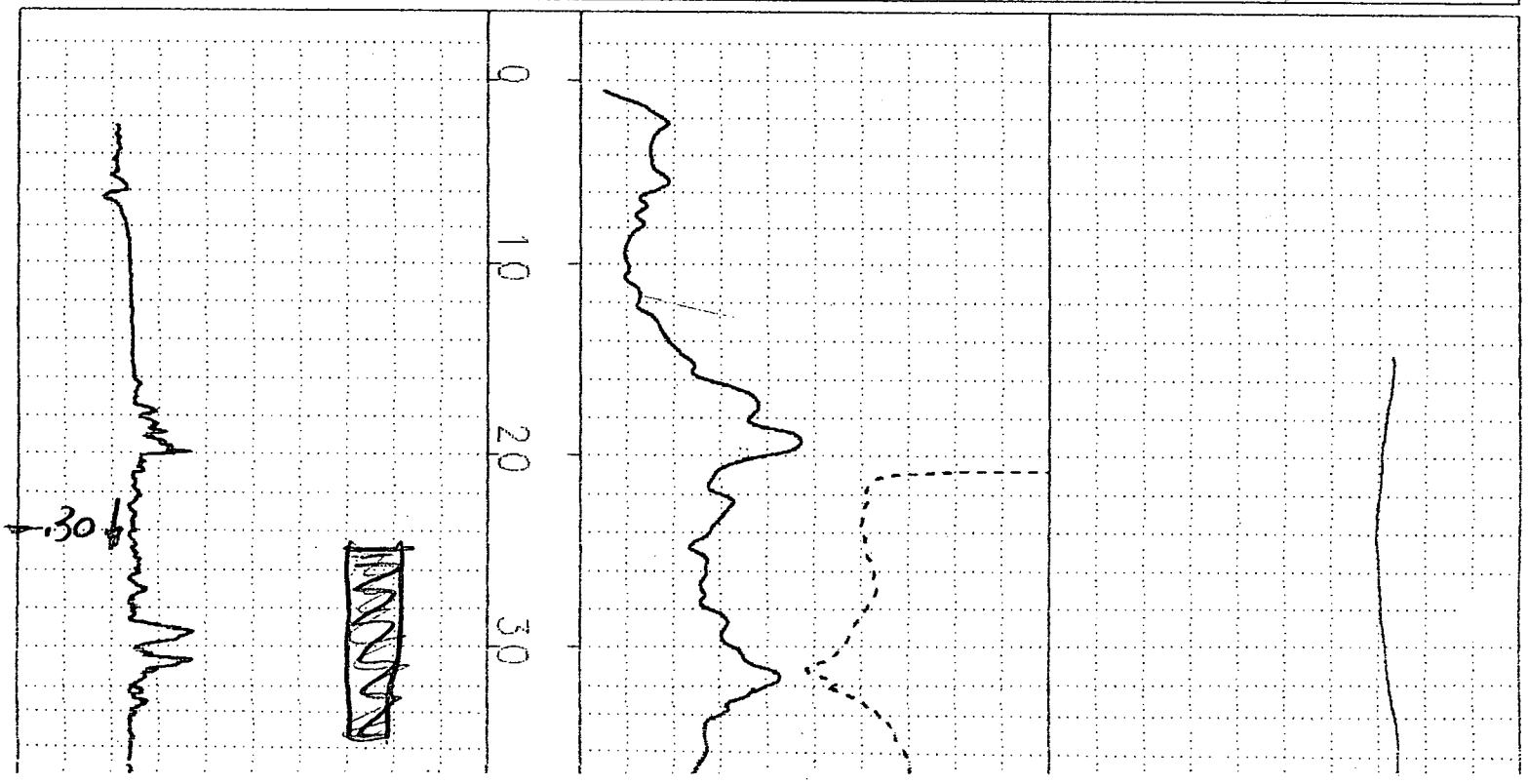
(C:\DATA\mg1953.AB1) MW-28

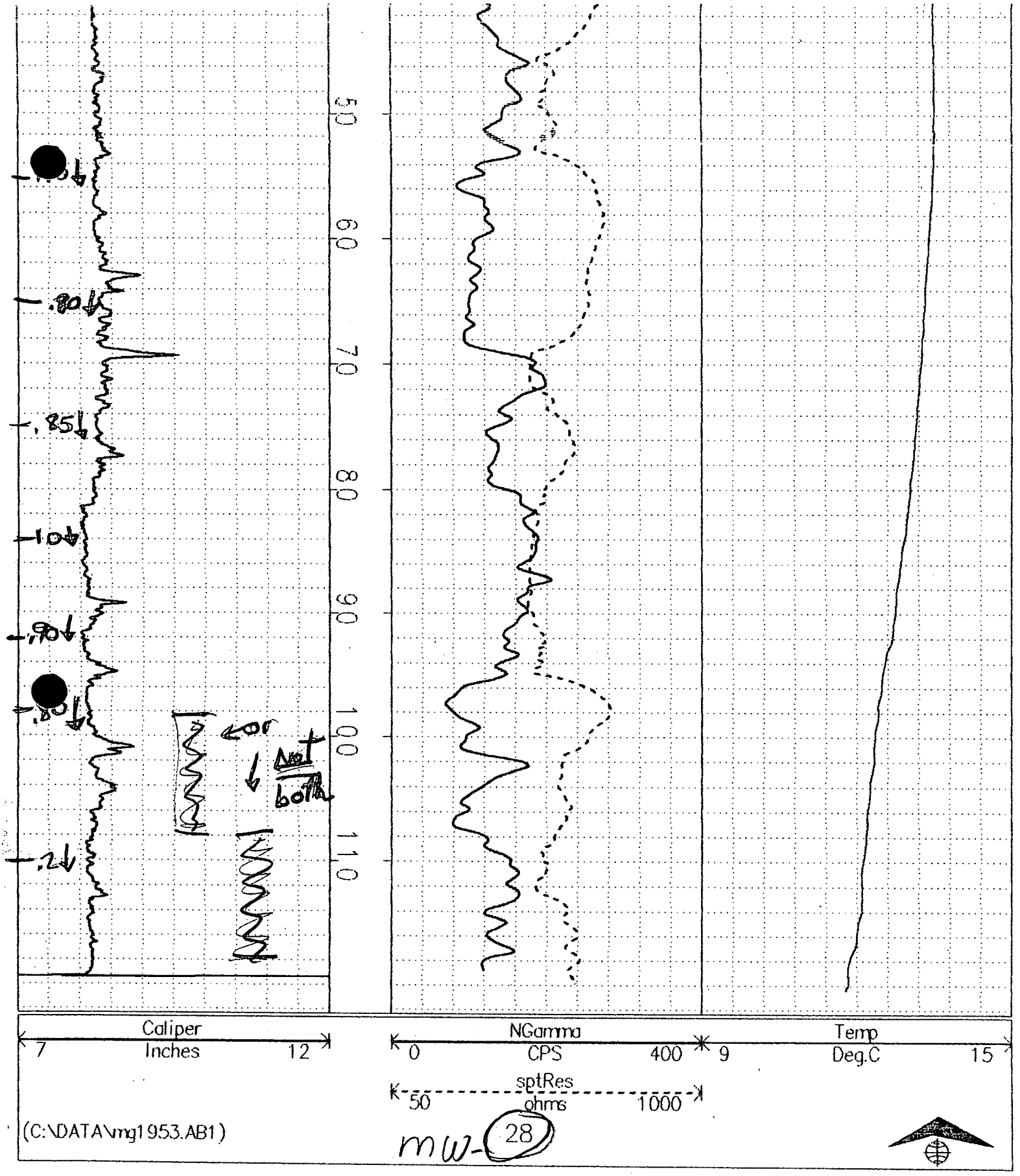
sptRes
50 ohms 1000

Caliper
7 Inches 12

NGamma
0 CPS 400

Temp
9 Deg.C 15





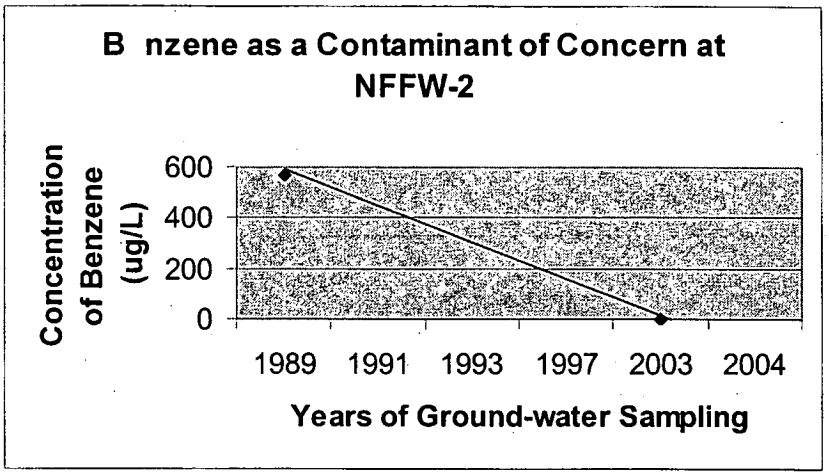
MG 1953

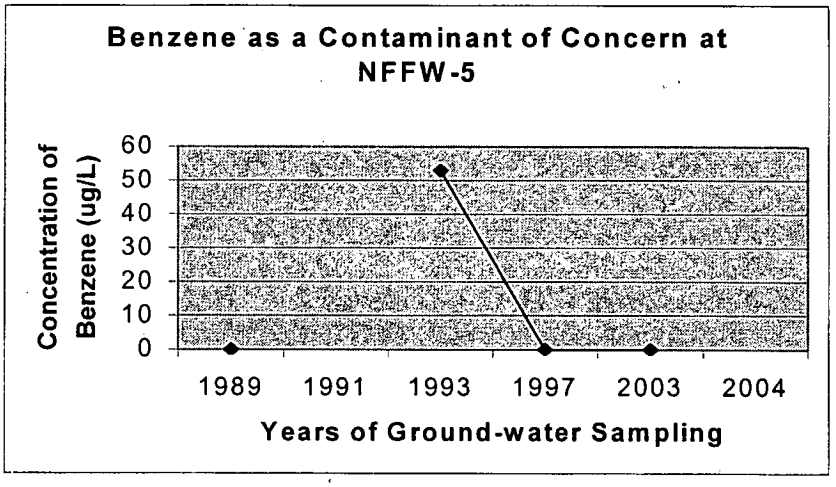
5/13/03

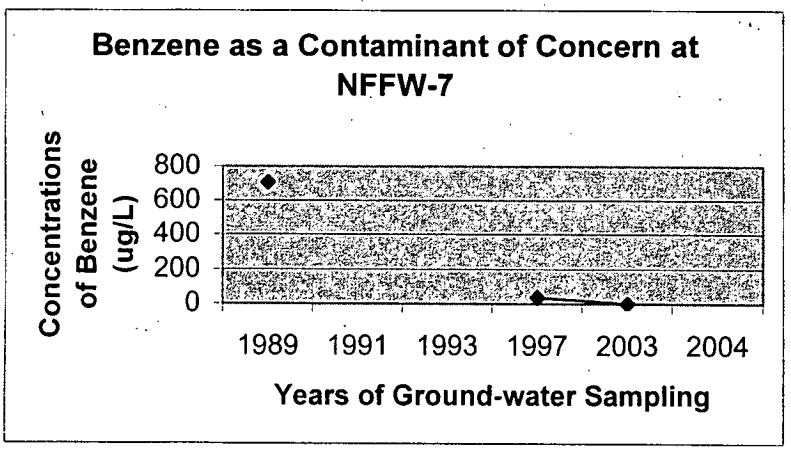
APPENDIX L

BENZENE AS POTENTIAL CONTAMINANT OF CONCERN, LINE GRAPHS

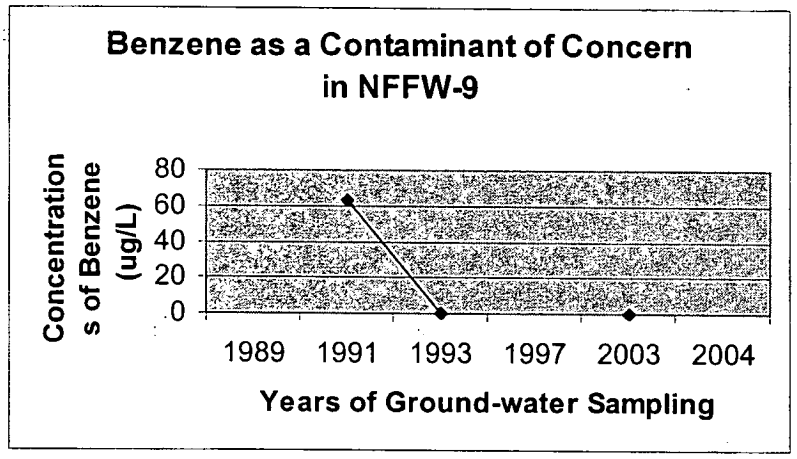
Trend of Benzene as Contaminant of Concern (concentrations that are above the applicable calculated MSC) at IR Site 10 in Groundwater

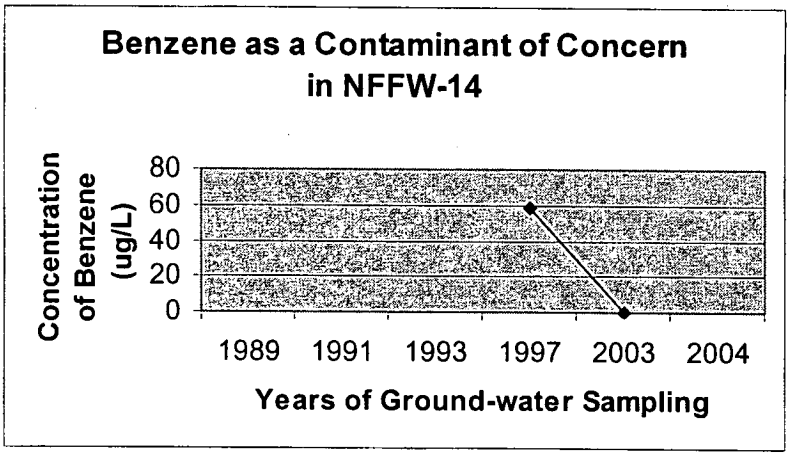


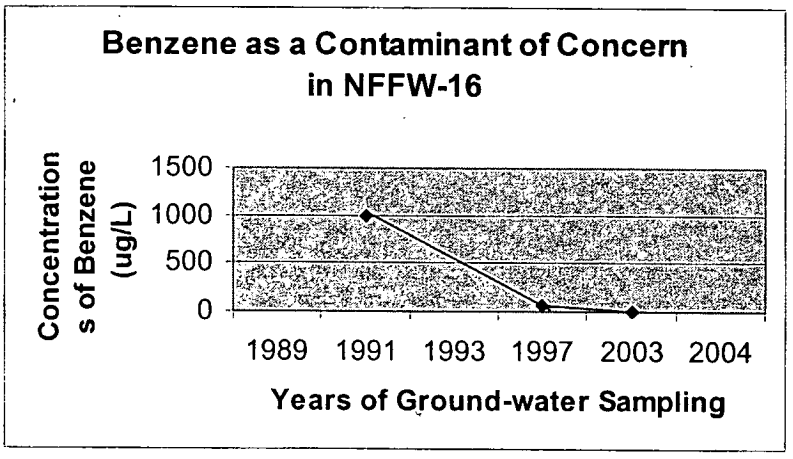




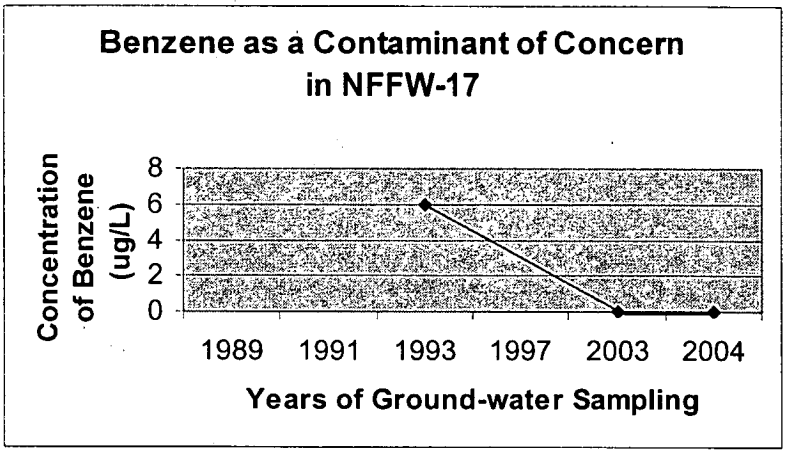
Trend of Benzene as Contaminant of Concern (concentrations that are above the applicable calculated MSC) at IR Site 10 in Groundwater

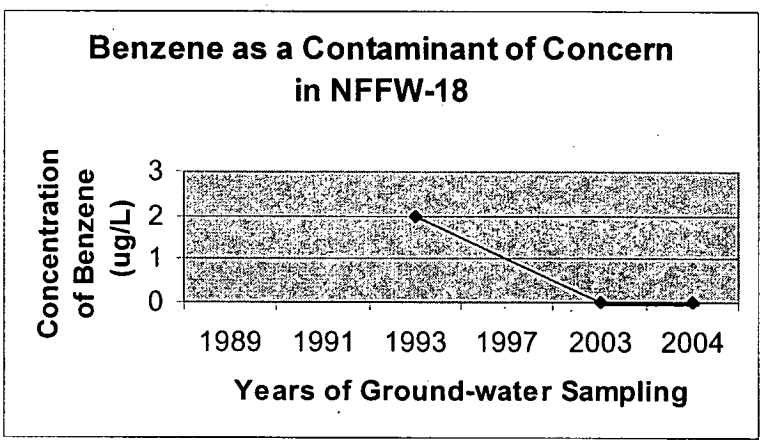


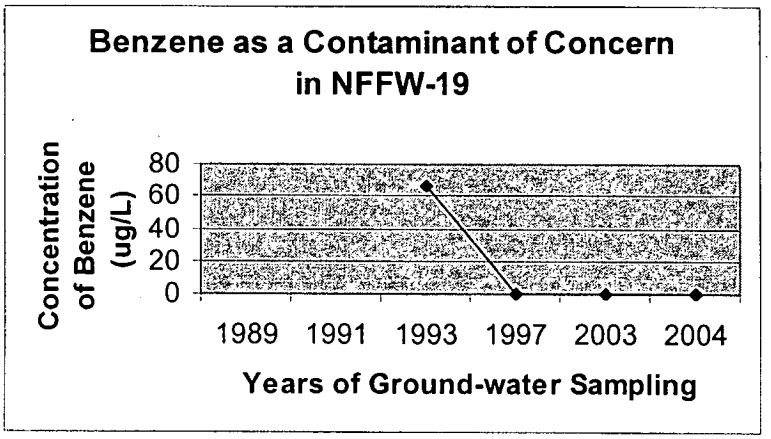




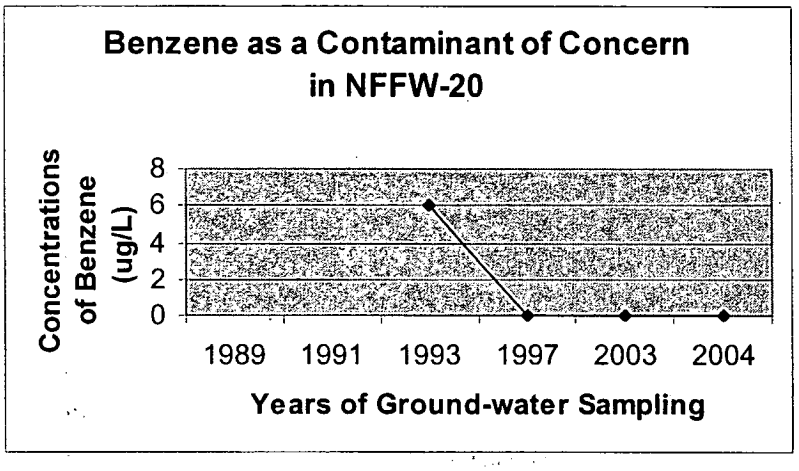
Trend of Benzene as Contaminant of Concern (concentrations that are above the applicable calculated MSC) at IR Site 10 in Groundwater

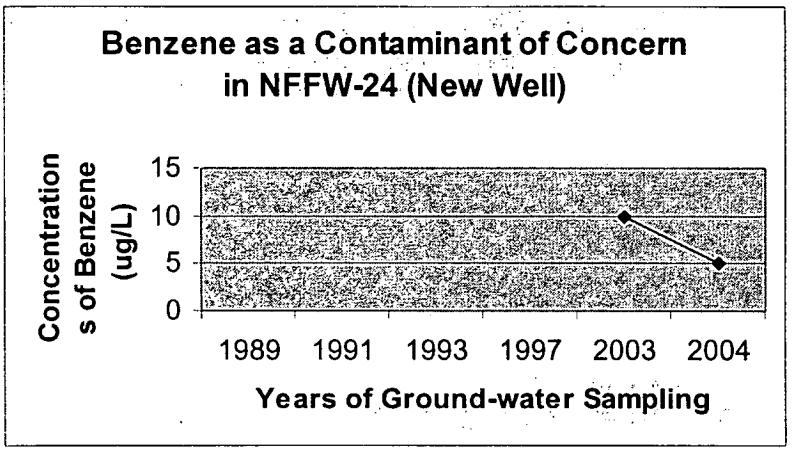






Trend of Benzene as Contaminant of Concern (concentrations that are above the applicable calculated MSC) at IR Site 10 in Groundwater





APPENDIX M

QUICK DOMENICO SPREADSHEETS

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	willow Grove 10MW24						
Date:	8/6/2004	Prepared by:	DEW				
		Contaminant:	Benzene				
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.01	2.60E+01	2.60E+00	1.00E-03	0.35	100	12.5	6570
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
1.15E-01	0.0143	0.07	1.8	58	5.00E-03	8.457142857	0.002773041

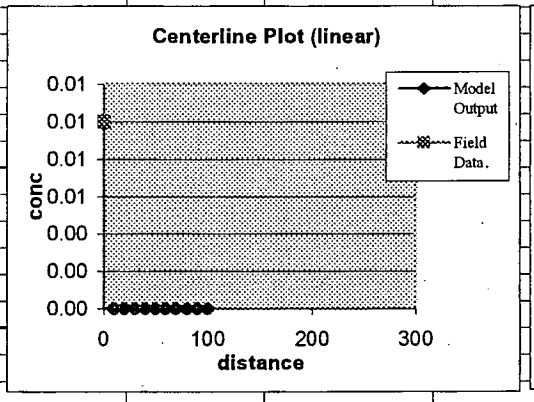
NEW QUICK_DOMENICO.XLS

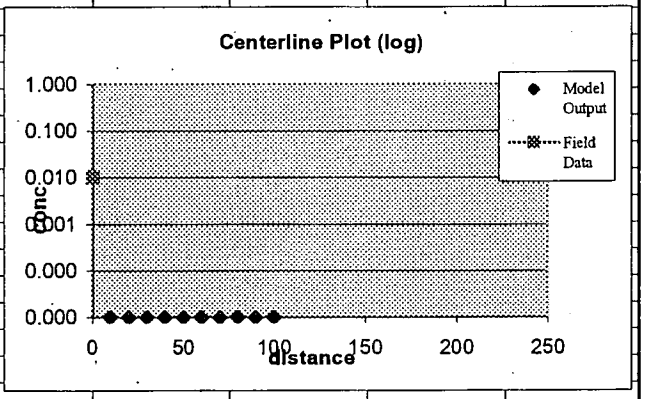
SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

Point Concentration

x(ft)	y(ft)	z(ft)
2800	0	0

	x(ft)	y(ft)	z(ft)
Conc. At	2800	0	0
at	6570	days =	
			0.000 mg/l





	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	100
	Width (ft)	200

	10	20	30	40	50	60	70	80	90	100
200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:	Centerline C Concentration	0.01					
	Distance from Source	0	50	125	200		

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Willow Grove NFFW2R						
Date:	8/6/2004	Prepared by:	DEW				
		Contaminant:	Benzo(a)pyrene				
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.00027	1.00E+01	1.00E+00	1.00E-03	0.24	100	12.5	6570
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
1.15E-01	0.0143	0.07	1.8	910000	5.00E-03	117001	2.00443E-07

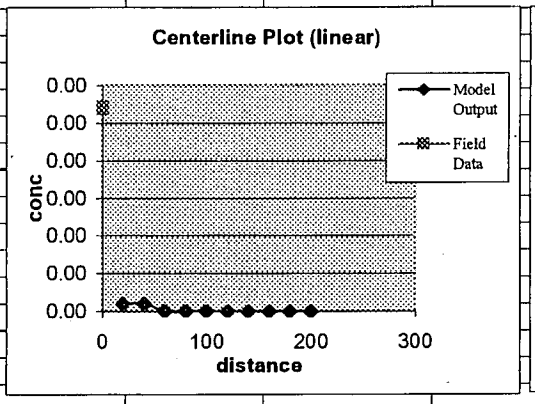
NEW QUICK_DOMENICO.XLS

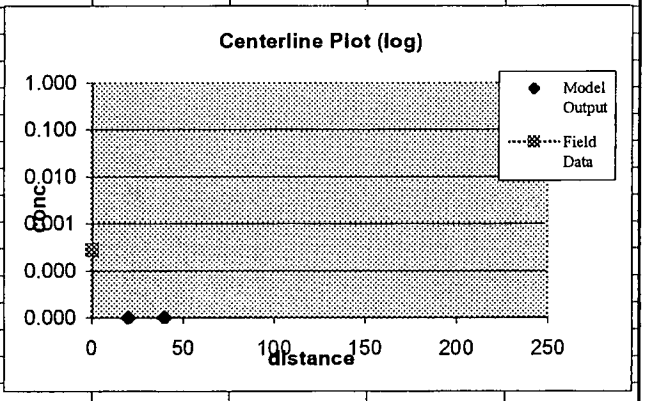
SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

Point Concentration

x(ft)	y(ft)	z(ft)
2975	0	0

	x(ft)	y(ft)	z(ft)
Conc. At	2975	0	0
at	6570	days =	#NAME?
			mg/l





	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	200
	Width (ft)	200

	20	40	60	80	100	120	140	160	180	200
200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100	0.000	0.000	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
0	0.000	0.000	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
-100	0.000	0.000	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
-200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Field Data:	Centerline C Concentration	0.00027
	Distance from Source	0

ADVECTIVE TRANSPORT WITH THREE DIMENSIONAL DISPERSION,1ST ORDER DECAY and RETARDATION - WITH CALIBRATION TOOL

Project:	Willow Grove NFFW-17						
Date:	8/6/2004	Prepared by:	DEW				
		Contaminant:	Benzo(a)pyrene				
SOURCE CONC (MG/L)	Ax (ft)	Ay (ft)	Az (ft) >=.001	LAMBDA day-1	SOURCE WIDTH (ft)	SOURCE THICKNESS (ft)	Time (days) (days)
0.00021	5.00E+01	5.00E+00	1.00E-03	0.24	100	12.5	6570
Hydraulic Cond (ft/day)	Hydraulic Gradient (ft/ft)	Porosity (dec. frac.)	Soil Bulk Density (g/cm³)	KOC	Frac. Org. Carb.	Retard-ation (R)	V (=K*i/n*R) (ft/day)
1.15E-01	0.0143	0.07	1.8	910000	5.00E-03	117001	2.00443E-07

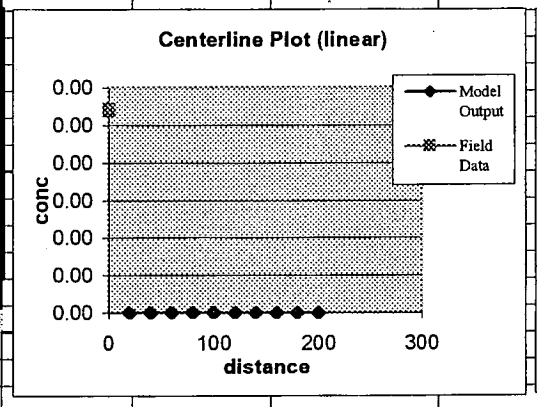
NEW QUICK_DOMENICO.XLS

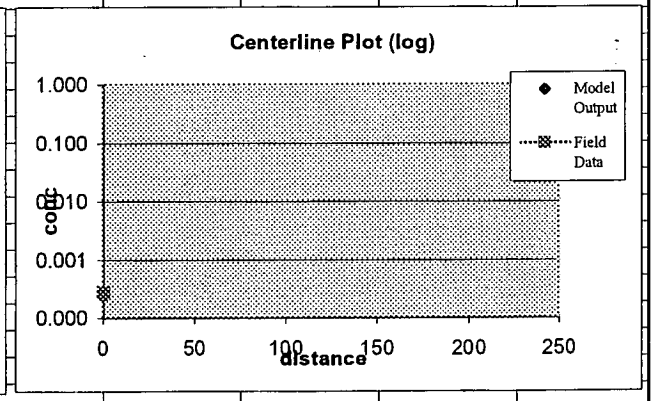
SPREADSHEET APPLICATION OF "AN ANALYTICAL MODEL FOR MULTIDIMENSIONAL TRANSPORT OF A DECAYING CONTAMINANT SPECIES"
P.A. Domenico (1987)
Modified to Include Retardation

Point Concentration

x(ft)	y(ft)	z(ft)
2975	0	0

	x(ft)	y(ft)	z(ft)
Conc. At	2975	0	0
at	6570	days =	#NAME?
			mg/l





	AREAL MODEL	CALCULATION DOMAIN
	Length (ft)	200
	Width (ft)	200

	20	40	60	80	100	120	140	160	180	200
200	#NAME?	0.000	0.000	0.000	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
100	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
0	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
-100	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?
-200	#NAME?	0.000	0.000	0.000	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?

Field Data:	Centerline C Concentration	0.00027
	Distance from Source	0

Assumptions for Contaminants

Well	Units	Benzene 10MW24	Benzo(a)pyrene NFFW-2R	Benzo(a)pyrene NFFW-17	Source
Concentration	ug/l	10	0.27	0.21	Solubility
Distance to Location of Concern (property boundary)	feet	2800	2975	2500	Average measured distance from NFFW-2R and NFFW-17 to NASJRB Boundary (Property Boundary)
Longitudinal Dispersivity					=X/10 where X is distance contaminant has traveled by advective transport (velocity x time). Used distance from Tank 115 to well in question
	feet	26	10	50	
Transverse Dispersivity	feet	2.6	1	5	= Ax/10 (default per PADEP Quick Domenico.xls instructions)
Verticle Dispersivity	feet	0.001	0.001	0.001	Conservative default per PADEP
Lambda (first order decay)					PADEP Act 2 Land Regulations, Appendix A, Table 5
	days-1	0.35	0.24	0.24	
Source Width	feet	100	100	100	Conservatively assumed 100' based on current/historic sampling and historic soil removal activities
Source Thickness	feet	12.5	12.5	12.5	Thickness of contaminated soil contributing contamination + water table fluctuation. Conservatively estimated based on depth to bedrock (14 ft) and groundwater fluctuation (12.5 ft - 13.25 ft)
Hydraulic Conductivity	ft/day	0.1148	0.1148	0.1148	Based on data from previous report
Hydraulic Gradient	ft/ft	0.0143	0.0143	0.0143	Based on recent survey data
Porosity		0.07	0.07	0.07	Based on data from previous report
Soil Bulk Density		1.8	1.8	1.8	Conservative default per PADEP
KOC		58	910000	910000	PADEP Act 2 Land Regulations, Appendix A, Table 5
foc		0.005	0.005	0.005	Conservative default per PADEP
Retardation					Calculated by spreadsheet
Velocity	ft/day				Calculated by spreadsheet
Y, Cordinate for which solution is desired	ft	0	0	0	Conservative default per PADEP
Z, Cordinate for which solution is desired		0	0	0	Conservative default per PADEP
T, time after contaminant began moving	days	6570	6570	6570	18 years (release identified in 1986)

APPENDIX N

1993 FIGURE OF FORMER PLUME

2003 NATURAL ATTENUATION TABLE

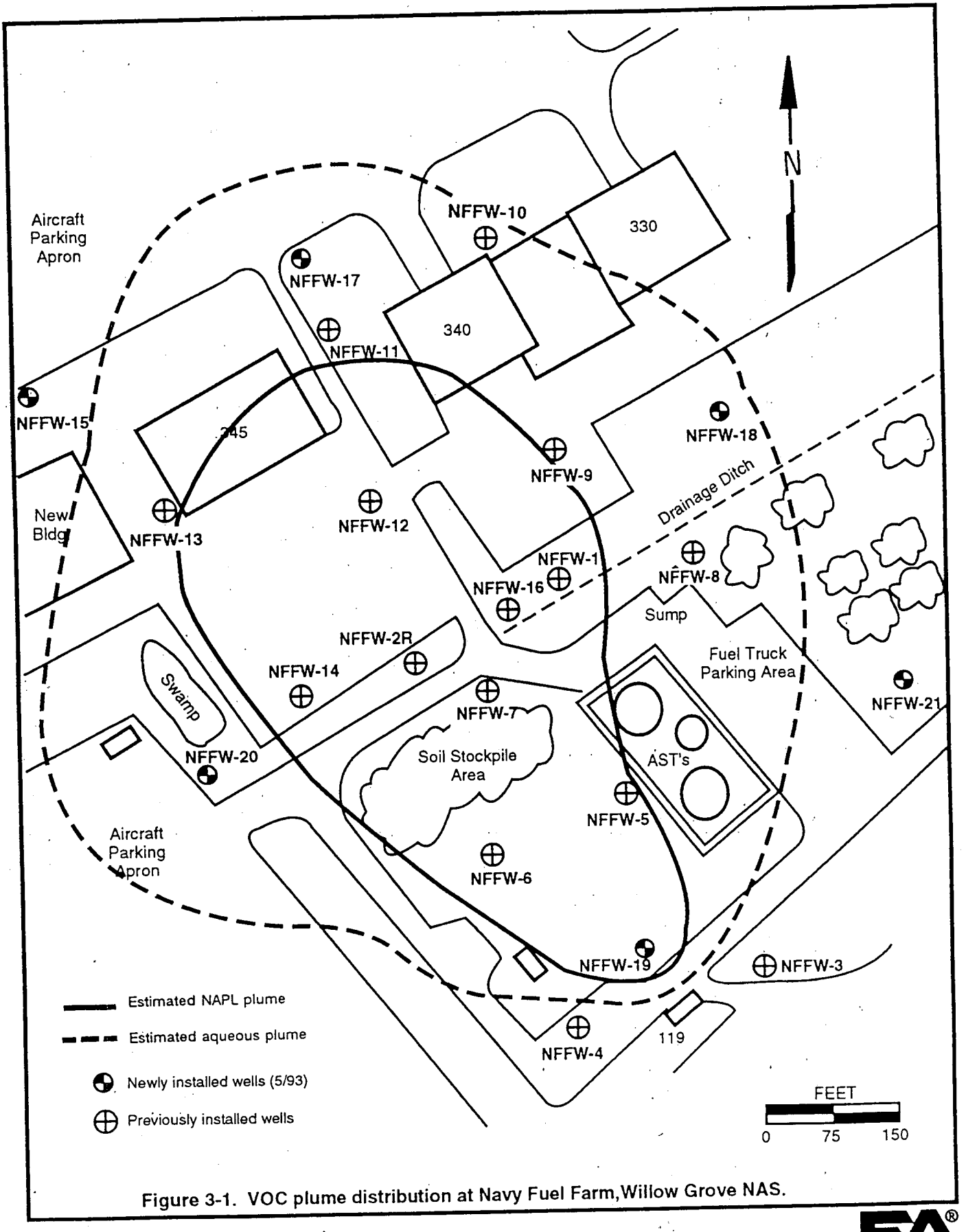


Figure 3-1. VOC plume distribution at Navy Fuel Farm, Willow Grove NAS.

Table of 2003 Select Natural Attenuation Parameters

Well Identification Number	NFFW-6 (10MW06)	NFFW-7 (10MW07)	NFFW-12 (10MW12)	NFFW-3 (10MW03)	NFFW-4 (10MW04)	NFFW-21 (10MW21)
*Well Placement in or out of former plume	in former plume			out of former plume		
Sulfate (mg/L)	1	2	3.3	80	27	67
Methane (ug/L)	4,800 K	6,400 K	5,500 K	<5	<5	<5
ORP (mV)	-105	-116	-111	174	153	160
Impacted or Not Impacted by Natural Attenuation	impacted	impacted	impacted	not impacted	not impacted	not impacted

*Based on "Final Report of Interim Site Investigations Navy Fuel Farm-Willow Grove NAS", by EA Engineering, dated 1993 September, Figure 3-1. VOC plume distribution at Navy Fuel Farm, Willow Grove NAS.(attached to this table)

K- Analyte present. Reported value may be biased high. Actual value is expected to be lower.