34-12

1-17-96

| | | |
|---|---|---|
| | Date | |
| AC | 6/18/08 | DIN |

February 9, 1996

HDR

Rcvd Date 02-14-96

Mr. Jim Bateson, Hydrogeologist
North Carolina Department of Environment,
Health and Natural Resources
Division of Solid Waste Management
Solid Waste Section
P. O. Box 27687
Raleigh, North Carolina 27611-7687

RE: **Initial Ground-Water Sampling Analytical Results**
Proposed Winston-Salem Construction and Demolition Landfill
Forsyth County, North Carolina
HDR Project No.: 00162-082-018

Dear Mr. Bateson:

HDR Engineering, Inc. of North Carolina (HDR) is hereby submitting, on behalf of the City of Winston-Salem Utilities Division, the ground-water analytical results for the first complete round of ground-water sampling at the proposed C&D Landfill located in Forsyth County, North Carolina. The existing Ground-Water Monitoring Plan for the site is currently being revised and will be submitted to the Section upon completion.

Ground-water samples were collected from the six newly installed detection monitoring wells (MW-1R, MW-2R, MW-4R, MW-5R, MW-6, and MW-7) and from existing monitoring well MW-3 on January 17, 1996 for Appendix I volatile organic compound (VOC) analysis as well as for the eight RCRA metals. A trip and equipment blank were also included for QA/QC purposes. Field measurements of pH, specific conductance, and temperature were also recorded during pre-sampling well purging. These measurements were recorded on field forms which have been attached to the Report of Laboratory Analysis.

Based on past ground-water flow characteristics for the site, ground-water monitoring well MW-1R is hydraulically upgradient of the proposed C&D cell and is therefore considered as "background" for the site. Soil boring logs and detection monitoring well construction specifications for all of the detection program wells will be provided in the revised plan.

The metals of barium, cadmium, chromium, lead, and mercury were detected in the ground water during this initial round of sampling. The concentrations detected were low and are reflective of the naturally-occurring trace metals typically present in the saprolite of this region. Several of the metals were detected at concentrations which slightly exceeded their 2L ground-water standard. The following is a summary of the wells with metals which exceeded their 2L standards:

**HDR Engineering, Inc.**
**of North Carolina**

Suite 1400
128 S. Tryon Street
Charlotte, North Carolina
28202-5001

Telephone
704 338-1800
Fax
704 338-6760

| Well No. | Metal |
|---|---|
| MW-1R: | Mercury |
| MW-2R: | Lead |
| MW-3: | None |
| MW-4R: | Cadmium, Lead, Mercury |
| MW-5R: | Chromium, Lead |
| MW-6: | Lead, Mercury |
| MW-7: | Lead, Mercury |

The presence of these metals (in excess of the 2L ground-water standards) in all of the newly installed wells (and not in existing well MW-3) may suggest that some lingering turbidity still remains in the newly installed wells, even though adequate well development was performed prior to sample collection using a Brainard-Kilman hand pump. As additional sampling events are performed and the wells are purged each time prior to sampling, this lingering turbidity should be reduced.

In addition to the detection of metals, two volatile organic compounds were detected during this initial sampling event. A trace of carbon disulfide was detected in MW-1R at a concentration of 23 ppb. This compound can occur in nature and since no waste has been placed at the site, this detection should not be considered significant. In addition, methyl ethyl ketone (MEK) was detected in MW-2R at a concentration of 86 ppb. The presence of this compound is likely associated with laboratory contamination since it is not naturally occurring (and no waste has been placed in the first cell). However, this concentration is below the 2L standard of 110 ppb. The complete Report of Laboratory Analysis for this initial round of sampling at the Winston-Salem C&D Landfill is attached at the end of this letter (including the Chain-of-Custody Record).

If you have any questions or comments concerning the information summarized in this letter or on the attached analytical data report, please do not hesitate to contact me at (704) 338-6832.

Sincerely,

John R. Isham
Project Hydrogeologist

attachments: Report of Laboratory Analysis (w/ Chain-of-Custody Record)
Pre-Sampling Well Purging Forms

cc: Ron Bell, Winston-Salem Utilities Division

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-1R
WELL INSIDE DIAMETER 2 INCHES
DEPTH OF BOTTOM 60.00 FEET
LENGTH OF GRAVEL PACK 17.00 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00162-082-018
DATE 1/17/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS FOGGY, COLD, DAMP
HNU/OVA READING N/A
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| FLUSHING | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| WATER LEVEL BEFORE | 38.77 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 10:55 | | | | |
| TIME END FLUSHING | 11:40 | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 4 | 8 | 10 | |
| WELL VOLUMES REMOVED | 0 | 1.25 | 2.51 | 3.13 | |

| FIELD ANALYSIS | | | | | |
|---|---|---|---|---|---|
| WATER TEMPERATURE (°C) | 58°f | 57.5°f | 57.5°f | 57.5°f | |
| SAMPLE (pH) | 5.35 | 5.85 | 5.88 | 5.88 | |
| SAMPLE CONDUCTIVITY (umhos/cm) | 1000 | 1100 | 1200 | 1100 | |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | |
| BUFFER AFTER | 4 | 4 | 4 | 4 | |
| ODOR | None | None | None | None | |
| COLOR | clear | straw yellow | yellow-brown | yellow-brown | |
| OTHER | | | | | |

COMMENTS

SAMPLED 11:50

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 gal/$ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 60.00 (WELL DEPTH) − 38.77 (DEPTH TO WATER) = 21.23 FT
3.14 X 0.08 ($r^2$) X h = 21.23 $FT^3$ X 7.48 gal/$FT^3$ = 1 WELL VOLUME IN GAL = 3.19

WELLPURG.DWG

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-2R
WELL INSIDE DIAMETER 2.0 INCHES
DEPTH OF BOTTOM 21.00' FEET
LENGTH OF GRAVEL PACK 17.00 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00162-082-018
DATE 1/17/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS COLD, WET, FOG, SNOWY
HNU/OVA READING NA
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| FLUSHING | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| WATER LEVEL BEFORE | 11.21 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 12:10 | | | | |
| TIME END FLUSHING | 12:25 | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 1 | 3 | 5 | |
| WELL VOLUMES REMOVED | 0 | 0.68 | 2.04 | 3.40 | |

| FIELD ANALYSIS | | | | | |
|---|---|---|---|---|---|
| WATER TEMPERATURE (°C) | 51.25° | 52.25 | 53.00° | 53.25° | |
| SAMPLE (pH) | 5.96 | 5.93 | 5.94 | 5.93 | |
| SAMPLE CONDUCTIVITY (umhos/cm) | 2400 | 2200 | 1900 | 2500 | |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | |
| BUFFER AFTER | 4 | 4 | 4 | 4 | |
| ODOR | ROTTEN ODOR ~~NONE~~ | MANURE ODOR | SAME | SAME | |
| COLOR | CLEAR | FAINT YELLOW | LIGHT GRAY-BROWN | SAME | |
| OTHER | | | | | |

| COMMENTS |
|---|
| SAMPLED 12:30 |
| |
| |

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 $gal/ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 21.00 (WELL DEPTH) − 11.21 (DEPTH TO WATER) = 9.79 FT
3.14 X 0.08 ($r^2$) X h = 9.79 $FT^3$ X 7.48 $gal/FT^3$ = 1 WELL VOLUME IN GAL = 1.47

WELLPURG.DWG

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-3
WELL INSIDE DIAMETER 2.0 INCHES
DEPTH OF BOTTOM 43.25' FEET
LENGTH OF GRAVEL PACK 17.0 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00162-092-018
DATE 1/17/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS CLOUDY, COOL, WET, CRAWY
HNU/OVA READING NA
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| FLUSHING | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| WATER LEVEL BEFORE | 37.42 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 1730 | | | | |
| TIME END FLUSHING | 1750 | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 1 | 2 | 3 | 4 |
| WELL VOLUMES REMOVED | 0 | 1.14 | 2.27 | 3.41 | 4.55 |

| FIELD ANALYSIS | | | | | |
|---|---|---|---|---|---|
| WATER TEMPERATURE (°C) | 56.0°f | 56.5°f | 56.25°f | 56.0°f | 56.0°f |
| SAMPLE (pH) | 6.24 | 6.06 | 5.98 | 5.90 | 5.83 |
| SAMPLE CONDUCTIVITY (umhos/cm) | 100 | 90 | 70 | 70 | 100 |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | 4 |
| BUFFER AFTER | 4 | 4 | 4 | 4 | 4 |
| ODOR | NONE | NONE | NONE | NONE | NONE |
| COLOR | clear | Brown | Same | Same | Same |
| OTHER | | TURBID | same | Same | Same |

## COMMENTS

Sampled 1755

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 gal/$ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 43.25 (WELL DEPTH) − 37.42 (DEPTH TO WATER) = 5.83 FT
3.14 X 0.08 ($r^2$) X h = 5.83 $FT^3$ X 7.48 gal/$FT^3$ = 1 WELL VOLUME IN GAL = 0.88

WELLPURG.DWG

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-4R
WELL INSIDE DIAMETER 2.0 INCHES
DEPTH OF BOTTOM 20.00 FEET
LENGTH OF GRAVEL PACK 17.00 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00162-089-018
DATE 1/17/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS CLOUDY, COLD, WET
HNU/OVA READING NA
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| FLUSHING | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| WATER LEVEL BEFORE | 9.90 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 16:40 | | | | |
| TIME END FLUSHING | 17:05 | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 2 | 4 | 6 | |
| WELL VOLUMES REMOVED | 0 | 1.32 | 2.63 | 3.95 | |

| FIELD ANALYSIS | | | | | |
|---|---|---|---|---|---|
| WATER TEMPERATURE (°C) | 50.25°f | 52.00°f | 50.50 | 50.75°f | |
| SAMPLE (pH) | 6.08 | 6.07 | 6.13 | 6.14 | |
| SAMPLE CONDUCTIVITY (umhos/cm) | 1400 | 1600 | 1500 | 1600 | |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | |
| BUFFER AFTER | 4 | 4 | 4 | 4 | |
| ODOR | NONE | NONE | NONE | NONE | |
| COLOR | Clear | faint yellow | same | same | |
| OTHER | | | | | |

| COMMENTS |
|---|
| Sampled 1710 |
| |
| |

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 $gal/ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 20.00 (WELL DEPTH) − 9.90 (DEPTH TO WATER) = 10.10 FT
3.14 X 0.08 ($r^2$) X h = 10.10 $FT^3$ X 7.48 $gal/FT^3$ = 1 WELL VOLUME IN GAL = 1.52

WELLPURG.DWG

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-5R
WELL INSIDE DIAMETER 2.0 INCHES
DEPTH OF BOTTOM 30.0 FEET
LENGTH OF GRAVEL PACK 17.0 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00167-082-015
DATE 1/17/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS CLOUDY, COLD, WET
HNU/OVA READING NA
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| **FLUSHING** | | | | | |
| WATER LEVEL BEFORE | 12.26 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 15:20 | | | | |
| TIME END FLUSHING | | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 2.5 | 5.5 | 8.5 | |
| WELL VOLUMES REMOVED | 0 | 0.94 | 2.06 | 3.18 | |
| **FIELD ANALYSIS** | | | | | |
| WATER TEMPERATURE (°C) | 54.00°f | 55°f | 55°f | 55.50°f | |
| SAMPLE (pH) | 6.34 | 6.32 | 6.30 | 6.30 | |
| SAMPLE CONDUCTIVITY (umhos/cm) | 1200 | 1600 | 1600 | 1400 | |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | |
| BUFFER AFTER | 4 | 4 | 4 | 4 | |
| ODOR | None | None | None | None | |
| COLOR | clear | yellow brown | same | same | |
| OTHER | | sl turbid | same | same | |

**COMMENTS**

Sampled 15:45

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 $gal/ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 30.00 (WELL DEPTH) − 12.26 (DEPTH TO WATER) = 17.74 FT
3.14 × 0.08 ($r^2$) × h = 17.74 $FT^3$ × 7.48 $gal/FT^3$ = 1 WELL VOLUME IN GAL = 2.67

WELLPURG.DWG

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-6
WELL INSIDE DIAMETER 2.0 INCHES
DEPTH OF BOTTOM 60.00' FEET
LENGTH OF GRAVEL PACK 17.00 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00162-082-018
DATE 1/17/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS CLOUDY, COOL, WET
HNU/OVA READING NA
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| FLUSHING | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| WATER LEVEL BEFORE | 50.94 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 13:30 | | | | |
| TIME END FLUSHING | 14:55 | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 2 | 4 | 5.5 | |
| WELL VOLUMES REMOVED | 0 | 1.47 | 2.94 | 4.04 | |

| FIELD ANALYSIS | | | | | |
|---|---|---|---|---|---|
| WATER TEMPERATURE (°C) | 56.00°f | 56.25°f | 56.50°f | 56°f | |
| SAMPLE (pH) | 6.44 | 6.33 | 6.21 | 6.05 | |
| SAMPLE CONDUCTIVITY (umhos/cm) | 80 | 76 | 71 | 72 | |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | |
| BUFFER AFTER | 4 | 4 | 4 | 4 | |
| ODOR | NONE | NONE | NONE | NONE | |
| COLOR | FAINT yellow BROWN | BROWN | BROWN | " | |
| OTHER | | TURBID | " | " | |

## COMMENTS

SAMPLED 1505

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 $gal/ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 60.00 (WELL DEPTH) − 50.94 (DEPTH TO WATER) = 9.06 FT
3.14 × 0.08 ($r^2$) × h = 9.06 $FT^3$ × 7.48 $gal/FT^3$ = 1 WELL VOLUME IN GAL = 1.36

WELLPURG.DWG

HDR
HDR Engineering, Inc.

# PRE-SAMPLING WELL PURGING

PROJECT WINSTON-SALEM C/D
WELL NUMBER MW-7
WELL INSIDE DIAMETER 2.0 INCHES
DEPTH OF BOTTOM 48.00 FEET
LENGTH OF GRAVEL PACK 17.00 FEET
DIAMETER OF GRAVEL PACK 8.0 INCHES

PROJECT NUMBER 00162-082-018
DATE 1/18/96 PAGE 1 OF 1
AIR TEMPERATURE (FAHRENHEIT) 42°
WEATHER CONDITIONS CLOUDY, COOL, WET
HNU/OVA READING NA
METHOD OF EVACUATION AND TYPE OF EQUIPMENT USED
TEFLON BAILER

## WITHDRAWAL OF WELL VOLUMES

| FLUSHING | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME | WELL VOLUME |
|---|---|---|---|---|---|
| WATER LEVEL BEFORE | 35.88 | | | | |
| WATER LEVEL AFTER | | | | | |
| TIME BEGIN FLUSHING | 16:00 | | | | |
| TIME END FLUSHING | 16:20 | | | | |
| ESTIMATED VOLUME FLUSHING (gal) | 0 | 2 | 4 | 6.6 | |
| WELL VOLUMES REMOVED | 0 | 1.10 | 2.20 | 3.63 | |

| FIELD ANALYSIS | | | | | |
|---|---|---|---|---|---|
| WATER TEMPERATURE (°C) | 55.00°F | 55.00°F | 55.35 | 55.00°F | |
| SAMPLE (pH) | 6.32 | 6.20 | 6.12 | 6.07 | |
| SAMPLE CONDUCTIVITY (umhos/cm) | 89 | 90 | 89 | 90 | |
| BUFFER BEFORE | 4 | 4 | 4 | 4 | |
| BUFFER AFTER | 4 | 4 | 4 | 4 | |
| ODOR | NONE | NONE | NONE | NONE | |
| COLOR | clear | BROWN | BROWN | BROWN | |
| OTHER | | SL TURBID | TURBID | TURBID | |

COMMENTS

Sampled 16:25

WELL VOLUME CALCULATIONS (1cf = 7.48 gal)
$\pi r^2 \times h$ = WELL VOLUME IN $FT^3$
$\pi$ = 3.14

r = RADIUS IN INCHES/12 = RADIUS IN FEET
h = HEIGHT OF WATER COLUMN IN WELL IN FEET
CONVERSION FROM $FT^3$ TO GALLONS = 7.48 gal/$ft^3$

WELL RADIUS = 1.0 IN/12 = 0.08 FT
h = 48.00 (WELL DEPTH) − 35.88 (DEPTH TO WATER) = 12.12 FT
3.14 × 0.08 ($r^2$) × h = 12.12 $FT^3$ × 7.48 gal/$FT^3$ = 1 WELL VOLUME IN GAL = 1.82

WELLPURG.DWG

Sample and Analysis Data Entry Form - New Sample(s)

Client No : 613151
Mr. John Isham : Client Contact
Tryon Street : Address
Suite 1400
Charlotte, NC 28202

704-338-1800 : Telephone No

Client P.O. No:
Project Manager: FCG Project Name: 00162-082-018
Name: Felicia C Grogan
Project Type:
Report Style: M
Desc:

Sample No: 92 053362.3 Collected Date: 1/17/96 Collected By: J. ISHAM
By: KHW Priority: 4
Due Date: 1/31/96 Sample Desc: MW-1R
GW GW GW GW
Comnt: RED-TH R1-18 CT1150 Matrix: WATER

| Analysis Abbr | Name: |
|---|---|
| APPIVOC | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

Sample No: 92 053363.1 Collected Date: 1/17/96 Collected By: J. ISHAM
By: KHW Priority: 4
Due Date: 1/31/96 Sample Desc: MW-2R
GW GW GW GW
Comnt: RED-TH R1-18 CT1230 Matrix: WATER

| | Name: |
|---|---|
| APPIVOC | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

Sample No: 92 053364.0 Collected Date: 1/17/96 Collected By: J. ISHAM
By: KHW Priority: 4
Due Date: 1/31/96 Sample Desc: MW-3
GW GW GW GW
Comnt: RED-TH R1-18 CT1755 Matrix: WATER

| Analysis Abbr | Name: |
|---|---|
| APPIVOC | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

PACE, Inc. reserves the right to return all samples at its discretion.

RECEIVED
JAN 22 1996
HDR
CHARLESTON, WV

Sample and Analysis Data Entry Form - New Sample(s)

HDR Engineering
Mr. John Isham
Client No : 613151
: Client Contact
Project No: 660118.501 Due Date: 2/01/96 Client P.O. No:

Collected By: J. ISHAM
Lab Rec'd Date: 1/18/96 Checked-In By: KHW Priority: 4
Sample Desc: MW-4R
Bottle Types: MU GV GV GV GV
R1-18 CT1710
Matrix: WATER

| Analysis Abbr: | Name: |
|---|---|
| APPIX | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

Collected Date: 1/17/96 Collected By: J. ISHAM
Lab Rec'd Date: 1/18/96 Checked-In By: KHW Priority: 4
Due Date: 1/31/96 Sample Desc: MW-5R
Bottle Types: MU GV GV GV GV
R1-18 CT1545
Matrix: WATER

| Analysis Abbr: | Name: |
|---|---|
| | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

Collected Date: 1/17/96 Collected By: J. ISHAM
Lab Rec'd Date: 1/18/96 Checked-In By: KHW Priority: 4
Sample Desc: MW-6
Bottle Types: MU GV GV GV GV
CT1505
Matrix: WATER

| Analysis Abbr: | Name: |
|---|---|
| | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

Collected Date Collected By: J. ISHAM
Lab Rec'd Date: 1/18/96 Checked-In By: KHW Priority: 4
Due Date: Sample Desc: MW-7
Bottle Types: MU GV GV GV GV
WATER

| Analysis Abbr: | Name: |
|---|---|
| | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

Collected Date: 1/17/96 Collected By: J. ISHAM
Lab Rec'd Date: 1/18/96 Checked-In By: KHW Priority: 4
Equipment Blank
Bottle Types: MU GV GV GV GV
WATER

| Analysis Abbr: | Name: |
|---|---|
| APPIX | APPENDIX I, LANDFILL VOLATILES |
| RCRA8 | RCRA METALS |

discretion.

Sample and Analysis Data Entry Form - New Sample(s)

HDR Engineering
Mr. John Isham

Client No : 613151
: Client Contact

[illegible] 000118.501 Due Date: 2/01/96 Client P.O. No:

Sample No: 92 053731.9 Collected Date: 1/17/96 Collected By: J. ISHAM
[illegible] By: KHW Priority: 4

Due Date: 1/31/96 Sample Desc: Trip Blank
[illegible] Types: GV GV
Comnt: RED-TH R1-18 Matrix: WATER

| Analysis Abbr: | Name: |
|---|---|
| APPIVOC | APPENDIX I, LANDFILL VOLATILES |
| [illegible] | RCRA METALS |

FCG 1/19/96

PACE, Inc. reserves the right to return all samples at its discretion.

# SAMPLE CONDITION UPON RECEIPT CHECKLIST

Client: HDR Engineering
Project: 660118501
Date Received: 1/18/96
Samples Received By: KHW

| | | |
|---|---|---|
| 1. | Is there a chain of custody (COC) or letter stating information contained on COC? | YES |
| 2. | Is the date and time relinquished in agreement with that written on the letter or COC? | YES |
| 3. | Do the samples received agree with the COC [illegible] number of samples, matrices, sample tags, sample containers, analyses, etc.)? | YES |
| 4. | Are all the samples within the holding times [illegible] analyses? Communicate any lapse of greater than 4 days beyond date of collection for VOA analysis. | YES |
| 5. | Are all the sample containers intact (i.e., not [illegible], leaking, etc.)? | YES |
| 6. | Are the sample at the proper temperature? | YES |
| [illegible] | [illegible] the analyses? | YES |
| 8. | Are the samples preserved correctly? | YES |
| [illegible] | [illegible] free? | YES |

'NO' Items Explained:
USE NCDEHNR DSWM PQLS FOR ALL PARAMETERS.

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ENVIRONMENTAL LABORATORIES

# REPORT OF LABORATORY ANALYSIS

February 01, 1996

RECEIVED
FEB 2 1996
HDR
CHARLOTTE, N.C.

Mr. John Isham
HDR Engineering
128 South Tryon Street
Suite 1400
Charlotte, NC 28202

RE: PACE Project No. 660118.501
Client Reference: 00162-082-018

Dear Mr. Isham:

Enclosed is the report of laboratory analyses for samples received January 18, 1996.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Tonda Wynn
for Felicia C Grogan
Project Manager

Enclosures

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Huntersville, NC 28078
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ENVIRONMENTAL LABORATORIES

# REPORT OF LABORATORY ANALYSIS

HDR Engineering
128 South Tryon Street
Suite 1400
Charlotte, NC 28202

February 01, 1996
PACE Project Number: 660118501

Attn: Mr. John Isham

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533623 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-1R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | 0.224 | | 01/26/96 |
| Cadmium | mg/L | 0.001 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | ND | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.006 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0018 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | 23 | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 2

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533623 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-1R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 105 | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 3

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533623 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-1R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Surrogate - Toluene-d8 | % | | 102 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 98 | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 4

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533631 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-2R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | 0.350 | | 01/26/96 |
| Cadmium | mg/L | 0.010 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | 0.012 | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.026 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0004 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | 86 | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |

# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 5

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533631 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-2R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 106 | | 01/24/96 |
| Surrogate - Toluene-d8 | % | | 102 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 97 | | 01/24/96 |

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 6

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533640 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-3 | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | 1.23 | | 01/26/96 |
| Cadmium | mg/L | 0.010 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | 0.009 | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.015 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0007 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 7

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533640 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-3 | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 105 | | 01/24/96 |
| Surrogate - Toluene-d8 | % | | 103 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 101 | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 8

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533658 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-4R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | 0.595 | | 01/26/96 |
| Cadmium | mg/L | 0.001 | 0.007 | | 01/26/96 |
| Chromium | mg/L | 0.005 | 0.021 | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.017 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0017 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 9

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0533658 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-4R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 104 | | 01/24/96 |
| Surrogate - Toluene-d8 | % | | 105 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 97 | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 10

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537270 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-5R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | 1.00 | | 01/26/96 |
| Cadmium | mg/L | 0.010 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | 0.096 | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.019 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0008 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 11

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537270 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-5R | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 106 | | 01/24/96 |
| Surrogate - Toluene-d8 | % | | 104 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 99 | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 12

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537289 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-6 | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ASH | | 01/26/96 |
| Barium | mg/L | 0.10 | 1.40 | | 01/26/96 |
| Cadmium | mg/L | 0.010 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | 0.012 | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.018 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0014 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 13

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537289 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-6 | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 107 | | 01/24/96 |
| Surrogate - Toluene-d8 | % | | 104 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 100 | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 14

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537297 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-7 | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | 1.93 | | 01/26/96 |
| Cadmium | mg/L | 0.010 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | 0.028 | | 01/26/96 |
| Lead | mg/L | 0.005 | 0.017 | | 01/26/96 |
| Mercury | mg/L | 0.0002 | 0.0014 | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/24/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/24/96 |
| Bromomethane | ug/L | 10 | ND | | 01/24/96 |
| Chloroethane | ug/L | 10 | ND | | 01/24/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Acetone | ug/L | 10 | ND | | 01/24/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/24/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/24/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/24/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/24/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/24/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/24/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/24/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| Chloroform | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/24/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 15

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537297 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | MW-7 | | |
| Parameter | Units | MDL | | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/24/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/24/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/24/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/24/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/24/96 |
| Toluene | ug/L | 5 | ND | | 01/24/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/24/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/24/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/24/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/24/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/24/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/24/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/24/96 |
| Styrene | ug/L | 5 | ND | | 01/24/96 |
| Bromoform | ug/L | 5 | ND | | 01/24/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/24/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/24/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/24/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/24/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/24/96 |
| Surrogate - Dibromofluoromethane | % | | 106 | | 01/24/96 |
| Surrogate - Toluene-d8 | % | | 103 | | 01/24/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 98 | | 01/24/96 |

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ENVIRONMENTAL LABORATORIES

# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 16

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537300 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | Equipment | | |
| Parameter | Units | MDL | Blank | METHOD | DATE ANALYZED |
| **INORGANIC ANALYSIS** | | | | | |
| RCRA METALS | | | | | |
| Arsenic | mg/L | 0.005 | ND | | 01/26/96 |
| Barium | mg/L | 0.10 | ND | | 01/26/96 |
| Cadmium | mg/L | 0.010 | ND | | 01/26/96 |
| Chromium | mg/L | 0.010 | ND | | 01/26/96 |
| Lead | mg/L | 0.005 | ND | | 01/26/96 |
| Mercury | mg/L | 0.0002 | ND | | 01/26/96 |
| Selenium | mg/L | 0.005 | ND | | 01/26/96 |
| Silver | mg/L | 0.001 | ND | | 01/26/96 |
| **ORGANIC ANALYSIS** | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/26/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/26/96 |
| Bromomethane | ug/L | 10 | ND | | 01/26/96 |
| Chloroethane | ug/L | 10 | ND | | 01/26/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/26/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/26/96 |
| Acetone | ug/L | 10 | ND | | 01/26/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/26/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/26/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/26/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/26/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/26/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/26/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/26/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/26/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/26/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/26/96 |
| Chloroform | ug/L | 5 | ND | | 01/26/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/26/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/26/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 17

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| PACE Sample Number: | | | 92 0537300 | | |
|---|---|---|---|---|---|
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | Equipment | | |
| Parameter | Units | MDL | Blank | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Benzene | ug/L | 5 | ND | | 01/26/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/26/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/26/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/26/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/26/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/26/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/26/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/26/96 |
| Toluene | ug/L | 5 | ND | | 01/26/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/26/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/26/96 |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/26/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/26/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/26/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/26/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/26/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/26/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/26/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/26/96 |
| Styrene | ug/L | 5 | ND | | 01/26/96 |
| Bromoform | ug/L | 5 | ND | | 01/26/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/26/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/26/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/26/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/26/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/26/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/26/96 |
| Surrogate - Dibromofluoromethane | % | | 102 | | 01/26/96 |
| Surrogate - Toluene-d8 | % | | 99 | | 01/26/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 98 | | 01/26/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 18

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| PACE Sample Number: | | | 92 0537319 | | |
|---|---|---|---|---|---|
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | Trip | | |
| Parameter | Units | MDL | Blank | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Methyl Chloride | ug/L | 10 | ND | | 01/25/96 |
| Chloroethene (Vinyl chloride) | ug/L | 10 | ND | | 01/25/96 |
| Bromomethane | ug/L | 10 | ND | | 01/25/96 |
| Chloroethane | ug/L | 10 | ND | | 01/25/96 |
| Trichlorofluoromethane | ug/L | 5 | ND | | 01/25/96 |
| 1,1-Dichloroethene | ug/L | 5 | ND | | 01/25/96 |
| Acetone | ug/L | 10 | ND | | 01/25/96 |
| Methyl iodide | ug/L | 5 | ND | | 01/25/96 |
| Carbon disulfide | ug/L | 5 | ND | | 01/25/96 |
| Dichloromethane | ug/L | 5 | ND | | 01/25/96 |
| Acrylonitrile | ug/L | 50 | ND | | 01/25/96 |
| trans-1,2-Dichloroethene | ug/L | 5 | ND | | 01/25/96 |
| 1,1-Dichloroethane | ug/L | 5 | ND | | 01/25/96 |
| Vinyl acetate | ug/L | 10 | ND | | 01/25/96 |
| Methyl ethyl ketone | ug/L | 10 | ND | | 01/25/96 |
| cis-1,2-Dichloroethene | ug/L | 5 | ND | | 01/25/96 |
| Bromochloromethane | ug/L | 5 | ND | | 01/25/96 |
| Chloroform | ug/L | 5 | ND | | 01/25/96 |
| 1,1,1-Trichloroethane | ug/L | 5 | ND | | 01/25/96 |
| Carbon tetrachloride | ug/L | 5 | ND | | 01/25/96 |
| Benzene | ug/L | 5 | ND | | 01/25/96 |
| 1,2-Dichloroethane | ug/L | 5 | ND | | 01/25/96 |
| Dibromomethane | ug/L | 5 | ND | | 01/25/96 |
| Trichloroethene | ug/L | 5 | ND | | 01/25/96 |
| 1,2-Dichloropropane | ug/L | 5 | ND | | 01/25/96 |
| Bromodichloromethane | ug/L | 5 | ND | | 01/25/96 |
| 4-Methyl-2-pentanone (MIBK) | ug/L | 10 | ND | | 01/25/96 |
| cis-1,3-Dichloropropene | ug/L | 5 | ND | | 01/25/96 |
| Toluene | ug/L | 5 | ND | | 01/25/96 |
| trans-1,3-Dichloro-1-propene | ug/L | 5 | ND | | 01/25/96 |
| 1,1,2-Trichloroethane | ug/L | 5 | ND | | 01/25/96 |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 19

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

| | | | | | |
|---|---|---|---|---|---|
| PACE Sample Number: | | | 92 0537319 | | |
| Date Collected: | | | 01/17/96 | | |
| Date Received: | | | 01/18/96 | | |
| Client Sample ID: | | | Trip | | |
| Parameter | Units | MDL | Blank | METHOD | DATE ANALYZED |
| ORGANIC ANALYSIS | | | | | |
| APPENDIX I, LANDFILL VOLATILES | | | | 8260 | |
| Tetrachloroethylene | ug/L | 5 | ND | | 01/25/96 |
| 2-Hexanone | ug/L | 10 | ND | | 01/25/96 |
| Dibromochloromethane | ug/L | 5 | ND | | 01/25/96 |
| 1,1,1,2-Tetrachloroethane | ug/L | 5 | ND | | 01/25/96 |
| 1,2-Dibromoethane | ug/L | 5 | ND | | 01/25/96 |
| Chlorobenzene | ug/L | 5 | ND | | 01/25/96 |
| Ethylbenzene | ug/L | 5 | ND | | 01/25/96 |
| Xylenes, total | ug/L | 5 | ND | | 01/25/96 |
| Styrene | ug/L | 5 | ND | | 01/25/96 |
| Bromoform | ug/L | 5 | ND | | 01/25/96 |
| trans-1,4-Dichloro-2-butene | ug/L | 5 | ND | | 01/25/96 |
| 1,1,2,2-Tetrachloroethane | ug/L | 5 | ND | | 01/25/96 |
| 1,2,3-Trichloropropane | ug/L | 5 | ND | | 01/25/96 |
| 1,4-Dichlorobenzene | ug/L | 5 | ND | | 01/25/96 |
| 1,2-Dichlorobenzene | ug/L | 5 | ND | | 01/25/96 |
| 1,2-Dibromo-3-chloropropane | ug/L | 5 | ND | | 01/25/96 |
| Surrogate - Dibromofluoromethane | % | | 102 | | 01/25/96 |
| Surrogate - Toluene-d8 | % | | 100 | | 01/25/96 |
| Surrogate - 4-Bromofluorobenzene | % | | 99 | | 01/25/96 |

RCRA Metals in Liquids
Analytical Methods: Barium, Cadmium, Chromium, Lead, Silver - EPA 200.7
Arsenic, Selenium - EPA 200.9
Mercury - EPA 245.1
Digestion Methods: Mercury - EPA 245.1
All Others - 200.2

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ENVIRONMENTAL LABORATORIES

# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 20

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

These data have been reviewed and are approved for release.

Dan H. Jones
Inorganic Department

Margaret S. Harding
Manager, Organic Chemistry

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 21

FOOTNOTES
for pages 1 through 20

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

MDL Method Detection Limit
ND Not detected at or above the MDL.

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# REPORT OF LABORATORY ANALYSIS



QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

Arsenic
Batch: 93 31305
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | | Units | Method Blank | MDL | Duplicate 920537270 of MW-5R | 92 0537270 |
|---|---|---|---|---|---|---|
| Arsenic | mg/L | 0.005 | ND | ND | ND | NC |

SPIKE:

| Parameter | | Units | 920537270 MW-5R | Spike MDL | Spike | Recv |
|---|---|---|---|---|---|---|
| Arsenic | mg/L | 0.005 | ND | 0.0250 | 105% | |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | | Units | Reference MDL | Recv | Dupl Value | Recv |
|---|---|---|---|---|---|---|
| Arsenic | mg/L | 0.005 | 0.0234 | 92% | 100% | 8% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 23

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

Barium
Batch: 93 31351
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920537270 MW-5R | Duplicate of 92 0537270 | RPD |
|---|---|---|---|---|---|---|
| Barium | mg/L | 0.10 | ND | 1.00 | 0.907 | 10% |

SPIKE:

| Parameter | Units | MDL | 920533658 MW 4R | Spike | Spike Recv |
|---|---|---|---|---|---|
| Barium | mg/L | 0.10 | 0.595 | 0.500 | 101% |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | Units | MDL | Reference Value | Recv | Dupl Recv | RPD |
|---|---|---|---|---|---|---|
| Barium | mg/L | 0.10 | 2.00 | 101% | 101% | 0% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 24

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 66011850l

Client Reference: 00162-082-018

Cadmium
Batch: 93 31326
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920537270 MW-5R | Duplicate of 92 0537270 | RPD |
|---|---|---|---|---|---|---|
| Cadmium | mg/L | 0.001 | ND | ND | ND | NC |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | Units | MDL | Reference Value | Recv | Dupl Recv | RPD |
|---|---|---|---|---|---|---|
| Cadmium | mg/L | 0.001 | 0.00311 | 101% | 94% | 7% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 25

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

Chromium
Batch: 93 31327
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920537270 MW-5R | Duplicate of 92 0537270 | RPD |
|---|---|---|---|---|---|---|
| Chromium | mg/L | 0.005 | ND | 0.096 | 0.086 | 11% |

SPIKE:

| Parameter | Units | MDL | 920533658 MW 4R | Spike | Spike Recv |
|---|---|---|---|---|---|
| Chromium | mg/L | 0.005 | 0.021 | 0.0040 | 100% |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | Units | MDL | Reference Value | Recv | Dupl Recv | RPD |
|---|---|---|---|---|---|---|
| Chromium | mg/L | 0.005 | 0.00969 | 97% | 97% | 0% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 26

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

Lead
Batch: 93 31349
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920537270 MW-5R | Duplicate of 92 0537270 | RPD |
|---|---|---|---|---|---|---|
| Lead | mg/L | 0.005 | ND | 0.019 | 0.019 | 0% |

SPIKE:

| Parameter | Units | MDL | 930169899 | Spike | Spike Recv |
|---|---|---|---|---|---|
| Lead | mg/L | 0.005 | ND | 0.0300 | 97% |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | Units | MDL | Reference Value | Recv | Dupl Recv | RPD |
|---|---|---|---|---|---|---|
| Lead | mg/L | 0.005 | 0.0300 | 101% | 101% | 0% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 27

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

Mercury
Batch: 93 31395
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920533631 MW 2R | Duplicate of 92 0533631 | RPD |
|---|---|---|---|---|---|---|
| Mercury | mg/L | 0.0002 | ND | 0.0004 | 0.0004 | 0% |

SPIKE:

| Parameter | Units | MDL | 930171990 | Spike | Spike Recv |
|---|---|---|---|---|---|
| Mercury | mg/L | 0.0002 | 0.0048 | 0.0020 | 115% |

LABORATORY CONTROL SAMPLE:

| Parameter | Units | MDL | Reference Value | Recv |
|---|---|---|---|---|
| Mercury | mg/L | 0.0002 | 0.0040 | 104% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 28

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 660118501

Client Reference: 00162-082-018

Selenium
Batch: 93 31361
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920537270 MW-5R | Duplicate of 92 0537270 | RPD |
|---|---|---|---|---|---|---|
| Selenium | mg/L | 0.005 | ND | ND | ND | NC |

SPIKE:

| Parameter | Units | MDL | 920533640 MW 3 | Spike | Spike Recv |
|---|---|---|---|---|---|
| Selenium | mg/L | 0.005 | ND | 0.0250 | 87% |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | Units | MDL | Reference Value | Recv | Dupl Recv | RPD |
|---|---|---|---|---|---|---|
| Selenium | mg/L | 0.005 | 0.0278 | 104% | 106% | 2% |

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# REPORT OF LABORATORY ANALYSIS

Mr. John Isham
Page 29

QUALITY CONTROL DATA

February 01, 1996
PACE Project Number: 66011850l

Client Reference: 00162-082-018

Silver
Batch: 93 31373
Samples: 92 0533623, 92 0533631, 92 0533640, 92 0533658, 92 0537270
92 0537289, 92 0537297, 92 0537300

METHOD BLANK AND SAMPLE DUPLICATE:

| Parameter | Units | MDL | Method Blank | 920537270 MW-5R | Duplicate of 92 0537270 | RPD |
|---|---|---|---|---|---|---|
| Silver | mg/L | 0.001 | ND | ND | ND | NC |

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

| Parameter | Units | MDL | Reference Value | Recv | Dupl Recv | RPD |
|---|---|---|---|---|---|---|
| Silver | mg/L | 0.001 | 0.00274 | 102% | 99% | 3% |

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Client Reference: 00162-082-018

| | |
|---|---|
| MDL | Method Detection Limit |
| NC | No calculation due to value below detection limit. |
| ND | Not detected at or above the MDL. |
| RPD | Relative Percent Difference |

## SURROGATE STANDARD RECOVERY

| LN | TEST CODE | SURROGATE COMPOUND | PERCENT RECOVERY | ACCEPTANCE LIMITS | REF LN |
|---|---|---|---|---|---|
| SAMPLE ID: 92-053362.3 | | | | SAMPLE NO: H420981 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 98 | - | |
| | | Dibromofluoromethane | 105 | - | |
| | | Toluene-d8 | 102 | - | |
| SAMPLE ID: 92-053363.1 | | | | SAMPLE NO: H420982 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 97 | - | |
| | | Dibromofluoromethane | 106 | - | |
| | | Toluene-d8 | 102 | - | |
| SAMPLE ID: 92-053364.0 | | | | SAMPLE NO: H420983 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 101 | - | |
| | | Dibromofluoromethane | 105 | - | |
| | | Toluene-d8 | 103 | - | |
| SAMPLE ID: 92-053365.8 | | | | SAMPLE NO: H420984 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 97 | - | |
| | | Dibromofluoromethane | 106 | - | |
| | | Toluene-d8 | 105 | - | |
| SAMPLE ID: 92-053727.0 | | | | SAMPLE NO: H420985 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 99 | - | |
| | | Dibromofluoromethane | 106 | - | |
| | | Toluene-d8 | 104 | - | |
| SAMPLE ID: 92-053728.9 | | | | SAMPLE NO: H420986 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 100 | - | |
| | | Dibromofluoromethane | 107 | - | |
| | | Toluene-d8 | 104 | - | |
| SAMPLE ID: 92-053729.7 | | | | SAMPLE NO: H420987 | |
| 2 | $VOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 98 | - | |
| | | Dibromofluoromethane | 106 | - | |

# REPORT OF LABORATORY ANALYSIS

## SURROGATE STANDARD RECOVERY

| LN | TEST CODE | SURROGATE COMPOUND | PERCENT RECOVERY | ACCEPTANCE LIMITS | REF LN |
|---|---|---|---|---|---|
| SAMPLE ID: 92-053729.7 | | | | SAMPLE NO: H420987 | |
| | | Toluene-d8 | 103 | - | |
| SAMPLE ID: 92-053730.0 | | | | SAMPLE NO: H420988 | |
| 2 | SVOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 98 | - | |
| | | Dibromofluoromethane | 102 | - | |
| | | Toluene-d8 | 99 | - | |
| SAMPLE ID: 92-053731.9 | | | | SAMPLE NO: H420989 | |
| 2 | SVOA2W | GC/MS Volatiles Surrogates (8260) | | | 1 |
| | | 4-Bromofluorobenzene | 99 | - | |
| | | Dibromofluoromethane | 102 | - | |
| | | Toluene-d8 | 100 | - | |

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# REPORT OF LABORATORY ANALYSIS

## LABORATORY CONTROL SAMPLE RECOVERY

| TEST CODE | DETERMINATION | LCS % RECOVERY | ACCEPTANCE LIMITS |
|---|---|---|---|
| BATCH NO: 59487 | | | SAMPLE NO: H362846 |
| OVTCWD | Volatiles by 8260 - Subtitle D | | |
| | 1,1-Dichloroethene | 116 | - |
| | Benzene | 111 | - |
| | Chlorobenzene | 114 | - |
| | Toluene | 114 | - |
| | Trichloroethene | 113 | - |
| BATCH NO: 59504 | | | SAMPLE NO: H362874 |
| OVTCWD | Volatiles by 8260 - Subtitle D | | |
| | 1,1-Dichloroethene | 99 | - |
| | Benzene | 103 | - |
| | Chlorobenzene | 101 | - |
| | Toluene | 103 | - |
| | Trichloroethene | 101 | - |
| BATCH NO: 59665 | | | SAMPLE NO: H363117 |
| OVTCWD | Volatiles by 8260 - Subtitle D | | |
| | 1,1-Dichloroethene | 97 | - |
| | Benzene | 103 | - |
| | Chlorobenzene | 105 | - |
| | Toluene | 102 | - |
| | Trichloroethene | 104 | - |

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# REPORT OF LABORATORY ANALYSIS

## METHOD BLANK DATA

| TEST CODE | DETERMINATION | RESULT | UNIT |
|---|---|---|---|
| BATCH NO: 59487 | | SAMPLE NO: H362847 | |
| OVTCWD | Volatiles by 8260 - Subtitle D | | |
| | 1,1,1,2-Tetrachloroethane | < 5 | ug/L |
| | 1,1,1-Trichloroethane | < 5 | ug/L |
| | 1,1,2,2-Tetrachloroethane | < 5 | ug/L |
| | 1,1,2-Trichloroethane | < 5 | ug/L |
| | 1,1-Dichloroethane | < 5 | ug/L |
| | 1,1-Dichloroethene | < 5 | ug/L |
| | 1,2,3-Trichloropropane | < 5 | ug/L |
| | 1,2-Dibromo-3-chloropropane | < 5 | ug/L |
| | 1,2-Dibromoethane | < 5 | ug/L |
| | 1,2-Dichlorobenzene | < 5 | ug/L |
| | 1,2-Dichloroethane | < 5 | ug/L |
| | 1,2-Dichloropropane | < 5 | ug/L |
| | 1,3-Dichlorobenzene | < 5 | ug/L |
| | 1,4-Dichlorobenzene | < 5 | ug/L |
| | 2-Butanone | < 10 | ug/L |
| | 2-Hexanone | < 10 | ug/L |
| | 4-Methyl-2-pentanone | < 10 | ug/L |
| | Acetone | < 10 | ug/L |
| | Acrolein | < 50 | ug/L |
| | Acrylonitrile | < 50 | ug/L |
| | Benzene | < 5 | ug/L |
| | Bromochloromethane | < 5 | ug/L |
| | Bromodichloromethane | < 5 | ug/L |
| | Bromoform | < 5 | ug/L |
| | Bromomethane | < 10 | ug/L |
| | Carbon disulfide | < 5 | ug/L |
| | Carbon tetrachloride | < 5 | ug/L |
| | Chlorobenzene | < 5 | ug/L |
| | Chloroethane | < 10 | ug/L |
| | Chloroform | < 5 | ug/L |
| | Chloromethane | < 10 | ug/L |
| | Dibromochloromethane | < 5 | ug/L |
| | Dibromomethane | < 5 | ug/L |
| | Ethylbenzene | < 5 | ug/L |
| | Iodomethane | < 5 | ug/L |
| | Methylene chloride | < 5 | ug/L |
| | Styrene | < 5 | ug/L |
| | Tetrachloroethene | < 5 | ug/L |
| | Toluene | < 5 | ug/L |
| | Trichloroethene | < 5 | ug/L |
| | Trichlorofluoromethane | < 5 | ug/L |
| | Vinyl acetate | < 10 | ug/L |
| | Vinyl chloride | < 10 | ug/L |
| | Xylenes (total) | < 5 | ug/L |

9800 Kincey Avenue Suite 100
Huntersville, NC 28078
TEL: 704-875-9092
FAX: 704-875-9091

An Equal Opportunity Employer

METHOD BLANK DATA

| TEST CODE | DETERMINATION | RESULT | UNIT |
|---|---|---|---|
| | cis-1,2-Dichloroethene | < 5 | ug/L |
| | cis-1,3-Dichloropropene | < 5 | ug/L |
| | trans-1,2-Dichloroethene | < 5 | ug/L |
| | trans-1,3-Dichloropropene | < 5 | ug/L |
| | trans-1,4-Dichloro-2-butene | < 5 | ug/L |

BATCH NO: 59504 SAMPLE NO: K362875

| | | | |
|---|---|---|---|
| OVTCWD | Volatiles by 8260 - Subtitle D | | |
| | 1,1,1,2-Tetrachloroethane | < 5 | ug/L |
| | 1,1,1-Trichloroethane | < 5 | ug/L |
| | 1,1,2,2-Tetrachloroethane | < 5 | ug/L |
| | 1,1,2-Trichloroethane | < 5 | ug/L |
| | 1,1-Dichloroethane | < 5 | ug/L |
| | 1,1-Dichloroethene | < 5 | ug/L |
| | 1,2,3-Trichloropropane | < 5 | ug/L |
| | 1,2-Dibromo-3-chloropropane | < 5 | ug/L |
| | 1,2-Dibromoethane | < 5 | ug/L |
| | 1,2-Dichlorobenzene | < 5 | ug/L |
| | 1,2-Dichloroethane | < 5 | ug/L |
| | 1,2-Dichloropropane | < 5 | ug/L |
| | 1,4-Dichlorobenzene | < 5 | ug/L |
| | 2-Butanone | < 10 | ug/L |
| | 2-Hexanone | < 10 | ug/L |
| | 4-Methyl-2-pentanone | < 10 | ug/L |
| | Acetone | < 10 | ug/L |
| | Acrylonitrile | < 50 | ug/L |
| | Benzene | < 5 | ug/L |
| | Bromochloromethane | < 5 | ug/L |
| | Bromodichloromethane | < 5 | ug/L |
| | Bromoform | < 5 | ug/L |
| | Bromomethane | < 10 | ug/L |
| | Carbon disulfide | < 5 | ug/L |
| | Carbon tetrachloride | < 5 | ug/L |
| | Chlorobenzene | < 5 | ug/L |
| | Chloroethane | < 10 | ug/L |
| | Chloroform | < 5 | ug/L |
| | Chloromethane | < 10 | ug/L |
| | Dibromochloromethane | < 5 | ug/L |
| | Dibromomethane | < 5 | ug/L |
| | Ethylbenzene | < 5 | ug/L |
| | Iodomethane | < 5 | ug/L |
| | Methyl iodide | < 5 | ug/L |
| | Methylene chloride | < 5 | ug/L |
| | Naphthalene | < 10 | ug/L |
| | Styrene | < 5 | ug/L |
| | Tetrachloroethene | < 5 | ug/L |

METHOD BLANK DATA

| TEST CODE | DETERMINATION | RESULT | UNIT |
|---|---|---|---|
| | Toluene | < 5 | ug/L |
| | Trichloroethene | < 5 | ug/L |
| | Trichlorofluoromethane | < 5 | ug/L |
| | Vinyl acetate | < 10 | ug/L |
| | Vinyl chloride | < 10 | ug/L |
| | Xylenes (total) | < 5 | ug/L |
| | cis-1,2-Dichloroethene | < 5 | ug/L |
| | cis-1,3-Dichloropropene | < 5 | ug/L |
| | trans-1,2-Dichloroethene | < 5 | ug/L |
| | trans-1,3-Dichloropropene | < 5 | ug/L |
| | trans-1,4-Dichloro-2-butene | < 5 | ug/L |

BATCH NO: 59665 SAMPLE NO: N363118

| | | | |
|---|---|---|---|
| OVTCWD | Volatiles by 8260 - Subtitle D | | |
| | 1,1,1,2-Tetrachloroethane | < 5 | ug/L |
| | 1,1,1-Trichloroethane | < 5 | ug/L |
| | 1,1,2,2-Tetrachloroethane | < 5 | ug/L |
| | 1,1,2-Trichloroethane | < 5 | ug/L |
| | 1,1-Dichloroethane | < 5 | ug/L |
| | 1,1-Dichloroethene | < 5 | ug/L |
| | 1,2,3-Trichloropropane | < 5 | ug/L |
| | 1,2-Dibromo-3-chloropropane | < 5 | ug/L |
| | 1,2-Dibromoethane | < 5 | ug/L |
| | 1,2-Dichlorobenzene | < 5 | ug/L |
| | 1,2-Dichloroethane | < 5 | ug/L |
| | 1,2-Dichloropropane | < 5 | ug/L |
| | 1,4-Dichlorobenzene | < 5 | ug/L |
| | 2-Butanone | < 10 | ug/L |
| | 2-Hexanone | < 10 | ug/L |
| | 4-Methyl-2-pentanone | < 10 | ug/L |
| | Acetone | < 10 | ug/L |
| | Acrylonitrile | < 50 | ug/L |
| | Benzene | < 5 | ug/L |
| | Bromochloromethane | < 5 | ug/L |
| | Bromodichloromethane | < 5 | ug/L |
| | Bromoform | < 5 | ug/L |
| | Bromomethane | < 10 | ug/L |
| | Carbon disulfide | < 5 | ug/L |
| | Carbon tetrachloride | < 5 | ug/L |
| | Chlorobenzene | < 5 | ug/L |
| | Chloroethane | < 10 | ug/L |
| | Chloroform | < 5 | ug/L |
| | Chloromethane | < 10 | ug/L |
| | Dibromochloromethane | < 5 | ug/L |
| | Dibromomethane | < 5 | ug/L |
| | Ethylbenzene | < 5 | ug/L |

METHOD BLANK DATA



| TEST CODE | DETERMINATION | RESULT | UNIT |
|---|---|---|---|
| | Iodomethane | | |
| | Methylene chloride | < 5 | ug/L |
| | Styrene | < 5 | ug/L |
| | Tetrachloroethene | < 5 | ug/L |
| | Toluene | < 5 | ug/L |
| | Trichloroethene | < 5 | ug/L |
| | Trichlorofluoromethane | < 5 | ug/L |
| | Vinyl acetate | < 5 | ug/L |
| | Vinyl chloride | < 10 | ug/L |
| | Xylenes (total) | < 10 | ug/L |
| | cis-1,2-Dichloroethene | < 5 | ug/L |
| | cis-1,3-Dichloropropene | < 5 | ug/L |
| | trans-1,2-Dichloroethene | < 5 | ug/L |
| | trans-1,3-Dichloropropene | < 5 | ug/L |
| | trans-1,4-Dichloro-2-butene | < 5 | ug/L |

# REPORT OF LABORATORY ANALYSIS

## MATRIX SPIKE AND MATRIX SPIKE DUPLICATE DATA

BATCH NO: 59395 SAMPLE NO: H420671

| TEST CODE | DETERMINATION | MS RESULT | MSD RESULT | UNITS | RPD | MS PCT RCVRY | MSD PCT RCVRY |
|---|---|---|---|---|---|---|---|
| OVPPW | Volatiles in Water | | | | | | |
| | 1,1-Dichloroethene | 20.1 | 20.1 | ug/L | 0.10 | 100 | 101 |
| | Benzene | 20.9 | 20.4 | ug/L | 2.03 | 104 | 102 |
| | Chlorobenzene | 19.9 | 19.8 | ug/L | 0.30 | 99 | 99 |
| | Toluene | 20.3 | 20.0 | ug/L | 1.24 | 101 | 100 |
| | Trichloroethene | 19.6 | 19.3 | ug/L | 1.18 | 98 | 97 |

pace INCORPORATED

ENVIRONMENTAL LABORATORIES

282587

**CHAIN-OF-CUSTODY RECORD**
**Analytical Request**

Client HDR ENGINEERING

Address 128 S. TRYON ST.
SUITE 1400, CHARLOTTE, 28202

Phone (704) 338-1800

Report To: SAME AS LEFT

Bill To: SAME AS LEFT

P.O. # / Billing Reference

Project Name / No. 00162-082-018

Pace Client No.

Pace Project Manager

Pace Project No.

*Requested Due Date: NORMAL

Sampled By (PRINT): JOHN R. ISHAM

Sampler Signature: John R. Isham

Date Sampled: 1/17/96

| ITEM NO. | SAMPLE DESCRIPTION | TIME | MATRIX | PACE NO. | NO. OF CONTAINERS | UNPRESERVED | $H_2SO_4$ | $HNO_3$ | VOA | | | ANALYSES REQUEST: 8260 VOCs | ANALYSES REQUEST: RCRA 8 METALS | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1R | 1150 | GW | | 5 | | | | | | | 4 | 1 | USE NCDEHNR |
| 2 | MW-2R | 1230 | GW | | 5 | | | | | | | 4 | 1 | DSWM PQLs |
| 3 | MW-3 | 1755 | GW | | 5 | | | | | | | 4 | 1 | FOR ALL |
| 4 | MW-4R | 1710 | GW | | 5 | | | | | | | 4 | 1 | PARAMETERS |
| 5 | MW-5R | 1545 | GW | | 5 | | | | | | | 4 | 1 | |
| 6 | MW-6 | 1505 | GW | | 5 | | | | | | | 4 | 1 | |
| 7 | MW-7 | 1625 | GW | | 5 | | | | | | | 4 | 1 | |
| 8 | EQUIPMENT BLANK | 1700 | W | | 5 | | | | | | | 4 | 1 | |

| COOLER NOS. | BAILERS | SHIPMENT METHOD OUT/DATE | SHIPMENT METHOD RETURNED/DATE |
|---|---|---|---|
| | | | |

| ITEM NUMBER | RELINQUISHED BY / AFFILIATION | ACCEPTED BY / AFFILIATION | DATE | TIME |
|---|---|---|---|---|
| 1-8 | John R. Isham HDR | Wendy Jones | 1/18/96 | 8:00 AM |

Additional Comments

(2) VOAS INCLUDED AS TRIP BLANKS FOR 8260