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SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NC

RESULTS OF WATER QUALITY SAMPLING
APRIL 1996

SEP 1996
RECEIVED
SPRC Waste Section

PREPARED FOR
ALAMANCE COUNTY

SEPTEMBER 19, 1996

BPA Environmental & Engineering, Inc.

(910) 272-9713 2641-G Randleman Road, Greensboro, NC 27406

SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NC

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I hereby certify this 19th day of September 1996, that this report was prepared by me or under my direct supervision.

Julia I. Almy
Geologist

Technical review performed by:

E. W. Scarlett, Jr., P.G.
Principal

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SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NC
RESULTS OF WATER QUALITY SAMPLING
APRIL 1996

1.0 EXECUTIVE SUMMARY

Eleven monitoring wells and two stream locations at the Alamance County Swepsonville Landfill were sampled on [redacted] All sampling was conducted according to North Carolina Solid Waste Management Guidelines. The samples were submitted to a North Carolina certified laboratory for testing using the Federal Appendix I list of constituents for detection monitoring plus mercury.

Results from the eleven monitoring well samples show that the concentrations of two inorganic constituents (chromium in MW-3 and MW-5, and lead in MW-5) exceeded the 15A NCAC 2L Standards for Class GA groundwater on the dates that samples were collected. Five inorganic constituents (barium, chromium, lead, nickel, and zinc) were detected in one or more of the monitoring well samples at concentrations that did not exceed the 2L Standards. Low concentrations of three inorganic constituents (beryllium, cobalt, and vanadium) were detected in one or more of the monitoring well samples; no 15A NCAC 2L Standards have been established for these constituents.

Concentrations of three volatile organic constituents [redacted] and [redacted]) exceeded the 15A NCAC 2L Standards for Class GA groundwater on the dates that samples were collected. One volatile organic constituent (1,1-dichloroethane) was detected in two monitoring well samples at concentrations that did not exceed 2L Standards.

No volatile organic or inorganic constituents were detected in the surface water samples collected from two locations on the creek that flows along the east/southeast boundary of the landfill disposal area.

2.0 INTRODUCTION

BPA Environmental & Engineering, Inc. was contracted by Alamance County, North Carolina to sample the ground and surface water at eleven monitoring wells and two surface water locations at the Swepsonville Landfill. The site location is shown on Figure 1.

3.0 SCOPE OF WORK

This sampling task included sampling eleven monitoring wells and two locations on a nearby stream for Federal Appendix I organic and inorganic constituents plus mercury as listed in 40 CFR, Part 258.

4.0 METHODS EMPLOYED

4.1 Monitoring Well Sampling

Groundwater sampling took place on April 11-19, 1996. The wells were purged by either removing a minimum of three (3) well volumes or purging the wells to dryness prior to obtaining water samples. The water samples were collected using properly decontaminated teflon bailers. All water samples were field checked for temperature, specific conductance, and pH. These data are summarized in Table 1. Field data sheets are included as Appendix A. Samples were placed in laboratory cleaned and supplied containers, packed on ice, and placed under chain-of-custody. Samples were shipped to the laboratory by a next day delivery service. All analyses were conducted by IEA, Inc., a North Carolina certified laboratory located in Cary, North Carolina. The monitoring well locations are shown on Figure 2.

4.2 Stream Sampling

Surface water sampling took place on April 11, 1996. Samples SW-1 and SW-2 were collected from a stream that flows along the east/southeast side of the Swepsonville Landfill. The

stream samples were analyzed for the same parameters as the groundwater samples. The stream sample locations are shown on Figure 2.

5.0 RESULTS

The results of the laboratory analyses for Appendix I constituents in the groundwater and surface water are summarized in Tables 2 and 3, and the complete laboratory reports are included as Appendix B.

5.1 Groundwater

The groundwater sample analyses revealed five constituents that had concentrations at or above 2L Standards in one or more of the wells. A summary of these analytical results is provided below.

- Chromium was detected in MW-3 at 0.0938 ppm and MW-5 at 0.0758 ppm. The 2L Standard is 0.05 ppm.
- Lead was detected in MW-5 at 0.0159 ppm. The 2L Standard is 0.015 ppm.
- Cis-1,2-Dichloroethene was detected in MW-4 at 310.0 ppb. The 2L Standard is 70.0 ppb.
- Tetrachloroethene was detected in MW-4 at 95.0 ppb. The 2L Standard is 0.7 ppb.
- Trichloroethene was detected in MW-4 at 39.0 ppb. The 2L Standard is 2.8 ppb.

The following six constituents were detected in one or more of the wells in concentrations below the 2L Standards.

- Barium was detected in MW-3 at 1.14 ppm and MW-7B at 0.668 ppm. The 2L Standard is 2.0 ppm.

- Chromium was detected in MW-2 at 0.0389 ppm, MW-7B at 0.0334 ppm, and MW-9B at 0.0375 ppm. The 2L Standard in 0.05 ppm.

- Lead was detected in MW-3 at 0.0134 ppm and MW-9 at 0.0102 ppm. The 2L Standard is 0.015 ppm.

- Nickel was detected in MW-3 at 0.0551 ppm. The 2L Standard is 0.1 ppm.

- Zinc was detected in MW-1 at 0.0571 ppm, MW-2 at 0.0999 ppm, MW-3 at 0.263 ppm, MW-5 at 0.133 ppm, MW-7B at 0.338 ppm, MW-8B at 0.117 ppm, and MW-9 at 0.120 ppm. The 2L Standard is 2.1 ppm.

- 1,1-Dichloroethane was detected in MW-2 at 11.0 ppb and MW-4 at 32.0 ppb. The 2L Standard is 700.0 ppb.

No 2L Standards have been set for the following three naturally occurring constituents that were found in detectable concentrations. The practical quantitation limits of the analyses do not serve as standards for naturally occurring constituents.

- Beryllium was detected in MW-3 at 0.0027 ppm, and MW-7B at 0.0039 ppm.

- Cobalt was detected in MW-2 at 0.0149 ppm, MW-3 at 0.0489 ppm, MW-4 at 0.0201 ppm, MW-5 at 0.0281 ppm, MW-7B at 0.0446 ppm, MW-8B at 0.0205 ppm, and MW-9 at 0.105 ppm.

- Vanadium was detected in MW-2 at 0.122 ppm, MW-3 at 0.281 ppm, MW-4 at 0.0644 ppm, MW-5 at 0.230 ppm, MW-7B at 0.205 ppm, and MW-9 at 0.0919 ppm.

5.2 Surface Water

There were no inorganic or volatile organic constituents detected in either of the surface water samples.

6.0 REFERENCES

North Carolina Administrative Code, Title 15A, Department of Environment, Health and Natural Resources, Division of Environmental Management, Subchapter 2L, Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina, Sections .0100, .0200, and .0300 (November 8, 1993); from the Environmental Management Commission, Raleigh, North Carolina.

North Carolina Administrative Code, Title 15A, Department of Environment, Health and Natural Resources, Division of Environmental Management, Subchapter 2B, Classifications and Water Quality Standards Applicable to the Surface Waters of North Carolina, Section .0200 (April 1, 1991); from the Environmental Management Commission, Raleigh, North Carolina.

North Carolina Administrative Code, Title 15A, Department of Environment, Health and Natural Resources, Division of Solid Waste Management, Subchapter 13B, Solid Waste Management, Section .1600 (January 4, 1994).

TABLE 1
GROUND AND SURFACE WATER FIELD SAMPLING DATA
SWEPSONVILLE LANDFILL
APRIL 11–19, 1996

Field Parameter	Sample No.							
	MW–1	MW–2	MW–3	MW–4	MW–5	MW–6	MW–7A	MW–7B
Temperature	57.8°F	70.3°F	63.6°F	67.1°F	64.8°F	67.2°F	63.8°F	63.5°F
Specific Conductance	277 μMHOs	632 μMHOs	92 μMHOs	557 μMHOs	226 μMHOs	364 μMHOs	201 μMHOs	133 μMHOs
pH	6.74	7.70	6.49	6.14	6.74	7.47	6.15	5.71

Field Parameter	Sample No.				
	MW–8A	MW–8B	MW–9	SW–1	SW–2
Temperature	64.9°F	63.1°F	62.8°F	61.8°F	68.1°F
Specific Conductance	85 μMHOs	48 μMHOs	185 μMHOs	248 μMHOs	146 μMHOs
pH	6.72	6.91	6.24	6.49	6.69

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TABLE 2
APPENDIX I INORGANIC ANALYSES PLUS MERCURY
SWEPSONVILLE LANDFILL
APRIL 11–19, 1996

Compound	Sample No.													15A NCAC 2L Standards for Class GA Ground Water	15A NCAC 2B Standards for Class B, C Surface Waters	Practical Quantitation Limit (PQL)
	MW–1	MW–2	MW–3	MW–4	MW–5	MW–6	MW–7A	MW–7B	MW–8A	MW–8B	MW–9	SW–1	SW–2			
Antimony, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	*		0.03
Arsenic, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	0.05	0.05	0.01
Barium, Total	BQL	BQL	1.140	BQL	BQL	BQL	BQL	0.668	BQL	BQL	BQL	BQL	BQL	2.0		0.5
Beryllium, Total	BQL	BQL	0.0027	BQL	BQL	BQL	BQL	0.0039	BQL	BQL	BQL	BQL	BQL	*	0.0065	0.002
Cadmium, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	0.005	0.002	0.001
[redacted] Total	BQL	0.0389	[redacted]	BQL	[redacted]	BQL	BQL	0.0334	BQL	BQL	0.0375	BQL	BQL	0.05	0.05	0.01
Cobalt, Total	BQL	0.0149	0.0489	0.0201	0.0281	BQL	BQL	0.0446	BQL	0.0205	0.105	BQL	BQL	*		0.01
Copper, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	1.0		0.2
[redacted] Total	BQL	BQL	0.0134	BQL	[redacted]	BQL	BQL	BQL	BQL	BQL	0.0102	BQL	BQL	0.015	0.025	0.01
Mercury, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	0.0011	0.000012	0.0005
Nickel, Total	BQL	BQL	0.0551	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	0.1	0.088	0.04
Selenium, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	0.05	0.005	0.02
Silver, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	0.018		0.01
Thallium, Total	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	*		0.01
Vanadium, Total	BQL	0.122	0.281	0.0644	0.230	BQL	BQL	0.205	BQL	BQL	0.0919	BQL	BQL	*		0.04
Zinc, Total	0.0571	0.0999	0.263	BQL	0.133	BQL	BQL	0.338	BQL	0.117	0.120	BQL	BQL	2.1		0.05

Notes:
- All results in parts per million (ppm)
- BQL – Below practical quantitation limit
- Shaded blocks denote concentrations that do not meet 15A NCAC 2L Standards for Class GA Groundwater (MW data) or 15A NCAC 2B Standards for Class B surface waters (SW data)
- * – No 15A NCAC 2L Standard has been established for these constituents

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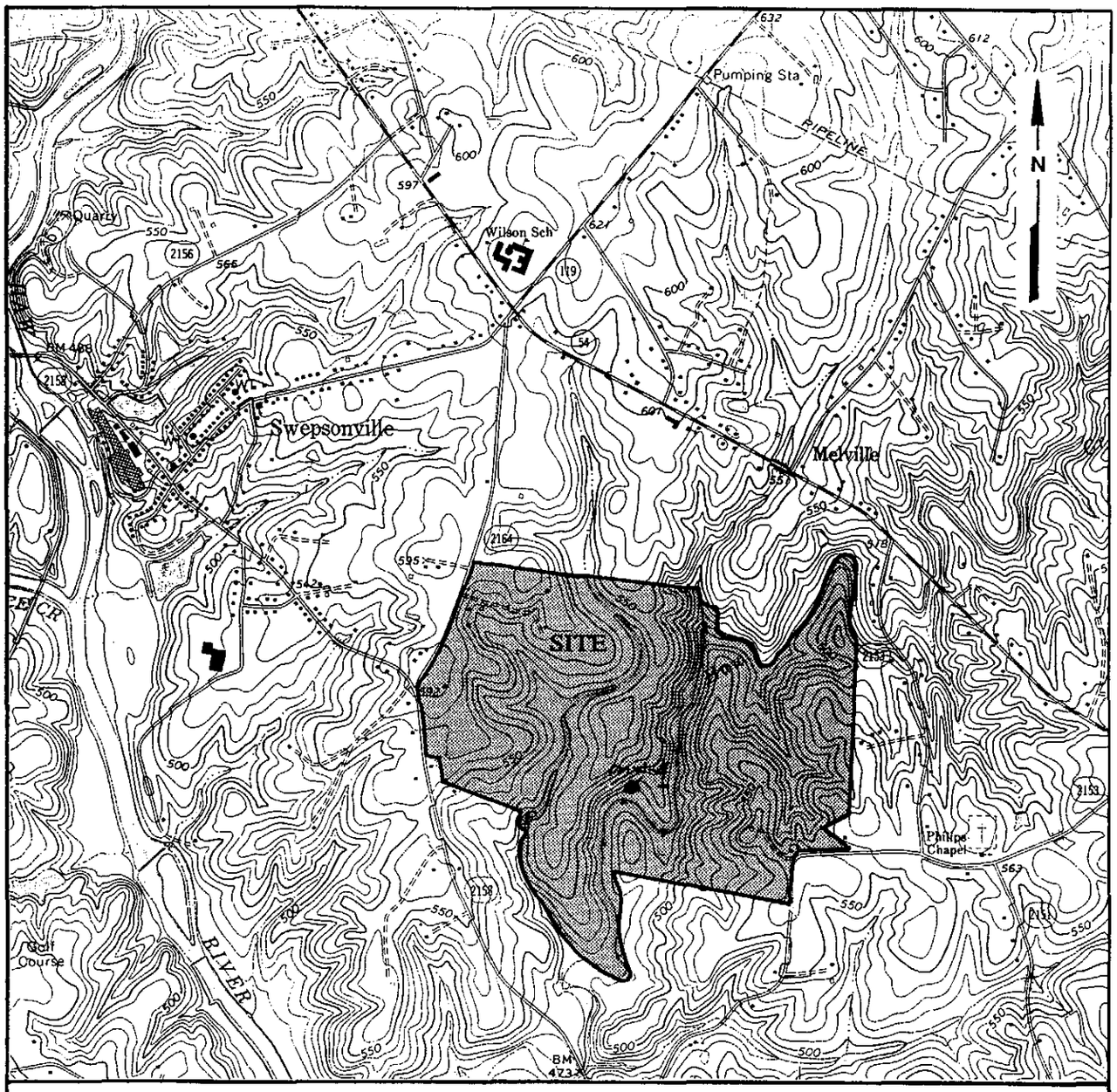

MEBANE QUADRANGLE
NORTH CAROLINA
USGS 7.5 MINUTE TOPOGRAPHIC SERIES
1969

1000 0 2000 3000
SCALE IN FEET

SWEPSONVILLE LANDFILL
ALAMANCE COUNTY, NORTH CAROLINA

BPA Environmental & Engineering, Inc.

SITE LOCATION MAP

FIGURE 1

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-1

Time 9:50 am

Sampled by James Roberts

Weather Sunny, cool

GROUNDWATER ELEVATION

1) Depth to water from measuring point 21.36 ft.

2) Depth to well bottom from measuring point 33.65 ft.

3) Height of water column 12.29 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 2.0 gal.

2) Volume of water removed prior to sampling 5.5 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 57.8°F

2) Specific Conductance 277 μmhos

3) pH 6.74

4) Physical Appearance and Odor Brownish, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 12, 1996

Source/Well MW-2

Time 1:45 pm

Sampled by James Roberts

Weather Sunny, warm

GROUNDWATER ELEVATION

1) Depth to water from measuring point 23.46 ft.

2) Depth to well bottom from measuring point 29.30 ft.

3) Height of water column 5.84 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 0.95 gal.

2) Volume of water removed prior to sampling 1.0 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 70.3°F

2) Specific Conductance 632 µmhos

3) pH 7.70

4) Physical Appearance and Odor Tanish, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-3

Time 4:10 pm

Sampled by James Roberts

Weather Sunny, 70s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 8.45 ft.

2) Depth to well bottom from measuring point 23.85 ft.

3) Height of water column 15.4 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 2.5 gal.

2) Volume of water removed prior to sampling 7.5 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 63.6°F

2) Specific Conductance 92 μmhos

3) pH 6.49

4) Physical Appearance and Odor Brown, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-4

Time 3:00 pm

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 33.68 ft.

2) Depth to well bottom from measuring point 49.90 ft.

3) Height of water column 16.22 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 2.64 gal.

2) Volume of water removed prior to sampling 8.0 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 67.1°F

2) Specific Conductance 557 μmhos

3) pH 6.14

4) Physical Appearance and Odor Dark brown, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-5

Time 2:00 pm

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 13.61 ft.

2) Depth to well bottom from measuring point 19.40 ft.

3) Height of water column 5.79 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 0.94 gal.

2) Volume of water removed prior to sampling 1.0 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 64.8°F

2) Specific Conductance 226 μmhos

3) pH 6.74

4) Physical Appearance and Odor Brownish, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-6

Time 11:15 am

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 19.76 ft.

2) Depth to well bottom from measuring point 52.67 ft.

3) Height of water column 32.91 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 5.36 gal.

2) Volume of water removed prior to sampling 16.0 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 67.2°F

2) Specific Conductance 364 μmhos

3) pH 7.47

4) Physical Appearance and Odor Clear, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-7A

Time 12:30 pm

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 22.43 ft.

2) Depth to well bottom from measuring point 63.35 ft.

3) Height of water column 40.92 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 6.67 gal.

2) Volume of water removed prior to sampling 20 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 63.8°F

2) Specific Conductance 201 μmhos

3) pH 6.15

4) Physical Appearance and Odor Clear, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 19, 1996

Source/Well MW-7B

Time 12:50 pm

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 20.20 ft.

2) Depth to well bottom from measuring point 32.46 ft.

3) Height of water column 12.26 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 1.99 gal.

2) Volume of water removed prior to sampling 5.5 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 63.5°F

2) Specific Conductance 133 μmhos

3) pH 5.71

4) Physical Appearance and Odor Tan, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-8A

Time 1:30 pm

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 19.77 ft.

2) Depth to well bottom from measuring point 63.35 ft.

3) Height of water column 43.58 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 7.1 gal.

2) Volume of water removed prior to sampling 21.5 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 64.9°F

2) Specific Conductance 85 μmhos

3) pH 6.72

4) Physical Appearance and Odor Clearish, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-8B

Time 1:10 pm

Sampled by James Roberts

Weather Sunny, 60s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 19.10 ft.

2) Depth to well bottom from measuring point 25.80 ft.

3) Height of water column 6.7 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 1.09 gal.

2) Volume of water removed prior to sampling 3.5 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 63.1°F

2) Specific Conductance 48 μmhos

3) pH 6.91

4) Physical Appearance and Odor Brown, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

GROUND WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well MW-9

Time 9:30 am

Sampled by James Roberts

Weather Sunny, 40s

GROUNDWATER ELEVATION

1) Depth to water from measuring point 13.20 ft.

2) Depth to well bottom from measuring point 27.25 ft.

3) Height of water column 14.05 ft.

4) Measuring point description Top of PVC Casing

WELL PURGING AND SAMPLE COLLECTION

1) Volume of water in well
   a) 2" well . . . . (v = 0.163 x h)
   b) 4" well . . . . (v = 0.651 x h) 2.29 gal.

2) Volume of water removed prior to sampling 7.0 gal.

3) Was well pumped DRY? (circle one) YES NO

FIELD ANALYSIS

1) Temperature 62.8°F

2) Specific Conductance 185 μmhos

3) pH 6.24

4) Physical Appearance and Odor Clearish, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

SURFACE WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well SW-1

Time 11:30 am

Sampled by James Roberts

Weather Sunny, 60s

FIELD ANALYSIS

1) Temperature 61.8°F

2) Specific Conductance 248 μmhos

3) pH 6.49

4) Physical Appearance and Odor Tanish, no odor

BPA ENVIRONMENTAL & ENGINEERING, INC.

SURFACE WATER SAMPLING FIELD DATA

Location Swepsonville Landfill

Date April 11, 1996

Source/Well SW-2

Time 4:15 pm

Sampled by James Roberts

Weather Sunny, 70s

FIELD ANALYSIS

1) Temperature 68.1°F

2) Specific Conductance 146 μmhos

3) pH 6.69

4) Physical Appearance and Odor Tanish, no odor

IEA, Inc.
3000 Weston Parkway
Cary, NC 27513

Phone 919-677-0090
Fax 919-677-0427

IEA
An Aquarion Company

May 29, 1996

Wes Scarlett
BPA Environmental & Engineering, Inc.
2641-G Randleman Road
Greensboro, NC 27406

IEA Project No.: 631909/9604331 Revision
IEA Reference No.: W9604081
Client Project I.D.: 0170.010 Swepsonville Landfill

Dear Mr. Scarlett,

Transmitted herewith are the revised results of analyses on 11 samples submitted to our laboratory.

The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.

Sherry R Alex

for Rodney Raimonde
Project Manager

IEA, Inc.
3000 Weston Parkway
Cary, NC 27513

Phone 919·677·0090
Fax 919·677·0427

IEA
An Aquarion Company

May 29, 1996

Wes Scarlett
BPA Environmental & Engineering, Inc.
2641-G Randleman Road
Greensboro, NC 27406

IEA Project No.: 631910/9604422 Revision
IEA Reference No.: W9604363
Client Project I.D.: 0170.010 Swepsonville landfill

Dear Mr. Scarlett,

Transmitted herewith are the revised results of analyses on one samples submitted to our laboratory.

The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.

Sherry R Alex

for Edward C. Braunsdorf
Project Manager

IEA, Inc.
3000 Weston Parkway
Cary, NC 27513

Phone 919-677-0090
Fax 919-677-0427

IEA
An Aquarion Company

April 25, 1996

APR 1996
RECEIVED

Wes Scarlett
BPA Environmental & Engineering, Inc.
2641-G Randleman Road
Greensboro, NC 27406

IEA Project No.: 631909/9604331
IEA Reference No.: W9604081
Client Project I.D.: 0170.010 Swepsonville Landfill

Dear Mr. Scarlett,

Transmitted herewith are the results of analyses on 11 samples submitted to our laboratory.

The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.

S. Alex
for Rodney Raimonde
Project Manager

IEA, Inc.
3000 Weston Parkway
Cary, NC 27513

Phone 919-677-0090
Fax 919-677-0427

IEA
An Aquarion Company

IEA-NORTH CAROLINA CERTIFICATIONS

Certifying State	Program Type	Lab ID #
Alabama	DW	40210
California	DW, WW, HW Radiolog.	I-1035,1768, I-1047 I-1018 (Rad)
Connecticut	DW, WW	PH-0135
Florida	DW WW (CompQAP)	87350 E87439 QAP#930007G
Kansas	DW, HW, WW	E-158 (DW, WW) E-1189 (HW)
Kentucky	DW	90049
Massachusetts	DW, WW	M-NC039
New Jersey	DW, WW Radiolog.	67719 67681
New York	Radiolog.	11422
North Carolina	DW WW Radiolog.	DW 37720 WW 84 Rad 37720
Ohio	Voluntary Action Program	CL00021
South Carolina	DW WW HW	99021
Tennessee	DW UST App List	02914
Utah	Radiolog. RCRA	E-206 E-226
Virginia	DW	00179
West Virginia	DW	9908C
Wisconsin	WW	998051010

DW=Drinking Water WW=Wastewater HW=Hazardous Waste Radiolog.=Radiological

Rev5.01/96

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433101 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-1

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	57.1	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433102 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-3

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	1140	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	2.68	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	93.8	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	48.9	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	13.4	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	55.1	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	281.	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	263.	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433103 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-4

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	20.1	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	64.4	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433104 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-5

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	75.8	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	28.1	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	15.9	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	230.	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	133.	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433105 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-6

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433106 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-7A

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433107 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-8A

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433108 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-8B

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	20.5	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	117.	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433109 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: MW-9

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	37.5	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	105.	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	10.2	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	91.9	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	120.	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433110 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: SW-1

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_909D
IEA Sample #: 960433111 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/12/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/11/96
Sample I.D.: SW-2

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
MERCURY	SW846 7470	0.500	BQL	04/17/96	04/18/96	MLH	R4941	04179601H
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
PREPARATION BLANKS

IEA Project #: 631_909D
Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Proj. I.D.: 0170.010 Swepsonville landfil
Sample Number: PBW 04169603P

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ARSENIC	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BARIUM	SW846 6010	500.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
BERYLLIUM	SW846 6010	2.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CADMIUM	SW846 6010	1.00	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
CHROMIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COBALT	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
COPPER	SW846 6010	200.	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
LEAD	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
NICKEL	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SELENIUM	SW846 6010	20.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
SILVER	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
THALLIUM	SW846 6010	10.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
VANADIUM	SW846 6010	40.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P
ZINC	SW846 6010	50.0	BQL	04/16/96	04/17/96	FXW	R4904	04169603P

Corresponding Samples:
960432801, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
PREPARATION BLANKS

IEA Project #: 631_909D
Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Proj. I.D.: 0170.010 Swepsonville landfil
Sample Number: PBW 04179601H

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
RCURY	SW846 7470	0.200	BQL	04/17/96	04/18/96	MLH	R4941	04179601H

orresponding Samples:
960433001, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111,
960433601, 960436002, 960436003, 960436004, 960436005, 960437701

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
LABORATORY CONTROL SAMPLE

A Project #: 631_909D
EA Sample #: LCSW 04169603P
Matrix: WATER

Parameter	Method	Results (ug/l) True	Found	Limits Lower	Upper	% RCY	Date Analyzed	IEA Run	Prep Batch
ANTIMONY	SW846 6010	5000	5050	4000	6000	101.	04/17/96	R4904	04169603P
ARSENIC	SW846 6010	5000	4960	4000	6000	99.2	04/17/96	R4904	04169603P
BARIUM	SW846 6010	5000	4870	4000	6000	97.4	04/17/96	R4904	04169603P
BERYLLIUM	SW846 6010	5000	5090	4000	6000	102.	04/17/96	R4904	04169603P
CADMIUM	SW846 6010	5000	4940	4000	6000	98.8	04/17/96	R4904	04169603P
CHROMIUM	SW846 6010	5000	4980	4000	6000	99.5	04/17/96	R4904	04169603P
COBALT	SW846 6010	5000	5020	4000	6000	100.	04/17/96	R4904	04169603P
COPPER	SW846 6010	5000	5000	4000	6000	100.	04/17/96	R4904	04169603P
LEAD	SW846 6010	5000	5010	4000	6000	100.	04/17/96	R4904	04169603P
NICKEL	SW846 6010	5000	4990	4000	6000	99.8	04/17/96	R4904	04169603P
SELENIUM	SW846 6010	5000	4940	4000	6000	98.9	04/17/96	R4904	04169603P
SILVER	SW846 6010	500	498.	400	600	99.7	04/17/96	R4904	04169603P
THALLIUM	SW846 6010	5000	4960	4000	6000	99.2	04/17/96	R4904	04169603P
VANADIUM	SW846 6010	5000	4980	4000	6000	99.7	04/17/96	R4904	04169603P
ZINC	SW846 6010	5000	4970	4000	6000	99.4	04/17/96	R4904	04169603P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
DUPLICATE ANALYSIS

IEA Project #: 631_909D
IEA Sample #: 960433101
Matrix: WATER

Parameter	Method	Duplicate Analysis Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
MERCURY	SW846 7470	BQL	BQL		04/18/96	R4941	R4941	04179601H

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960433001, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111,
960433601, 960436002, 960436003, 960436004, 960436005, 960437701

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
DUPLICATE ANALYSIS

IEA Project #: 631_909D
IEA Sample #: 960433105
Matrix: WATER

Parameter	Method	Duplicate Analysis Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ANTIMONY	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
ARSENIC	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
BARIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
BERYLLIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
CADMIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
CHROMIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
COBALT	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
COPPER	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
LEAD	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
NICKEL	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
SELENIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
SILVER	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
THALLIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
VANADIUM	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P
ZINC	SW846 6010	BQL	BQL		04/17/96	R4904	R4904	04169603P

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960432801, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE RESULTS

IEA Project #: 631_909D
EA Sample #: 960433101
Matrix: WATER

Spike Results (ug/l)

rameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
MERCURY	SW846 7470	1.00	BQL	0.991	88.4	04/18/96	R4941	R4941	04179601H

%R = ((SSR - SR) / SA) * 100 Control Limits: 75-125%

orresponding Samples:
960433001, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111,
960433601, 960436002, 960436003, 960436004, 960436005, 960437701

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE RESULTS

IEA Project #: 631_909D
EA Sample #: 960433105
Matrix: WATER

Spike Results (ug/l)

rameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
ANTIMONY	SW846 6010	500.	BQL	474.	94.7	04/17/96	R4904	R4904	04169603P
SENIC	SW846 6010	2000	BQL	1880	94.3	04/17/96	R4904	R4904	04169603P
RIUM	SW846 6010	2000	BQL	1890	90.7	04/17/96	R4904	R4904	04169603P
BERYLLIUM	SW846 6010	50.0	BQL	48.2	96.4	04/17/96	R4904	R4904	04169603P
CADMIUM	SW846 6010	50.0	BQL	47.0	94.0	04/17/96	R4904	R4904	04169603P
ROMIUM	SW846 6010	200.	BQL	194.	93.2	04/17/96	R4904	R4904	04169603P
BALT	SW846 6010	500.	BQL	470.	93.1	04/17/96	R4904	R4904	04169603P
COPPER	SW846 6010	250.	BQL	246.	95.0	04/17/96	R4904	R4904	04169603P
LEAD	SW846 6010	500.	BQL	474.	93.9	04/17/96	R4904	R4904	04169603P
CKEL	SW846 6010	500.	BQL	481.	95.0	04/17/96	R4904	R4904	04169603P
LENIUM	SW846 6010	2000	BQL	1870	93.5	04/17/96	R4904	R4904	04169603P
SILVER	SW846 6010	50.0	BQL	48.6	97.3	04/17/96	R4904	R4904	04169603P
THALLIUM	SW846 6010	2000	BQL	1870	93.5	04/17/96	R4904	R4904	04169603P
NADIUM	SW846 6010	500.	BQL	482.	93.8	04/17/96	R4904	R4904	04169603P
NC	SW846 6010	500.	BQL	518.	94.6	04/17/96	R4904	R4904	04169603P

%R = ((SSR - SR) / SA) * 100 Control Limits: 75-125%

orresponding Samples:
960432801, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111

omments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE DUPLICATE RESULTS

IEA Project #: 631_909D
IEA Sample #: 960433101S
Matrix: WATER

Spike Duplicate Results

Parameter	Method	Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
MERCURY	SW846 7470	0.991	0.973	1.83	04/18/96	R4941	R4941	04179601H

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960433001, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111,
960433601, 960436002, 960436003, 960436004, 960436005, 960437701

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE DUPLICATE RESULTS

IEA Project #: 631_909D
IEA Sample #: 960433105S
Matrix: WATER

Parameter	Method	Spike Duplicate Results Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ANTIMONY	SW846 6010	474.	481.	1.51	04/17/96	R4904	R4904	04169603P
ARSENIC	SW846 6010	1880	1900	1.06	04/17/96	R4904	R4904	04169603P
BARIUM	SW846 6010	1890	1920	1.38	04/17/96	R4904	R4904	04169603P
BERYLLIUM	SW846 6010	48.2	48.8	1.22	04/17/96	R4904	R4904	04169603P
CADMIUM	SW846 6010	47.0	47.6	1.24	04/17/96	R4904	R4904	04169603P
CHROMIUM	SW846 6010	194.	198.	1.60	04/17/96	R4904	R4904	04169603P
COBALT	SW846 6010	470.	476.	1.33	04/17/96	R4904	R4904	04169603P
COPPER	SW846 6010	246.	252.	2.49	04/17/96	R4904	R4904	04169603P
LEAD	SW846 6010	474.	480.	1.29	04/17/96	R4904	R4904	04169603P
NICKEL	SW846 6010	481.	487.	1.27	04/17/96	R4904	R4904	04169603P
SELENIUM	SW846 6010	1870	1890	1.23	04/17/96	R4904	R4904	04169603P
SILVER	SW846 6010	48.6	49.2	1.14	04/17/96	R4904	R4904	04169603P
THALLIUM	SW846 6010	1870	1900	1.61	04/17/96	R4904	R4904	04169603P
VANADIUM	SW846 6010	482.	490.	1.57	04/17/96	R4904	R4904	04169603P
ZINC	SW846 6010	518.	527.	1.82	04/17/96	R4904	R4904	04169603P

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960432801, 960433101, 960433102, 960433103, 960433104, 960433105,
960433106, 960433107, 960433108, 960433109, 960433110, 960433111

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-01	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-1	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-01	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-1	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-02	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-3	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-02	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-3	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-03	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-4	Dilution Factor:	2.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	32
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	310
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-03	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-4	Dilution Factor:	2.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	95
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	39
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit
Quantitation limit elevated due to sample dilution prior to analysis.
Sample diluted due to high concentration of target compounds present.

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-04	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-5	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

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Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-04	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-5	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-05	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-6	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

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Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-05	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-6	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-06	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-7A	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-06	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-7A	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-07	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-8A	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-07	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-8A	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-08	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-8B	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-08	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-8B	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
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Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-09	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-9	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-09	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	MW-9	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-10	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	SW-1	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-10	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	SW-1	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-11	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	SW-2	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	04/12/96
IEA Sample Number:	9604331-11	Date Sampled:	04/11/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	SW-2	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	N/A
IEA Sample Number:	9604331	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJW)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	N/A
IEA Sample Number:	9604331	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/17/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJW)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit
N/A = Not Applicable
Corresponding Samples: 9604331-06 through 11
Filename: 0417103

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	N/A
IEA Sample Number:	9604331	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	QC BLANK (VBLKJX)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	N/A
IEA Sample Number:	9604331	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	QC BLANK (VBLKJX)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit
N/A = Not Applicable
Corresponding Samples: 9604331-01, 02, 04, 05
Filename: 0417J06

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	N/A
IEA Sample Number:	9604331	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJY)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-909	Date Received:	N/A
IEA Sample Number:	9604331	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJY)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit
N/A = Not Applicable
Corresponding Samples: 9604331-03, 03MS/MSD
Filename: 0418102

Industrial & Environmental Analysts, Inc. (IEA)
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

IEA Project No.: 631-909
IEA Reference No: 9604331-03

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC
1,1-Dichloroethene	100	BQL	128	128	61-145
Trichloroethene	100	39	117	78	71-120
Benzene	100	BQL	93	93	76-127
Toluene	100	BQL	88	88	76-125
Chlorobenzene	100	BQL	88	88	75-130

	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	100	140	140	9	14	61-145
Trichloroethene	100	123	84	5	14	71-120
Benzene	100	108	108	15 *	11	76-127
Toluene	100	99	99	12	13	76-125
Chlorobenzene	100	99	99	12	13	75-130

Comments:
* Outside QC Limits
Corresponding Samples: 9604331-01 through 11
The associated LCS met all quality control criteria as determined by the laboratory showing the instrument to be in control.

FORM WAVOLMAS REV 012492

Industrial & Environmental Analysts, Inc. (IEA)
8260 VOLATILE SURROGATE RECOVERY

IEA Project No.: 631-909

Sample ID	SURR 1	SURR 2	SURR 3
VBLKJX	103	102	101
9604331-01	106	90	107
9604331-02	102	97	105
9604331-04	103	101	104
9604331-05	105	109	106
VBLKJY	103	106	105
9604331-03	103	102	105
VBLKJW	104	102	105
9604331-06	104	104	107
9604331-07	101	96	107
9604331-08	103	99	105
9604331-09	103	90	102
9604331-10	105	101	103
9604331-11	106	104	105
9604331-03MS	106	110	103
9604331-03MSD	103	106	104

	QC Limits
S1 = Toluene-d8	(90-123)
S2 = 4-Bromofluorobenzene	(75-129)
S3 = 1,2-Dichloroethane-d4	(70-139)

BPA Environmental & Engineering, Inc.

(910) 272-9713 2641-G Randleman Road, Greensboro, NC 27406

CHAIN OF CUSTODY RECORD

Sheet 1 of 1

Sample No.	Description/Location	Date	Time	Grab	Comp	No. of Containers	Preservative	MATRIX soil	MATRIX water	ANALYSES REQUESTED: AR1 VOC	AR1 metals T-46						
MW-1		4.11.96	950	✓		3	HCl HNO3		✓								
~~MW-2~~				✓					✓								
MW-3			400	✓					✓								
MW-4			300						✓								
MW-5			200	✓					✓								
MW-6			1115	✓					✓								
MW-7A			1230	✓					✓								
MW-8A			130	✓					✓								
MW-8B			110	✓					✓								
MW-9			930	✓					✓								
SW-1			1115	✓					✓								
SW-2			1130	✓					✓								

SPECIAL INSTRUCTIONS:

FIELD OBSERVATIONS:

W 9604081

Items/Reason	Relinquished By	Received By	Date	Time
All Shipping	[illegible]	[illegible]	4-12	12:10pm
		[illegible]	4-12-96	1530

Items/Reason	Relinquished By	Received By	Date	Time

PROJECT QUOTE NO.

PROJECT RUSH NO.

PROJECT MANAGER Kris S.

2C 631-9090

PROJECT NAME Sutcpson Ile Landfill

PROJECT NUMBER 170.000

SAMPLER(S) [illegible]

IEA, Inc.
3000 Weston Parkway
Cary, NC 27513

Phone 919-677-0090
Fax 919-677-0427

IEA
An Aquarion Company

April 29, 1996

MAY 1996
RECEIVED

Wes Scarlett
BPA Environmental & Engineering, Inc.
2641-G Randleman Road
Greensboro, NC 27406

IEA Project No.: 631910/9604422
IEA Reference No.: W9604363
Client Project I.D.: 0170.010 Swepsonville landfill

Dear Mr. Scarlett,

Transmitted herewith are the results of analyses on one samples submitted to our laboratory.

The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.

for S Alex
Edward C. Braunsdorf
Project Manager

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_910D
IEA Sample #: 960442201 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/16/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/12/96
Sample I.D.: MW-2

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
ARSENIC	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
BARIUM	SW846 6010	500.	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
BERYLLIUM	SW846 6010	2.00	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
CADMIUM	SW846 6010	1.00	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
CHROMIUM	SW846 6010	10.0	38.9	04/18/96	04/23/96	FXW	R4993	04189602P
COBALT	SW846 6010	10.0	14.9	04/18/96	04/23/96	FXW	R4993	04189602P
COPPER	SW846 6010	200.	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
LEAD	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
MERCURY	SW846 7470	0.500	BQL	04/18/96	04/19/96	MLH	R4987	04189602H
NICKEL	SW846 6010	50.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
SELENIUM	SW846 6010	20.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
SILVER	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
THALLIUM	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
VANADIUM	SW846 6010	40.0	122.	04/18/96	04/23/96	FXW	R4993	04189602P
ZINC	SW846 6010	50.0	99.9	04/18/96	04/23/96	FXW	R4993	04189602P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
PREPARATION BLANKS

IEA Project #: 631_910D
Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Proj. I.D.: 0170.010 Swepsonville landfil
Sample Number: PBW 04189602H

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
MERCURY	SW846 7470	0.500	BQL	04/18/96	04/19/96	MLH	R4987	04189602H

Corresponding Samples:
960432101, 960432801, 960440201, 960440203, 960440204, 960440205, 960440206, 960440207, 960440208, 960441501, 960442201

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
PREPARATION BLANKS

IEA Project #: 631_910D
Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Proj. I.D.: 0170.010 Swepsonville landfil
Sample Number: PBW 04189602P

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
ARSENIC	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
BARIUM	SW846 6010	500.	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
BERYLLIUM	SW846 6010	2.00	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
CADMIUM	SW846 6010	1.00	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
CHROMIUM	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
COBALT	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
COPPER	SW846 6010	200.	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
LEAD	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
NICKEL	SW846 6010	50.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
SELENIUM	SW846 6010	20.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
SILVER	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
THALLIUM	SW846 6010	10.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
VANADIUM	SW846 6010	40.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P
ZINC	SW846 6010	50.0	BQL	04/18/96	04/23/96	FXW	R4993	04189602P

Corresponding Samples:
960440201, 960440203, 960440204, 960440205, 960440206, 960440207, 960440208, 960440209, 960440210, 960440211, 960440212, 960440213, 960441501, 960442201

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
LABORATORY CONTROL SAMPLE

IEA Project #: 631_910D
IEA Sample #: LCSW 04189602P
Matrix: WATER

arameter	Method	Results (ug/l) True	Found	Limits Lower	Upper	% RCY	Date Analyzed	IEA Run	Prep Batch
ANTIMONY	SW846 6010	5000	5120	4000	6000	102.	04/23/96	R4993	04189602P
RSENIC	SW846 6010	5000	4920	4000	6000	98.4	04/23/96	R4993	04189602P
ARIUM	SW846 6010	5000	4870	4000	6000	97.4	04/23/96	R4993	04189602P
BERYLLIUM	SW846 6010	5000	5020	4000	6000	100.	04/23/96	R4993	04189602P
CADMIUM	SW846 6010	5000	4960	4000	6000	99.2	04/23/96	R4993	04189602P
HROMIUM	SW846 6010	5000	4960	4000	6000	99.1	04/23/96	R4993	04189602P
OBALT	SW846 6010	5000	4980	4000	6000	99.5	04/23/96	R4993	04189602P
COPPER	SW846 6010	5000	4780	4000	6000	95.6	04/23/96	R4993	04189602P
EAD	SW846 6010	5000	4950	4000	6000	99.1	04/23/96	R4993	04189602P
ICKEL	SW846 6010	5000	4970	4000	6000	99.4	04/23/96	R4993	04189602P
ELENIUM	SW846 6010	5000	4900	4000	6000	98.0	04/23/96	R4993	04189602P
SILVER	SW846 6010	500	480.	400	600	96.1	04/23/96	R4993	04189602P
HALLIUM	SW846 6010	5000	4980	4000	6000	99.6	04/23/96	R4993	04189602P
ANADIUM	SW846 6010	5000	4940	4000	6000	98.9	04/23/96	R4993	04189602P
ZINC	SW846 6010	5000	4970	4000	6000	99.4	04/23/96	R4993	04189602P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
DUPLICATE ANALYSIS

IEA Project #: 631_910D
IEA Sample #: 960440201
Matrix: WATER

Parameter	Method	Duplicate Analysis Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ANTIMONY	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
ARSENIC	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
BARIUM	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
BERYLLIUM	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
CADMIUM	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
CHROMIUM	SW846 6010	23.8	23.4	1.77	04/23/96	R4993	R4993	04189602P
COBALT	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
COPPER	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
LEAD	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
MERCURY	SW846 7470	BQL	BQL		04/19/96	R4987	R4987	04189602H
NICKEL	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
SELENIUM	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
SILVER	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
THALLIUM	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
VANADIUM	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P
ZINC	SW846 6010	BQL	BQL		04/23/96	R4993	R4993	04189602P

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960432101, 960432801, 960440201, 960440203, 960440204, 960440205, 960440206, 960440207, 960440208, 960440209, 960440210, 960440211, 960440212, 960440213, 960441501, 960442201

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE RESULTS

IEA Project #: 631_910D
IEA Sample #: 960440201
Matrix: WATER

Spike Results (ug/l)

Parameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
ANTIMONY	SW846 6010	500.	BQL	473.	94.6	04/23/96	R4993	R4993	04189602P
ARSENIC	SW846 6010	2000	BQL	1870	93.4	04/23/96	R4993	R4993	04189602P
BARIUM	SW846 6010	2000	BQL	1960	93.9	04/23/96	R4993	R4993	04189602P
BERYLLIUM	SW846 6010	50.0	BQL	48.8	94.6	04/23/96	R4993	R4993	04189602P
CADMIUM	SW846 6010	50.0	BQL	46.0	92.0	04/23/96	R4993	R4993	04189602P
CHROMIUM	SW846 6010	200.	23.8	204.	90.4	04/23/96	R4993	R4993	04189602P
COBALT	SW846 6010	500.	BQL	461.	90.8	04/23/96	R4993	R4993	04189602P
COPPER	SW846 6010	250.	BQL	257.	97.5	04/23/96	R4993	R4993	04189602P
LEAD	SW846 6010	500.	BQL	463.	91.4	04/23/96	R4993	R4993	04189602P
MERCURY	SW846 7470	1.00	BQL	0.961	96.1	04/19/96	R4987	R4987	04189602H
NICKEL	SW846 6010	500.	BQL	476.	93.4	04/23/96	R4993	R4993	04189602P
SELENIUM	SW846 6010	2000	BQL	1890	94.5	04/23/96	R4993	R4993	04189602P
SILVER	SW846 6010	50.0	BQL	47.3	94.6	04/23/96	R4993	R4993	04189602P
THALLIUM	SW846 6010	2000	BQL	1900	94.5	04/23/96	R4993	R4993	04189602P
VANADIUM	SW846 6010	500.	BQL	488.	92.4	04/23/96	R4993	R4993	04189602P
ZINC	SW846 6010	500.	BQL	510.	93.0	04/23/96	R4993	R4993	04189602P

%R = ((SSR - SR) / SA) * 100 Control Limits: 75-125%

Corresponding Samples:
960432101, 960432801, 960440201, 960440203, 960440204, 960440205, 960440206, 960440207, 960440208, 960440209, 960440210, 960440211, 960440212, 960440213, 960441501, 960442201

Comments: % Recovery calculated based on idl values.

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE DUPLICATE RESULTS

IEA Project #: 631_910D
IEA Sample #: 960440201S
Matrix: WATER

Parameter	Method	Spike Duplicate Results Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ANTIMONY	SW846 6010	473.	477.	0.84	04/23/96	R4993	R4993	04189602P
ARSENIC	SW846 6010	1870	1900	1.69	04/23/96	R4993	R4993	04189602P
BARIUM	SW846 6010	1960	1940	1.03	04/23/96	R4993	R4993	04189602P
BERYLLIUM	SW846 6010	48.8	49.9	2.24	04/23/96	R4993	R4993	04189602P
CADMIUM	SW846 6010	46.0	47.3	2.81	04/23/96	R4993	R4993	04189602P
CHROMIUM	SW846 6010	204.	212.	3.62	04/23/96	R4993	R4993	04189602P
COBALT	SW846 6010	461.	475.	2.88	04/23/96	R4993	R4993	04189602P
COPPER	SW846 6010	257.	249.	3.08	04/23/96	R4993	R4993	04189602P
LEAD	SW846 6010	463.	475.	2.49	04/23/96	R4993	R4993	04189602P
MERCURY	SW846 7470	0.961	1.00	4.18	04/19/96	R4987	R4987	04189602H
NICKEL	SW846 6010	476.	490.	2.85	04/23/96	R4993	R4993	04189602P
SELENIUM	SW846 6010	1890	1880	0.57	04/23/96	R4993	R4993	04189602P
SILVER	SW846 6010	47.3	47.4	0.25	04/23/96	R4993	R4993	04189602P
THALLIUM	SW846 6010	1900	1920	1.22	04/23/96	R4993	R4993	04189602P
VANADIUM	SW846 6010	488.	499.	2.19	04/23/96	R4993	R4993	04189602P
ZINC	SW846 6010	510.	533.	4.36	04/23/96	R4993	R4993	04189602P

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960432101, 960432801, 960440201, 960440203, 960440204, 960440205,
960440206, 960440207, 960440208, 960440209, 960440210, 960440211,
960440212, 960440213, 960441501, 960442201

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-910	Date Received:	04/16/96
IEA Sample Number:	9604422-01	Date Sampled:	04/12/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-2	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	11
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-910	Date Received:	04/16/96
IEA Sample Number:	9604422-01	Date Sampled:	04/12/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Crewes
Sample Identification:	MW-2	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-910	Date Received:	N/A
IEA Sample Number:	9604422	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJY)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-910	Date Received:	N/A
IEA Sample Number:	9604422	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	04/18/96
Client Project I.D.:	0170.010 Swepsonville Landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJY)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit
N/A = Not Applicable
Corresponding Samples: 9604422-01, 9604331-03MS/MSD
Filename: 0418102

Industrial & Environmental Analysts, Inc. (IEA)
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

IEA Project No.: 631-910
IEA Reference No: 9604331-03

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC
1,1-Dichloroethene	100	BQL	128	128	61-145
Trichloroethene	100	39	117	78	71-120
Benzene	100	BQL	93	93	76-127
Toluene	100	BQL	88	88	76-125
Chlorobenzene	100	BQL	88	88	75-130

	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	100	140	140	9	14	61-145
Trichloroethene	100	123	84	5	14	71-120
Benzene	100	108	108	15 *	11	76-127
Toluene	100	99	99	12	13	76-125
Chlorobenzene	100	99	99	12	13	75-130

Comments:
* Outside QC Limits
Corresponding Samples: 9604422-01
The associated LCS met all quality control criteria as determined by the laboratory showing the instrument to be in control.

FORM WAVOLMAS REV 012492

Industrial & Environmental Analysts, Inc. (IEA)
8260 VOLATILE SURROGATE RECOVERY

IEA Project No.: 631-910

Sample ID	SURR 1	SURR 2	SURR 3
VBLKJY	103	106	105
960422-01	102	103	100
9604331-03MS	106	110	103
9604331-03MSD	103	106	104

	QC Limits
S1 = Toluene-d8	(90-123)
S2 = 4-Bromofluorobenzene	(75-129)
S3 = 1,2-Dichloroethane-d4	(70-139)

IEA
An Aquarion Company
3000 WESTON PKWY.
CARY, N.C. 27513
PH # 919-677-0090
FAX # 919-677-0427

CHAIN OF CUSTODY RECORD

NO. 66901

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

BPA

Page 1 of 1

170.010 Swepsonville Landfill

SAMPLERS (SIGNATURE)

						# OF CONTAINERS	SOIL	WATER												
MW-2	4-12-96	1415		V		3		✓	✓	✓										

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
[illegible]	4-13-96				
[illegible]	4-15-96	8:30	[illegible]		

IEA QUOTE NO.	IEA RUSH NO.
9004363	
PROJECT MANAGER (PLEASE PRINT)	**P.O. NO.**

☒ BOTTLE INTACT ☐ CUSTODY SEALS
☒ PRESERVED ☐ SEALS INTACT
☒ CHILLED ☐ SEE REMARKS

Received 4/15/96 @ 9:30 631-910D 4C

REMARKS

IEA, Inc.
3000 Weston Parkway
Cary, NC 27513

Phone 919-677-0090
Fax 919-677-0427

IEA
An Aquarion Company

May 6, 1996

RECEIVED MAY 1996

Wes Scarlett
BPA Environmental & Engineering, Inc.
2641-G Randleman Road
Greensboro, NC 27406

IEA Project No.: 631913/9604571
IEA Reference No.: W9604081
Client Project I.D.: 0170.010 Swepsonville landfil

Dear Mr. Scarlett,

Transmitted herewith are the results of analyses on one samples submitted to our laboratory.

The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.

S Alex for
Rodney Raimonde
Project Manager

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report

IEA Project #: 631_913D
IEA Sample #: 960457101 Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC Date Received: 04/22/96
Client Proj. I.D.: 0170.010 Swepsonville landfil Date Sampled: 04/19/96
Sample I.D.: 7-B

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
ANTIMONY	SW846 6010	30.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
ARSENIC	SW846 6010	10.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
BARIUM	SW846 6010	500.	668.	04/25/96	04/30/96	JDJ	R5140	04259602P
BERYLLIUM	SW846 6010	2.00	3.88	04/25/96	04/30/96	JDJ	R5140	04259602P
CADMIUM	SW846 6010	1.00	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
CHROMIUM	SW846 6010	10.0	33.4	04/25/96	04/30/96	JDJ	R5140	04259602P
COBALT	SW846 6010	10.0	44.6	04/25/96	04/30/96	JDJ	R5140	04259602P
COPPER	SW846 6010	200.	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
LEAD	SW846 6010	10.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
MERCURY	SW846 7470	0.200	BQL	04/25/96	04/26/96	LXG	R5094	04259601H
NICKEL	SW846 6010	50.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
SELENIUM	SW846 6010	20.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
SILVER	SW846 6010	10.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
THALLIUM	SW846 6010	10.0	BQL	04/25/96	04/30/96	JDJ	R5140	04259602P
VANADIUM	SW846 6010	40.0	205.	04/25/96	04/30/96	JDJ	R5140	04259602P
ZINC	SW846 6010	50.0	338.	04/25/96	04/30/96	JDJ	R5140	04259602P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
PREPARATION BLANKS

IEA Project #: 631_913D
Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Proj. I.D.: 0170.010 Swepsonville landfil
Sample Number: PBW 04259601H

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
:RCURY	SW846 7470	0.200	BQL	04/25/96	04/26/96	LXG	R5094	04259601H

orresponding Samples:
960436106, 960436107, 960436517, 960436518, 960448901, 960448902,
960448903F, 960450201, 960457101, 960462504, 960462505F

omments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
PREPARATION BLANKS

IEA Project #: 631_913D
Matrix: WATER
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Proj. I.D.: 0170.010 Swepsonville landfil
Sample Number: PBW 04259602P

Parameter	Method	Quant Limit	Result (ug/l)	Date Prepared	Date Analyzed	Analyst	IEA Run	Prep Batch
NTIMONY	SW846 6010	30.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
RSENIC	SW846 6010	10.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
BARIUM	SW846 6010	500.	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
ERYLLIUM	SW846 6010	2.00	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
ADMIUM	SW846 6010	1.00	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
CHROMIUM	SW846 6010	10.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
COBALT	SW846 6010	10.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
OPPER	SW846 6010	200.	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
EAD	SW846 6010	10.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
NICKEL	SW846 6010	50.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
SELENIUM	SW846 6010	20.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
ILVER	SW846 6010	10.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
HALLIUM	SW846 6010	10.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
VANADIUM	SW846 6010	40.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P
ZINC	SW846 6010	50.0	BQL	04/25/96	04/29/96	JDJ	R5140	04259602P

orresponding Samples:
960435708, 960439711, 960450801, 960451201, 960451202, 960451203, 960457101

omments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
LABORATORY CONTROL SAMPLE

IEA Project #: 631_913D
IEA Sample #: LCSW 04259602P
Matrix: WATER

Parameter	Method	Results (ug/l) True	Found	Limits Lower	Upper	% RCY	Date Analyzed	IEA Run	Prep Batch
ANTIMONY	SW846 6010	5000	5040	4000	6000	101.	04/30/96	R5140	04259602P
ARSENIC	SW846 6010	5000	4900	4000	6000	97.9	04/30/96	R5140	04259602P
BARIUM	SW846 6010	5000	5120	4000	6000	102.	04/30/96	R5140	04259602P
BERYLLIUM	SW846 6010	5000	4730	4000	6000	94.5	04/30/96	R5140	04259602P
CADMIUM	SW846 6010	5000	4670	4000	6000	93.5	04/30/96	R5140	04259602P
CHROMIUM	SW846 6010	5000	4730	4000	6000	94.7	04/30/96	R5140	04259602P
COBALT	SW846 6010	5000	4780	4000	6000	95.6	04/30/96	R5140	04259602P
COPPER	SW846 6010	5000	5020	4000	6000	100.	04/30/96	R5140	04259602P
LEAD	SW846 6010	5000	4870	4000	6000	97.4	04/30/96	R5140	04259602P
NICKEL	SW846 6010	5000	4820	4000	6000	96.4	04/30/96	R5140	04259602P
SELENIUM	SW846 6010	5000	5050	4000	6000	101.	04/30/96	R5140	04259602P
SILVER	SW846 6010	500	470.	400	600	94.0	04/30/96	R5140	04259602P
THALLIUM	SW846 6010	5000	5090	4000	6000	102.	04/30/96	R5140	04259602P
VANADIUM	SW846 6010	5000	4840	4000	6000	96.9	04/30/96	R5140	04259602P
ZINC	SW846 6010	5000	4570	4000	6000	91.5	04/30/96	R5140	04259602P

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
DUPLICATE ANALYSIS

IEA Project #: 631_913D
IEA Sample #: 960435708
Matrix: WATER

Duplicate Analysis

Parameter	Method	Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ANTIMONY	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
ARSENIC	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
BARIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
BERYLLIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
CADMIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
CHROMIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
COBALT	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
COPPER	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
LEAD	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
NICKEL	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
SELENIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
SILVER	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
THALLIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
VANADIUM	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P
ZINC	SW846 6010	BQL	BQL		04/30/96	R5140	R5140	04259602P

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960435708, 960439711, 960450801, 960451201, 960451202, 960451203,
960457101

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
DUPLICATE ANALYSIS

IEA Project #: 631_913D
IEA Sample #: 960457101
Matrix: WATER

		Duplicate Analysis						
Parameter	Method	Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
MERCURY	SW846 7470	BQL	BQL		04/26/96	R5094	R5094	04259601H

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960436106, 960436107, 960436517, 960436518, 960448901, 960448902, 960448903F, 960450201, 960457101, 960462504, 960462505F

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE RESULTS

IEA Project #: 631_913D
IEA Sample #: 960435708
Matrix: WATER

Spike Results (ug/l)

arameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
ANTIMONY	SW846 6010	500.	BQL	497.	99.4	04/30/96	R5140	R5140	04259602P
RSENIC	SW846 6010	2000	BQL	1940	96.9	04/30/96	R5140	R5140	04259602P
ARIUM	SW846 6010	2000	BQL	2020	101.	04/30/96	R5140	R5140	04259602P
ERYLLIUM	SW846 6010	50.0	BQL	48.7	95.0	04/30/96	R5140	R5140	04259602P
CADMIUM	SW846 6010	50.0	BQL	46.6	93.2	04/30/96	R5140	R5140	04259602P
HROMIUM	SW846 6010	200.	BQL	189.	93.3	04/30/96	R5140	R5140	04259602P
OBALT	SW846 6010	500.	BQL	465.	93.0	04/30/96	R5140	R5140	04259602P
COPPER	SW846 6010	250.	BQL	252.	101.	04/30/96	R5140	R5140	04259602P
LEAD	SW846 6010	500.	BQL	483.	96.1	04/30/96	R5140	R5140	04259602P
ICKEL	SW846 6010	500.	BQL	482.	96.3	04/30/96	R5140	R5140	04259602P
ELENIUM	SW846 6010	2000	BQL	1990	99.6	04/30/96	R5140	R5140	04259602P
SILVER	SW846 6010	50.0	BQL	47.7	95.5	04/30/96	R5140	R5140	04259602P
THALLIUM	SW846 6010	2000	BQL	2030	101.	04/30/96	R5140	R5140	04259602P
ANADIUM	SW846 6010	500.	BQL	480.	96.0	04/30/96	R5140	R5140	04259602P
INC	SW846 6010	500.	BQL	478.	93.8	04/30/96	R5140	R5140	04259602P

%R = ((SSR - SR) / SA) * 100 Control Limits: 75-125%

orresponding Samples:
960435708, 960439711, 960450801, 960451201, 960451202, 960451203,
960457101

omments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE RESULTS

IEA Project #: 631_913D
IEA Sample #: 960457101
Matrix: WATER

Spike Results (ug/l)

arameter	Method	SA	SR	SSR	%RCY	Date Analyzed	Samp Run	Spike Run	Prep Batch
MERCURY	SW846 7470	1.00	BQL	0.908	81.6	04/26/96	R5094	R5094	04259601H

%R = ((SSR - SR) / SA) * 100 Control Limits: 75-125%

Corresponding Samples:
960436106, 960436107, 960436517, 960436518, 960448901, 960448902,
960448903F, 960450201, 960457101, 960462504, 960462505F

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE DUPLICATE RESULTS

IEA Project #: 631_913D
IEA Sample #: 960435708S
Matrix: WATER

Parameter	Method	Spike Duplicate Results Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
ANTIMONY	SW846 6010	497.	500.	0.53	04/30/96	R5140	R5140	04259602P
ARSENIC	SW846 6010	1940	1940	0.41	04/30/96	R5140	R5140	04259602P
BARIUM	SW846 6010	2020	2030	0.77	04/30/96	R5140	R5140	04259602P
BERYLLIUM	SW846 6010	48.7	48.9	0.38	04/30/96	R5140	R5140	04259602P
CADMIUM	SW846 6010	46.6	46.8	0.39	04/30/96	R5140	R5140	04259602P
CHROMIUM	SW846 6010	189.	189.	0.10	04/30/96	R5140	R5140	04259602P
COBALT	SW846 6010	465.	466.	0.27	04/30/96	R5140	R5140	04259602P
COPPER	SW846 6010	252.	253.	0.31	04/30/96	R5140	R5140	04259602P
LEAD	SW846 6010	483.	485.	0.40	04/30/96	R5140	R5140	04259602P
NICKEL	SW846 6010	482.	483.	0.08	04/30/96	R5140	R5140	04259602P
SELENIUM	SW846 6010	1990	2000	0.17	04/30/96	R5140	R5140	04259602P
SILVER	SW846 6010	47.7	47.7	0.09	04/30/96	R5140	R5140	04259602P
THALLIUM	SW846 6010	2030	2040	0.59	04/30/96	R5140	R5140	04259602P
VANADIUM	SW846 6010	480.	482.	0.33	04/30/96	R5140	R5140	04259602P
ZINC	SW846 6010	478.	482.	0.81	04/30/96	R5140	R5140	04259602P

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960435708, 960439711, 960450801, 960451201, 960451202, 960451203, 960457101

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
Level 2 Metals Results Report
SPIKE DUPLICATE RESULTS

IEA Project #: 631_913D
IEA Sample #: 960457101S
Matrix: WATER

Spike Duplicate Results

Parameter	Method	Sample (ug/l)	Duplicate (ug/l)	RPD %	Date Analyzed	Samp Run	Dup Run	Prep Batch
MERCURY	SW846 7470	0.908	0.915	0.76	04/26/96	R5094	R5094	04259601H

$$RPD = \frac{S-D}{(S+D)/2} \times 100$$

Control Limits: +/- 20%

Corresponding Samples:
960436106, 960436107, 960436517, 960436518, 960448901, 960448902, 960448903F, 960450201, 960457101, 960462504, 960462505F

Comments:

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-913	Date Received:	04/22/96
IEA Sample Number:	9604571-01	Date Sampled:	04/19/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	05/02/96
Client Project I.D.:	0170.010 Swepsonville landfil	Analysis By:	Moore
Sample Identification:	7-B	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-913	Date Received:	04/22/96
IEA Sample Number:	9604571-01	Date Sampled:	04/19/96
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	05/02/96
Client Project I.D.:	0170.010 Swepsonville landfil	Analysis By:	Moore
Sample Identification:	7-B	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-913	Date Received:	N/A
IEA Sample Number:	9604571	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	05/02/96
Client Project I.D.:	0170.010 Swepsonville landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJR)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
1	Acetone	100	BQL
2	Acrylonitrile	200	BQL
3	Benzene	5	BQL
4	Bromochloromethane	5	BQL
5	Bromodichloromethane	5	BQL
6	Bromoform	5	BQL
7	Bromomethane	10	BQL
8	2-Butanone	100	BQL
9	Carbon Disulfide	100	BQL
10	Carbon Tetrachloride	10	BQL
11	Chlorobenzene	5	BQL
12	Chlorodibromomethane	5	BQL
13	Chloroethane	10	BQL
14	Chloroform	5	BQL
15	Chloromethane	10	BQL
16	1,2-Dibromo-3-Chloropropane	25	BQL
17	1,2-Dibromoethane	5	BQL
18	Dibromomethane	10	BQL
19	1,2-Dichlorobenzene	5	BQL
20	1,4-Dichlorobenzene	5	BQL
21	trans-1,4-Dichloro-2-Butene	100	BQL
22	1,1-Dichloroethane	5	BQL
23	1,2-Dichloroethane	5	BQL
24	1,1-Dichloroethene	5	BQL
25	cis-1,2-Dichloroethene	5	BQL
26	trans-1,2-Dichloroethene	5	BQL
27	1,2-Dichloropropane	5	BQL
28	cis-1,3-Dichloropropene	10	BQL
29	trans-1,3-Dichloropropene	10	BQL
30	Ethylbenzene	5	BQL
31	2-Hexanone	50	BQL
32	Iodomethane	10	BQL
33	Methylene Chloride	10	BQL
34	4-Methyl-2-Pentanone	100	BQL
35	Styrene	10	BQL
36	1,1,1,2-Tetrachloroethane	5	BQL
37	1,1,2,2-Tetrachloroethane	5	BQL

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Appendix I Target List

IEA Project Number:	631-913	Date Received:	N/A
IEA Sample Number:	9604571	Date Sampled:	N/A
Client Name:	BPA ENVIRONMENTAL & ENG., INC	Date Analyzed:	05/02/96
Client Project I.D.:	0170.010 Swepsonville landfil	Analysis By:	Moore
Sample Identification:	QC BLANK (VBLKJR)	Dilution Factor:	1.0
Matrix:	Water		

Number	Compound	Quantitation Limit (ug/L)	Results Concentration (ug/L)
38	Tetrachloroethene	5	BQL
39	Toluene	5	BQL
40	1,1,1-Trichloroethane	5	BQL
41	1,1,2-Trichloroethane	5	BQL
42	Trichloroethene	5	BQL
43	Trichlorofluoromethane	5	BQL
44	1,2,3-Trichloropropane	15	BQL
45	Vinyl Acetate	50	BQL
46	Vinyl Chloride	10	BQL
47	Xylenes (Total)	5	BQL

Comments:
Sample specific quantitation limits may be calculated by multiplying the quantitation limit by the dilution factor and/or moisture correction factor where reported.
BQL = Below Quantitation Limit
N/A = Not Applicable
Corresponding Samples: 9604571-01, 01MS/MSD, LCSJR
Filename:0502104

Industrial & Environmental Analysts, Inc. (IEA)
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

IEA Project No.: 631-913
IEA Reference No: 9604571-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC
1,1-Dichloroethene	50	BQL	51	102	61-145
Trichloroethene	50	BQL	37	74	71-120
Benzene	50	BQL	44	88	76-127
Toluene	50	BQL	42	84	76-125
Chlorobenzene	50	BQL	42	84	75-130

	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	50	57	114	11	14	61-145
Trichloroethene	50	43	86	15 *	14	71-120
Benzene	50	51	102	15 *	11	76-127
Toluene	50	49	98	15 *	13	76-125
Chlorobenzene	50	49	98	15 *	13	75-130

Comments:
* Outside QC Limits
The associated LCS met all quality control criteria as determined by the laboratory showing the instrument to be in control. The LCS data is provided with the report as supporting documentation.

FORM WAVOLMAS REV 012492

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Laboratory Control Spike (LCS)

IEA Project Number: 631-913
IEA Sample Number: 9604571
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Project I.D.: 0170.010 Swepsonville landfil
Sample Identification: VLCSJR

Date Analyzed: 05/02/96
Analysis By: Moore
Matrix: Water

Number	Compound	Amount Spiked (ug/L)	Amount Recovered (ug/L)	SLCS % REC	Control Limits Lower (%REC)	Upper (%REC)
40	1,1-Dichloroethene	20	22.5	113	10	200
41	cis-1,2-Dichloroethene	20	20.7	104	10	200
42	trans-1,2-Dichloroethene	20	18.1	91	10	200
43	1,2-Dichloropropane	20	19.0	95	10	200
44	cis-1,3-Dichloropropene	20	16.8	84	10	200
45	trans-1,3-Dichloropropene	20	16.4	82	10	200
46	Ethylbenzene	20	19.4	97	10	200
47	Ethyl Methacrylate	20	18.0	90	10	200
48	2-Hexanone	20	14.2	71	10	200
49	Iodomethane	20	17.1	86	10	200
50	p-Isopropyltoluene	20	18.6	93	10	200
51	Methacrylonitrile	20	18.9	95	10	200
52	Methylene Chloride	20	20.0	100	10	200
53	Methyl Methacrylate	20	18.4	92	10	200
54	4-Methyl-2-Pentanone	20	18.8	94	10	200
55	Methyl-tert-Butyl Ether	20	20.4	102	10	200
56	Naphthalene	20	9.4	47	10	200
57	Pentachloroethane	20	13.8	69	10	200
58	n-Propylbenzene	20	17.5	88	10	200
59	Styrene	20	17.9	90	10	200
60	1,1,1,2-Tetrachloroethane	20	16.6	83	10	200
61	1,1,2,2-Tetrachloroethane	20	19.3	97	10	200
62	Tetrachloroethene	20	19.1	96	10	200
63	Toluene	20	19.2	96	10	200
64	1,2,4-Trichlorobenzene	20	14.2	71	10	200
65	1,1,1-Trichloroethane	20	17.7	89	10	200
66	1,1,2-Trichloroethane	20	18.4	92	10	200
67	Trichloroethene	20	20.0	100	10	200
68	Trichlorofluoromethane	20	16.6	83	10	200
69	1,2,3-Trichlorobenzene	20	14.1	71	10	200
70	1,2,4-Trimethylbenzene	20	12.6	63	10	200
71	1,3,5-Trimethylbenzene	20	19.4	97	10	200
72	1,2,3-Trichloropropane	20	18.9	95	10	200
73	Vinyl Acetate	20	2.0	10	10	200
74	Vinyl Chloride	20	17.9	90	10	200
75	Xylenes (Total)	60	60.3	101	10	200

Comments:
Corresponding Samples: 9604571-01, 01MS/MSD
Filename: 0502108

Industrial & Environmental Analysts, Inc. (IEA)
GC/MS PURGEABLES SW-846 METHOD 8260
Laboratory Control Spike (LCS)

IEA Project Number: 631-913
IEA Sample Number: 9604571
Client Name: BPA ENVIRONMENTAL & ENG., INC
Client Project I.D.: 0170.010 Swepsonville landfil
Sample Identification: VLCSJR

Date Analyzed: 05/02/96
Analysis By: Moore
Matrix: Water

Number	Compound	Amount Spiked (ug/L)	Amount Recovered (ug/L)	SLCS % REC	Control Limits Lower (%REC)	Upper (%REC)
40	1,1-Dichloroethene	20	22.5	113	10	200
41	cis-1,2-Dichloroethene	20	20.7	104	10	200
42	trans-1,2-Dichloroethene	20	18.1	91	10	200
43	1,2-Dichloropropane	20	19.0	95	10	200
44	cis-1,3-Dichloropropene	20	16.8	84	10	200
45	trans-1,3-Dichloropropene	20	16.4	82	10	200
46	Ethylbenzene	20	19.4	97	10	200
47	Ethyl Methacrylate	20	18.0	90	10	200
48	2-Hexanone	20	14.2	71	10	200
49	Iodomethane	20	17.1	86	10	200
50	p-Isopropyltoluene	20	18.6	93	10	200
51	Methacrylonitrile	20	18.9	95	10	200
52	Methylene Chloride	20	20.0	100	10	200
53	Methyl Methacrylate	20	18.4	92	10	200
54	4-Methyl-2-Pentanone	20	18.8	94	10	200
55	Methyl-tert-Butyl Ether	20	20.4	102	10	200
56	Naphthalene	20	9.4	47	10	200
57	Pentachloroethane	20	13.8	69	10	200
58	n-Propylbenzene	20	17.5	88	10	200
59	Styrene	20	17.9	90	10	200
60	1,1,1,2-Tetrachloroethane	20	16.6	83	10	200
61	1,1,2,2-Tetrachloroethane	20	19.3	97	10	200
62	Tetrachloroethene	20	19.1	96	10	200
63	Toluene	20	19.2	96	10	200
64	1,2,4-Trichlorobenzene	20	14.2	71	10	200
65	1,1,1-Trichloroethane	20	17.7	89	10	200
66	1,1,2-Trichloroethane	20	18.4	92	10	200
67	Trichloroethene	20	20.0	100	10	200
68	Trichlorofluoromethane	20	16.6	83	10	200
69	1,2,3-Trichlorobenzene	20	14.1	71	10	200
70	1,2,4-Trimethylbenzene	20	12.6	63	10	200
71	1,3,5-Trimethylbenzene	20	19.4	97	10	200
72	1,2,3-Trichloropropane	20	18.9	95	10	200
73	Vinyl Acetate	20	2.0	10	10	200
74	Vinyl Chloride	20	17.9	90	10	200
75	Xylenes (Total)	60	60.3	101	10	200

Comments:
Corresponding Samples: 9604571-01, 01MS/MSD
Filename: 0502108

Industrial & Environmental Analysts, Inc. (IEA)
8260 VOLATILE SURROGATE RECOVERY

IEA Project No.: 631-913

Sample ID	SURR 1	SURR 2	SURR 3
VBLKJR	108	103	107
9604571-01	106	107	105
9604571-01MS	106	104	103
9604571-01MSD	107	101	104
LCSJR	104	104	106

	QC Limits
S1 = Toluene-d8	(90-123)
S2 = 4-Bromofluorobenzene	(75-129)
S3 = 1,2-Dichloroethane-d4	(70-139)

IEA
An Aquarion Company

3000 WESTON PKWY.
CARY, N.C. 27513
PH # 919-677-0090
FAX # 919-677-0427

CHAIN OF CUSTODY RECORD

NO. 67136

REGULATORY CLASSIFICATION - PLEASE SPECIFY

☐ NPDES ☐ DRINKING WATER ☐ RCRA ☐ OTHER _____

COMPANY: BPA

631-913

Page 1 of 1

PROJECT: 170.010 Sweetsaville Landfill

SAMPLERS: (SIGNATURE) Jora C. Robert

SAMPLE I.D.	DATE	TIME	GRAB	COMPOSITE	STATION LOCATION	# OF CONTAINERS	SOIL	WATER	API Lab	API Field
MW-B	4/19/96	12:30P	✓			3		✓	✓	✓

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[illegible]	4/19/96		KED Svcs	4/19/96	12:15pm
Jora C. Robert	4/22/96	[illegible]	D. McCormick	4/22/96	13:25

IEA QUOTE NO.	IEA RUSH NO.
[illegible]	

PROJECT MANAGER (PLEASE PRINT)	P.O. NO.

REMARKS ON SAMPLE RECEIPT

☒ BOTTLE INTACT ☐ CUSTODY SEALS
☐ PRESERVED ☐ SEALS INTACT
☒ CHILLED ☐ SEE REMARKS

IEA REMARKS: 4°C

FIELD REMARKS

BPA Environmental & Engineering, Inc.

John E. Palmer, P.G.
E.W. Scarlett, Jr., P.G.
R. Edward Hedgecock, P.E., P.G.

2641-G Randleman Road
Greensboro, NC 27406-5159
(910) 272-9713

September 20, 1996

Mr. Larry Rose
Division of Solid Waste Management
P.O. Box 27687
Raleigh, NC 27611-7687

RE: Water Quality Monitoring
Swepsonville Landfill
BPA Project Nos. 0170.010

Dear Mr. Rose:

Enclosed is one (1) copy of the report titled "Swepsonville Landfill, Alamance County, NC, Results of Water Quality Sampling, April 1996." If you have any comments or questions, please call.

Sincerely yours,

BPA ENVIRONMENTAL & ENGINEERING, INC.

E. W. Scarlett, Jr., P.G.
Principal

EWS/cwm