**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

RECEIVED
MAY - 7 2004
LANDAU ASSOCIATES, INC.

4 May 2004

Stacy Pischer
Landau Associates, Inc.
130 Second Avenue South
Edmonds, WA 98020-9129

**RE: Project: POA Uplands / 529009.311**
**ARI Job No: GM76**

Dear Stacy:

Please find enclosed the original chain of custody (COC) records and the analytical results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted eighteen soil samples on April 5, 2004 in good condition. There were no discrepancies between the COC and the sample containers' labels.

The samples were analyzed for PAHs, PCBs, NWTPH-Dx with acid/silica gel cleanups, total metals, and dioxins/furans as requested. The test for dioxins/furans was sub-contracted to Pace Analytical Services in Minneapolis, MN. Quality control analyses are included for your review.

Many of the samples showed relatively high percent moistures, resulting in higher reporting limits.

The high hydrocarbon interference in the PAH analyses prevented more concentrated analyses of the samples.

The standards in the NWTPH-Dx analyses were acid/silica cleaned as per the method.

A matrix spike and sample duplicate were performed on sample **LSB-1,4-4.5** for the total metals analyses. The relative percent differences (RPDs) for arsenic and mercury in the duplicate were outside the control limits. The client was contacted regarding the mercury RPD and determined that no corrective action was necessary. The data reviewer evaluated the arsenic RPD and determined that no corrective action was necessary. The level of detection of arsenic was relatively low. Higher RPDs result from lower absolute values. Recoveries of arsenic and mercury in the matrix spike were good as well as recoveries in the laboratory control sample.

**Pischer**
**Landau Associates, Inc.**
**Client Project: POA Uplands / 529009.311**
**ARI Job Number: GM76**
**Page 2**

Recovery of antimony in the matrix spike was low. Low spike recoveries are typical for antimony. The low recovery of antimony is due to formation of Sb205 in the presence of nitric acid. This antimony oxide compound is very adsorptive and is lost on silicate surfaces (i.e. sand and soil). The addition of HCl to the digestion, as required by method 3050 for ICP analysis, converts some of this adsorptive oxide to the SbCl6 anion, which does not adsorb on undigested siliceous materials. However, this conversion is not quantitative. Recovery of antimony in the laboratory control sample was good.

No further analytical complications were noted.

A copy of this report and all associated raw data will remain on file with ARI. If you have any questions or require additional information, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mary Lou Fox

Mary Lou Fox
Project Manager
206/695-6211
marylou@arilabs.com

Enclosures
cc: GM76
MLF/mlf

GM76

30

☒ Seattle (Edmonds) (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (Lake Oswego) (503) 443-6010
☐ _____

Landau Associates

# Chain-of-Custody Record

Date 4/2/04
Page 1 of 2

Project Name POA Uplands Project No. 529009.311
Project Location/Event Anacortes, WA
Sampler's Name Ken Reid
Project Contact Stacy Pischer
Send Results To " "

Turnaround Time
☒ Standard
☐ Accelerated
☐ _____

| Sample I.D. | Date | Time | Matrix | No. of Containers | Metals * | NWTPH-Dx ** | PCB's | PAH's | cPAH's | Dioxins/Furans | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LSB-1, 4-4.5 | 4/1/04 | 1345 | Soil | 3 | ✓ | ✓ | | | | ✓ | * Antimony, arsenic, cadmium, copper, lead, mercury, nickle, thallium |
| LSB-1, 6-6.5 | | 1400 | | 2 | ✓ | ✓ | | | | ✓ | |
| LSB-1, 9-10 | | 1405 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-1, 18-19 | | 1410 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-2, 4-5 | | 1500 | | 2 | ✓ | ✓ | no cPAH's | no PAH's | | ✓ | ** Acid/silica gel cleanup required on all samples. Also analyze for heavy oil-range hydrocarbons |
| LSB-2, 6-7 | | 1505 | | 3 | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| LSB-2, 10-11 | | 1510 | | 2 | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| LSB-2, 17-18 | | 1525 | | 2 | ✓ | ✓ | ✓ | ✓ | | ✓ | |
| LSB-7, 4-5 | 4/2/04 | 0845 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-7, 7-8 | | 0855 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-8, 4-5 | | 0945 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-8, 6-7 | | 0955 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-3, 4-5 | | 1050 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-3, 6-7 | | 1100 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-4, 4-5 | | 1215 | | 3 | ✓ | ✓ | | | | ✓ | |
| LSB-4, 6-7 | | 1220 | | 3 | ✓ | ✓ | ✓ | | ✓ | ✓ | |

Special Shipment/Handling or Storage Requirements On ice

Method of Shipment ARI Courier

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature Stacy Pischer | Signature | Signature | Signature |
| Printed Name STACY PISCHER | Printed Name ERIC BRANSON | Printed Name | Printed Name |
| Company LANDAU ASSOC | Company ARI | Company | Company |
| Date 4/5/04 Time 1140 | Date 4/5/04 Time 1740 | Date Time | Date Time |

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Rev 4/01

GM76

☒ Seattle (Edmonds) (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (Lake Oswego) (503) 443-6010
☐ _____

Landau Associates

# Chain-of-Custody Record

Date 4/2/04
Page 2 of 2

Project Name DOA Uplands  Project No. 529009.31
Project Location/Event Anacortes WA
Sampler's Name KJR
Project Contact Stacy Pischer
Send Results To " "

Turnaround Time
☒ Standard
☐ Accelerated
☐ _____

| Sample I.D. | Date | Time | Matrix | No. of Containers | Metals * | NWTPH-Dx ** | PCB's | PAH's | cPAH's | Dioxins/Furans | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LSB-4, 10-11 | 4/2/04 | 1225 | Soil | 3 | ✓ | ✓ | | | | ✓ | * See Page 1 |
| LSB-4, 14-15 | ↓ | 1230 | ↓ | 3 | ✓ | ✓ | | | | ✓ | ** See Page 1 |

Special Shipment/Handling or Storage Requirements On-ice

Method of Shipment ARI Courier

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature: Stacy Pischer | Signature: | Signature: | Signature: |
| Printed Name: STACY PISCHER | Printed Name: ERIC BRANSON | Printed Name: | Printed Name: |
| Company: LANDAU ASSOC | Company: ARI | Company: | Company: |
| Date: 4/5/04 Time: 1140 | Date: 4/5/04 Time: 1740 | Date: Time: | Date: Time: |

WHITE COPY - Project File  YELLOW COPY - Laboratory  PINK COPY - Client Representative

Rev 4/01

**Analytical Resources, Incorporated**
Analytical Chemists and Consultants

## ORGANIC COMPOUND DATA REPORTING QUALIFIERS

| | |
|---|---|
| U | Indicates the compound was undetected at the reported concentration. (Same as ND). |
| J | Indicates an estimated concentration when the value is less than the calculated reporting limit. |
| D | Indicates the surrogate/spike(s) was not detected, due to dilution of extract. |
| NR | Indicates the surrogate recovery cannot be reported due to matrix interference. |
| E | Indicates a value above the linear range of the detector. Sample dilution required. |
| S | Indicates no value reported due to saturation of the detector. Sample dilution required. |
| NA | Indicates compound not analyzed for. |
| M | Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match. |
| B | Indicates possible/probable blank contamination. Flagged when the analyte is detected in the blank as well as the sample. |
| Y | Indicates raised reporting limit due to background interference or to activity on the instrument. Compound is still not detected at or above the raised level. |
| C | Indicates a probable hit that cannot be confirmed due to matrix interference (GC). |
| P | Indicates a high RPD for dual column GC analyses without obvious interference. |

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270C SIM GC/MS


Sample ID: MB-041504
METHOD BLANK

Lab Sample ID: MB-041504
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/21/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: NA
Date Received: NA

Date Extracted: 04/15/04
Date Analyzed: 04/19/04 18:58
Instrument/Analyst: NT6/Van
GPC Cleanup: No
Alumina: 1:1

Sample Amount: 7.50 g
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: NA
pH: NA

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 91-20-3 | Naphthalene | 6.7 | < 6.7 U |
| 91-57-6 | 2-Methylnaphthalene | 6.7 | < 6.7 U |
| 208-96-8 | Acenaphthylene | 6.7 | < 6.7 U |
| 83-32-9 | Acenaphthene | 6.7 | < 6.7 U |
| 86-73-7 | Fluorene | 6.7 | < 6.7 U |
| 85-01-8 | Phenanthrene | 6.7 | < 6.7 U |
| 120-12-7 | Anthracene | 6.7 | < 6.7 U |
| 206-44-0 | Fluoranthene | 6.7 | < 6.7 U |
| 129-00-0 | Pyrene | 6.7 | < 6.7 U |
| 56-55-3 | Benzo(a)anthracene | 6.7 | < 6.7 U |
| 218-01-9 | Chrysene | 6.7 | < 6.7 U |
| 205-99-2 | Benzo(b)fluoranthene | 6.7 | < 6.7 U |
| 207-08-9 | Benzo(k)fluoranthene | 6.7 | < 6.7 U |
| 50-32-8 | Benzo(a)pyrene | 6.7 | < 6.7 U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 6.7 | < 6.7 U |
| 53-70-3 | Dibenz(a,h)anthracene | 6.7 | < 6.7 U |
| 191-24-2 | Benzo(g,h,i)perylene | 6.7 | < 6.7 U |
| 132-64-9 | Dibenzofuran | 6.7 | < 6.7 U |

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

| | |
|---|---|
| d10-2-Methylnaphthalene | 69.3% |
| d14-Dibenzo(a,h)anthracene | 63.3% |

ANALYTICAL RESOURCES INCORPORATED

# SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311

| Client ID | MNP | DBA | TOT OUT |
|---|---|---|---|
| MB-041504 | 69.3% | 63.3% | 0 |
| LCS-041504 | 68.7% | 70.0% | 0 |
| LSB-2,6-7 | 74.0% | 48.7% | 0 |
| LSB-2,10-11 | 63.0% | 56.0% | 0 |
| LSB-2,17-18 | 73.0% | 62.3% | 0 |
| LSB-4,6-7 | 72.7% | 55.3% | 0 |

| | LCS/MB LIMITS | QC LIMITS |
|---|---|---|
| (MNP) = d10-2-Methylnaphthalene | (35-113) | (11-127) |
| (DBA) = d14-Dibenzo(a,h)anthracene | (26-142) | (10-153) |

Prep Method: SW3550B
Log Number Range: 04-5203 to 04-5213

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PNAs by SW8270C SIM GC/MS**


**Sample ID: LCS-041504**
**LAB CONTROL**

Lab Sample ID: LCS-041504
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/21/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/19/04 19:22
Instrument/Analyst: NT6/Van
GPC Cleanup: No
Alumina Cleanup: Yes

Sample Amount: 7.50 g
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
pH: NA
Moisture: NA

| Analyte | Lab Control | Spike Added | Recovery |
|---|---|---|---|
| Phenanthrene | 150 | 200 | 75.0% |
| Chrysene | 147 | 200 | 73.5% |
| Benzo(k)fluoranthene | 130 | 200 | 65.0% |

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

| | |
|---|---|
| d10-2-Methylnaphthalene | 68.7% |
| d14-Dibenzo(a,h)anthracene | 70.0% |

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270C SIM GC/MS


Sample ID: LSB-2,6-7
SAMPLE

Lab Sample ID: GM76F
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/21/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/20/04 16:00
Instrument/Analyst: NT6/Van
GPC Cleanup: No
Alumina: 1:2

Sample Amount: 0.62 g-dry-wt
Final Extract Volume: 2.0 mL
Dilution Factor: 1.00
Percent Moisture: 38.6 %
pH: 9.9

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 91-20-3 | Naphthalene | 320 | 2,300 |
| 91-57-6 | 2-Methylnaphthalene | 320 | 5,800 |
| 208-96-8 | Acenaphthylene | 320 | 580 |
| 83-32-9 | Acenaphthene | 320 | 710 |
| 86-73-7 | Fluorene | 320 | 1,800 |
| 85-01-8 | Phenanthrene | 320 | 10,000 |
| 120-12-7 | Anthracene | 320 | 1,600 |
| 206-44-0 | Fluoranthene | 320 | 6,000 |
| 129-00-0 | Pyrene | 320 | 8,200 |
| 56-55-3 | Benzo(a)anthracene | 320 | 2,400 |
| 218-01-9 | Chrysene | 320 | 3,900 |
| 205-99-2 | Benzo(b)fluoranthene | 320 | 2,100 |
| 207-08-9 | Benzo(k)fluoranthene | 320 | 1,700 |
| 50-32-8 | Benzo(a)pyrene | 320 | 2,000 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 320 | 970 |
| 53-70-3 | Dibenz(a,h)anthracene | 320 | < 320 U |
| 191-24-2 | Benzo(g,h,i)perylene | 320 | 1,200 |
| 132-64-9 | Dibenzofuran | 320 | 360 |

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

| | |
|---|---|
| d10-2-Methylnaphthalene | 74.0% |
| d14-Dibenzo(a,h)anthracene | 48.7% |

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270C SIM GC/MS


Sample ID: LSB-2,10-11
SAMPLE

Lab Sample ID: GM76G
LIMS ID: 04-5204
Matrix: Soil
Data Release Authorized:
Reported: 04/21/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/20/04 16:25
Instrument/Analyst: NT6/Van
GPC Cleanup: No
Alumina: 1:1

Sample Amount: 0.24 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 80.7 %
pH: 7.8

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 91-20-3 | Naphthalene | 210 | < 210 U |
| **91-57-6** | **2-Methylnaphthalene** | **210** | **400** |
| 208-96-8 | Acenaphthylene | 210 | < 210 U |
| 83-32-9 | Acenaphthene | 210 | < 210 U |
| 86-73-7 | Fluorene | 210 | < 210 U |
| **85-01-8** | **Phenanthrene** | **210** | **670** |
| 120-12-7 | Anthracene | 210 | < 210 U |
| **206-44-0** | **Fluoranthene** | **210** | **830** |
| **129-00-0** | **Pyrene** | **210** | **790** |
| **56-55-3** | **Benzo(a)anthracene** | **210** | **270** |
| **218-01-9** | **Chrysene** | **210** | **380** |
| **205-99-2** | **Benzo(b)fluoranthene** | **210** | **350** |
| **207-08-9** | **Benzo(k)fluoranthene** | **210** | **250** |
| **50-32-8** | **Benzo(a)pyrene** | **210** | **330** |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 210 | < 210 U |
| 53-70-3 | Dibenz(a,h)anthracene | 210 | < 210 U |
| 191-24-2 | Benzo(g,h,i)perylene | 210 | < 210 U |
| 132-64-9 | Dibenzofuran | 210 | < 210 U |

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

| | |
|---|---|
| d10-2-Methylnaphthalene | 63.0% |
| d14-Dibenzo(a,h)anthracene | 56.0% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PNAs by SW8270C SIM GC/MS**
Page 1 of 1

**Sample ID: LSB-2,17-18**
**SAMPLE**

Lab Sample ID: GM76H
LIMS ID: 04-5205
Matrix: Soil
Data Release Authorized:
Reported: 04/21/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/20/04 16:49
Instrument/Analyst: NT6/Van
GPC Cleanup: No
Alumina: 1:1

Sample Amount: 0.20 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 73.2 %
pH: 8.0

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| **91-20-3** | **Naphthalene** | **250** | **380** |
| **91-57-6** | **2-Methylnaphthalene** | **250** | **2,000** |
| 208-96-8 | Acenaphthylene | 250 | < 250 U |
| 83-32-9 | Acenaphthene | 250 | < 250 U |
| **86-73-7** | **Fluorene** | **250** | **400** |
| **85-01-8** | **Phenanthrene** | **250** | **1,600** |
| 120-12-7 | Anthracene | 250 | < 250 U |
| **206-44-0** | **Fluoranthene** | **250** | **650** |
| **129-00-0** | **Pyrene** | **250** | **1,200** |
| **56-55-3** | **Benzo(a)anthracene** | **250** | **420** |
| **218-01-9** | **Chrysene** | **250** | **680** |
| 205-99-2 | Benzo(b)fluoranthene | 250 | < 250 U |
| 207-08-9 | Benzo(k)fluoranthene | 250 | < 250 U |
| **50-32-8** | **Benzo(a)pyrene** | **250** | **280** |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 250 | < 250 U |
| 53-70-3 | Dibenz(a,h)anthracene | 250 | < 250 U |
| 191-24-2 | Benzo(g,h,i)perylene | 250 | < 250 U |
| 132-64-9 | Dibenzofuran | 250 | < 250 U |

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

| | |
|---|---|
| d10-2-Methylnaphthalene | 73.0% |
| d14-Dibenzo(a,h)anthracene | 62.3% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PNAs by SW8270C SIM GC/MS**
Page 1 of 1

**Sample ID: LSB-4,6-7**
**SAMPLE**

Lab Sample ID: GM76P
LIMS ID: 04-5213
Matrix: Soil
Data Release Authorized:
Reported: 04/21/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/20/04 17:46
Instrument/Analyst: NT6/Van
GPC Cleanup: No
Alumina: 1:1

Sample Amount: 0.94 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 38.9 %
pH: 7.4

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 56-55-3 | Benzo(a)anthracene | 110 | < 110 U |
| **218-01-9** | **Chrysene** | **110** | **140** |
| 205-99-2 | Benzo(b)fluoranthene | 110 | < 110 U |
| 207-08-9 | Benzo(k)fluoranthene | 110 | < 110 U |
| 50-32-8 | Benzo(a)pyrene | 110 | < 110 U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 110 | < 110 U |
| 53-70-3 | Dibenz(a,h)anthracene | 110 | < 110 U |

Reported in µg/kg (ppb)

**SIM Semivolatile Surrogate Recovery**

| | |
|---|---|
| d10-2-Methylnaphthalene | 72.7% |
| d14-Dibenzo(a,h)anthracene | 55.3% |

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082


Sample ID: MB-041504
METHOD BLANK

Lab Sample ID: MB-041504
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/22/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: NA
Date Received: NA

Date Extracted: 04/15/04
Date Analyzed: 04/21/04 19:40
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
pH: NA
Percent Moisture: NA

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 33 | < 33 U |
| 53469-21-9 | Aroclor 1242 | 33 | < 33 U |
| 12672-29-6 | Aroclor 1248 | 33 | < 33 U |
| 11097-69-1 | Aroclor 1254 | 33 | < 33 U |
| 11096-82-5 | Aroclor 1260 | 33 | < 33 U |
| 11104-28-2 | Aroclor 1221 | 33 | < 33 U |
| 11141-16-5 | Aroclor 1232 | 33 | < 33 U |

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

| | |
|---|---|
| Decachlorobiphenyl | 68.2% |
| Tetrachlorometaxylene | 58.5% |

ANALYTICAL RESOURCES INCORPORATED

## SW8082/PCB SOIL/SEDIMENTS SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311

| Client ID | DCBP | TCMX | TOT OUT |
|---|---|---|---|
| MB-041504 | 68.2% | 58.5% | 0 |
| LCS-041504 | 67.5% | 47.2% | 0 |
| LSB-2,6-7 | 41.8% | 36.5% | 0 |
| LSB-2,10-11 | 38.2% | 39.2% | 0 |
| LSB-2,17-18 | 42.2% | 35.5% | 0 |
| LSB-4,6-7 | 54.8% | 48.8% | 0 |

| | LCS/MB LIMITS | QC LIMITS |
|---|---|---|
| (DCBP) = Decachlorobiphenyl | (44-131) | (18-161) |
| (TCMX) = Tetrachlorometaxylene | (27-125) | (18-136) |

Prep Method: SW3550B
Log Number Range: 04-5203 to 04-5213

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PCB by GC/ECD MethodSW8082**


**Sample ID: LCS-041504**
**LAB CONTROL**

Lab Sample ID: LCS-041504
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/22/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/21/04 20:01
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
pH: NA
Percent Moisture: NA

| Analyte | Lab Control | Spike Added | Recovery |
|---|---|---|---|
| Aroclor 1016 | 189 | 333 | 56.8% |
| Aroclor 1260 | 238 | 333 | 71.5% |

**PCB Surrogate Recovery**

| | |
|---|---|
| Decachlorobiphenyl | 67.5% |
| Tetrachlorometaxylene | 47.2% |

Results reported in µg/kg (ppb)

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PCB by GC/ECD Method SW8082**
Page 1 of 1

**Sample ID: LSB-2,6-7**
**SAMPLE**

Lab Sample ID: GM76F
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/22/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/21/04 20:22
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: No

Sample Amount: 7.39 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
pH: 9.9
Percent Moisture: 38.6%

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 54 | < 54 U |
| 53469-21-9 | Aroclor 1242 | 54 | < 54 U |
| 12672-29-6 | Aroclor 1248 | 54 | < 54 U |
| **11097-69-1** | **Aroclor 1254** | **54** | **660** |
| **11096-82-5** | **Aroclor 1260** | **54** | **270** |
| 11104-28-2 | Aroclor 1221 | 54 | < 54 U |
| 11141-16-5 | Aroclor 1232 | 54 | < 54 U |

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

| | |
|---|---|
| Decachlorobiphenyl | 41.8% |
| Tetrachlorometaxylene | 36.5% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PCB by GC/ECD Method SW8082**
Page 1 of 1

**Sample ID: LSB-2,10-11**
**SAMPLE**

Lab Sample ID: GM76G
LIMS ID: 04-5204
Matrix: Soil
Data Release Authorized:
Reported: 04/22/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/21/04 20:43
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: No

Sample Amount: 2.32 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
pH: 7.8
Percent Moisture: 80.7%

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 170 | < 170 U |
| 53469-21-9 | Aroclor 1242 | 170 | < 170 U |
| 12672-29-6 | Aroclor 1248 | 170 | < 170 U |
| 11097-69-1 | Aroclor 1254 | 170 | < 170 U |
| 11096-82-5 | Aroclor 1260 | 170 | < 170 U |
| 11104-28-2 | Aroclor 1221 | 170 | < 170 U |
| 11141-16-5 | Aroclor 1232 | 170 | < 170 U |

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

| | |
|---|---|
| Decachlorobiphenyl | 38.2% |
| Tetrachlorometaxylene | 39.2% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PCB by GC/ECD Method SW8082**
Page 1 of 1

**Sample ID: LSB-2,17-18**
**SAMPLE**

Lab Sample ID: GM76H
LIMS ID: 04-5205
Matrix: Soil
Data Release Authorized:
Reported: 04/22/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/21/04 21:04
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: No

Sample Amount: 3.23 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
pH: 8.0
Percent Moisture: 73.2%

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 120 | < 120 U |
| 53469-21-9 | Aroclor 1242 | 120 | < 120 U |
| 12672-29-6 | Aroclor 1248 | 120 | < 120 U |
| 11097-69-1 | Aroclor 1254 | 120 | < 120 U |
| 11096-82-5 | Aroclor 1260 | 120 | < 120 U |
| 11104-28-2 | Aroclor 1221 | 120 | < 120 U |
| 11141-16-5 | Aroclor 1232 | 120 | < 120 U |

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

| | |
|---|---|
| Decachlorobiphenyl | 42.2% |
| Tetrachlorometaxylene | 35.5% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**PCB by GC/ECD Method SW8082**
Page 1 of 1

**Sample ID: LSB-4,6-7**
**SAMPLE**

Lab Sample ID: GM76P
LIMS ID: 04-5213
Matrix: Soil
Data Release Authorized:
Reported: 04/22/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/21/04 21:25
Instrument/Analyst: ECD5/PK
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: No

Sample Amount: 7.35 g-dry-wt
Final Extract Volume: 4.0 mL
Dilution Factor: 1.00
Silica Gel: Yes
pH: 7.4
Percent Moisture: 38.9%

| CAS Number | Analyte | RL | Result |
|---|---|---|---|
| 12674-11-2 | Aroclor 1016 | 54 | < 54 U |
| 53469-21-9 | Aroclor 1242 | 54 | < 54 U |
| 12672-29-6 | Aroclor 1248 | 54 | < 54 U |
| **11097-69-1** | **Aroclor 1254** | **54** | **190** |
| 11096-82-5 | Aroclor 1260 | 54 | < 54 U |
| 11104-28-2 | Aroclor 1221 | 54 | < 54 U |
| 11141-16-5 | Aroclor 1232 | 54 | < 54 U |

Reported in µg/kg (ppb)

**PCB Surrogate Recovery**

| | |
|---|---|
| Decachlorobiphenyl | 54.8% |
| Tetrachlorometaxylene | 48.8% |

ANALYTICAL RESOURCES INCORPORATED

# TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 04/05/04

ARI Job: GM76
Project: POA Uplands
529009.311

| ARI ID | Client ID | Client Amt | Final Vol | Basis | Prep Date |
|---|---|---|---|---|---|
| 04-5198-041504MB1 | Method Blank | 10.0 g | 1.00 mL | - | 04/15/04 |
| 04-5198-041504LCS1 | Lab Control | 10.0 g | 1.00 mL | - | 04/15/04 |
| 04-5198-GM76A | LSB-1,4-4.5 | 6.92 g | 1.00 mL | D | 04/15/04 |
| 04-5198-GM76AMS | LSB-1,4-4.5 | 6.94 g | 1.00 mL | D | 04/15/04 |
| 04-5198-GM76AMSD | LSB-1,4-4.5 | 6.91 g | 1.00 mL | D | 04/15/04 |
| 04-5199-GM76B | LSB-1,6-6.5 | 6.04 g | 1.00 mL | D | 04/15/04 |
| 04-5200-GM76C | LSB-1,9-10 | 3.96 g | 1.00 mL | D | 04/15/04 |
| 04-5200-GM76CDP | LSB-1,9-10 | 3.96 g | 1.00 mL | D | 04/15/04 |
| 04-5201-GM76D | LSB-1,18-19 | 6.31 g | 1.00 mL | D | 04/15/04 |
| 04-5202-GM76E | LSB-2,4-5 | 9.57 g | 1.00 mL | D | 04/15/04 |
| 04-5203-GM76F | LSB-2,6-7 | 6.15 g | 5.00 mL | D | 04/15/04 |
| 04-5204-GM76G | LSB-2,10-11 | 1.93 g | 1.00 mL | D | 04/15/04 |
| 04-5205-GM76H | LSB-2,17-18 | 0.54 g | 1.00 mL | D | 04/15/04 |
| 04-5206-GM76I | LSB-7,4-5 | 6.31 g | 1.00 mL | D | 04/15/04 |
| 04-5207-GM76J | LSB-7,7-8 | 2.29 g | 1.00 mL | D | 04/15/04 |
| 04-5208-GM76K | LSB-8,4-5 | 6.85 g | 1.00 mL | D | 04/15/04 |
| 04-5209-GM76L | LSB-8,6-7 | 6.01 g | 1.00 mL | D | 04/15/04 |
| 04-5210-GM76M | LSB-3,4-5 | 6.36 g | 1.00 mL | D | 04/15/04 |
| 04-5211-GM76N | LSB-3,6-7 | 5.21 g | 1.00 mL | D | 04/15/04 |
| 04-5212-GM76O | LSB-4,4-5 | 8.97 g | 1.00 mL | D | 04/15/04 |
| 04-5213-GM76P | LSB-4,6-7 | 6.13 g | 5.00 mL | D | 04/15/04 |
| 04-5214-GM76Q | LSB-4,10-11 | 2.83 g | 1.00 mL | D | 04/15/04 |
| 04-5215-GM76R | LSB-4,14-15 | 1.89 g | 1.00 mL | D | 04/15/04 |

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

# CLEANED TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311

| Client ID | O-TER | TOT OUT |
|---|---|---|
| MB-041504 | 112% | 0 |
| LCS-041504 | 108% | 0 |
| LSB-1,4-4.5 | 92.4% | 0 |
| LSB-1,4-4.5 MS | 93.3% | 0 |
| LSB-1,4-4.5 MSD | 94.7% | 0 |
| LSB-1,6-6.5 | 88.0% | 0 |
| LSB-1,9-10 | 82.7% | 0 |
| LSB-1,9-10 DUP | 75.1% | 0 |
| LSB-1,18-19 | 59.8% | 0 |
| LSB-2,4-5 | 84.4% | 0 |
| LSB-2,6-7 | 113% | 0 |
| LSB-2,10-11 | 85.7% | 0 |
| LSB-2,17-18 | 106% | 0 |
| LSB-7,4-5 | 97.1% | 0 |
| LSB-7,7-8 | 73.1% | 0 |
| LSB-8,4-5 | 86.2% | 0 |
| LSB-8,6-7 | 95.8% | 0 |
| LSB-3,4-5 | 87.8% | 0 |
| LSB-3,6-7 | 79.1% | 0 |
| LSB-4,4-5 | 107% | 0 |
| LSB-4,6-7 | 96.6% | 0 |
| LSB-4,10-11 | 77.6% | 0 |
| LSB-4,14-15 | 75.6% | 0 |

| | LCS/MB LIMITS | QC LIMITS |
|---|---|---|
| (O-TER) = o-Terphenyl | (45-136) | (30-120) |

Prep Method: SW3545
Log Number Range: 04-5198 to 04-5215

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**NWTPHD by GC/FID-Silica and Acid Cleaned** **Sample ID: LSB-1,4-4.5**
Page 1 of 1 MS/MSD

Lab Sample ID: GM76A
LIMS ID: 04-5198
Matrix: Soil
Data Release Authorized:
Reported: 04/23/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted MS/MSD: 04/15/04

Date Analyzed MS: 04/20/04 21:51
MSD: 04/20/04 22:12
Instrument/Analyst MS: FID/ESJ
MSD: FID/ESJ

Sample Amount MS: 6.94 g-dry-wt
MSD: 6.91 g-dry-wt
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 1.0
MSD: 1.0
Percent Moisture: 30.9%

| Range | Sample | MS | Spike Added-MS | MS Recovery | MSD | Spike Added-MSD | MSD Recovery | RPD |
|---|---|---|---|---|---|---|---|---|
| Diesel | 52.0 | 191 | 216 | 64.4% | 203 | 217 | 69.6% | 6.1% |

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID-Silica and Acid Cleaned


Sample ID: LCS-041504
LAB CONTROL

Lab Sample ID: LCS-041504
LIMS ID: 04-5198
Matrix: Soil
Data Release Authorized:
Reported: 04/23/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Date Extracted: 04/15/04
Date Analyzed: 04/20/04 20:10
Instrument/Analyst: FID/ESJ

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.0

| Range | Lab Control | Spike Added | Recovery |
|---|---|---|---|
| Diesel | 120 | 150 | 80.0% |

**TPHD Surrogate Recovery**

| | |
|---|---|
| o-Terphenyl | 108% |

Results reported in mg/kg

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**TOTAL DIESEL RANGE HYDROCARBONS**
NWTPHD by GC/FID-Silica and Acid Cleaned
Page 1 of 3
Matrix: Soil

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311

Data Release Authorized:
Reported: 04/23/04

| ARI ID | Sample ID | Extraction Date | Analysis Date | DL | Range | Result mg/kg |
|---|---|---|---|---|---|---|
| MB-041504<br>04-5198 | Method Blank | 04/15/04 | 04/20/04 | 1.0 | Diesel<br>Motor Oil<br>HC ID<br>o-Terphenyl | < 5.0 U<br>< 10 U<br>---<br>112% |
| GM76A<br>04-5198 | LSB-1,4-4.5 | 04/15/04 | 04/20/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **52**<br>**260**<br>DRO/RRO<br>92.4% |
| GM76B<br>04-5199 | LSB-1,6-6.5 | 04/15/04 | 04/20/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **9.9**<br>**48**<br>DRO/RRO<br>88.0% |
| GM76C<br>04-5200 | LSB-1,9-10 | 04/15/04 | 04/20/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **44**<br>**140**<br>DRO/RRO<br>82.7% |
| GM76C DP<br>04-5200 | LSB-1,9-10 | 04/15/04 | 04/20/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **25**<br>**77**<br>DRO/RRO<br>75.1% |
| GM76D<br>04-5201 | LSB-1,18-19 | 04/15/04 | 04/20/04 | 1.0 | Diesel<br>Motor Oil<br>HC ID<br>o-Terphenyl | < 5.0 U<br>< 10 U<br>---<br>59.8% |
| GM76E<br>04-5202 | LSB-2,4-5 | 04/15/04 | 04/20/04 | 1.0 | Diesel<br>Motor Oil<br>HC ID<br>o-Terphenyl | < 5.0 U<br>< 10 U<br>---<br>84.4% |
| GM76F<br>04-5203 | LSB-2,6-7 | 04/15/04 | 04/22/04 | 20 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **10000**<br>**54000**<br>DRO/RRO<br>113% |
| GM76G<br>04-5204 | LSB-2,10-11 | 04/15/04 | 04/21/04 | 5.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **670**<br>**4200**<br>DRO/RRO<br>85.7% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**TOTAL DIESEL RANGE HYDROCARBONS**
NWTPHD by GC/FID-Silica and Acid Cleaned
Page 2 of 3
Matrix: Soil

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311

Data Release Authorized:
Reported: 04/23/04

| ARI ID | Sample ID | Extraction Date | Analysis Date | DL | Range | Result mg/kg |
|---|---|---|---|---|---|---|
| GM76H<br>04-5205 | LSB-2,17-18 | 04/15/04 | 04/21/04 | 5.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **2600**<br>**12000**<br>DRO/RRO<br>106% |
| GM76I<br>04-5206 | LSB-7,4-5 | 04/15/04 | 04/22/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **31**<br>**210**<br>DRO/RRO<br>97.1% |
| GM76J<br>04-5207 | LSB-7,7-8 | 04/15/04 | 04/21/04 | 1.0 | Diesel<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | < 11 U<br>**22**<br>---<br>73.1% |
| GM76K<br>04-5208 | LSB-8,4-5 | 04/15/04 | 04/21/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **7.4**<br>**59**<br>DRO/RRO<br>86.2% |
| GM76L<br>04-5209 | LSB-8,6-7 | 04/15/04 | 04/21/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **30**<br>**210**<br>DRO/RRO<br>95.8% |
| GM76M<br>04-5210 | LSB-3,4-5 | 04/15/04 | 04/21/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **13**<br>**20**<br>DRO/RRO<br>87.8% |
| GM76N<br>04-5211 | LSB-3,6-7 | 04/15/04 | 04/21/04 | 1.0 | Diesel<br>Motor Oil<br>HC ID<br>o-Terphenyl | < 5.0 U<br>< 10 U<br>---<br>79.1% |
| GM76O<br>04-5212 | LSB-4,4-5 | 04/15/04 | 04/22/04 | 1.0 | **Diesel**<br>**Motor Oil**<br>HC ID<br>o-Terphenyl | **6.0**<br>**32**<br>DRO/RRO<br>107% |
| GM76P<br>04-5213 | LSB-4,6-7 | 04/15/04 | 04/22/04 | 1.0 | **Diesel**<br>Motor Oil<br>HC ID<br>o-Terphenyl | **120**<br>< 41 U<br>DRO/RRO<br>96.6% |

ANALYTICAL RESOURCES INCORPORATED

**ORGANICS ANALYSIS DATA SHEET**
**TOTAL DIESEL RANGE HYDROCARBONS**
NWTPHD by GC/FID-Silica and Acid Cleaned

Matrix: Soil

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311

Data Release Authorized:
Reported: 04/23/04

| ARI ID | Sample ID | Extraction Date | Analysis Date | DL | Range | Result mg/kg |
|---|---|---|---|---|---|---|
| GM76Q 04-5214 | LSB-4,10-11 | 04/15/04 | 04/21/04 | 1.0 | **Diesel** | **130** |
| | | | | | **Motor Oil** | **170** |
| | | | | | HC ID | DRO/RRO |
| | | | | | o-Terphenyl | 77.6% |
| GM76R 04-5215 | LSB-4,14-15 | 04/15/04 | 04/21/04 | 1.0 | **Diesel** | **120** |
| | | | | | **Motor Oil** | **260** |
| | | | | | HC ID | DRO/RRO |
| | | | | | o-Terphenyl | 75.6% |

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicate results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: METHOD BLANK

Lab Sample ID: GM76MB
LIMS ID: 04-5199
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 5 | 5 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | 7440-38-2 | Arsenic | 0.1 | 0.1 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.2 | 0.2 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-50-8 | Copper | 0.2 | 0.2 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7439-92-1 | Lead | 2 | 2 | U |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.05 | 0.05 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 1 | 1 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 5 | 5 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-1,4-4.5
MATRIX SPIKE

Lab Sample ID: GM76A
LIMS ID: 04-5198
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

## MATRIX SPIKE QUALITY CONTROL REPORT

| Analyte | Analysis Method | Sample | Spike | Spike Added | % Recovery | Q |
|---|---|---|---|---|---|---|
| Antimony | 6010B | 20 U | 50 | 280 | 17.9% | N |
| Arsenic | 7060A | 4.2 | 16.0 | 14.4 | 81.9% | |
| Cadmium | 6010B | 0.7 U | 70.3 | 70.6 | 99.6% | |
| Copper | 6010B | 89.9 | 157 | 70.6 | 95.0% | |
| Lead | 6010B | 49 | 334 | 283 | 101% | |
| Mercury | 7471A | 0.14 | 1.02 | 0.75 | 117% | |
| Nickel | 6010B | 42 | 111 | 71 | 97.2% | |
| Thallium | 6010B | 20 U | 270 | 280 | 96.4% | |

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-1,4-4.5
DUPLICATE

Lab Sample ID: GM76A
LIMS ID: 04-5198
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

## MATRIX DUPLICATE QUALITY CONTROL REPORT

| Analyte | Analysis Method | Sample | Duplicate | RPD | Control Limit | Q |
|---|---|---|---|---|---|---|
| Antimony | 6010B | 20 U | 20 U | 0.0% | +/- 20 | L |
| Arsenic | 7060A | 4.2 | 6.7 | 45.9% | +/- 20% | * |
| Cadmium | 6010B | 0.7 U | 0.7 U | 0.0% | +/- 0.7 | L |
| Copper | 6010B | 89.9 | 77.8 | 14.4% | +/- 20% | |
| Lead | 6010B | 49 | 45 | 8.5% | +/- 20% | |
| Mercury | 7471A | 0.14 | 0.28 | 66.7% | +/- 0.08 | L* |
| Nickel | 6010B | 42 | 43 | 2.4% | +/- 20% | |
| Thallium | 6010B | 20 U | 20 U | 0.0% | +/- 20 | L |

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LAB CONTROL

Lab Sample ID: GM76LCS
LIMS ID: 04-5199
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: NA
Date Received: NA

## BLANK SPIKE QUALITY CONTROL REPORT

| Analyte | Analysis Method | Spike Found | Spike Added | % Recovery | Q |
|---|---|---|---|---|---|
| Antimony | 6010B | 212 | 200 | 106% | |
| Arsenic | 7060A | 9.2 | 10.0 | 92.0% | |
| Cadmium | 6010B | 49.4 | 50.0 | 98.8% | |
| Copper | 6010B | 49.2 | 50.0 | 98.4% | |
| Lead | 6010B | 204 | 200 | 102% | |
| Mercury | 7471A | 1.08 | 1.00 | 108% | |
| Nickel | 6010B | 49 | 50 | 98.0% | |
| Thallium | 6010B | 201 | 200 | 100% | |

Reported in mg/kg-dry

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-1,4-4.5
SAMPLE

Lab Sample ID: GM76A
LIMS ID: 04-5198
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 64.6%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/14/04 | 7440-38-2 | Arsenic | 0.7 | 4.2 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-43-9 | Cadmium | 0.7 | 0.7 | U |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-50-8 | Copper | 0.7 | 89.9 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7439-92-1 | Lead | 7 | 49 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.08 | 0.14 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-02-0 | Nickel | 4 | 42 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-1,6-6.5
SAMPLE

Lab Sample ID: GM76B
LIMS ID: 04-5199
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 62.1%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-36-0 | Antimony | 40 | 40 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | 7440-38-2 | Arsenic | 0.4 | 3.1 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-43-9 | Cadmium | 1 | 1 | U |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-50-8 | Copper | 1 | 77 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7439-92-1 | Lead | 10 | 20 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.07 | 0.13 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-02-0 | Nickel | 7 | 29 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-28-0 | Thallium | 40 | 40 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-1,9-10
SAMPLE

Lab Sample ID: GM76C
LIMS ID: 04-5200
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 39.2%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 10 | 10 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | **7440-38-2** | **Arsenic** | 0.6 | **4.2** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.5 | 0.5 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 0.5 | **132** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 5 | **74** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.1 | 0.1 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-02-0** | **Nickel** | 2 | **59** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 10 | 10 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-1,18-19
SAMPLE

Lab Sample ID: GM76D
LIMS ID: 04-5201
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 66.5%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 7 | 7 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | **7440-38-2** | **Arsenic** | 0.3 | **5.8** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-43-9** | **Cadmium** | 0.3 | **0.9** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 0.3 | **19.7** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 3 | **4** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.05 | 0.05 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-02-0** | **Nickel** | 1 | **30** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 7 | 7 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-2,4-5
SAMPLE

Lab Sample ID: GM76E
LIMS ID: 04-5202
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 94.2%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 5 | 5 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | **7440-38-2** | **Arsenic** | 0.3 | **1.6** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.2 | 0.2 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 0.2 | **24.0** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 2 | **4** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.05 | 0.05 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-02-0** | **Nickel** | 1 | **35** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 5 | 5 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-2,6-7
SAMPLE

Lab Sample ID: GM76F
LIMS ID: 04-5203
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 61.3%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | **7440-38-2** | **Arsenic** | 2 | **14** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7440-43-9** | **Cadmium** | 0.7 | **7.0** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7440-50-8** | **Copper** | 0.7 | **1,040** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7439-92-1** | **Lead** | 7 | **1,610** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | **7439-97-6** | **Mercury** | 0.06 | **2.37** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7440-02-0** | **Nickel** | 4 | **50** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-2,10-11
SAMPLE

Lab Sample ID: GM76G
LIMS ID: 04-5204
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 20.4%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | 7440-38-2 | Arsenic | 2 | 17 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.9 | 3.8 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-50-8 | Copper | 0.9 | 145 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7439-92-1 | Lead | 9 | 206 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.2 | 0.4 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 5 | 23 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-2,17-18
SAMPLE

Lab Sample ID: GM76H
LIMS ID: 04-5205
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/01/04
Date Received: 04/05/04

Percent Total Solids: 28.0%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | 7440-38-2 | Arsenic | 0.8 | 4.3 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.7 | 1.8 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-50-8 | Copper | 0.7 | 91.2 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7439-92-1 | Lead | 7 | 215 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.1 | 0.6 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 3 | 18 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-7,4-5
SAMPLE

Lab Sample ID: GM76I
LIMS ID: 04-5206
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 58.8%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | **7440-38-2** | **Arsenic** | 0.4 | **6.4** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.8 | 0.8 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 0.8 | **138** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 8 | **93** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.07 | 0.07 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-02-0** | **Nickel** | 4 | **38** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-7,7-8
SAMPLE

Lab Sample ID: GM76J
LIMS ID: 04-5207
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 18.4%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | **7440-38-2** | **Arsenic** | 0.5 | **4.7** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 1 | 1 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 1 | **28** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 10 | **20** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.2 | 0.2 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 5 | 5 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-8,4-5
SAMPLE

Lab Sample ID: GM76K
LIMS ID: 04-5208
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 61.4%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | 7440-38-2 | Arsenic | 0.4 | 6.1 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.8 | 0.8 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-50-8 | Copper | 0.8 | 123 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7439-92-1 | Lead | 8 | 56 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.07 | 0.13 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 4 | 47 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-8,6-7
SAMPLE

Lab Sample ID: GM76L
LIMS ID: 04-5209
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 57.4%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-36-0 | Antimony | 40 | 220 | |
| 3050B | 04/08/04 | 7060A | 04/13/04 | 7440-38-2 | Arsenic | 2 | 28 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-43-9 | Cadmium | 2 | 2 | U |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-50-8 | Copper | 2 | 855 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7439-92-1 | Lead | 20 | 2,930 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.08 | 0.08 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-02-0 | Nickel | 8 | 67 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-28-0 | Thallium | 40 | 40 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-3,4-5
SAMPLE

Lab Sample ID: GM76M
LIMS ID: 04-5210
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 57.1%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | **7440-38-2** | **Arsenic** | 0.4 | **3.8** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7440-43-9** | **Cadmium** | 0.8 | **1.4** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7440-50-8** | **Copper** | 0.8 | **98.1** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7439-92-1** | **Lead** | 8 | **41** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.07 | 0.07 | U |
| 3050B | 04/08/04 | 6010B | 04/13/04 | **7440-02-0** | **Nickel** | 4 | **44** | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-3,6-7
SAMPLE

Lab Sample ID: GM76N
LIMS ID: 04-5211
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 43.7%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 30 | 30 | U |
| 3050B | 04/08/04 | 7060A | 04/12/04 | **7440-38-2** | **Arsenic** | 0.5 | **6.7** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 1 | 1 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 1 | **90** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 10 | **30** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.1 | 0.1 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-02-0** | **Nickel** | 5 | **34** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 30 | 30 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-4,4-5
SAMPLE

Lab Sample ID: GM76O
LIMS ID: 04-5212
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 85.9%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 6 | 6 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | **7440-38-2** | **Arsenic** | 0.6 | **4.0** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.2 | 0.2 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 0.2 | **19.1** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 2 | **12** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.04 | 0.04 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-02-0** | **Nickel** | 1 | **26** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 6 | 6 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-4,6-7
SAMPLE

Lab Sample ID: GM76P
LIMS ID: 04-5213
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 55.0%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 9 | 9 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | 7440-38-2 | Arsenic | 0.4 | 6.5 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.3 | 1.3 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-50-8 | Copper | 0.3 | 85.6 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7439-92-1 | Lead | 3 | 187 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.09 | 0.28 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 2 | 72 | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 9 | 9 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-4,10-11
SAMPLE

Lab Sample ID: GM76Q
LIMS ID: 04-5214
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 15.7%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-36-0 | Antimony | 30 | 30 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | 7440-38-2 | Arsenic | 1 | 14 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-43-9 | Cadmium | 1 | 5 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-50-8 | Copper | 1 | 536 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7439-92-1 | Lead | 10 | 60 | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.2 | 0.3 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-02-0 | Nickel | 6 | 65 | |
| 3050B | 04/08/04 | 6010B | 04/13/04 | 7440-28-0 | Thallium | 30 | 30 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS


Sample ID: LSB-4,14-15
SAMPLE

Lab Sample ID: GM76R
LIMS ID: 04-5215
Matrix: Soil
Data Release Authorized:
Reported: 04/15/04

QC Report No: GM76-Landau Associates
Project: POA Uplands
529009.311
Date Sampled: 04/02/04
Date Received: 04/05/04

Percent Total Solids: 20.6%

| Prep Meth | Prep Date | Analysis Method | Analysis Date | CAS Number | Analyte | RL | mg/kg-dry | Q |
|---|---|---|---|---|---|---|---|---|
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-36-0 | Antimony | 20 | 20 | U |
| 3050B | 04/08/04 | 7060A | 04/13/04 | **7440-38-2** | **Arsenic** | 0.5 | **1.5** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-43-9 | Cadmium | 0.9 | 0.9 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7440-50-8** | **Copper** | 0.9 | **24.8** | |
| 3050B | 04/08/04 | 6010B | 04/12/04 | **7439-92-1** | **Lead** | 9 | **12** | |
| CLP | 04/09/04 | 7471A | 04/09/04 | 7439-97-6 | Mercury | 0.2 | 0.2 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-02-0 | Nickel | 5 | 5 | U |
| 3050B | 04/08/04 | 6010B | 04/12/04 | 7440-28-0 | Thallium | 20 | 20 | U |

U-Analyte undetected at given RL
RL-Reporting Limit

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a014.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76MBS1
Client ID:
Injection: 20-APR-2004 19:49

Dilution Factor: 1

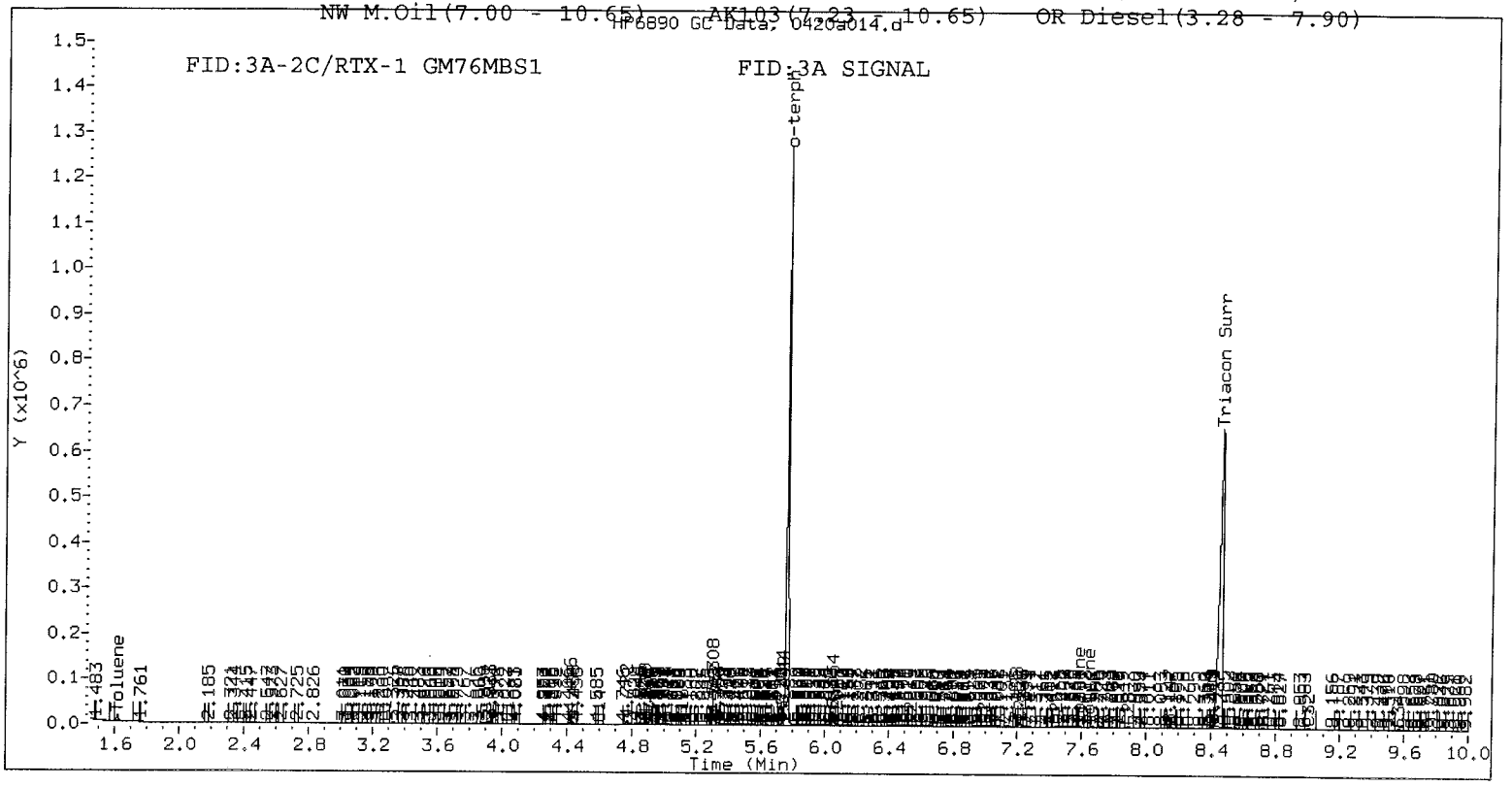
GP 4/22/04

FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 7.643 | 6.026 | 1195 | 1025 | GAS (Tol-C12) | 62725 | 0 |
| C8 | ---- | | | | DIESEL (C12-C24) | 378523 | 27 |
| C10 | 3.279 | 0.001 | 1157 | 1798 | M.OIL (C24-C38) | 185853 | 22* |
| C12 | 4.038 | 0.006 | 424 | 823 | | | |
| C14 | 4.601 | 0.005 | 823 | 1335 | | | |
| C16 | 5.115 | -0.001 | 2050 | 1997 | | | |
| C18 | 5.611 | -0.004 | 2474 | 1738 | | | |
| C20 | 6.078 | -0.008 | 4135 | 3087 | | | |
| C22 | 6.538 | -0.005 | 3933 | 4296 | | | |
| C24 | 6.994 | -0.005 | 3745 | 3990 | | | |
| C25 | 7.216 | -0.010 | 7028 | 8311 | | | |
| C26 | 7.442 | -0.008 | 3341 | 3663 | | | |
| C28 | 7.889 | -0.009 | 2303 | 3384 | | | |
| C32 | 9.007 | -0.013 | 1801 | 2446 | | | |
| C34 | 9.570 | -0.015 | 2441 | 2686 | | | |
| Filter Peak | 10.059 | 0.764 | 180892 | 204408 | | | |
| C36 | ---- | | | | o-Terph Surrogate Rec = 112% | | (889662) |
| C38 | ---- | | | | Triacon Surrogate Rec = 125.0% | | |
| C40 | ---- | | | | | | |
| o-terph | 5.771 | 0.003 | 1255768 | 889662 | | | |
| Triacon Surr | 8.463 | 0.005 | 653511 | 918638 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a016.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76A
Client ID:
Injection: 20-APR-2004 20:30
Dilution Factor: 1

4/22/04

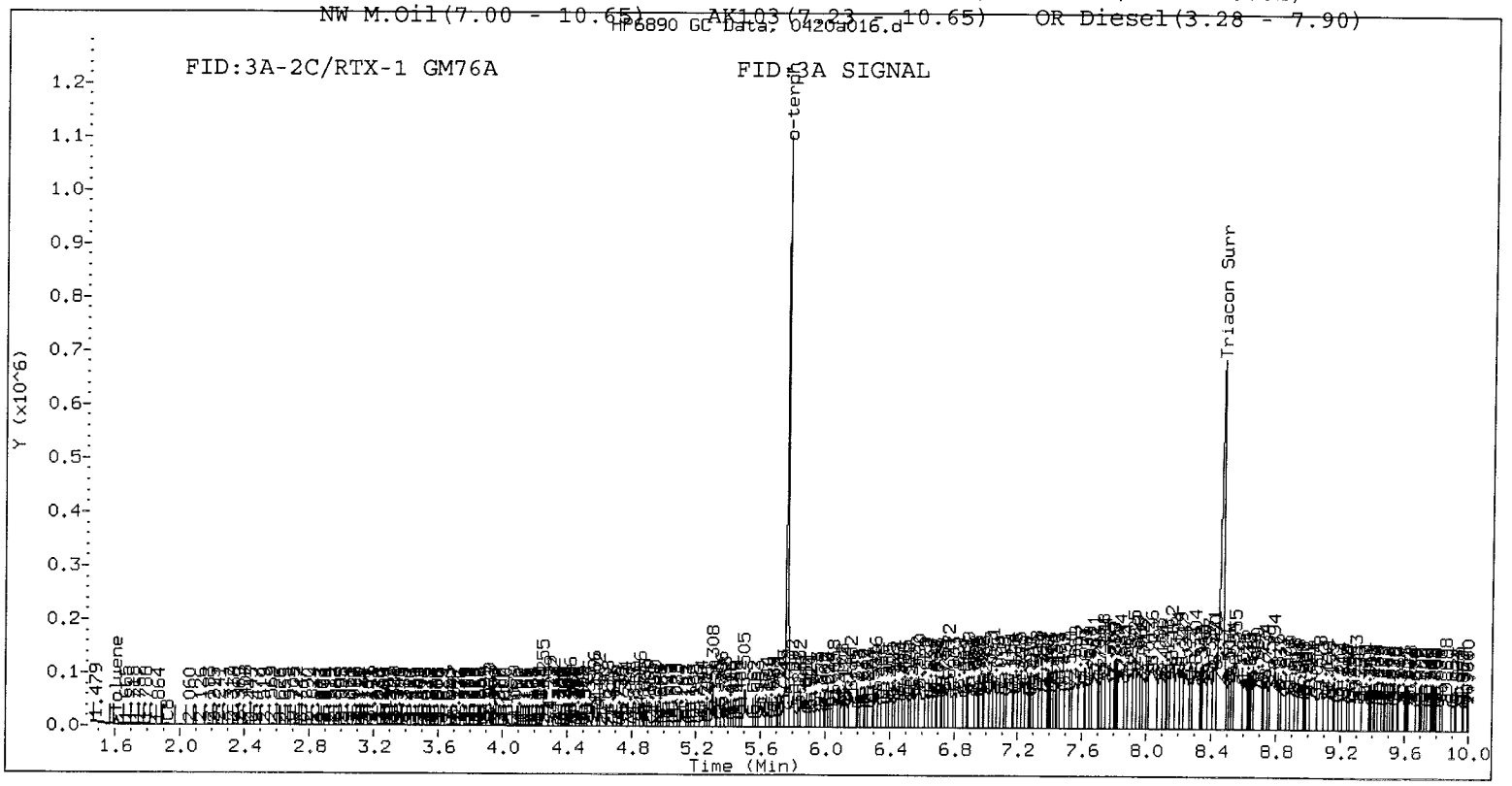
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.606 | -0.011 | 15317 | 19830 | GAS (Tol-C12) | 204917 | 1 |
| C8 | 1.919 | -0.004 | 1751 | 4684 | DIESEL (C12-C24) | 5135600 | 360 |
| C10 | 3.278 | -0.001 | 4444 | 3414 | M.OIL (C24-C38) | 15078388 | 1816* |
| C12 | 4.033 | 0.000 | 13172 | 11941 | | | |
| C14 | 4.595 | -0.001 | 26358 | 12448 | | | |
| C16 | 5.114 | -0.002 | 30290 | 29808 | | | |
| C18 | 5.612 | -0.003 | 38851 | 65157 | | | |
| C20 | 6.086 | -0.001 | 56874 | 57203 | | | |
| C22 | 6.544 | 0.001 | 71333 | 77898 | | | |
| C24 | 7.000 | 0.000 | 77799 | 130054 | | | |
| C25 | 7.226 | 0.000 | 84586 | 118308 | | | |
| C26 | 7.450 | -0.001 | 79365 | 86647 | | | |
| C28 | 7.903 | 0.004 | 105005 | 175782 | | | |
| C32 | 9.019 | -0.001 | 72177 | 173465 | | | |
| C34 | 9.580 | -0.006 | 66682 | 136277 | | | |
| Filter Peak | 10.068 | 0.772 | 141901 | 146455 | | | |
| C36 | 10.130 | -0.001 | 64551.0 | 149291 | o-Terph Surrogate Rec = 92.5% | | (737311) |
| C38 | 10.643 | -0.004 | 57359.0 | 139005 | Triacon Surrogate Rec = 104.4% | | (767138) |
| C40 | 11.185 | -0.003 | 12632 | 42171 | | | |
| o-terph | 5.771 | 0.002 | 1067302 | 737311 | | | |
| Triacon Surr | 8.473 | 0.014 | 596674 | 767138 | | | |

D IR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a022.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76B
Client ID:
Injection: 20-APR-2004 22:32

Dilution Factor: 1

GJ 4/22/04

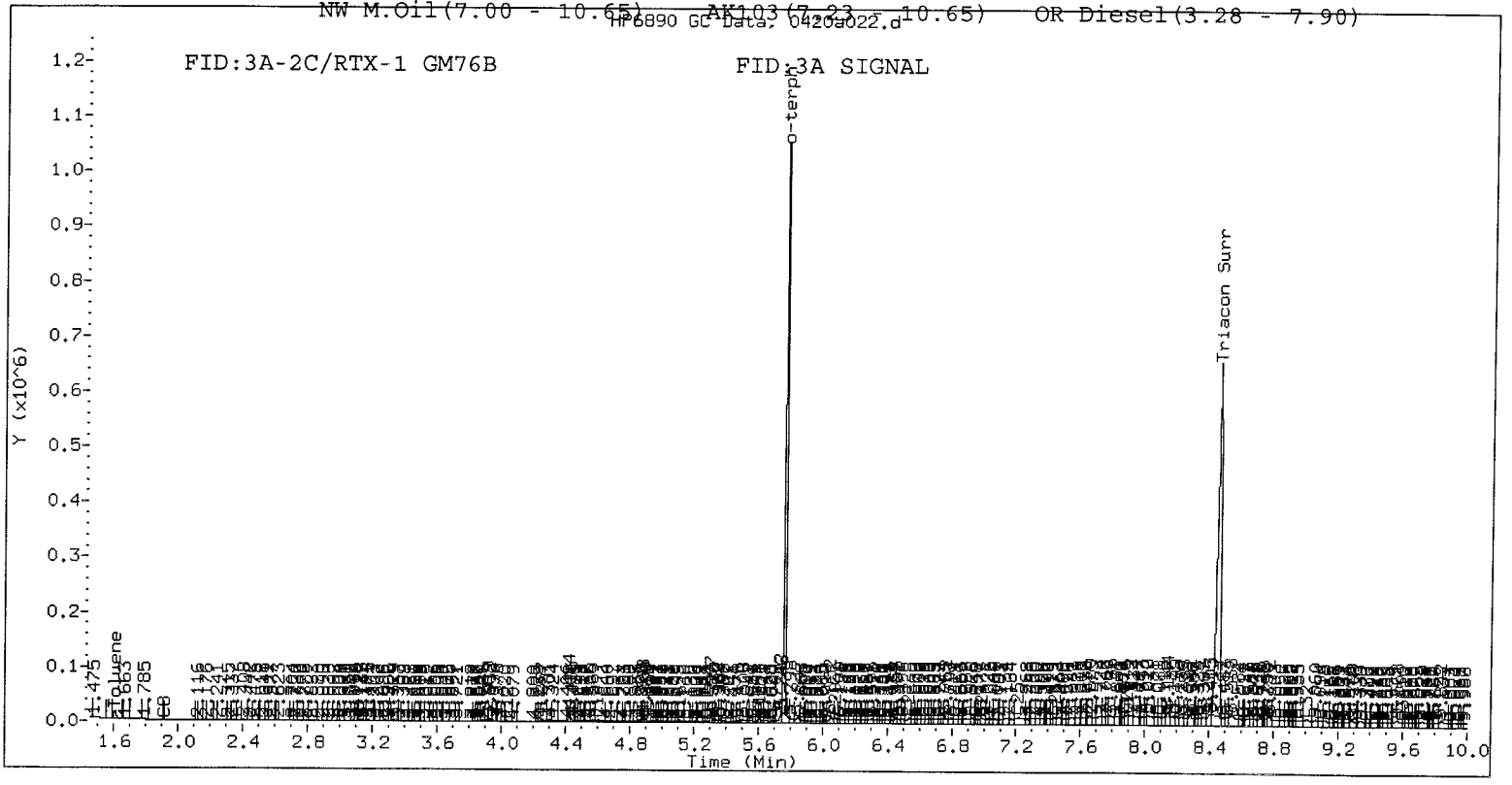
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.604 | -0.013 | 14800 | 13517 | GAS (Tol-C12) | 73951 | 0 |
| C8 | 1.915 | -0.007 | 914 | 783 | DIESEL (C12-C24) | 857716 | 60 |
| C10 | 3.278 | -0.001 | 1393 | 1460 | M.OIL (C24-C38) | 2429194 | 293* |
| C12 | 4.035 | 0.003 | 996 | 1706 | | | |
| C14 | 4.603 | 0.007 | 3978 | 7997 | | | |
| C16 | 5.113 | -0.003 | 4117 | 5008 | | | |
| C18 | 5.609 | -0.005 | 7599 | 5868 | | | |
| C20 | 6.078 | -0.008 | 10491 | 11186 | | | |
| C22 | 6.534 | -0.009 | 10961 | 16567 | | | |
| C24 | 6.989 | -0.011 | 11846 | 21899 | | | |
| C25 | 7.215 | -0.011 | 13773 | 46855 | | | |
| C26 | 7.439 | -0.011 | 13020 | 17159 | | | |
| C28 | 7.889 | -0.010 | 18138 | 23104 | | | |
| C32 | 9.005 | -0.015 | 13956 | 34146 | | | |
| C34 | 9.599 | 0.014 | 8266 | 2454 | | | |
| Filter Peak | 10.053 | 0.758 | 102216 | 97813 | | | |
| C36 | 10.114 | -0.016 | 12760.0 | 27810 | o-Terph Surrogate Rec = 88.1% | | (701908) |
| C38 | 10.634 | -0.013 | 11691.0 | 25290 | Triacon Surrogate Rec = 119.4% | | (877159) |
| C40 | 11.176 | -0.012 | 3260 | 9298 | | | |
| o-terph | 5.767 | -0.001 | 1039170 | 701908 | | | |
| Triacon Surr | 8.461 | 0.003 | 641727 | 877159 | | | |

JR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a023.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76C
Client ID:
Injection: 20-APR-2004 22:52

Dilution Factor: 1

SJ 4/22/04

FID:3A RESULTS

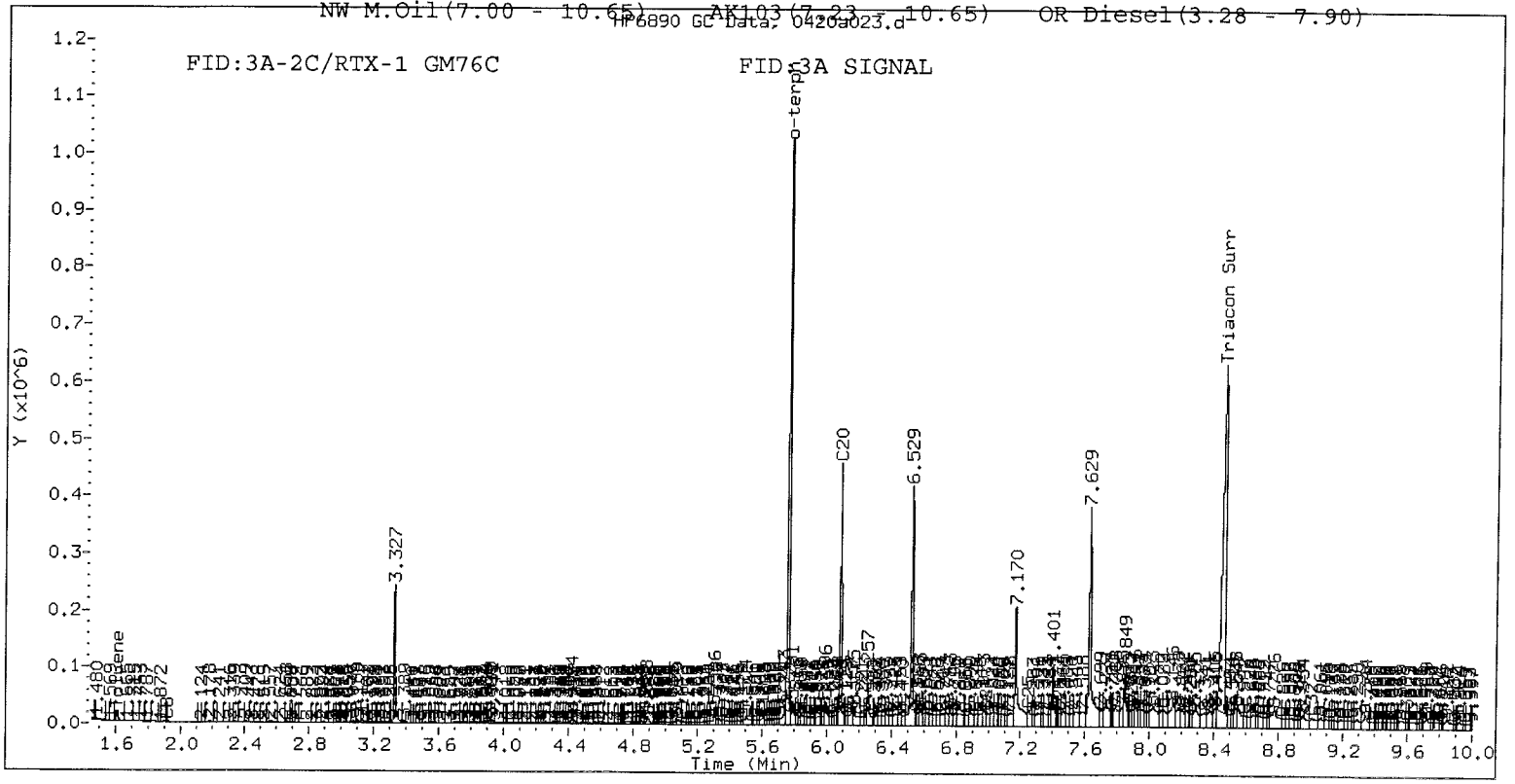
| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.606 | -0.011 | 18442 | 14629 | GAS (Tol-C12) | 274193 | 1 |
| C8 | 1.916 | -0.007 | 976 | 574 | DIESEL (C12-C24) | 2497629 | 175 |
| C10 | 3.279 | 0.001 | 1607 | 2026 | M.OIL (C24-C38) | 4599022 | 554* |
| C12 | 4.034 | 0.002 | 1895 | 2693 | | | |
| C14 | 4.595 | -0.001 | 3476 | 4671 | | | |
| C16 | 5.112 | -0.004 | 5671 | 7476 | | | |
| C18 | 5.609 | -0.006 | 11455 | 17706 | | | |
| C20 | 6.088 | 0.001 | 459930 | 287166 | | | |
| C22 | 6.556 | 0.013 | 21659 | 8527 | | | |
| C24 | 6.992 | -0.008 | 23808 | 30740 | | | |
| C25 | 7.251 | 0.025 | 28542 | 48003 | | | |
| C26 | 7.441 | -0.009 | 23230 | 23442 | | | |
| C28 | 7.890 | -0.008 | 31054 | 25615 | | | |
| C32 | 9.007 | -0.013 | 18025 | 51260 | | | |
| C34 | 9.597 | 0.012 | 11603 | 9322 | | | |
| Filter Peak | 10.053 | 0.758 | 97180 | 92047 | | | |
| C36 | 10.116 | -0.014 | 15307.0 | 34342 | o-Terph Surrogate Rec = 82.6% | | (658380) |
| C38 | 10.632 | -0.015 | 14594.0 | 32129 | Triacon Surrogate Rec = 112.4% | | (825971) |
| C40 | 11.175 | -0.013 | 3363 | 9739 | | | |
| o-terph | 5.767 | -0.001 | 1004775 | 658380 | | | |
| Triacon Surr | 8.461 | 0.003 | 608770 | 825971 | | | |

DJR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)

HP6890 GC Data: 0420a023.d



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a025.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76D
Client ID:
Injection: 20-APR-2004 23:33

Dilution Factor: 1

4/22/04

FID:3A RESULTS

| Compound | RT | Shift | Height | Area |
|---|---|---|---|---|
| Toluene | 1.604 | -0.012 | 13046 | 10934 |
| C8 | ---- | | | |
| C10 | 3.278 | 0.000 | 940 | 1217 |
| C12 | 4.082 | 0.050 | 296 | 609 |
| C14 | 4.602 | 0.006 | 633 | 1484 |
| C16 | 5.115 | -0.001 | 1054 | 1270 |
| C18 | 5.610 | -0.005 | 1641 | 1050 |
| C20 | 6.087 | 0.000 | 2121 | 2298 |
| C22 | 6.542 | -0.001 | 1962 | 2726 |
| C24 | 6.997 | -0.002 | 1801 | 1963 |
| C25 | 7.221 | -0.005 | 3584 | 5820 |
| C26 | 7.443 | -0.007 | 1655 | 1810 |
| C28 | 7.888 | -0.010 | 1877 | 2754 |
| C32 | 9.007 | -0.013 | 1456 | 1966 |
| C34 | 9.569 | -0.016 | 273 | 479 |
| Filter Peak | 9.655 | 0.360 | 121212 | 120156 |
| C36 | ---- | | | |
| C38 | 10.649 | 0.002 | 589.0 | 1362 |
| C40 | 11.175 | -0.012 | 541 | 1288 |
| o-terph | 5.765 | -0.003 | 794300 | 476706 |
| Triacon Surr | 8.458 | 0.000 | 563067 | 740605 |

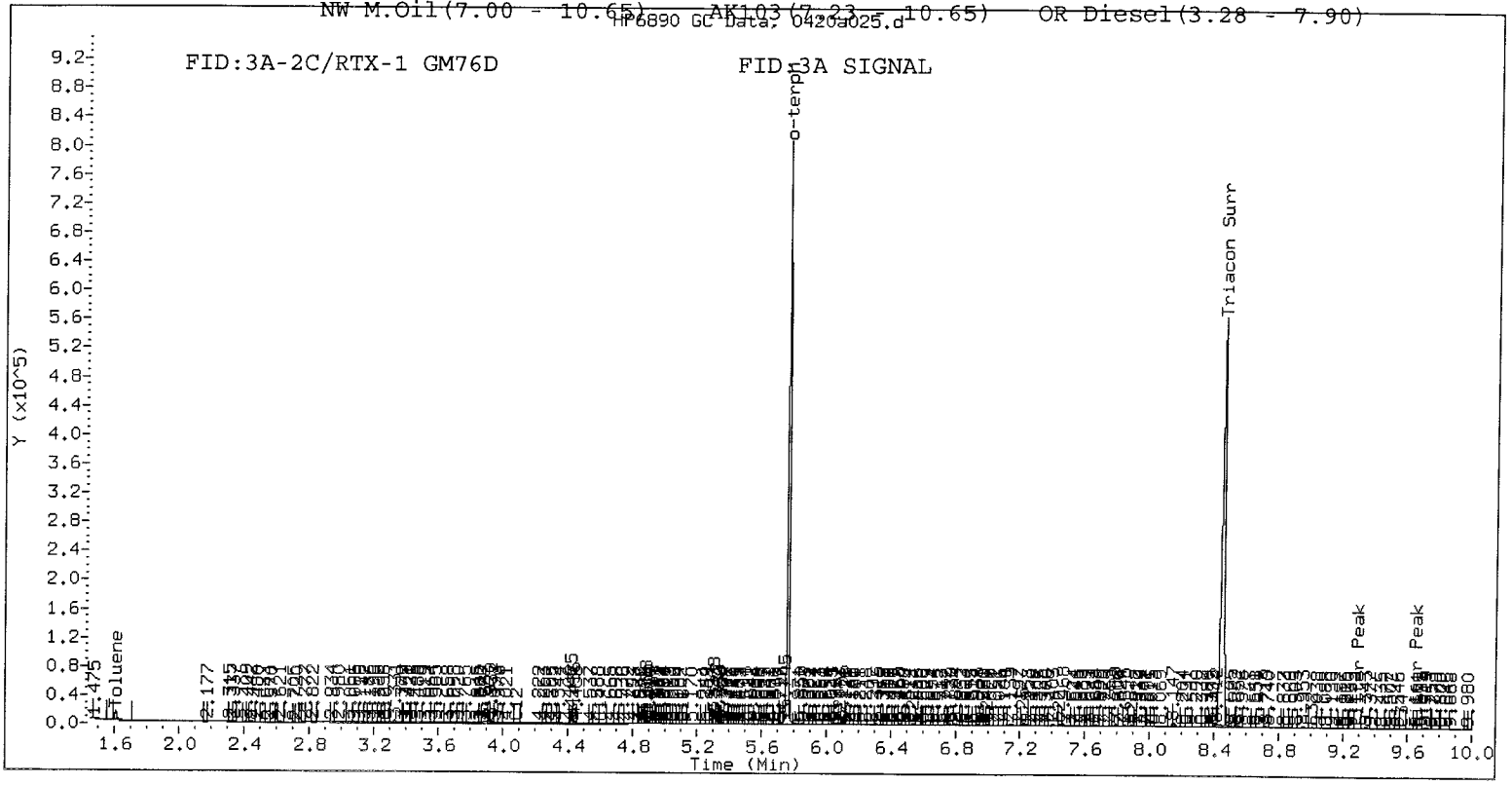
| Range | Total Area | Conc |
|---|---|---|
| GAS (Tol-C12) | 53788 | 0 |
| DIESEL (C12-C24) | 213907 | 15 |
| M.OIL (C24-C38) | 177427 | 21* |

o-Terph Surrogate Rec = 60% (476706)
Triacon Surrogate Rec = 100.8% (740605)

D

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a026.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76E
Client ID:
Injection: 20-APR-2004 23:53

Dilution Factor: 1

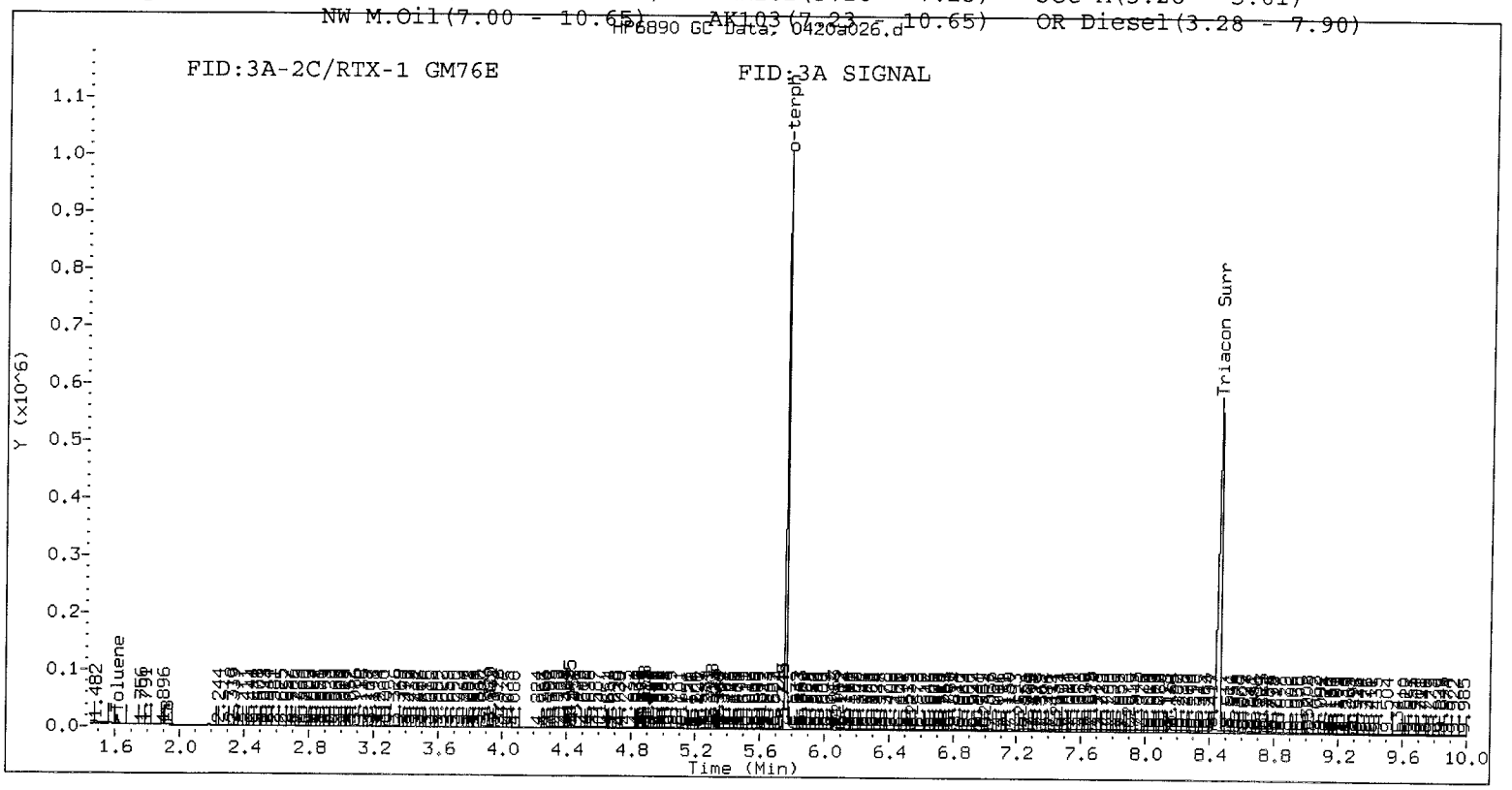
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.609 | -0.008 | 16176 | 16698 | GAS (Tol-C12) | 71096 | 0 |
| C8 | 1.920 | -0.003 | 274 | 363 | DIESEL (C12-C24) | 284947 | 20 U2L |
| C10 | 3.279 | 0.001 | 1345 | 1546 | M.OIL (C24-C38) | 530893 | 64* |
| C12 | 4.020 | -0.012 | 506 | 650 | | | |
| C14 | 4.606 | 0.011 | 1142 | 3132 | | | |
| C16 | 5.115 | 0.000 | 1660 | 2575 | | | |
| C18 | 5.611 | -0.003 | 2906 | 2015 | | | |
| C20 | 6.090 | 0.004 | 3506 | 3481 | | | |
| C22 | 6.553 | 0.010 | 3289 | 4203 | | | |
| C24 | 7.007 | 0.007 | 3499 | 3660 | | | |
| C25 | 7.229 | 0.004 | 4773 | 6485 | | | |
| C26 | 7.451 | 0.001 | 3580 | 5540 | | | |
| C28 | 7.893 | -0.005 | 4603 | 6424 | | | |
| C32 | 9.008 | -0.012 | 3460 | 3048 | | | |
| C34 | 9.568 | -0.017 | 2199 | 7030 | | | |
| Filter Peak | 10.053 | 0.758 | 101959 | 98423 | | | |
| C36 | 10.116 | -0.014 | 2468.0 | 5688 | o-Terph Surrogate Rec = 84.5% | | (673309) |
| C38 | 10.635 | -0.012 | 1876.0 | 5275 | Triacon Surrogate Rec = 95.1% | | (699027) |
| C40 | ---- | | | | | | |
| o-terph | 5.770 | 0.002 | 998574 | 673309 | | | |
| Triacon Surr | 8.462 | 0.004 | 580407 | 699027 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)

HP6890 GC Data: 0420a026.d



Analytical Resources Inc.
TPH Quantitation Report

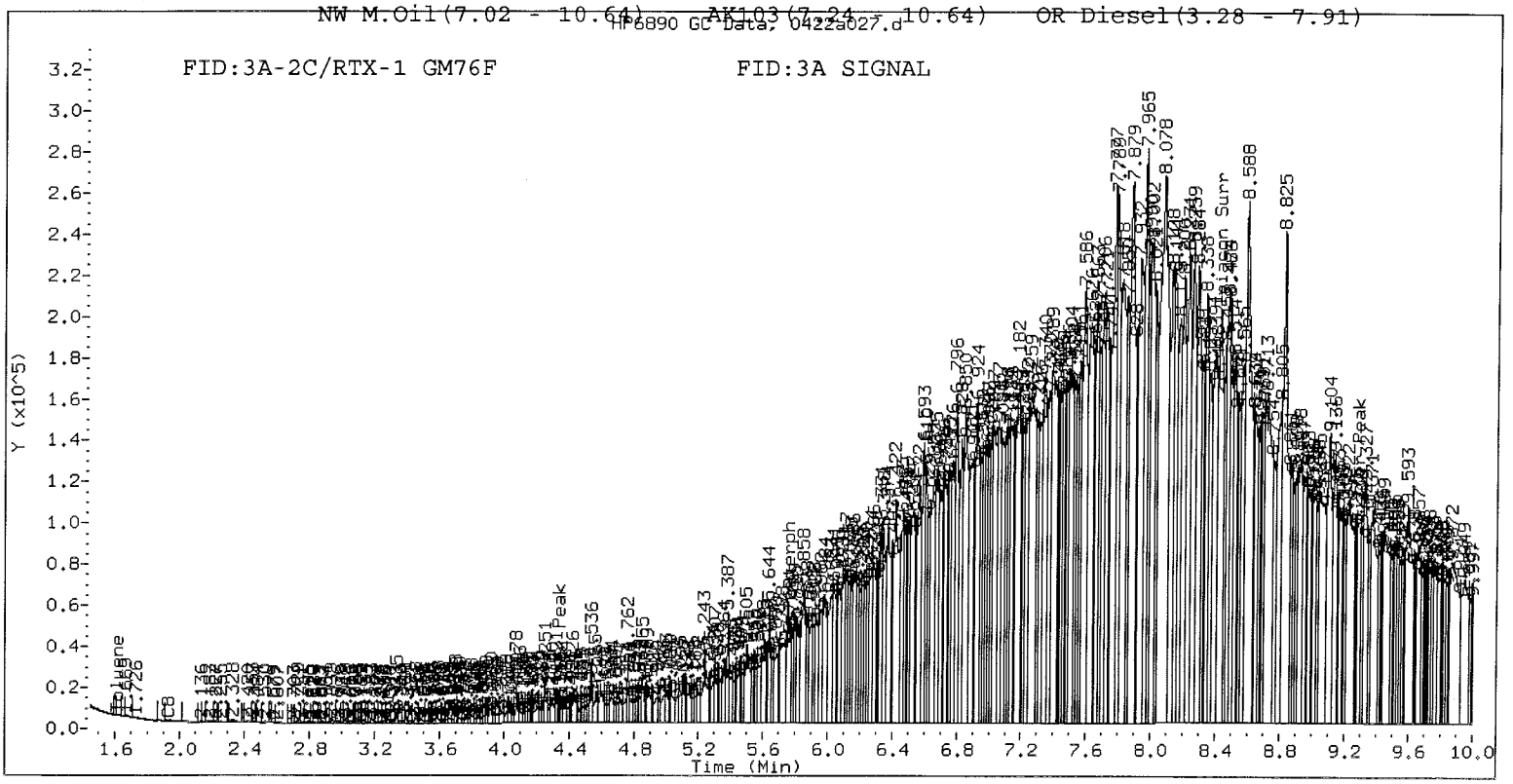
Data file: /chem3/fid3a.i/20040422.b/0422a027.d ARI ID: GM76F
Method: /chem3/fid3a.i/20040422.b/acidsiltphfid3a.m Client ID:
Instrument: fid3a.i Injection: 22-APR-2004 20:06
Operator: ESJ
Report Date: 04/23/2004 Dilution Factor: 20
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.612 | 0.005 | 211 | 307 | GAS (Tol-C12) | 170162 | 1 |
| C8 | 1.927 | 0.013 | 618 | 1224 | DIESEL (C12-C24) | 8834651 | 619 |
| C10 | 3.282 | 0.003 | 3713 | 2894 | M.OIL (C24-C38) | 27480428 | 3309* |
| C12 | 4.032 | 0.000 | 12747 | 9235 | | | |
| C14 | 4.593 | 0.000 | 19253 | 27563 | | | |
| C16 | 5.112 | 0.000 | 23787 | 19066 | | | |
| C18 | 5.611 | -0.001 | 42995 | 65044 | | | |
| C20 | 6.096 | 0.002 | 76852 | 102331 | | | |
| C22 | 6.566 | 0.004 | 118397 | 166397 | | | |
| C24 | 7.014 | -0.005 | 144359 | 156368 | | | |
| C25 | 7.243 | -0.001 | 148608 | 67790 | | | |
| C26 | 7.465 | -0.003 | 161167 | 114975 | | | |
| C28 | 7.908 | -0.007 | 186628 | 51840 | | | |
| C32 | 9.031 | 0.008 | 108173 | 70424 | | | |
| C34 | 9.571 | -0.011 | 78423 | 23334 | | | |
| Filter Peak | 9.284 | -0.011 | 97436 | 114512 | | | |
| C36 | 10.120 | -0.003 | 57207.0 | 24628 | o-Terph Surrogate Rec = 22.8% | | (9078) |
| C38 | 10.635 | -0.004 | 31819.0 | 16992 | Triacon Surrogate Rec = 98.2% | | (36077) |
| C40 | 11.169 | -0.010 | 10683 | 18631 | | | |
| o-terph | 5.760 | -0.008 | 19250 | 9078 | | | |
| Triacon Surr | 8.423 | -0.046 | 38291 | 36077 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.020) AK102(3.28 - 7.24) Jet A(3.28 - 5.61)
NW M.Oil(7.02 - 10.64) AK103(7.24 - 10.64) OR Diesel(3.28 - 7.91)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a031.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/23/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76G
Client ID:
Injection: 21-APR-2004 01:35

Dilution Factor: 5

4/23/04

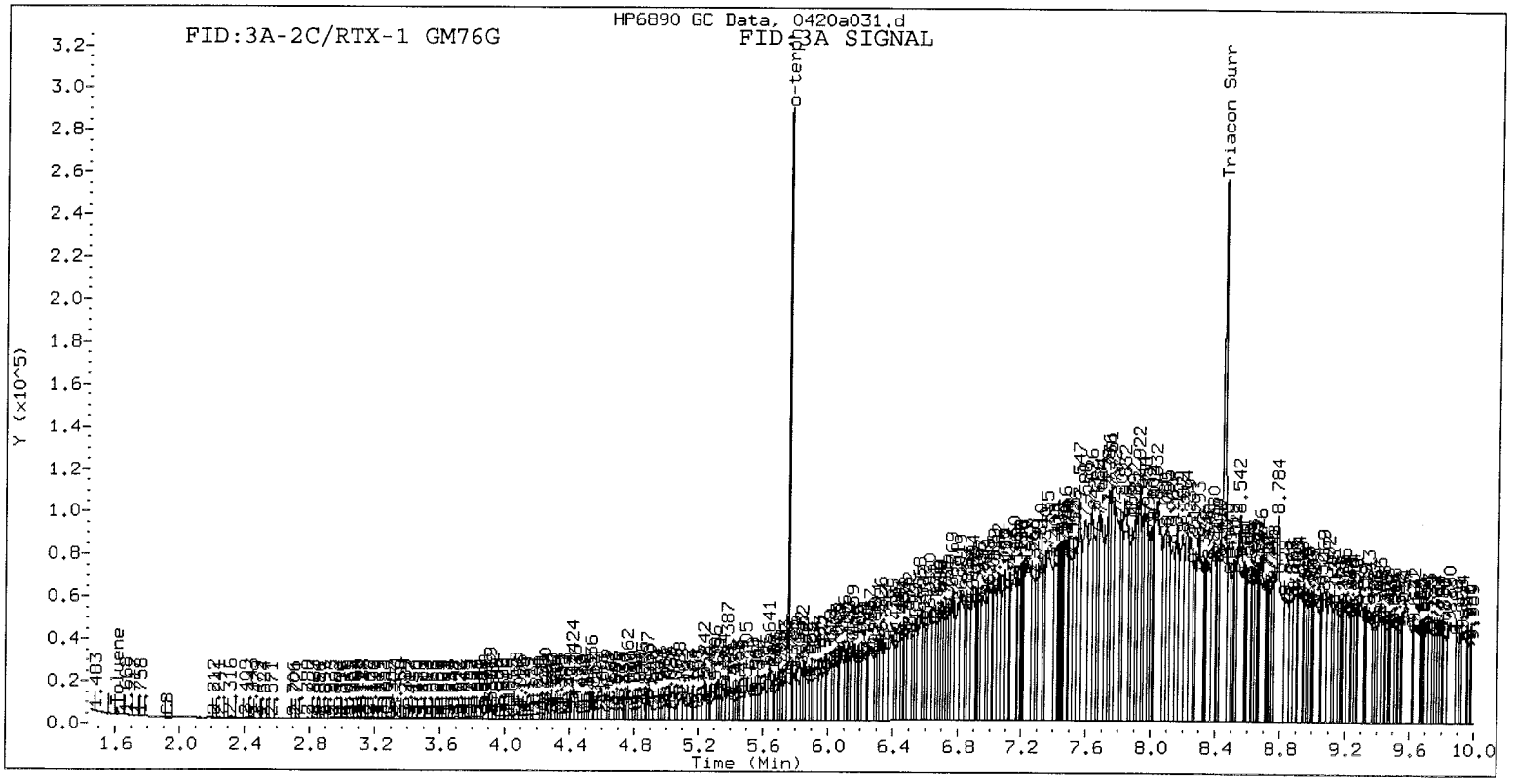
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.609 | -0.007 | 3132 | 2307 | GAS (Tol-C12) | 86454 | 0 |
| C8 | 1.919 | -0.003 | 948 | 2299 | DIESEL (C12-C24) | 3704026 | 259 |
| C10 | 3.278 | 0.000 | 1247 | 1383 | M.OIL (C24-C38) | 13342188 | 1607* |
| C12 | 4.032 | 0.000 | 2751 | 2611 | | | |
| C14 | 4.593 | -0.003 | 6799 | 6542 | | | |
| C16 | 5.112 | -0.004 | 10972 | 14141 | | | |
| C18 | 5.610 | -0.004 | 18444 | 28950 | | | |
| C20 | 6.083 | -0.003 | 34866 | 42972 | | | |
| C22 | 6.540 | -0.003 | 48324 | 55342 | | | |
| C24 | 6.997 | -0.003 | 63155 | 88730 | | | |
| C25 | 7.228 | 0.002 | 76471 | 206315 | | | |
| C26 | 7.446 | -0.004 | 78123 | 34006 | | | |
| C28 | 7.904 | 0.005 | 97059 | 91328 | | | |
| C32 | 9.013 | -0.007 | 58384 | 139982 | | | |
| C34 | 9.572 | -0.013 | 56779 | 184936 | | | |
| Filter Peak | 10.053 | 0.758 | 29790 | 27513 | | | |
| C36 | 10.129 | -0.001 | 39189.0 | 82465 | o-Terph Surrogate Rec = 85.7% | | (136633) |
| C38 | 10.645 | -0.002 | 20997.0 | 7801 | Triacon Surrogate Rec = 112.9% | | (165917) |
| C40 | 11.180 | -0.008 | 6087 | 9833 | | | |
| o-terph | 5.760 | -0.008 | 270856 | 136633 | | | |
| Triacon Surr | 8.449 | -0.009 | 180428 | 165917 | | | |

D MR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a032.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/23/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76H
Client ID:
Injection: 21-APR-2004 01:55
Dilution Factor: 5

4/23/04

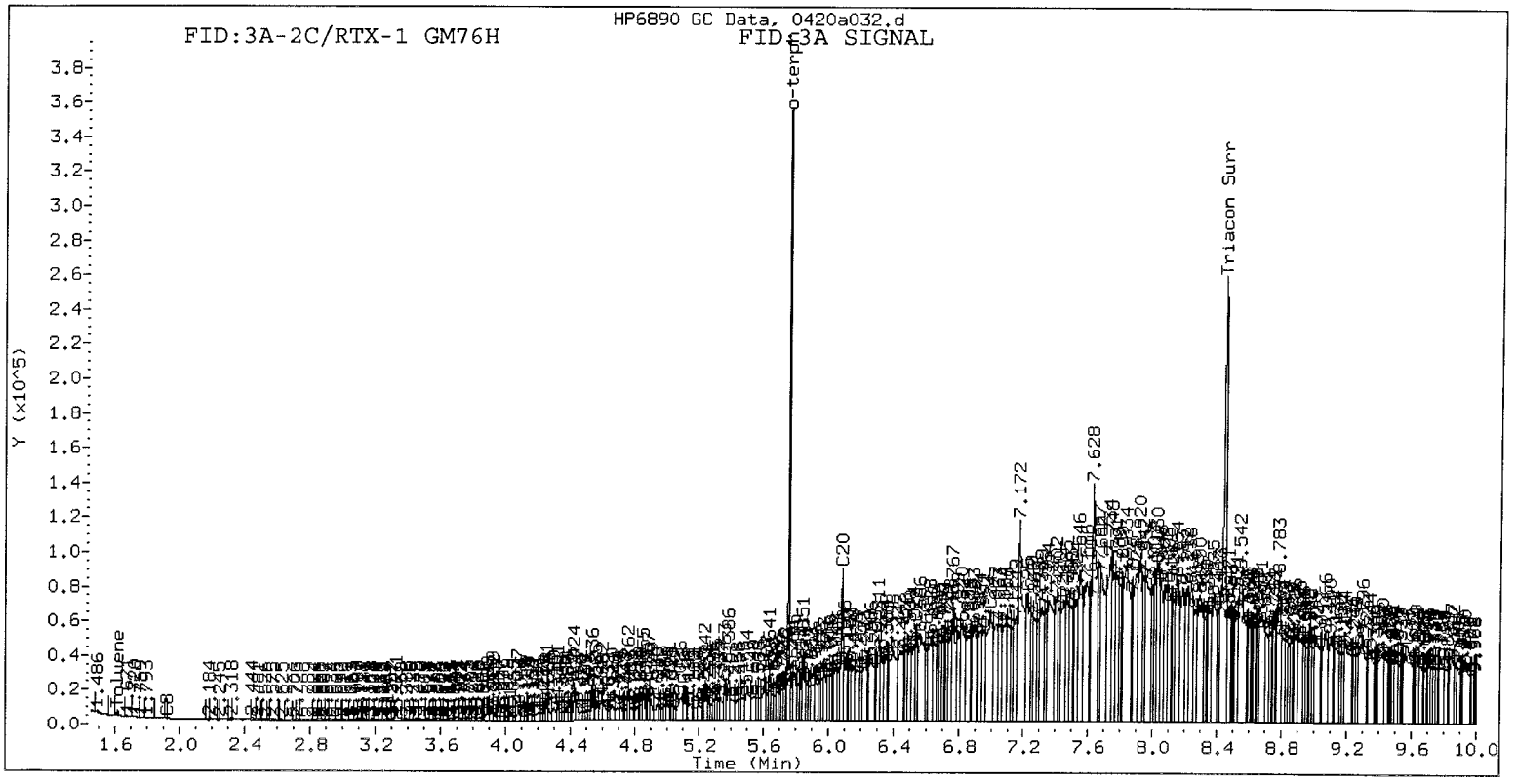
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.613 | -0.004 | 2990 | 2461 | GAS (Tol-C12) | 102429 | 0 |
| C8 | 1.922 | 0.000 | 259 | 67 | DIESEL (C12-C24) | 3953092 | 277 |
| C10 | 3.278 | 0.000 | 1582 | 1589 | M.OIL (C24-C38) | 11245190 | 1354* |
| C12 | 4.032 | 0.000 | 5651 | 4814 | | | |
| C14 | 4.593 | -0.003 | 15101 | 12196 | | | |
| C16 | 5.112 | -0.004 | 20753 | 15584 | | | |
| C18 | 5.609 | -0.005 | 27916 | 33160 | | | |
| C20 | 6.085 | -0.001 | 88463 | 74492 | | | |
| C22 | 6.538 | -0.005 | 56827 | 61153 | | | |
| C24 | 6.996 | -0.003 | 64320 | 151737 | | | |
| C25 | 7.223 | -0.002 | 74818 | 143787 | | | |
| C26 | 7.446 | -0.004 | 71244 | 101816 | | | |
| C28 | 7.894 | -0.004 | 86490 | 151509 | | | |
| C32 | 9.011 | -0.009 | 48245 | 117948 | | | |
| C34 | 9.571 | -0.014 | 44680 | 140583 | | | |
| Filter Peak | 10.052 | 0.757 | 15409 | 13564 | | | |
| C36 | 10.128 | -0.002 | 29587.0 | 35075 | o-Terph Surrogate Rec = 106.2% | | (169326) |
| C38 | 10.652 | 0.005 | 15434.0 | 5490 | Triacon Surrogate Rec = 120.0% | | (176278) |
| C40 | 11.160 | -0.028 | 4826 | 5960 | | | |
| o-terph | 5.760 | -0.009 | 332675 | 169326 | | | |
| Triacon Surr | 8.445 | -0.013 | 192669 | 176278 | | | |

D MR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040422.b/0422a024.d
Method: /chem3/fid3a.i/20040422.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/23/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76I
Client ID:
Injection: 22-APR-2004 19:04

Dilution Factor: 1

4/23/04

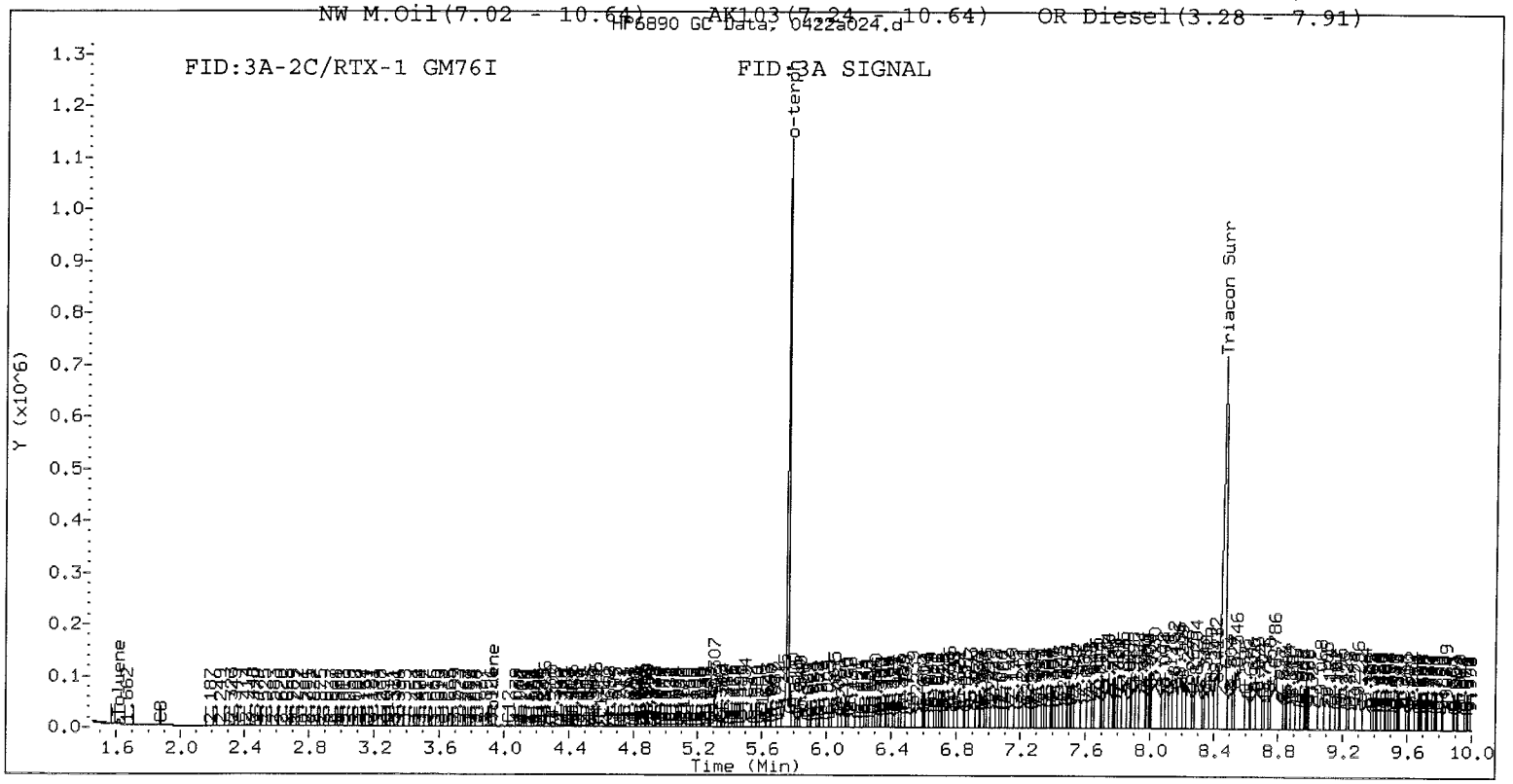
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 11.086 | 9.478 | 9963 | 398 | GAS (Tol-C12) | 65791 | 0 |
| C8 | 1.872 | -0.042 | 172 | 223 | DIESEL (C12-C24) | 2832987 | 198 |
| C10 | 3.282 | 0.003 | 1137 | 902 | M.OIL (C24-C38) | 10805340 | 1301* |
| C12 | 4.033 | 0.002 | 2856 | 3242 | | | |
| C14 | 4.602 | 0.008 | 12542 | 18380 | | | |
| C16 | 5.113 | 0.000 | 9207 | 12072 | | | |
| C18 | 5.610 | -0.002 | 16704 | 25321 | | | |
| C20 | 6.104 | 0.011 | 30015 | 28919 | | | |
| C22 | 6.567 | 0.005 | 39115 | 91792 | | | |
| C24 | 7.026 | 0.006 | 44686 | 67364 | | | |
| C25 | 7.242 | -0.002 | 40777 | 47599 | | | |
| C26 | 7.469 | 0.000 | 47626 | 71715 | | | |
| C28 | 7.919 | 0.004 | 85125 | 106254 | | | |
| C32 | 9.013 | -0.010 | 56981 | 159837 | | | |
| C34 | 9.575 | -0.006 | 54751 | 119359 | | | |
| Filter Peak | 10.055 | 0.759 | 64451 | 61002 | | | |
| C36 | 10.122 | -0.001 | 51902.0 | 104325 | o-Terph Surrogate Rec = 97.2% | | (774449) |
| C38 | 10.638 | -0.002 | 50482.0 | 95700 | Triacon Surrogate Rec = 117.6% | | (864395) |
| C40 | 11.177 | -0.002 | 13585 | 30758 | | | |
| o-terph | 5.769 | 0.001 | 1107053 | 774449 | | | |
| Triacon Surr | 8.468 | -0.001 | 649197 | 864395 | | | |

0/8

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.020) AK102(3.28 - 7.24) Jet A(3.28 - 5.61)
NW M.Oil(7.02 - 10.64) AK103(7.24 - 10.64) OR Diesel(3.28 - 7.91)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a034.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76J
Client ID:
Injection: 21-APR-2004 02:35

Dilution Factor: 1

9 4/22/04

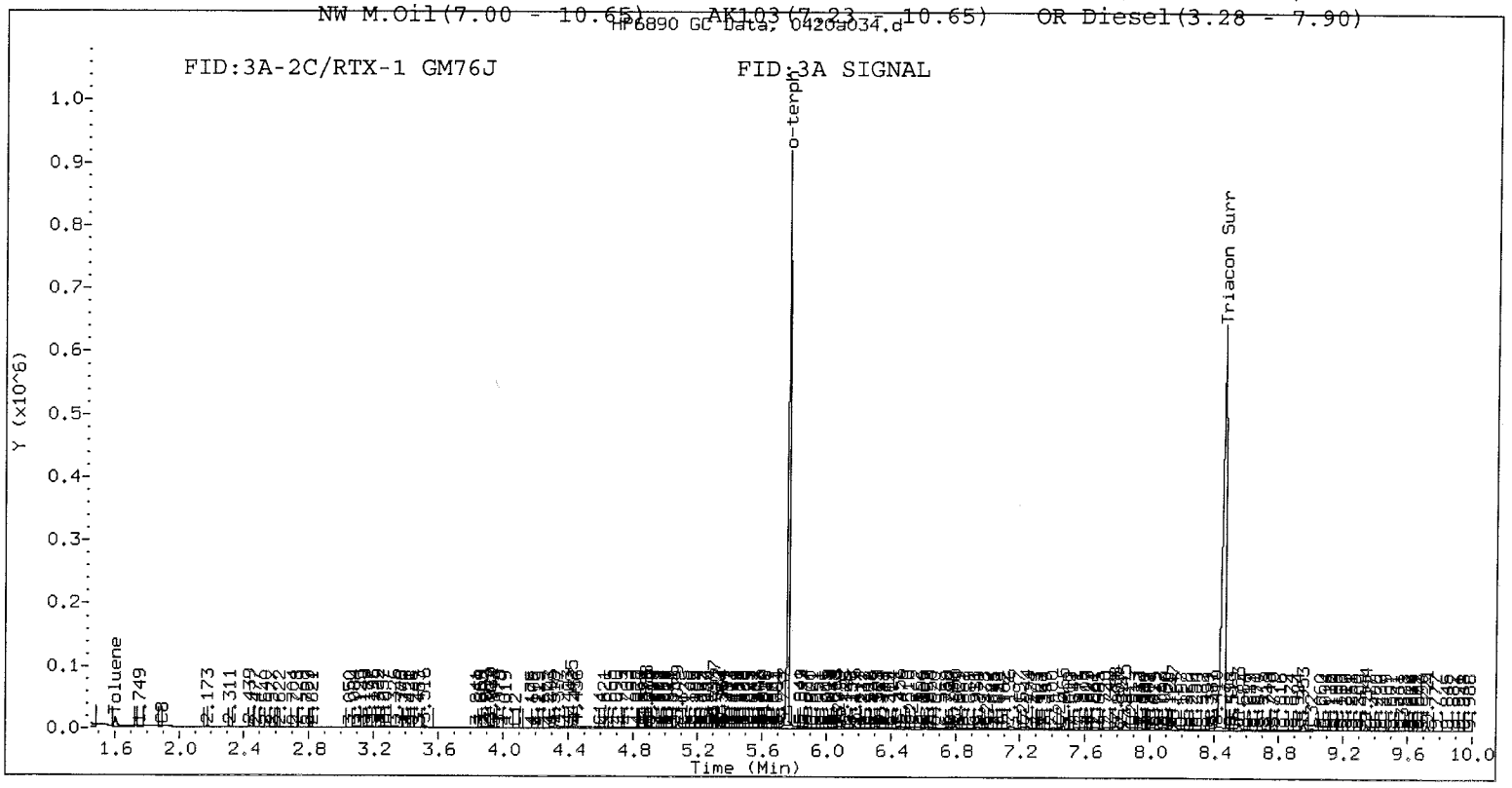
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.599 | -0.018 | 14935 | 26734 | GAS (Tol-C12) | 71250 | 0 |
| C8 | 1.888 | -0.035 | 857 | 933 | DIESEL (C12-C24) | 307930 | 22 |
| C10 | 3.278 | 0.000 | 743 | 1134 | M.OIL (C24-C38) | 423787 | 51* |
| C12 | 4.075 | 0.043 | 251 | 495 | | | |
| C14 | 4.599 | 0.004 | 646 | 1013 | | | |
| C16 | 5.112 | -0.003 | 2033 | 2187 | | | |
| C18 | 5.610 | -0.005 | 2691 | 1820 | | | |
| C20 | 6.081 | -0.005 | 2866 | 3153 | | | |
| C22 | 6.537 | -0.006 | 3174 | 4380 | | | |
| C24 | 6.992 | -0.007 | 2624 | 2995 | | | |
| C25 | 7.217 | -0.009 | 3537 | 5404 | | | |
| C26 | 7.441 | -0.009 | 2325 | 2727 | | | |
| C28 | 7.887 | -0.011 | 2997 | 4450 | | | |
| C32 | 9.006 | -0.014 | 2699 | 5688 | | | |
| C34 | 9.571 | -0.014 | 1131 | 2159 | | | |
| Filter Peak | 10.058 | 0.763 | 153458 | 154405 | | | |
| C36 | 10.082 | -0.048 | 7614.0 | 9161 | o-Terph Surrogate Rec = 73.0% | | (582110) |
| C38 | 10.640 | -0.007 | 1019.0 | 1404 | Triacon Surrogate Rec = 120.1% | | (882171) |
| C40 | ---- | | | | | | |
| o-terph | 5.766 | -0.002 | 913643 | 582110 | | | |
| Triacon Surr | 8.461 | 0.003 | 639462 | 882171 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)

HP6890 GC Data, 0420a034.d



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a035.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76K
Client ID:
Injection: 21-APR-2004 02:56

Dilution Factor: 1

SR 4/22/04

FID:3A RESULTS

| Compound | RT | Shift | Height | Area |
|---|---|---|---|---|
| Toluene | 1.600 | -0.016 | 13723 | 11482 |
| C8 | ---- | | | |
| C10 | 3.278 | -0.001 | 1067 | 1319 |
| C12 | ---- | | | |
| C14 | 4.606 | 0.010 | 1068 | 3589 |
| C16 | 5.114 | -0.002 | 1810 | 2942 |
| C18 | 5.618 | 0.004 | 1418 | 113 |
| C20 | 6.081 | -0.005 | 4888 | 5021 |
| C22 | 6.536 | -0.007 | 8071 | 12851 |
| C24 | 6.991 | -0.009 | 11251 | 14616 |
| C25 | 7.215 | -0.011 | 14950 | 31023 |
| C26 | 7.443 | -0.007 | 14896 | 16307 |
| C28 | 7.892 | -0.006 | 26623 | 57866 |
| C32 | 9.006 | -0.014 | 17047 | 42307 |
| C34 | 9.600 | 0.015 | 11206 | 7881 |
| Filter Peak | 10.054 | 0.759 | 116199 | 113406 |
| C36 | 10.118 | -0.012 | 12612.0 | 26679 |
| C38 | 10.634 | -0.013 | 7498.0 | 17533 |
| C40 | 11.175 | -0.012 | 2331 | 7914 |
| o-terph | 5.767 | -0.001 | 1025644 | 686824 |
| Triacon Surr | 8.462 | 0.004 | 647830 | 869136 |

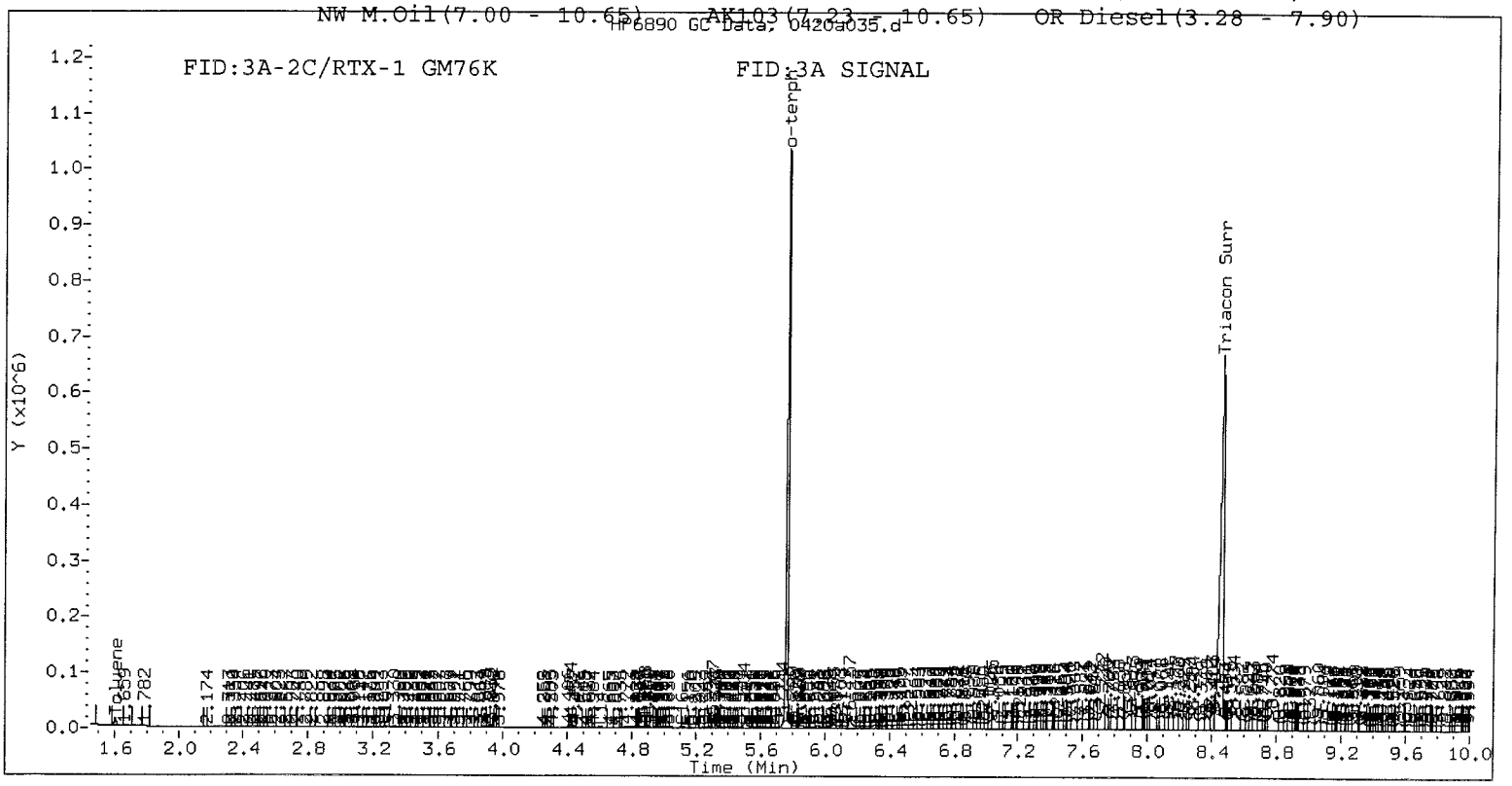
| Range | Total Area | Conc |
|---|---|---|
| GAS (Tol-C12) | 68748 | 0 |
| DIESEL (C12-C24) | 722035 | 51 |
| M.OIL (C24-C38) | 3383294 | 407* |

o-Terph Surrogate Rec = 86.2% (686824)
Triacon Surrogate Rec = 118.3% (869136)

D/R

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a036.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76L
Client ID:
Injection: 21-APR-2004 03:16
Dilution Factor: 1

SR 4/22/04

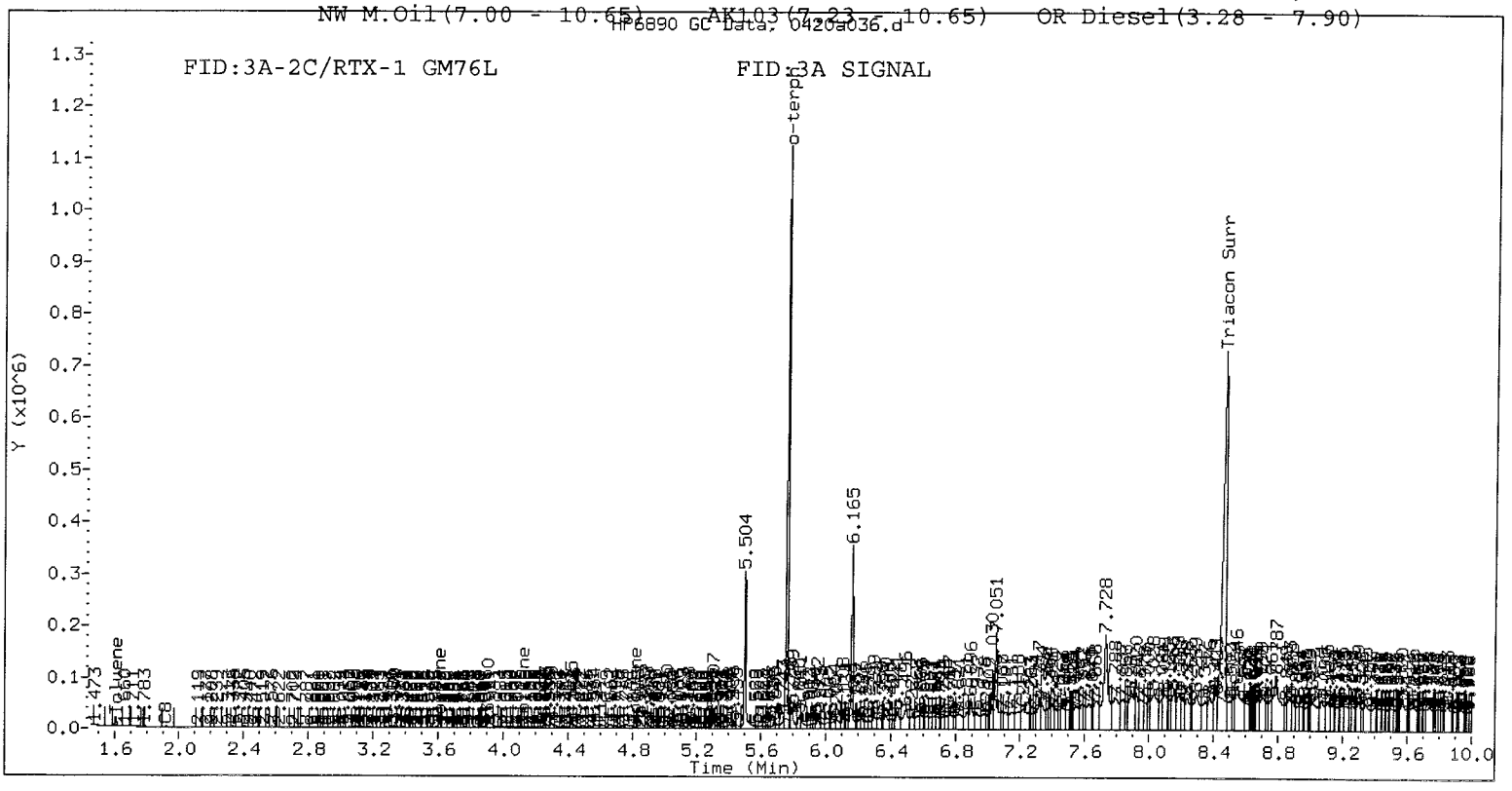
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 4.816 | 3.199 | 3385 | 3265 | GAS (Tol-C12) | 143009 | 0 |
| C8 | 1.913 | -0.010 | 627 | 784 | DIESEL (C12-C24) | 2579420 | 181 |
| C10 | 3.278 | -0.001 | 1645 | 1646 | M.OIL (C24-C38) | 10451150 | 1259* |
| C12 | 4.032 | 0.000 | 2892 | 2976 | | | |
| C14 | 4.601 | 0.006 | 7943 | 12854 | | | |
| C16 | 5.111 | -0.005 | 4996 | 2903 | | | |
| C18 | 5.610 | -0.005 | 6474 | 10085 | | | |
| C20 | 6.069 | -0.018 | 21323 | 33097 | | | |
| C22 | 6.537 | -0.006 | 30661 | 43663 | | | |
| C24 | 6.994 | -0.006 | 28908 | 17974 | | | |
| C25 | 7.221 | -0.005 | 40555 | 125575 | | | |
| C26 | 7.443 | -0.007 | 38675 | 39675 | | | |
| C28 | 7.888 | -0.011 | 76620 | 153988 | | | |
| C32 | 9.015 | -0.005 | 54428 | 146894 | | | |
| C34 | 9.600 | 0.015 | 42175 | 15846 | | | |
| Filter Peak | 10.060 | 0.765 | 99707 | 97194 | | | |
| C36 | 10.127 | -0.003 | 42310.0 | 97879 | o-Terph Surrogate Rec = 95.8% | | (763985) |
| C38 | 10.639 | -0.008 | 24453.0 | 60558 | Triacon Surrogate Rec = 123.2% | | (905278) |
| C40 | 11.174 | -0.014 | 6226 | 10624 | | | |
| o-terph | 5.770 | 0.001 | 1106654 | 763985 | | | |
| Triacon Surr | 8.469 | 0.011 | 672878 | 905278 | | | |

D MR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a037.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76M
Client ID:
Injection: 21-APR-2004 03:36
Dilution Factor: 1

9Y 4/22/04

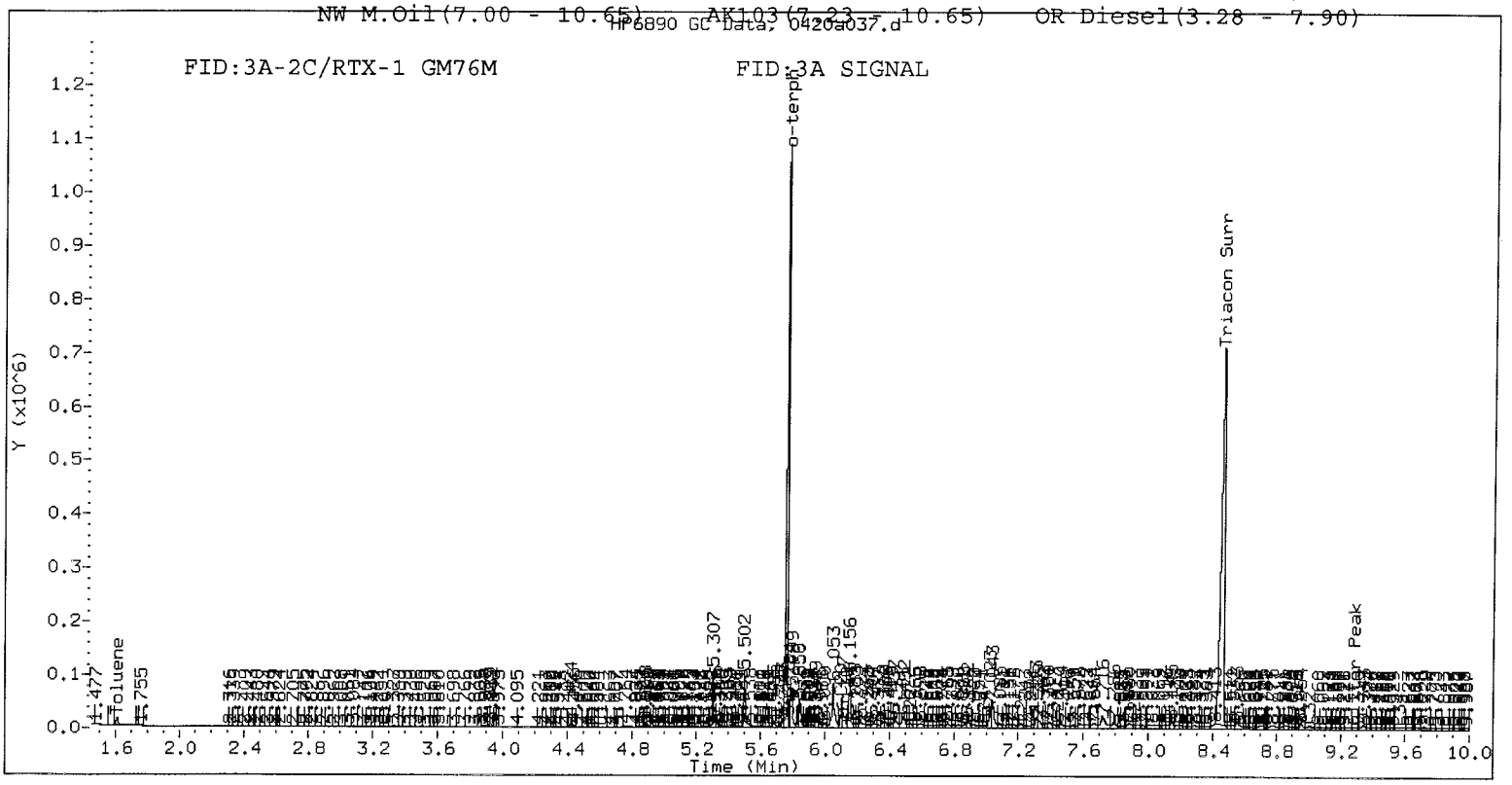
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.606 | -0.011 | 14382 | 12184 | GAS (Tol-C12) | 48327 | 0 |
| C8 | ---- | | | | DIESEL (C12-C24) | 1165248 | 82 |
| C10 | 3.278 | -0.001 | 969 | 1128 | M.OIL (C24-C38) | 1071300 | 129* |
| C12 | ---- | | | | | | |
| C14 | 4.606 | 0.010 | 857 | 1951 | | | |
| C16 | 5.115 | -0.001 | 1601 | 1165 | | | |
| C18 | 5.609 | -0.006 | 3252 | 2440 | | | |
| C20 | 6.104 | 0.018 | 55010 | 37025 | | | |
| C22 | 6.534 | -0.009 | 9152 | 9151 | | | |
| C24 | 6.991 | -0.009 | 4881 | 4971 | | | |
| C25 | 7.217 | -0.009 | 8551 | 14520 | | | |
| C26 | 7.439 | -0.011 | 5729 | 5123 | | | |
| C28 | 7.911 | 0.012 | 7008 | 7967 | | | |
| C32 | 9.004 | -0.017 | 6351 | 15447 | | | |
| C34 | 9.567 | -0.018 | 4275 | 15152 | | | |
| Filter Peak | 9.287 | -0.008 | 504639 | 824275 | | | |
| C36 | 10.120 | -0.011 | 4672.0 | 13635 | o-Terph Surrogate Rec = 87.9% (700303) | | |
| C38 | 10.636 | -0.012 | 2735.0 | 8773 | Triacon Surrogate Rec = 138.7% (1018813) | | |
| C40 | 11.179 | -0.009 | 963 | 765 | | | |
| o-terph | 5.768 | 0.000 | 1070007 | 700303 | | | |
| Triacon Surr | 8.463 | 0.004 | 703348 | 1018813 | | | |

9|R

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a038.d ARI ID: GM76N
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m Client ID:
Instrument: fid3a.i Injection: 21-APR-2004 03:56
Operator: ESJ
Report Date: 04/22/2004 Dilution Factor: 1
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

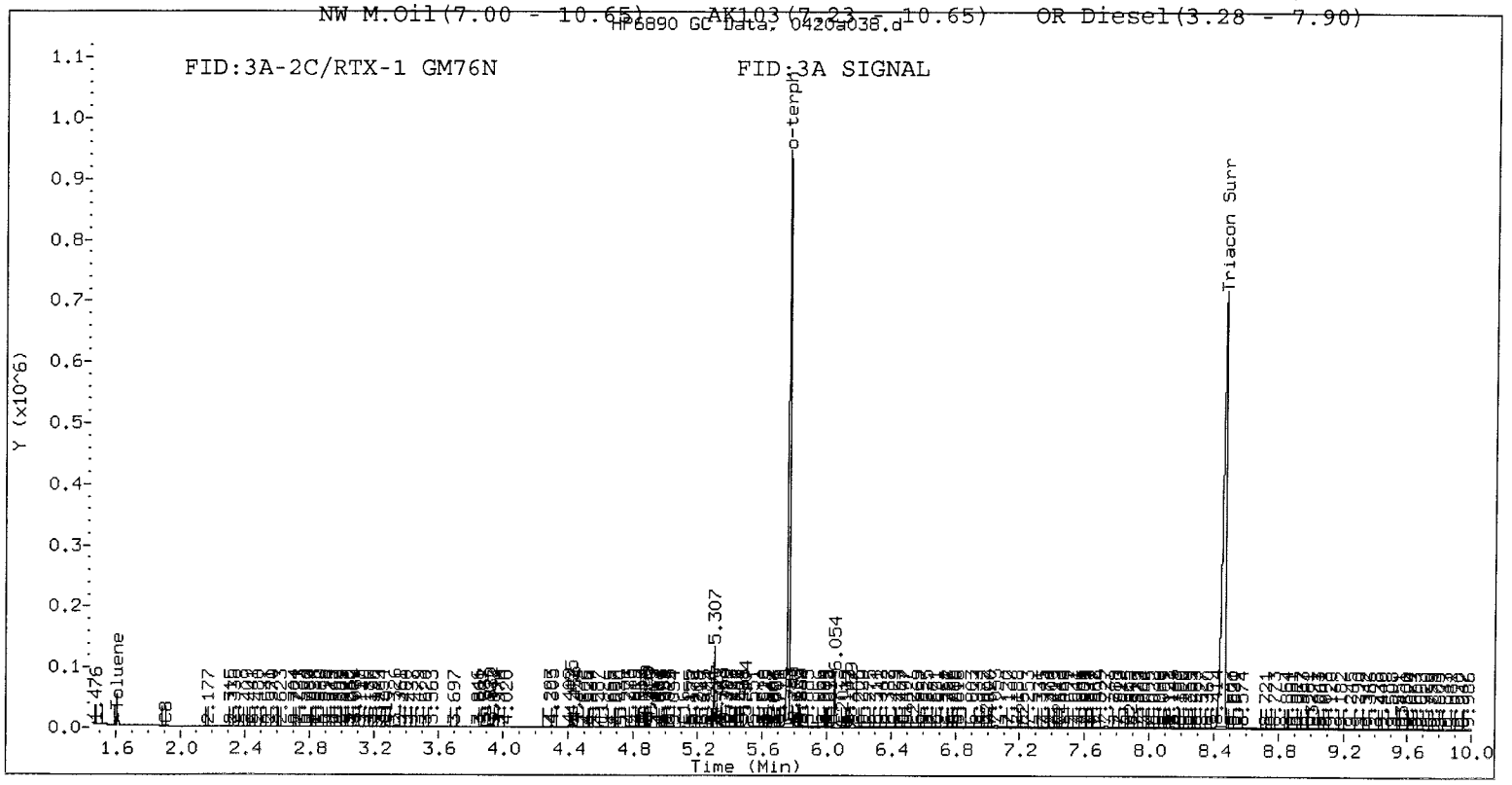
GR 4/22/04

FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.606 | -0.011 | 20216 | 7587 | GAS (Tol-C12) | 46709 | 0 |
| C8 | 1.905 | -0.018 | 485 | 53 | DIESEL (C12-C24) | 321940 | 23 |
| C10 | 3.279 | 0.000 | 900 | 1147 | M.OIL (C24-C38) | 159057 | 19* |
| C12 | ---- | | | | | | |
| C14 | 4.605 | 0.009 | 754 | 2029 | | | |
| C16 | 5.116 | 0.000 | 1114 | 1976 | | | |
| C18 | 5.610 | -0.005 | 1790 | 1338 | | | |
| C20 | 6.104 | 0.017 | 4064 | 3744 | | | |
| C22 | 6.540 | -0.003 | 1438 | 2568 | | | |
| C24 | 6.995 | -0.005 | 947 | 961 | | | |
| C25 | 7.219 | -0.006 | 1419 | 2739 | | | |
| C26 | 7.443 | -0.007 | 966 | 795 | | | |
| C28 | 7.890 | -0.009 | 1766 | 2604 | | | |
| C32 | 9.007 | -0.013 | 1930 | 2760 | | | |
| C34 | 9.570 | -0.015 | 426 | 857 | | | |
| Filter Peak | 10.089 | 0.794 | 539622 | 905706 | | | |
| C36 | 10.089 | -0.041 | 541712.0 | 919747 | o-Terph Surrogate Rec = 79.0% | | (630042) |
| C38 | ---- | | | | Triacon Surrogate Rec = 137.4% | | |
| C40 | ---- | | | | | | |
| o-terph | 5.767 | -0.001 | 940840 | 630042 | | | |
| Triacon Surr | 8.464 | 0.006 | 713628 | 1009623 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040422.b/0422a025.d
Method: /chem3/fid3a.i/20040422.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/23/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76O
Client ID:
Injection: 22-APR-2004 19:25

Dilution Factor: 1

GJ 4/23/04

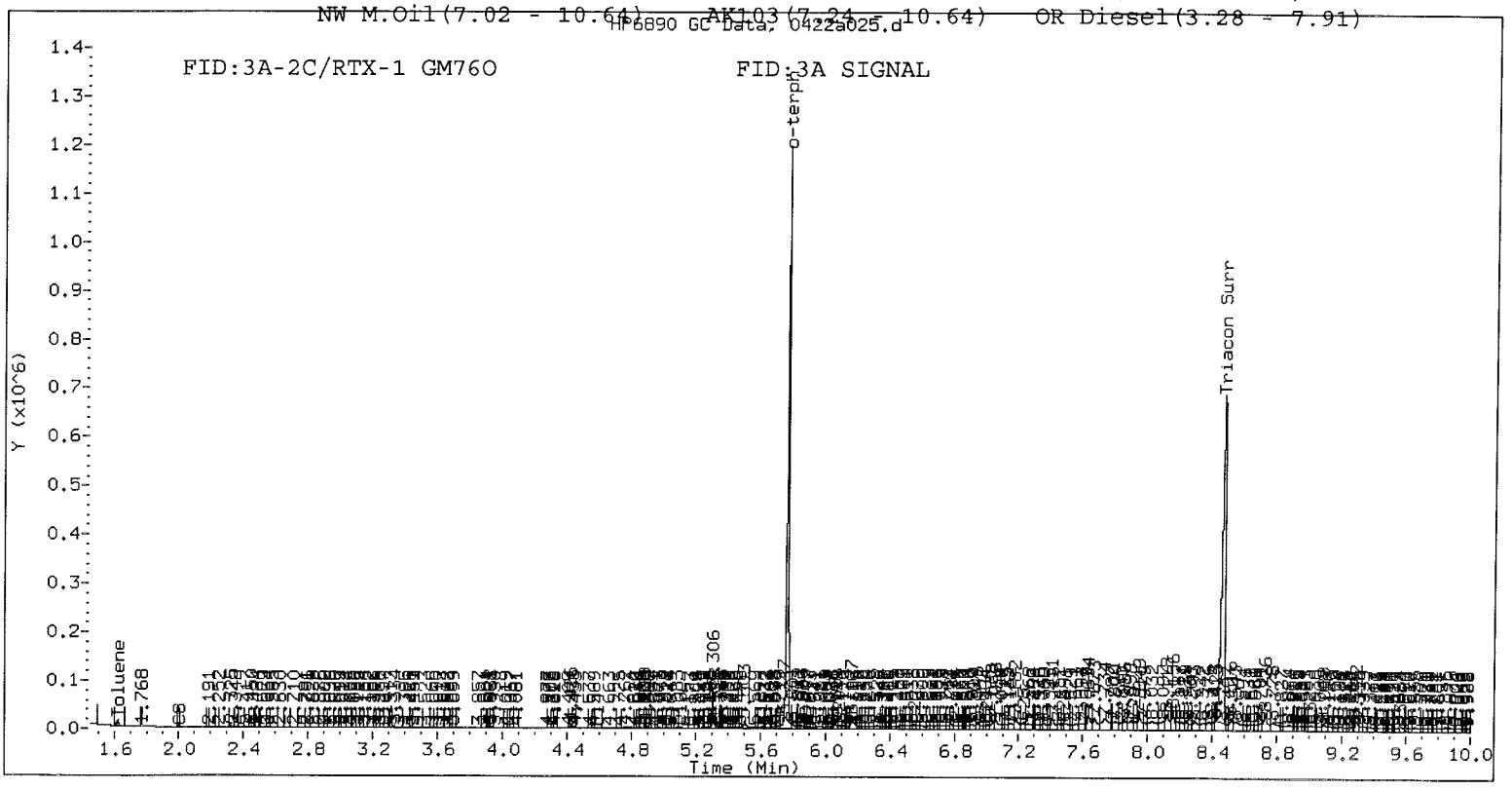
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.616 | 0.009 | 11059 | 10544 | GAS (Tol-C12) | 48161 | 0 |
| C8 | 2.001 | 0.087 | 170 | 271 | DIESEL (C12-C24) | 772460 | 54 |
| C10 | 3.282 | 0.003 | 815 | 798 | M.OIL (C24-C38) | 2405822 | 290* |
| C12 | 4.036 | 0.005 | 343 | 339 | | | |
| C14 | 4.604 | 0.010 | 710 | 1421 | | | |
| C16 | 5.112 | -0.001 | 2014 | 3489 | | | |
| C18 | 5.610 | -0.002 | 4742 | 5553 | | | |
| C20 | 6.090 | -0.004 | 8524 | 9308 | | | |
| C22 | 6.553 | -0.009 | 9447 | 10699 | | | |
| C24 | 7.007 | -0.013 | 9874 | 11518 | | | |
| C25 | 7.231 | -0.013 | 15094 | 23461 | | | |
| C26 | 7.478 | 0.010 | 12098 | 12015 | | | |
| C28 | 7.922 | 0.007 | 17991 | 23195 | | | |
| C32 | 9.009 | -0.014 | 13328 | 30837 | | | |
| C34 | 9.570 | -0.011 | 9480 | 14205 | | | |
| Filter Peak | 10.071 | 0.775 | 296370 | 372090 | | | |
| C36 | 10.117 | -0.006 | 9180.0 | 17239 | o-Terph Surrogate Rec = 107.2% | | (854742) |
| C38 | 10.633 | -0.007 | 7085.0 | 23452 | Triacon Surrogate Rec = 124.3% | | (913155) |
| C40 | 11.176 | -0.004 | 2903 | 8047 | | | |
| o-terph | 5.771 | 0.003 | 1179327 | 854742 | | | |
| Triacon Surr | 8.470 | 0.001 | 672005 | 913155 | | | |

D | R

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.020) AK102(3.28 - 7.24) Jet A(3.28 - 5.61)
NW M.Oil(7.02 - 10.64) AK103(7.24 - 10.64) OR Diesel(3.28 - 7.91)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040422.b/0422a026.d
Method: /chem3/fid3a.i/20040422.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/23/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76P
Client ID:
Injection: 22-APR-2004 19:45

Dilution Factor: 1

4/23/04

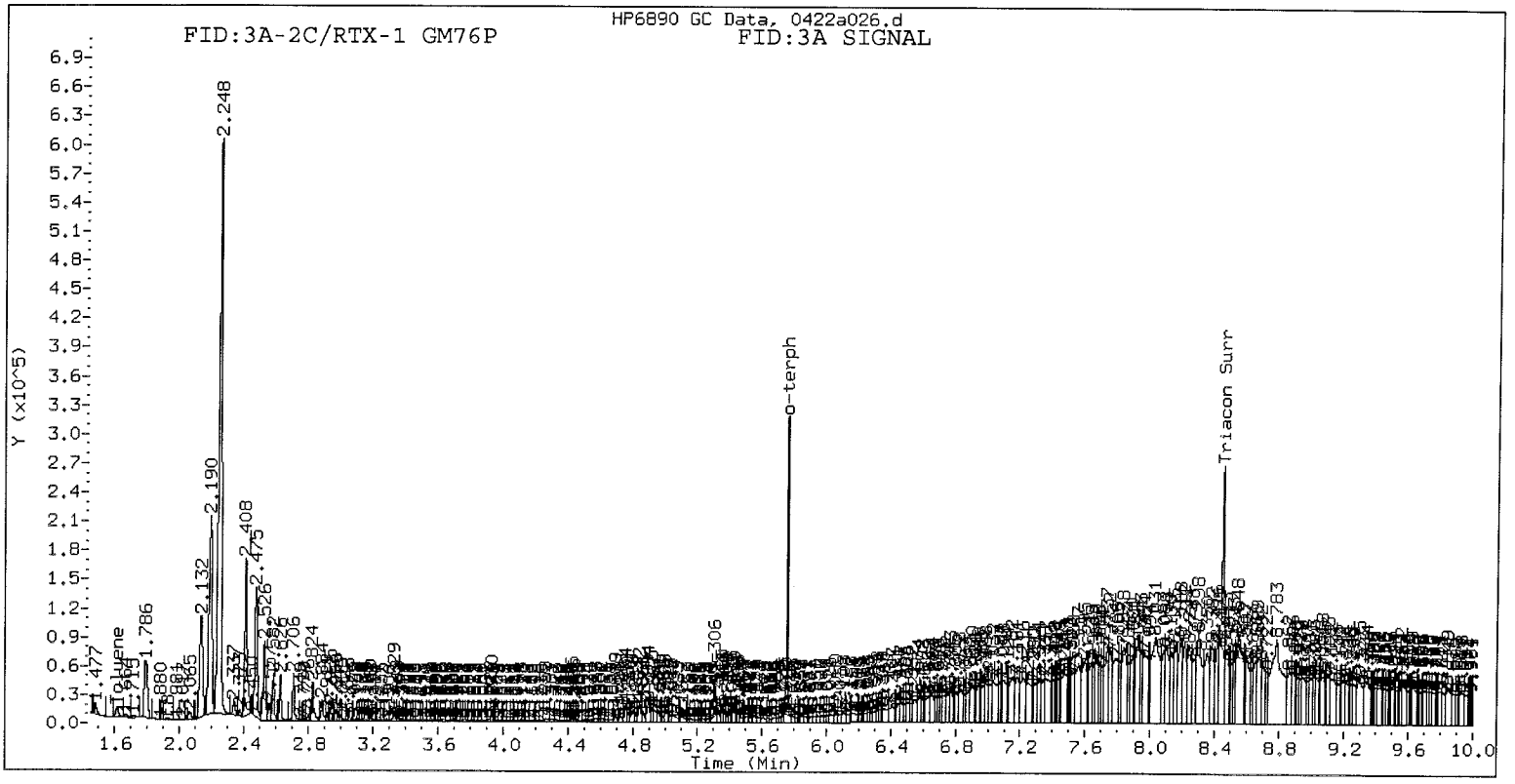
FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.613 | 0.006 | 10680 | 12731 | GAS (Tol-C12) | 2007106 | 7 |
| C8 | 1.924 | 0.011 | 1289 | 2029 | DIESEL (C12-C24) | 2025010 | 142 |
| C10 | 3.282 | 0.003 | 1933 | 1482 | M.OIL (C24-C38) | 10763428 | 1296* |
| C12 | 4.032 | 0.001 | 1329 | 1411 | | | |
| C14 | 4.593 | 0.000 | 2973 | 1511 | | | |
| C16 | 5.111 | -0.002 | 6165 | 10737 | | | |
| C18 | 5.609 | -0.003 | 6028 | 8517 | | | |
| C20 | 6.085 | -0.008 | 8930 | 10288 | | | |
| C22 | 6.551 | -0.011 | 24471 | 35807 | | | |
| C24 | 7.011 | -0.008 | 41186 | 52921 | | | |
| C25 | 7.248 | 0.004 | 42289 | 89187 | | | |
| C26 | 7.473 | 0.004 | 51980 | 113096 | | | |
| C28 | 7.922 | 0.007 | 90933 | 132980 | | | |
| C32 | 9.022 | -0.001 | 49892 | 11851 | | | |
| C34 | 9.569 | -0.012 | 43617 | 65739 | | | |
| Filter Peak | 10.056 | 0.760 | 94443 | 91710 | | | |
| C36 | 10.121 | -0.002 | 39368.0 | 113338 | o-Terph Surrogate Rec = 19.3% | | (153996) |
| C38 | 10.635 | -0.005 | 30503.0 | 80903 | Triacon Surrogate Rec = 22.6% | | (165745) |
| C40 | 11.174 | -0.006 | 11245 | 29079 | | | |
| o-terph | 5.760 | -0.008 | 309969 | 153996 | | | |
| Triacon Surr | 8.449 | -0.020 | 191224 | 165745 | | | |

D1 R

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.020) AK102(3.28 - 7.24) Jet A(3.28 - 5.61)
NW M.Oil(7.02 - 10.64) AK103(7.24 - 10.64) OR Diesel(3.28 - 7.91)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a045.d ARI ID: GM76Q
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m Client ID:
Instrument: fid3a.i Injection: 21-APR-2004 06:18
Operator: ESJ
Report Date: 04/21/2004 Dilution Factor: 1
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

4/23/04

FID:3A RESULTS

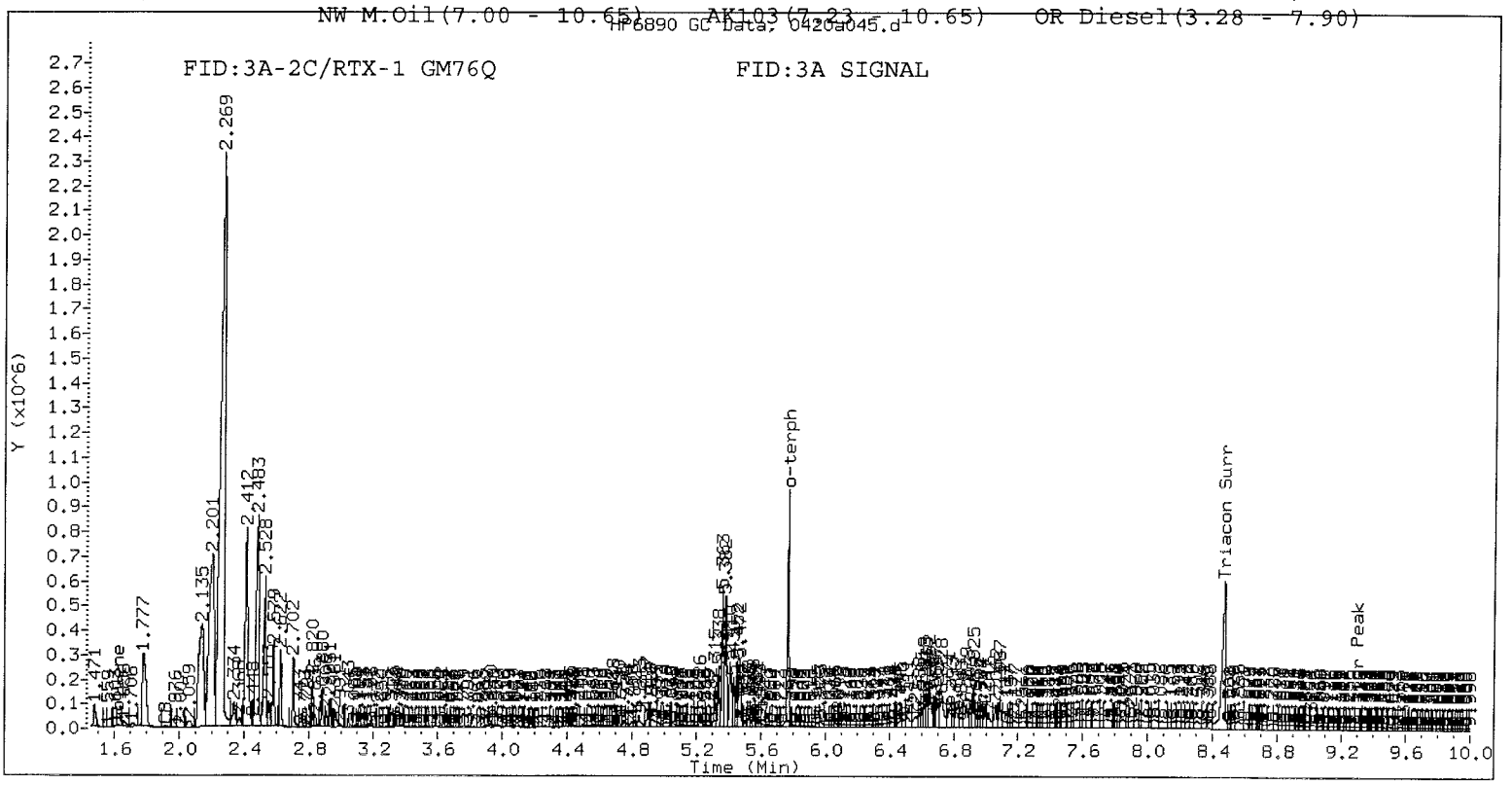
| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.619 | 0.002 | 6223 | 5778 | GAS (Tol-C12) | 11255093 | 38 |
| C8 | 1.913 | -0.010 | 3417 | 6330 | DIESEL (C12-C24) | 5349450 | 375 |
| C10 | 3.277 | -0.001 | 5483 | 3092 | M.OIL (C24-C38) | 3980437 | 479* |
| C12 | 4.030 | -0.002 | 1117 | 398 | | | |
| C14 | 4.601 | 0.005 | 6471 | 4924 | | | |
| C16 | 5.117 | 0.002 | 9809 | 10477 | | | |
| C18 | 5.606 | -0.009 | 14186 | 21050 | | | |
| C20 | 6.084 | -0.003 | 12255 | 2650 | | | |
| C22 | 6.566 | 0.023 | 49118 | 74928 | | | |
| C24 | 6.994 | -0.006 | 93918 | 75987 | | | |
| C25 | 7.223 | -0.002 | 28247 | 62034 | | | |
| C26 | 7.456 | 0.006 | 25077 | 16788 | | | |
| C28 | 7.898 | 0.000 | 31358 | 53041 | | | |
| C32 | 9.013 | -0.007 | 17164 | 37770 | | | |
| C34 | 9.590 | 0.005 | 10589 | 6143 | | | |
| Filter Peak | 9.297 | 0.002 | 13676 | 24011 | | | |
| C36 | 10.123 | -0.007 | 8112.0 | 13226 | o-Terph Surrogate Rec = 82.9% | | (660577) |
| C38 | 10.636 | -0.011 | 3432.0 | 3846 | Triacon Surrogate Rec = 115.4% | | (848075) |
| C40 | ---- | | | | | | |
| o-terph | 5.772 | 0.003 | 962631 | 660577 | | | |
| Triacon Surr | 8.471 | 0.013 | 600728 | 848075 | | | |

D/F

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)

HP6890 GC Data: 0420a045.d



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a046.d ARI ID: GM76R
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m Client ID:
Instrument: fid3a.i Injection: 21-APR-2004 06:38
Operator: ESJ
Report Date: 04/22/2004 Dilution Factor: 1
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

4/22/04

FID:3A RESULTS

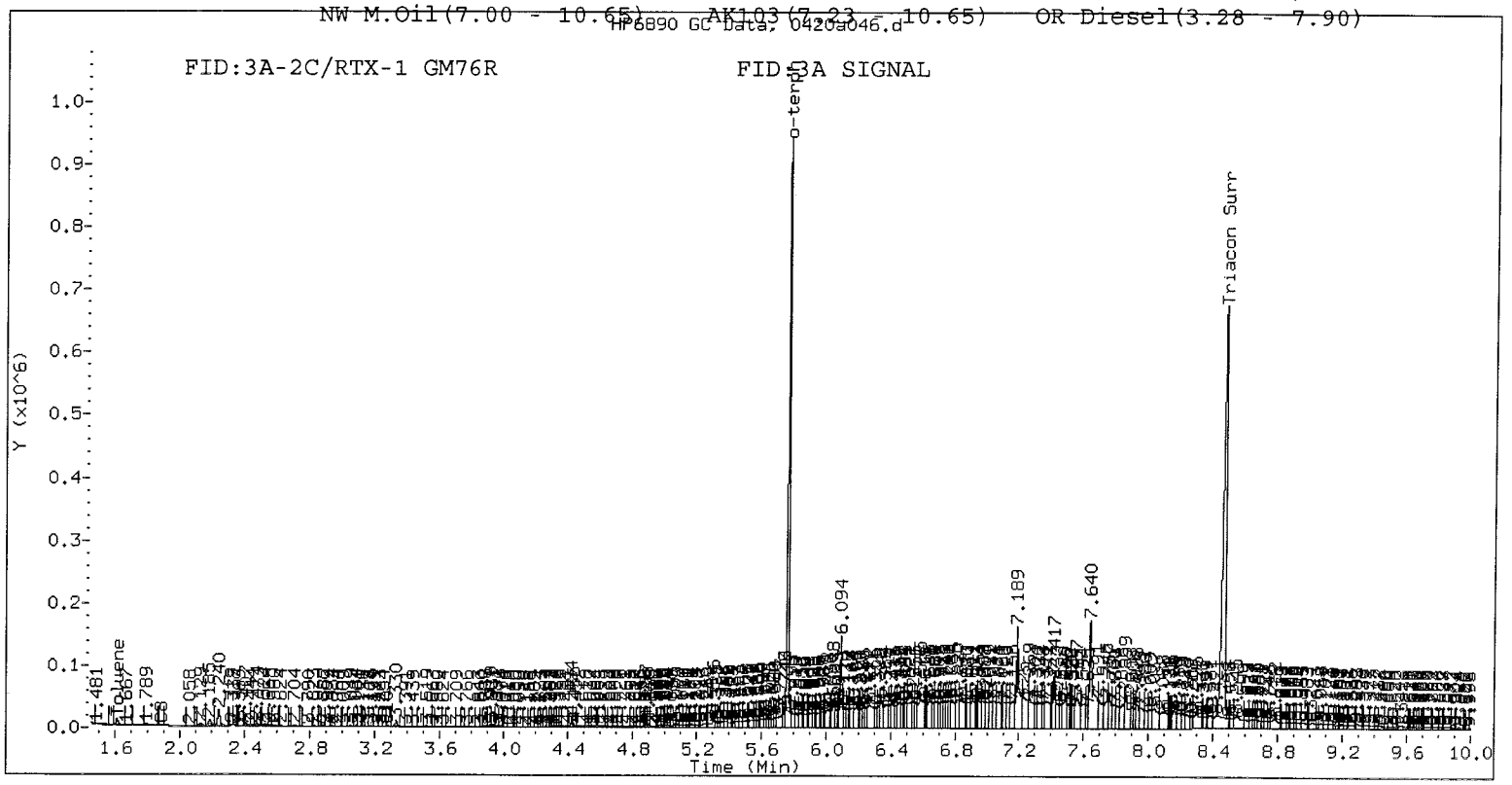
| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.609 | -0.008 | 10037 | 9031 | GAS (Tol-C12) | 106622 | 0 |
| C8 | 1.879 | -0.044 | 65 | 54 | DIESEL (C12-C24) | 3286372 | 230 |
| C10 | 3.279 | 0.000 | 586 | 789 | M.OIL (C24-C38) | 4012348 | 483* |
| C12 | 4.033 | 0.001 | 407 | 721 | | | |
| C14 | 4.595 | 0.000 | 927 | 1995 | | | |
| C16 | 5.111 | -0.004 | 3739 | 4749 | | | |
| C18 | 5.625 | 0.011 | 13258 | 10015 | | | |
| C20 | 6.082 | -0.004 | 27878 | 18661 | | | |
| C22 | 6.540 | -0.003 | 43918 | 49385 | | | |
| C24 | 6.996 | -0.004 | 42918 | 45930 | | | |
| C25 | 7.227 | 0.002 | 50479 | 106588 | | | |
| C26 | 7.461 | 0.011 | 38499 | 27436 | | | |
| C28 | 7.902 | 0.004 | 33984 | 40491 | | | |
| C32 | 9.010 | -0.010 | 11165 | 24313 | | | |
| C34 | 9.566 | -0.019 | 6282 | 20652 | | | |
| Filter Peak | 10.053 | 0.758 | 85362 | 82336 | | | |
| C36 | 10.119 | -0.011 | 3384.0 | 7115 | o-Terph Surrogate Rec = 75.6% | | (602431) |
| C38 | 10.638 | -0.009 | 1559.0 | 5300 | Triacon Surrogate Rec = 118.3% | | (869247) |
| C40 | ---- | | | | | | |
| o-terph | 5.768 | 0.000 | 916092 | 602431 | | | |
| Triacon Surr | 8.472 | 0.014 | 657138 | 869247 | | | |

D IR

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)

HP6890 GC Data: 0420a046.d



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a020.d
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m
Instrument: fid3a.i
Operator: ESJ
Report Date: 04/22/2004
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

ARI ID: GM76AMS
Client ID:
Injection: 20-APR-2004 21:51

Dilution Factor: 1

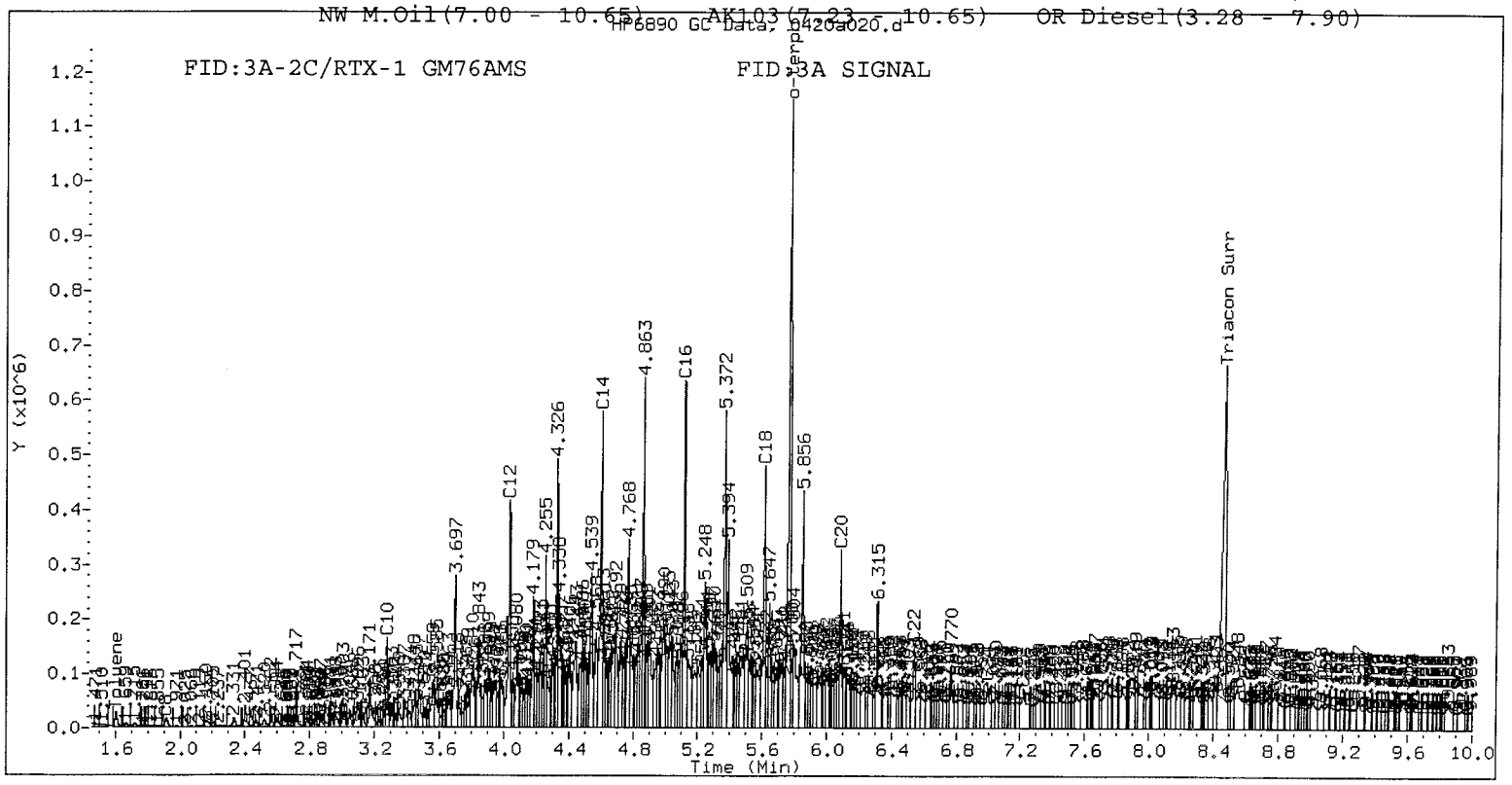
GJ 4/22/04

FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.599 | -0.018 | 27959 | 29165 | GAS (Tol-C12) | 3566565 | 12 |
| C8 | 1.908 | -0.015 | 15138 | 19387 | DIESEL (C12-C24) | 18921706 | 1325 |
| C10 | 3.277 | -0.002 | 163947 | 102009 | M.OIL (C24-C38) | 9727537 | 1171 |
| C12 | 4.033 | 0.001 | 414068 | 363797 | | | |
| C14 | 4.600 | 0.004 | 577704 | 479742 | | | |
| C16 | 5.120 | 0.004 | 634060 | 501638 | | | |
| C18 | 5.618 | 0.003 | 479893 | 388088 | | | |
| C20 | 6.088 | 0.001 | 326390 | 233211 | | | |
| C22 | 6.542 | -0.001 | 155220 | 162543 | | | |
| C24 | 6.997 | -0.002 | 83603 | 159488 | | | |
| C25 | 7.222 | -0.004 | 71792 | 192118 | | | |
| C26 | 7.447 | -0.003 | 61435 | 70802 | | | |
| C28 | 7.896 | -0.003 | 68736 | 128338 | | | |
| C32 | 9.016 | -0.004 | 49457 | 132429 | | | |
| C34 | 9.575 | -0.010 | 48454 | 117757 | | | |
| Filter Peak | 10.061 | 0.766 | 110413 | 109765 | | | |
| C36 | 10.124 | -0.006 | 51283.0 | 126944 | o-Terph Surrogate Rec = 93.4% | | (744162) |
| C38 | 10.640 | -0.007 | 48176.0 | 107329 | Triacon Surrogate Rec = 110.2% | | (809566) |
| C40 | 11.182 | -0.006 | 10304 | 29931 | | | |
| o-terph | 5.773 | 0.004 | 1048904 | 744162 | | | |
| Triacon Surr | 8.468 | 0.010 | 610057 | 809566 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

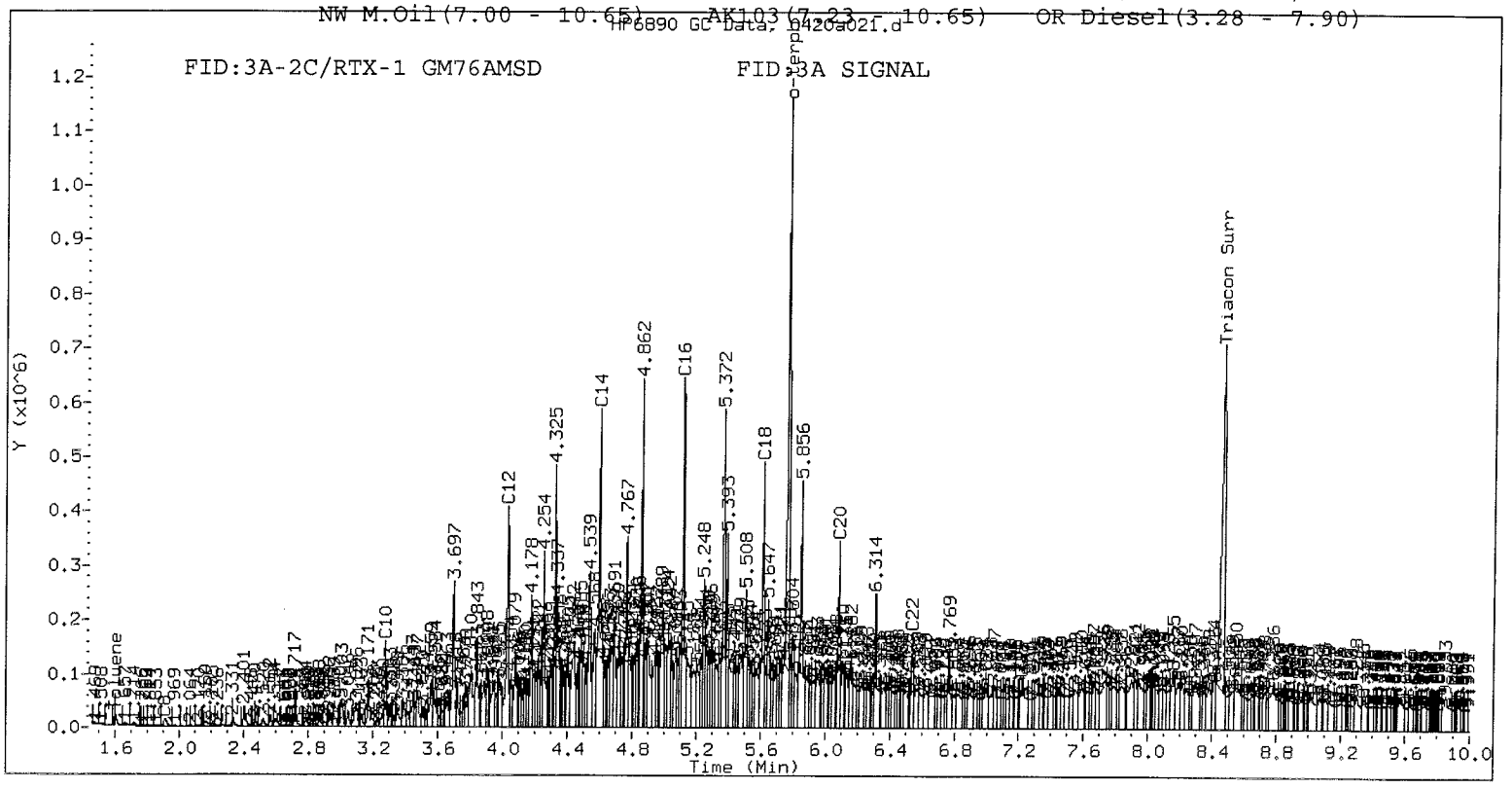
Data file: /chem3/fid3a.i/20040420.b/0420a021.d ARI ID: GM76AMSD
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m Client ID:
Instrument: fid3a.i Injection: 20-APR-2004 22:12
Operator: ESJ
Report Date: 04/22/2004 Dilution Factor: 1
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.597 | -0.020 | 22220 | 7474 | GAS (Tol-C12) | 3441186 | 11 |
| C8 | 1.906 | -0.016 | 13166 | 18193 | DIESEL (C12-C24) | 19992384 | 1400 |
| C10 | 3.276 | -0.002 | 158849 | 97457 | M.OIL (C24-C38) | 12175407 | 1466* |
| C12 | 4.033 | 0.001 | 407188 | 359990 | | | |
| C14 | 4.599 | 0.003 | 587265 | 603986 | | | |
| C16 | 5.120 | 0.004 | 643188 | 513652 | | | |
| C18 | 5.617 | 0.003 | 489233 | 420567 | | | |
| C20 | 6.087 | 0.000 | 344418 | 249148 | | | |
| C22 | 6.542 | -0.001 | 177309 | 143160 | | | |
| C24 | 6.996 | -0.003 | 103431 | 163469 | | | |
| C25 | 7.222 | -0.004 | 90789 | 205330 | | | |
| C26 | 7.446 | -0.004 | 78571 | 91135 | | | |
| C28 | 7.897 | -0.001 | 90080 | 218111 | | | |
| C32 | 9.014 | -0.006 | 62600 | 163703 | | | |
| C34 | 9.579 | -0.006 | 60209 | 147505 | | | |
| Filter Peak | 10.059 | 0.764 | 81031 | 76980 | | | |
| C36 | 10.125 | -0.005 | 57528.0 | 137228 | o-Terph Surrogate Rec = 94.7% | | (754920) |
| C38 | 10.640 | -0.007 | 46165.0 | 94491 | Triacon Surrogate Rec = 111.1% | | (816686) |
| C40 | 11.178 | -0.010 | 10693 | 27088 | | | |
| o-terph | 5.772 | 0.004 | 1057584 | 754920 | | | |
| Triacon Surr | 8.469 | 0.011 | 640111 | 816686 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3a.i/20040420.b/0420a015.d ARI ID: GM76LCSS1
Method: /chem3/fid3a.i/20040420.b/acidsiltphfid3a.m Client ID:
Instrument: fid3a.i Injection: 20-APR-2004 20:10
Operator: ESJ
Report Date: 04/22/2004 Dilution Factor: 1
Macro: 13-MAR-2004
Calibration Dates: Gas:31-DEC-2003 Diesel:09-APR-2004 M.Oil:19-MAR-2004

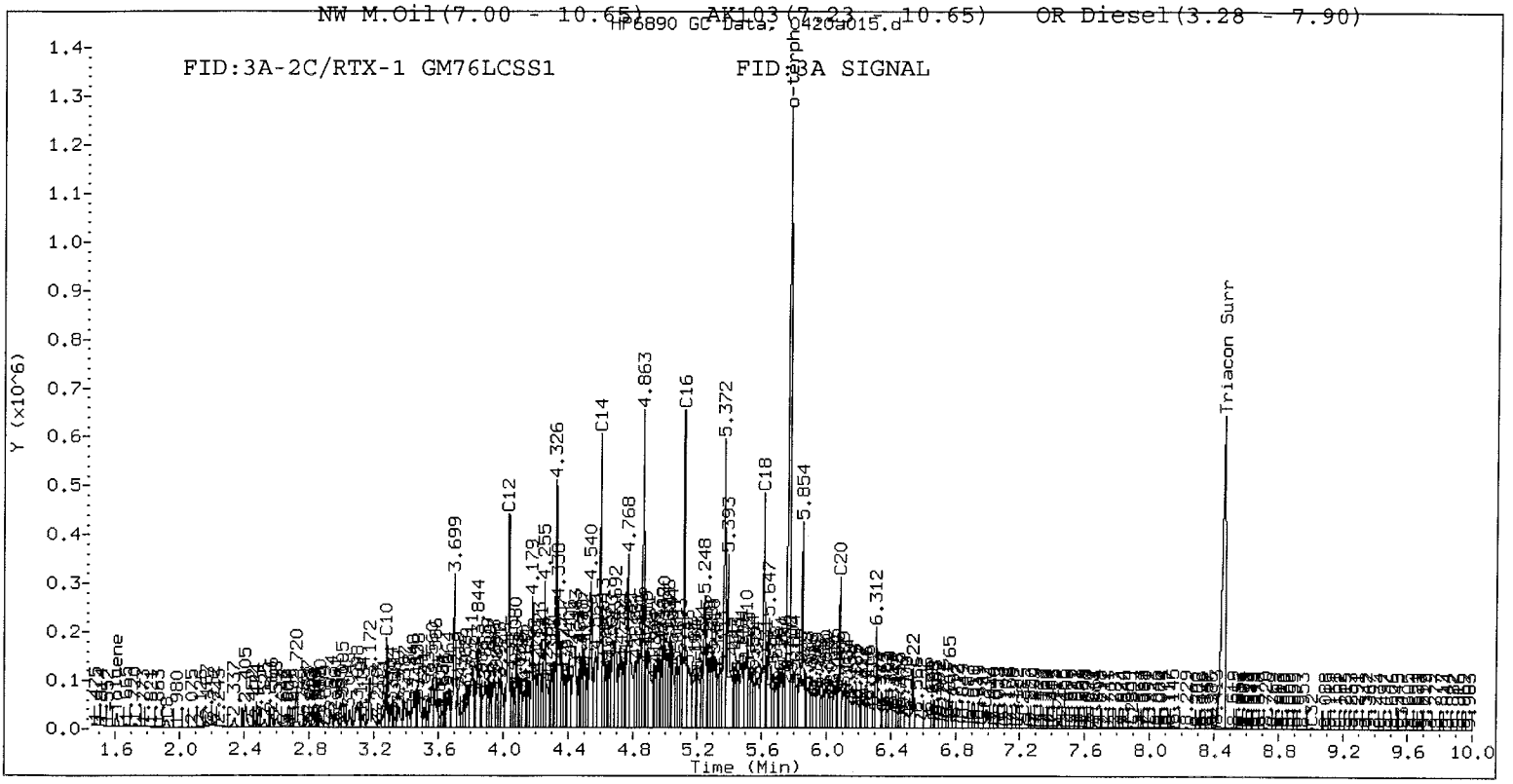
4/22/04

FID:3A RESULTS

| Compound | RT | Shift | Height | Area | Range | Total Area | Conc |
|---|---|---|---|---|---|---|---|
| Toluene | 1.607 | -0.009 | 26996 | 27182 | GAS (Tol-C12) | 3971606 | 13 |
| C8 | 1.918 | -0.005 | 15561 | 22108 | DIESEL (C12-C24) | 17141361 | 1200 |
| C10 | 3.278 | -0.001 | 185676 | 116727 | M.OIL (C24-C38) | 366648 | 44* |
| C12 | 4.034 | 0.002 | 440054 | 393295 | | | |
| C14 | 4.600 | 0.004 | 602475 | 487455 | | | |
| C16 | 5.120 | 0.005 | 652191 | 522205 | | | |
| C18 | 5.617 | 0.003 | 483928 | 400802 | | | |
| C20 | 6.086 | -0.001 | 311744 | 207400 | | | |
| C22 | 6.538 | -0.005 | 123763 | 100293 | | | |
| C24 | 6.992 | -0.008 | 38817 | 40024 | | | |
| C25 | 7.218 | -0.008 | 23304 | 31756 | | | |
| C26 | 7.441 | -0.009 | 13014 | 12696 | | | |
| C28 | 7.887 | -0.011 | 4606 | 8573 | | | |
| C32 | 9.006 | -0.014 | 1867 | 2901 | | | |
| C34 | 9.572 | -0.013 | 450 | 707 | | | |
| Filter Peak | 10.052 | 0.757 | 117305 | 118475 | | | |
| C36 | ---- | | | | o-Terph Surrogate Rec = 108% | | (864462) |
| C38 | 10.637 | -0.010 | 468.0 | 1190 | Triacon Surrogate Rec = 117.6% | | (864089) |
| C40 | ---- | | | | | | |
| o-terph | 5.773 | 0.005 | 1179716 | 864462 | | | |
| Triacon Surr | 8.460 | 0.002 | 639426 | 864089 | | | |

* Indicates Filter Peak subtracted

Range Times: NW Diesel(4.032 - 7.000) AK102(3.28 - 7.23) Jet A(3.28 - 5.61)
NW M.Oil(7.00 - 10.65) AK103(7.23 - 10.65) OR Diesel(3.28 - 7.90)



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# DETERMINATION OF PCDD/PCDF LEVELS

**Prepared for:**
**Analytical Resources, Inc.**
**Attn: Mary Lou Fox**
**4611 South 134th Place, Suite 100**
**Tukwila, WA 98168**

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This report contains 32 pages.

The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

**Client Project Number: 529009.311**

**Client Purchase Order Number: NA**

## REPORT OF LABORATORY ANALYSIS

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**REPORT OF: CHEMICAL ANALYSES**

**PROJECT:** **PCDD/PCDF ANALYSES**

**DATE:** April 27, 2004

**ISSUED TO:** Analytical Resources, Inc.
Attn: Mary Lou Fox
4611 South 134th Place
Tukwila, WA 98168

**REPORT NO:** 04-1087041

## INTRODUCTION

This report presents the results from the analyses performed on eighteen samples submitted by a representative of Analytical Resources, Inc. The samples were analyzed for the presence or absence of polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) using a modified version of USEPA Method 8290.

## SAMPLE IDENTIFICATION

| Client ID | Sample Type | Date Received | Pace ID |
|---|---|---|---|
| LSB-1,4-4.5 | Soil | 04/07/04 | 105495360 |
| LSB-1,6-6.5 | Soil | 04/07/04 | 105495378 |
| LSB-1,9-10 | Soil | 04/07/04 | 105495394 |
| LSB-1,18-19 | Soil | 04/07/04 | 105495402 |
| LSB-2,4-5 | Soil | 04/07/04 | 105495428 |
| LSB-2,6-7 | Soil | 04/07/04 | 105495436 |
| LSB-2,10-11 | Soil | 04/07/04 | 105495444 |
| LSB-2,17-18 | Soil | 04/07/04 | 105495469 |
| LSB-7,4-5 | Soil | 04/07/04 | 105495485 |
| LSB-7,7-8 | Soil | 04/07/04 | 105495493 |
| LSB-8,4-5 | Soil | 04/07/04 | 105495501 |
| LSB-8,6-7 | Soil | 04/07/04 | 105495519 |
| LSB-3,4-5 | Soil | 04/07/04 | 105495527 |
| LSB-3,6-7 | Soil | 04/07/04 | 105495543 |
| LSB-4,4-5 | Soil | 04/07/04 | 105495550 |
| LSB-4,6-7 | Soil | 04/07/04 | 105495576 |
| LSB-4,10-11 | Soil | 04/07/04 | 105495584 |
| LSB-4,14-15 | Soil | 04/07/04 | 105495600 |

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## DISCUSSION

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 39-108%. With the exception of one low internal standard recovery in sample LSB-2,10-11, which was flagged "P" on the results table, the labeled standard recoveries obtained for this project were within the 40-135% target range for this method. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, the presence of interfering substances impacted the determination of selected congeners. The affected values were flagged "I" where incorrect isotope ratios were obtained, or "E" where polychlorinated diphenyl ethers were present.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results, found at the beginning of Appendix B, show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batch using clean sand or sample material that had been fortified with native standard materials. The results show that the spiked native compounds were generally recovered at 87-118%, although slightly elevated recovery values (132-141%) were obtained for OCDD in the matrix spike samples. Relative percent differences ranged from 1.5-10%. These results indicate high degrees of accuracy and precision for these determinations.

It should be noted that the response obtained for the labeled OCDD in the calibration standard analysis (U40421B_17) performed at the end of the 4/21/04 runshift was outside the target range. As specified in the method, the average of the daily response factors for this compound was used in the calculations for the samples from this runshift. The affected values were flagged "*" on the results tables in Appendix B. It should also be noted that this did not impact the accuracy of the native congener determinations.

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**REPORT OF: CHEMICAL ANALYSES**

**PROJECT:** PCDD/PCDF ANALYSES **DATE:** April 27, 2004

 **REPORT NO:** 04-1087041

## REMARKS

The sample extracts will be retained for a period of 30 days from the date of this report and then discarded unless other arrangements are made. The raw mass spectral data will be archived for a period of not less than one year. Questions regarding the data contained in this report may be directed to the author at the number provided below.

**Pace Analytical Services, Inc.**

Scott C. Unze
Project Manager, HRMS
(612) 607-6383

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## TABLE 1. 2,3,7,8-TCDD Equivalency Factors (TEFs) for the Polychlorinated Dibenzo-p-dioxins and Dibenzofurans

| Number | Compound(s) | TEF |
|---|---|---|
| 1 | 2,3,7,8-TCDD | 1.00 |
| 2 | 1,2,3,7,8-PeCDD | 0.50 |
| 3 | 1,2,3,6,7,8-HxCDD | 0.1 |
| 4 | 1,2,3,7,8,9-HxCDD | 0.1 |
| 5 | 1,2,3,4,7,8-HxCDD | 0.1 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 0.01 |
| 7 | OCDD | 0.001 |
| 8 | * Total - TCDD | 0.0 |
| 9 | * Total - PeCDD | 0.0 |
| 10 | * Total - HxCDD | 0.0 |
| 11 | * Total - HpCDD | 0.0 |
| 12 | 2,3,7,8-TCDF | 0.10 |
| 13 | 1,2,3,7,8-PeCDF | 0.05 |
| 14 | 2,3,4,7,8-PeCDF | 0.5 |
| 15 | 1,2,3,6,7,8-HxCDF | 0.1 |
| 16 | 1,2,3,7,8,9-HxCDF | 0.1 |
| 17 | 1,2,3,4,7,8-HxCDF | 0.1 |
| 18 | 2,3,4,6,7,8-HxCDF | 0.1 |
| 19 | 1,2,3,4,6,7,8-HpCDF | 0.01 |
| 20 | 1,2,3,4,7,8,9-HpCDF | 0.01 |
| 21 | OCDF | 0.001 |
| 22 | * Total - TCDF | 0.0 |
| 23 | * Total - PeCDF | 0.0 |
| 24 | * Total - HxCDF | 0.0 |
| 25 | * Total - HpCDF | 0.0 |

*Excluding the 2,3,7,8-substituted congeners.

Reference: 1989 ITEFs

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## Appendix A

# REPORT OF LABORATORY ANALYSIS

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SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 04\06\04

ANALYTICAL RESOURCES INCORPORATED

ARI Project: GM76

1087041

Laboratory: Pace Analytical, Inc.
Lab Contact: ~~Chuck Sueper~~ Scott Unze
Lab Address: 1700 Elm St.
Minneapolis, MN 55414
Phone: 612-607-1700
Fax:

ARI Client: Landau Associates
Project ID: 529009.311
ARI PMgr: Mary Lou Fox
Phone: (206) 340-2866 Ext
Fax: (206) 695-6201

Analytical Protocol: In-house
Special Instructions:

Requested Turn Around: ~~04/19/04~~ Std
Fax Results (Y/N): **Yes**

**Limits of Liability.** *Subcontractor is expected to perform all requested services in accordance with appropriate methodology following Standard Operating Procedures that meet standards for the industry. The total liability of ARI, its officers, agents, employees, or sucessors, arising out of or in connection with the requested services, shall not exceed the negotiated amount for said services. The agreement by the Subcontractor to perform services requested by ARI releases ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Subcontractor.*

| ARI Sample ID | Client Sample ID/ Add'l Sample ID | Sampled | Matrix | Bottles | Analyses |
|---|---|---|---|---|---|
| 04-5198-GM76A | LSB-1,4-4.5 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 5495360 | | |
| 04-5199-GM76B | LSB-1,6-6.5 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 378 | | |
| 04-5200-GM76C | LSB-1,9-10 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 394 | | |
| 04-5201-GM76D | LSB-1,18-19 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 402 | | |
| 04-5202-GM76E | LSB-2,4-5 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 428 | | |
| 04-5203-GM76F | LSB-2,6-7 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 436 | | |
| 04-5204-GM76G | LSB-2,10-11 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 444 | | |
| 04-5205-GM76H | LSB-2,17-18 | 4/ 1/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | 469 | | |

8290 betra-od isomer

Please do an MS/MSD - lab's choice of sample.

| | | | |
|---|---|---|---|
| Carrier UPS | Airbill | | Date 04/04/04 |
| Relinquished by [signature] | Company ARI | Date 04/04/04 | Time 17:27 |
| Received by [signature] | Company Pace | Date ~~4-6-04~~ ① 4-7-04 | Time 11:20 |

Page 1 of 2 Subcontractor Custody Form - **GM76**

T=3

① BR 4-27-04

10870741

SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 04\06\04

ANALYTICAL RESOURCES INCORPORATED

ARI Project: GM76

Laboratory: Pace Analytical, Inc.
Lab Contact: Chuck Sueper

ARI Client: Landau Associates
Project ID: 529009.311

| ARI Sample ID | Client Sample ID/ Add'l Sample ID | Sampled | Matrix | Bottles | Analyses |
|---|---|---|---|---|---|
| 04-5206-GM76I | LSB-7,4-5 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5207-GM76J | LSB-7,7-8 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5208-GM76K | LSB-8,4-5 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5209-GM76L | LSB-8,6-7 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5210-GM76M | LSB-3,4-5 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5211-GM76N | LSB-3,6-7 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5212-GM76O | LSB-4,4-5 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5213-GM76P | LSB-4,6-7 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5214-GM76Q | LSB-4,10-11 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |
| 04-5215-GM76R | LSB-4,14-15 | 4/ 2/04 | Soil | 1 | Dioxins/Furans |
| Special Instructions: NONE | | | | | |

5495485

8290 tetra-octa isomers

493

501

519

527 (MS/MSD) @ 14/07/04

543

550

576

584

600

| Carrier | Airbill | Date |
|---|---|---|
| Relinquished by | Company | Date / Time |
| Received by | Company | Date / Time |

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## Appendix B

# REPORT OF LABORATORY ANALYSIS

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# Method 8290 Blank Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-4676 | Matrix | Solid |
| Filename | F40421A_11 | Dilution | NA |
| Total Amount Extracted | 10.2 g | Extracted | 04/18/2004 |
| ICAL Date | 04/06/2004 | Analyzed | 04/21/2004 10:57 |
| CCal Filename(s) | F40420B_19 & F40421A_17 | Injected By | MRO |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg |
|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 0.200 |
| Total TCDF | ND | ----- | 0.200 |
| 2,3,7,8-TCDD | ND | ----- | 0.200 |
| Total TCDD | ND | ----- | 0.200 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.980 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.980 |
| Total PeCDF | ND | ----- | 0.980 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.980 |
| Total PeCDD | ND | ----- | 0.980 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.980 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.980 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.980 |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.980 |
| Total HxCDF | ND | ----- | 0.980 |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.980 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 0.980 |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.980 |
| Total HxCDD | ND | ----- | 0.980 |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 0.980 |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.980 |
| Total HpCDF | ND | ----- | 0.980 |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 0.980 |
| Total HpCDD | ND | ----- | 0.980 |
| OCDF | ND | ----- | 2.000 |
| OCDD | ND | ----- | 2.000 |

| Internal Standards | ng's Added | Percent Recovery |
|---|---|---|
| 2,3,7,8-TCDF-13C | 2.00 | 65 |
| 2,3,7,8-TCDD-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF-13C | 2.00 | 67 |
| 1,2,3,7,8-PeCDD-13C | 2.00 | 73 |
| 1,2,3,4,7,8-HxCDF-13C | 2.00 | 69 |
| 1,2,3,6,7,8-HxCDF-13C | 2.00 | 65 |
| 2,3,4,6,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8,9-HxCDF-13C | 2.00 | 66 |
| 1,2,3,4,7,8-HxCDD-13C | 2.00 | 76 |
| 1,2,3,6,7,8-HxCDD-13C | 2.00 | 67 |
| 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 74 |
| 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 72 |
| 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 81 |
| OCDD-13C | 4.00 | 74 |
| 1,2,3,4-TCDD-13C | 2.00 | NA |
| 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 2,3,7,8-TCDD-37Cl4 | 0.20 | 70 |

Total 2,3,7,8-TCDD Equivalence: 0.00 ng/Kg (Using ITE Factors)

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
LRL = Lower Reporting Limit
J = Concentration detected is below the calibration range
P = Recovery outside of target range
A = Detection Limit based on signal-to-noise measurement

I = Interference
E = PCDE Interference
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1087041

## REPORT OF LABORATORY ANALYSIS

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Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-1,4-4.5 | | |
| Lab Sample ID | 105495360 | | |
| Filename | F40421B_03 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 16.1 g | Matrix | Soil |
| % Moisture | 36.6 | Dilution | NA |
| Dry Weight Extracted | 10.2 g | Collected | 04/01/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 18:23 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.98 | ----- | 0.200 | | 2,3,7,8-TCDF-13C | 2.00 | 80 |
| Total TCDF | 12.00 | ----- | 0.200 | | 2,3,7,8-TCDD-13C | 2.00 | 79 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 79 |
| 2,3,7,8-TCDD | 0.26 | ----- | 0.200 | J | 2,3,4,7,8-PeCDF-13C | 2.00 | 77 |
| Total TCDD | 18.00 | ----- | 0.200 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 78 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 85 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.980 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 76 |
| 2,3,4,7,8-PeCDF | 1.10 | ----- | 0.980 | J | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 77 |
| Total PeCDF | 6.30 | ----- | 0.980 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 79 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 91 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.980 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 72 |
| Total PeCDD | 8.70 | ----- | 0.980 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 82 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 72 |
| 1,2,3,4,7,8-HxCDF | 2.00 | ----- | 0.980 | J | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 83 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.980 | | OCDD-13C | 4.00 | 69 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.980 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.980 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 10.00 | ----- | 0.980 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.980 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 79 |
| 1,2,3,6,7,8-HxCDD | 1.50 | ----- | 0.980 | J | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.980 | | | | |
| Total HxCDD | 15.00 | ----- | 0.980 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 6.10 | ----- | 0.980 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.980 | | Equivalence: 1.7 ng/Kg | | |
| Total HpCDF | 13.00 | ----- | 0.980 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 22.00 | ----- | 0.980 | | | | |
| Total HpCDD | 43.00 | ----- | 0.980 | | | | |
| | | | | | | | |
| OCDF | 8.70 | ----- | 2.000 | J | | | |
| OCDD | 210.00 | ----- | 2.000 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1087041

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-1,6-6.5 | | |
| Lab Sample ID | 105495378 | | |
| Filename | F40421B_04 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 16.4 g | Matrix | Soil |
| % Moisture | 37.4 | Dilution | NA |
| Dry Weight Extracted | 10.2 g | Collected | 04/01/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 19:12 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ----- | 0.44 | 0.200 | I | 2,3,7,8-TCDF-13C | 2.00 | 85 |
| Total TCDF | 6.80 | ----- | 0.200 | | 2,3,7,8-TCDD-13C | 2.00 | 87 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 82 |
| 2,3,7,8-TCDD | 0.26 | ----- | 0.200 | J | 2,3,4,7,8-PeCDF-13C | 2.00 | 80 |
| Total TCDD | 13.00 | ----- | 0.200 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 83 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 103 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.980 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 69 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.980 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 80 |
| Total PeCDF | 3.40 | ----- | 0.980 | J | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 80 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 104 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.980 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 68 |
| Total PeCDD | 9.60 | ----- | 0.980 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 82 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 71 |
| 1,2,3,4,7,8-HxCDF | 1.10 | ----- | 0.980 | J | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 82 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.980 | | OCDD-13C | 4.00 | 67 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.980 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.980 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 5.50 | ----- | 0.980 | J | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.980 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 85 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 0.980 | | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.980 | | | | |
| Total HxCDD | 10.00 | ----- | 0.980 | | | | |
| 1,2,3,4,6,7,8-HpCDF | 3.40 | ----- | 0.980 | J | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.980 | | Equivalence: 0.63 ng/Kg | | |
| Total HpCDF | 7.30 | ----- | 0.980 | J | (Using ITE Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | 12.00 | ----- | 0.980 | | | | |
| Total HpCDD | 24.00 | ----- | 0.980 | | | | |
| OCDF | 5.30 | ----- | 2.000 | J | | | |
| OCDD | 100.00 | ----- | 2.000 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Pace Analytical™

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-1,9-10 | | |
| Lab Sample ID | 105495394 | | |
| Filename | F40421B_05 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 29.0 g | Matrix | Soil |
| % Moisture | 65.4 | Dilution | NA |
| Dry Weight Extracted | 10.0 g | Collected | 04/01/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 20:02 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 16.0 | ----- | 0.23 | A | 2,3,7,8-TCDF-13C | 2.00 | 93 |
| Total TCDF | 250.0 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 100 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 62 |
| 2,3,7,8-TCDD | 4.7 | ----- | 0.33 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 50 |
| Total TCDD | 300.0 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 58 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 90 |
| 1,2,3,7,8-PeCDF | 10.0 | ----- | 1.00 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 78 |
| 2,3,4,7,8-PeCDF | 14.0 | ----- | 1.00 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | 220.0 | ----- | 1.00 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 57 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 87 |
| 1,2,3,7,8-PeCDD | 15.0 | ----- | 1.00 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 80 |
| Total PeCDD | 400.0 | ----- | 1.00 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 71 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 54 |
| 1,2,3,4,7,8-HxCDF | ----- | 6.5 | 1.00 | E | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 72 |
| 1,2,3,6,7,8-HxCDF | 7.2 | ----- | 1.00 | | OCDD-13C | 4.00 | 49 |
| 2,3,4,6,7,8-HxCDF | 7.0 | ----- | 1.00 | | | | |
| 1,2,3,7,8,9-HxCDF | ----- | 1.8 | 1.00 | I | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 69.0 | ----- | 1.00 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 8.5 | ----- | 1.00 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 98 |
| 1,2,3,6,7,8-HxCDD | 14.0 | ----- | 1.00 | | | | |
| 1,2,3,7,8,9-HxCDD | 11.0 | ----- | 1.00 | | | | |
| Total HxCDD | 290.0 | ----- | 1.00 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 26.0 | ----- | 1.00 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | 2.1 | ----- | 1.00 | J | Equivalence: 28 ng/Kg | | |
| Total HpCDF | 66.0 | ----- | 1.00 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 82.0 | ----- | 1.00 | | | | |
| Total HpCDD | 160.0 | ----- | 1.00 | | | | |
| | | | | | | | |
| OCDF | 28.0 | ----- | 2.00 | | | | |
| OCDD | 400.0 | ----- | 2.00 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1087041

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Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-1,18-19 | | |
| Lab Sample ID | 105495402 | | |
| Filename | F40421B_06 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 16.2 g | Matrix | Soil |
| % Moisture | 35.7 | Dilution | NA |
| Dry Weight Extracted | 10.4 g | Collected | 04/01/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 20:51 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 0.29 | A | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 0.19 | | 2,3,7,8-TCDD-13C | 2.00 | 62 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 68 |
| 2,3,7,8-TCDD | ND | ----- | 0.27 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 67 |
| Total TCDD | ND | ----- | 0.19 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 69 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 82 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.96 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 73 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.96 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| Total PeCDF | ND | ----- | 0.96 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 71 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 83 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.96 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 73 |
| Total PeCDD | ND | ----- | 0.96 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 71 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 62 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.96 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 69 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.96 | | OCDD-13C | 4.00 | 57 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.96 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.96 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 0.96 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.96 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 0.96 | | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.96 | | | | |
| Total HxCDD | ND | ----- | 0.96 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 0.96 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.96 | | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 0.96 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 0.96 | | | | |
| Total HpCDD | ND | ----- | 0.96 | | | | |
| | | | | | | | |
| OCDF | ND | ----- | 1.90 | | | | |
| OCDD | ND | ----- | 1.90 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-2,4-5 | | |
| Lab Sample ID | 105495428 | | |
| Filename | F40421B_07 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 11.2 g | Matrix | Soil |
| % Moisture | 5.7 | Dilution | NA |
| Dry Weight Extracted | 10.6 g | Collected | 04/01/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 21:42 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 0.190 | | 2,3,7,8-TCDF-13C | 2.00 | 77 |
| Total TCDF | 0.54 | ----- | 0.190 | J | 2,3,7,8-TCDD-13C | 2.00 | 78 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 87 |
| 2,3,7,8-TCDD | ND | ----- | 0.190 | | 2,3,4,7,8-PeCDF-13C | 2.00 | 87 |
| Total TCDD | 2.40 | ----- | 0.190 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 90 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 89 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.940 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 83 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.940 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 82 |
| Total PeCDF | ND | ----- | 0.940 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 84 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 92 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.940 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 80 |
| Total PeCDD | ND | ----- | 0.940 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 86 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 78 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.940 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 85 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.940 | | OCDD-13C | 4.00 | 72 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.940 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.940 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 0.940 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.940 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 73 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 0.940 | | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.940 | | | | |
| Total HxCDD | 2.20 | ----- | 0.940 | J | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 0.940 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.940 | | Equivalence: 0.035 ng/Kg | | |
| Total HpCDF | ND | ----- | 0.940 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 2.20 | ----- | 0.940 | J | | | |
| Total HpCDD | 4.50 | ----- | 0.940 | J | | | |
| | | | | | | | |
| OCDF | ND | ----- | 1.900 | | | | |
| OCDD | 13.00 | ----- | 1.900 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-2,6-7 | | |
| Lab Sample ID | 105495436 | | |
| Filename | U40423A_13 | | |
| Injected By | MRO | | |
| Total Amount Extracted | 16.7 g | Matrix | Soil |
| % Moisture | 38.1 | Dilution | 10 |
| Dry Weight Extracted | 10.3 g | Collected | 04/01/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40423A_01 & U40423A_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/23/2004 18:51 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 29 | ----- | 2.4 | A | 2,3,7,8-TCDF-13C | 2.00 | 83 |
| Total TCDF | 1500 | ----- | 1.9 | | 2,3,7,8-TCDD-13C | 2.00 | 78 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 65 |
| 2,3,7,8-TCDD | 10 | ----- | 2.7 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 58 |
| Total TCDD | 880 | ----- | 1.9 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 62 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 78 |
| 1,2,3,7,8-PeCDF | ----- | 1900 | 9.7 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 75 |
| 2,3,4,7,8-PeCDF | 460 | ----- | 9.7 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | 2500 | ----- | 9.7 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 65 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 91 |
| 1,2,3,7,8-PeCDD | 74 | ----- | 9.7 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 77 |
| Total PeCDD | 1400 | ----- | 9.7 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 66 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 53 |
| 1,2,3,4,7,8-HxCDF | 93 | ----- | 9.7 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | 93 | ----- | 9.7 | | OCDD-13C | 4.00 | 54 |
| 2,3,4,6,7,8-HxCDF | 93 | ----- | 9.7 | | | | |
| 1,2,3,7,8,9-HxCDF | 42 | ----- | 9.7 | J | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 2500 | ----- | 9.7 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 32 | ----- | 9.7 | J | 2,3,7,8-TCDD-37Cl4 | 0.20 | 87 |
| 1,2,3,6,7,8-HxCDD | 86 | ----- | 9.7 | | | | |
| 1,2,3,7,8,9-HxCDD | 47 | ----- | 9.7 | J | | | |
| Total HxCDD | 1300 | ----- | 9.7 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 130 | ----- | 9.7 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | 24 | ----- | 9.7 | J | Equivalence: 330 ng/Kg | | |
| Total HpCDF | 260 | ----- | 9.7 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 290 | ----- | 9.7 | | | | |
| Total HpCDD | 590 | ----- | 9.7 | | | | |
| | | | | | | | |
| OCDF | 33 | ----- | 19.0 | J | | | |
| OCDD | 530 | ----- | 19.0 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1087041

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Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-2,10-11 | | |
| Lab Sample ID | 105495444 | | |
| Filename | U40421B_13 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 50.1 g | Matrix | Soil |
| % Moisture | 80.2 | Dilution | NA |
| Dry Weight Extracted | 9.94 g | Collected | 04/01/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40421B_01 & U40421B_17 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 03:43 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery | |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 11.0 | ----- | 0.35 | A | 2,3,7,8-TCDF-13C | 2.00 | 75 | |
| Total TCDF | 320.0 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 80 | |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 55 | |
| 2,3,7,8-TCDD | 2.1 | ----- | 0.46 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 50 | |
| Total TCDD | 260.0 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 51 | |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 88 | |
| 1,2,3,7,8-PeCDF | ----- | 20 | 1.00 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 82 | |
| 2,3,4,7,8-PeCDF | 35.0 | ----- | 1.00 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 77 | |
| Total PeCDF | 620.0 | ----- | 1.00 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 70 | |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 80 | |
| 1,2,3,7,8-PeCDD | 15.0 | ----- | 1.00 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 86 | |
| Total PeCDD | 300.0 | ----- | 1.00 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 | |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 | |
| 1,2,3,4,7,8-HxCDF | 11.0 | ----- | 1.00 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 55 | |
| 1,2,3,6,7,8-HxCDF | 13.0 | ----- | 1.00 | | OCDD-13C | 4.00 | 39 | P* |
| 2,3,4,6,7,8-HxCDF | 11.0 | ----- | 1.00 | | | | | |
| 1,2,3,7,8,9-HxCDF | 5.5 | ----- | 1.00 | | 1,2,3,4-TCDD-13C | 2.00 | NA | |
| Total HxCDF | 370.0 | ----- | 1.00 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA | |
| | | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 5.5 | ----- | 1.00 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 81 | |
| 1,2,3,6,7,8-HxCDD | 14.0 | ----- | 1.00 | | | | | |
| 1,2,3,7,8,9-HxCDD | 7.8 | ----- | 1.00 | | | | | |
| Total HxCDD | 210.0 | ----- | 1.00 | | | | | |
| | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 22.0 | ----- | 1.00 | | Total 2,3,7,8-TCDD | | | |
| 1,2,3,4,7,8,9-HpCDF | 3.1 | ----- | 1.00 | J | Equivalence: 36 ng/Kg | | | |
| Total HpCDF | 48.0 | ----- | 1.00 | | (Using ITE Factors) | | | |
| | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 46.0 | ----- | 1.00 | | | | | |
| Total HpCDD | 96.0 | ----- | 1.00 | | | | | |
| | | | | | | | | |
| OCDF | 11.0 | ----- | 2.00 | | | | | |
| OCDD | 150.0 | ----- | 2.00 | | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-2,17-18 | | |
| Lab Sample ID | 105495469 | | |
| Filename | U40423A_12 | | |
| Injected By | MRO | | |
| Total Amount Extracted | 34.0 g | Matrix | Soil |
| % Moisture | 70.5 | Dilution | 10 |
| Dry Weight Extracted | 10.0 g | Collected | 04/01/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40423A_01 & U40423A_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/23/2004 18:01 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 9.4 | ----- | 2.00 | J | 2,3,7,8-TCDF-13C | 2.00 | 85 |
| Total TCDF | 700.0 | ----- | 2.00 | | 2,3,7,8-TCDD-13C | 2.00 | 77 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 66 |
| 2,3,7,8-TCDD | 4.2 | ----- | 2.30 | AJ | 2,3,4,7,8-PeCDF-13C | 2.00 | 56 |
| Total TCDD | 310.0 | ----- | 2.00 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 61 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 76 |
| 1,2,3,7,8-PeCDF | ----- | 920 | 10.00 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 73 |
| 2,3,4,7,8-PeCDF | 280.0 | ----- | 10.00 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 70 |
| Total PeCDF | 1800.0 | ----- | 10.00 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 66 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 75 |
| 1,2,3,7,8-PeCDD | 24.0 | ----- | 10.00 | J | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 77 |
| Total PeCDD | 450.0 | ----- | 10.00 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 68 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 57 |
| 1,2,3,4,7,8-HxCDF | 41.0 | ----- | 10.00 | J | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | 45.0 | ----- | 10.00 | J | OCDD-13C | 4.00 | 55 |
| 2,3,4,6,7,8-HxCDF | 43.0 | ----- | 10.00 | J | | | |
| 1,2,3,7,8,9-HxCDF | 18.0 | ----- | 10.00 | J | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 1400.0 | ----- | 10.00 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 10.00 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 85 |
| 1,2,3,6,7,8-HxCDD | 27.0 | ----- | 10.00 | J | | | |
| 1,2,3,7,8,9-HxCDD | 16.0 | ----- | 10.00 | J | | | |
| Total HxCDD | 410.0 | ----- | 10.00 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 56.0 | ----- | 10.00 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 10.00 | | Equivalence: 180 ng/Kg | | |
| Total HpCDF | 110.0 | ----- | 10.00 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 80.0 | ----- | 10.00 | | | | |
| Total HpCDD | 160.0 | ----- | 10.00 | | | | |
| | | | | | | | |
| OCDF | ND | ----- | 20.00 | | | | |
| OCDD | 240.0 | ----- | 20.00 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-3,4-5 | | |
| Lab Sample ID | 105495527 | | |
| Filename | F40421B_09 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 16.0 g | Matrix | Soil |
| % Moisture | 36.9 | Dilution | NA |
| Dry Weight Extracted | 10.1 g | Collected | 04/02/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 23:21 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.21 | ----- | 0.200 | J | 2,3,7,8-TCDF-13C | 2.00 | 78 |
| Total TCDF | 1.30 | ----- | 0.200 | | 2,3,7,8-TCDD-13C | 2.00 | 80 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 82 |
| 2,3,7,8-TCDD | ND | ----- | 0.200 | | 2,3,4,7,8-PeCDF-13C | 2.00 | 84 |
| Total TCDD | 5.60 | ----- | 0.200 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 83 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 90 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.990 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 84 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.990 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 82 |
| Total PeCDF | ND | ----- | 0.990 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 84 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 93 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.990 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 79 |
| Total PeCDD | 5.10 | ----- | 0.990 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 86 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 78 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.990 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 86 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.990 | | OCDD-13C | 4.00 | 72 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.990 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.990 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 2.10 | ----- | 0.990 | J | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.990 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 76 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 0.990 | | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.990 | | | | |
| Total HxCDD | 5.50 | ----- | 0.990 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.90 | ----- | 0.990 | J | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.990 | | Equivalence: 0.20 ng/Kg | | |
| Total HpCDF | 1.90 | ----- | 0.990 | J | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 7.60 | ----- | 0.990 | | | | |
| Total HpCDD | 15.00 | ----- | 0.990 | | | | |
| | | | | | | | |
| OCDF | 3.90 | ----- | 2.000 | J | | | |
| OCDD | 78.00 | ----- | 2.000 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-3,6-7 | | |
| Lab Sample ID | 105495543 | | |
| Filename | F40421B_10 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 23.9 g | Matrix | Soil |
| % Moisture | 57.2 | Dilution | NA |
| Dry Weight Extracted | 10.2 g | Collected | 04/02/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 00:10 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ----- | 1.10 | 0.200 | I | 2,3,7,8-TCDF-13C | 2.00 | 70 |
| Total TCDF | 27.0 | ----- | 0.200 | | 2,3,7,8-TCDD-13C | 2.00 | 68 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 74 |
| 2,3,7,8-TCDD | ----- | 0.38 | 0.200 | I | 2,3,4,7,8-PeCDF-13C | 2.00 | 69 |
| Total TCDD | 51.0 | ----- | 0.200 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 69 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 80 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.980 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 75 |
| 2,3,4,7,8-PeCDF | 1.4 | ----- | 0.980 | J | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | 12.0 | ----- | 0.980 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 78 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 84 |
| 1,2,3,7,8-PeCDD | 1.1 | ----- | 0.980 | J | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 73 |
| Total PeCDD | 31.0 | ----- | 0.980 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 82 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 78 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.980 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 83 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.980 | | OCDD-13C | 4.00 | 73 |
| 2,3,4,6,7,8-HxCDF | 1.0 | ----- | 0.980 | J | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.980 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 12.0 | ----- | 0.980 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 1.1 | ----- | 0.980 | J | 2,3,7,8-TCDD-37Cl4 | 0.20 | 64 |
| 1,2,3,6,7,8-HxCDD | 5.7 | ----- | 0.980 | | | | |
| 1,2,3,7,8,9-HxCDD | 1.8 | ----- | 0.980 | J | | | |
| Total HxCDD | 41.0 | ----- | 0.980 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 9.6 | ----- | 0.980 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | 1.2 | ----- | 0.980 | J | Equivalence: 4.0 ng/Kg | | |
| Total HpCDF | 40.0 | ----- | 0.980 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 81.0 | ----- | 0.980 | | | | |
| Total HpCDD | 150.0 | ----- | 0.980 | | | | |
| | | | | | | | |
| OCDF | 24.0 | ----- | 2.000 | | | | |
| OCDD | 900.0 | ----- | 2.000 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
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Minneapolis, MN 55414

Tel: 612-607-1700
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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-4,4-5 | | |
| Lab Sample ID | 105495550 | | |
| Filename | F40421B_11 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 12.6 g | Matrix | Soil |
| % Moisture | 20.1 | Dilution | NA |
| Dry Weight Extracted | 10.0 g | Collected | 04/02/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 01:00 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 3.50 | ----- | 0.200 | | 2,3,7,8-TCDF-13C | 2.00 | 79 |
| Total TCDF | 70.00 | ----- | 0.200 | | 2,3,7,8-TCDD-13C | 2.00 | 79 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 86 |
| 2,3,7,8-TCDD | 0.91 | ----- | 0.200 | JA | 2,3,4,7,8-PeCDF-13C | 2.00 | 82 |
| Total TCDD | 140.00 | ----- | 0.200 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 82 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 85 |
| 1,2,3,7,8-PeCDF | 2.70 | ----- | 1.000 | J | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 84 |
| 2,3,4,7,8-PeCDF | 4.70 | ----- | 1.000 | J | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 81 |
| Total PeCDF | 41.00 | ----- | 1.000 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 87 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 92 |
| 1,2,3,7,8-PeCDD | 3.70 | ----- | 1.000 | J | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 80 |
| Total PeCDD | 130.00 | ----- | 1.000 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 88 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 89 |
| 1,2,3,4,7,8-HxCDF | 2.30 | ----- | 1.000 | J | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 93 |
| 1,2,3,6,7,8-HxCDF | 2.50 | ----- | 1.000 | J | OCDD-13C | 4.00 | 82 |
| 2,3,4,6,7,8-HxCDF | 3.40 | ----- | 1.000 | J | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 1.000 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 22.00 | ----- | 1.000 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 2.90 | ----- | 1.000 | J | 2,3,7,8-TCDD-37Cl4 | 0.20 | 77 |
| 1,2,3,6,7,8-HxCDD | 5.90 | ----- | 1.000 | | | | |
| 1,2,3,7,8,9-HxCDD | 4.60 | ----- | 1.000 | J | | | |
| Total HxCDD | 140.00 | ----- | 1.000 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 8.50 | ----- | 1.000 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | 1.10 | ----- | 1.000 | J | Equivalence: 8.5 ng/Kg | | |
| Total HpCDF | 11.00 | ----- | 1.000 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 45.00 | ----- | 1.000 | | | | |
| Total HpCDD | 84.00 | ----- | 1.000 | | | | |
| | | | | | | | |
| OCDF | 9.10 | ----- | 2.000 | J | | | |
| OCDD | 230.00 | ----- | 2.000 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-4,6-7 | | |
| Lab Sample ID | 105495576 | | |
| Filename | U40421B_11 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 19.2 g | Matrix | Soil |
| % Moisture | 47.2 | Dilution | NA |
| Dry Weight Extracted | 10.2 g | Collected | 04/02/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40421B_01 & U40421B_17 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 02:05 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery | |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ----- | 16 | 0.20 | E | 2,3,7,8-TCDF-13C | 2.00 | 76 | |
| Total TCDF | 190.0 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 82 | |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 70 | |
| 2,3,7,8-TCDD | 3.2 | ----- | 0.29 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 63 | |
| Total TCDD | 430.0 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 67 | |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 99 | |
| 1,2,3,7,8-PeCDF | ----- | 18 | 0.98 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 89 | |
| 2,3,4,7,8-PeCDF | 16.0 | ----- | 0.98 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 83 | |
| Total PeCDF | 160.0 | ----- | 0.98 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 71 | |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 100 | |
| 1,2,3,7,8-PeCDD | 17.0 | ----- | 0.98 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 84 | |
| Total PeCDD | 460.0 | ----- | 0.98 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 60 | |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 46 | |
| 1,2,3,4,7,8-HxCDF | ----- | 13 | 0.98 | E | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 56 | |
| 1,2,3,6,7,8-HxCDF | 13.0 | ----- | 0.98 | | OCDD-13C | 4.00 | 46 | * |
| 2,3,4,6,7,8-HxCDF | 15.0 | ----- | 0.98 | | | | | |
| 1,2,3,7,8,9-HxCDF | 4.9 | ----- | 0.98 | J | 1,2,3,4-TCDD-13C | 2.00 | NA | |
| Total HxCDF | 160.0 | ----- | 0.98 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA | |
| 1,2,3,4,7,8-HxCDD | 12.0 | ----- | 0.98 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 87 | |
| 1,2,3,6,7,8-HxCDD | 30.0 | ----- | 0.98 | | | | | |
| 1,2,3,7,8,9-HxCDD | 14.0 | ----- | 0.98 | | | | | |
| Total HxCDD | 530.0 | ----- | 0.98 | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 62.0 | ----- | 0.98 | | Total 2,3,7,8-TCDD | | | |
| 1,2,3,4,7,8,9-HpCDF | 7.5 | ----- | 0.98 | | Equivalence: 37 ng/Kg | | | |
| Total HpCDF | 200.0 | ----- | 0.98 | | (Using ITE Factors) | | | |
| 1,2,3,4,6,7,8-HpCDD | 380.0 | ----- | 0.98 | | | | | |
| Total HpCDD | 720.0 | ----- | 0.98 | | | | | |
| OCDF | 120.0 | ----- | 2.00 | | | | | |
| OCDD | 3800.0 | ----- | 2.00 | | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-4,10-11 | | |
| Lab Sample ID | 105495584 | | |
| Filename | U40421B_12 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 61.8 g | Matrix | Soil |
| % Moisture | 83.6 | Dilution | NA |
| Dry Weight Extracted | 10.1 g | Collected | 04/02/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40421B_01 & U40421B_17 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 02:54 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery | |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 4.1 | ----- | 0.20 | | 2,3,7,8-TCDF-13C | 2.00 | 85 | |
| Total TCDF | 74.0 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 90 | |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 75 | |
| 2,3,7,8-TCDD | 1.2 | ----- | 0.21 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 67 | |
| Total TCDD | 120.0 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 72 | |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 98 | |
| 1,2,3,7,8-PeCDF | ----- | 34 | 0.99 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 97 | |
| 2,3,4,7,8-PeCDF | 5.5 | ----- | 0.99 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 89 | |
| Total PeCDF | 46.0 | ----- | 0.99 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 79 | |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 106 | |
| 1,2,3,7,8-PeCDD | 5.9 | ----- | 0.99 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 94 | |
| Total PeCDD | 140.0 | ----- | 0.99 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 70 | |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 | |
| 1,2,3,4,7,8-HxCDF | 4.2 | ----- | 0.99 | J | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 67 | |
| 1,2,3,6,7,8-HxCDF | 3.5 | ----- | 0.99 | J | OCDD-13C | 4.00 | 57 | * |
| 2,3,4,6,7,8-HxCDF | 3.1 | ----- | 0.99 | J | | | | |
| 1,2,3,7,8,9-HxCDF | 2.8 | ----- | 0.99 | J | 1,2,3,4-TCDD-13C | 2.00 | NA | |
| Total HxCDF | 76.0 | ----- | 0.99 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA | |
| | | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 4.4 | ----- | 0.99 | J | 2,3,7,8-TCDD-37Cl4 | 0.20 | 87 | |
| 1,2,3,6,7,8-HxCDD | 12.0 | ----- | 0.99 | | | | | |
| 1,2,3,7,8,9-HxCDD | 5.8 | ----- | 0.99 | | | | | |
| Total HxCDD | 180.0 | ----- | 0.99 | | | | | |
| | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 43.0 | ----- | 0.99 | | Total 2,3,7,8-TCDD | | | |
| 1,2,3,4,7,8,9-HpCDF | 2.4 | ----- | 0.99 | J | Equivalence: 13 ng/Kg | | | |
| Total HpCDF | 110.0 | ----- | 0.99 | | (Using ITE Factors) | | | |
| | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 120.0 | ----- | 0.99 | | | | | |
| Total HpCDD | 230.0 | ----- | 0.99 | | | | | |
| | | | | | | | | |
| OCDF | 59.0 | ----- | 2.00 | | | | | |
| OCDD | 720.0 | ----- | 2.00 | | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-4,14-15 | | |
| Lab Sample ID | 105495600 | | |
| Filename | F40421B_12 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 46.0 g | Matrix | Soil |
| % Moisture | 77.9 | Dilution | NA |
| Dry Weight Extracted | 10.2 g | Collected | 04/02/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 01:49 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 0.54 | A | 2,3,7,8-TCDF-13C | 2.00 | 83 |
| Total TCDF | 4.8 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 90 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 52 |
| 2,3,7,8-TCDD | ND | ----- | 0.41 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 43 |
| Total TCDD | 3.6 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 52 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 77 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.98 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.98 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | 1.9 | ----- | 0.98 | J | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 75 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 91 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.98 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 80 |
| Total PeCDD | ND | ----- | 0.98 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 81 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 75 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.98 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 88 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.98 | | OCDD-13C | 4.00 | 94 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.98 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.98 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 0.98 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.98 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 85 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 0.98 | | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.98 | | | | |
| Total HxCDD | 6.3 | ----- | 0.98 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 2.2 | ----- | 0.98 | J | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.98 | | Equivalence: 0.086 ng/Kg | | |
| Total HpCDF | 3.9 | ----- | 0.98 | J | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 3.5 | ----- | 0.98 | J | | | |
| Total HpCDD | 7.9 | ----- | 0.98 | J | | | |
| | | | | | | | |
| OCDF | 9.6 | ----- | 2.00 | J | | | |
| OCDD | 20.0 | ----- | 2.00 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
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Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-7,4-5 | | |
| Lab Sample ID | 105495485 | | |
| Filename | F40421B_13 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 16.7 g | Matrix | Soil |
| % Moisture | 39.3 | Dilution | NA |
| Dry Weight Extracted | 10.1 g | Collected | 04/02/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 02:39 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.50 | ----- | 0.40 | A | 2,3,7,8-TCDF-13C | 2.00 | 73 |
| Total TCDF | 51.00 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 79 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 50 |
| 2,3,7,8-TCDD | 0.91 | ----- | 0.39 | JA | 2,3,4,7,8-PeCDF-13C | 2.00 | 42 |
| Total TCDD | 62.00 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 47 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 96 |
| 1,2,3,7,8-PeCDF | 1.50 | ----- | 0.99 | J | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 74 |
| 2,3,4,7,8-PeCDF | 2.80 | ----- | 0.99 | J | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| Total PeCDF | 41.00 | ----- | 0.99 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 68 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 97 |
| 1,2,3,7,8-PeCDD | 2.60 | ----- | 0.99 | J | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 79 |
| Total PeCDD | 64.00 | ----- | 0.99 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 72 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.99 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 73 |
| 1,2,3,6,7,8-HxCDF | 1.20 | ----- | 0.99 | J | OCDD-13C | 4.00 | 51 |
| 2,3,4,6,7,8-HxCDF | 1.30 | ----- | 0.99 | J | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.99 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 13.00 | ----- | 0.99 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 1.50 | ----- | 0.99 | J | 2,3,7,8-TCDD-37Cl4 | 0.20 | 77 |
| 1,2,3,6,7,8-HxCDD | 2.30 | ----- | 0.99 | J | | | |
| 1,2,3,7,8,9-HxCDD | 1.60 | ----- | 0.99 | J | | | |
| Total HxCDD | 46.00 | ----- | 0.99 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 3.10 | ----- | 0.99 | J | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.99 | | Equivalence: 4.9 ng/Kg | | |
| Total HpCDF | 7.00 | ----- | 0.99 | J | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 9.10 | ----- | 0.99 | | | | |
| Total HpCDD | 18.00 | ----- | 0.99 | | | | |
| | | | | | | | |
| OCDF | 4.20 | ----- | 2.00 | J | | | |
| OCDD | 34.00 | ----- | 2.00 | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
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Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
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Pace Analytical™

# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-7,7-8 | | |
| Lab Sample ID | 105495493 | | |
| Filename | F40421B_08 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 56.6 g | Matrix | Soil |
| % Moisture | 82.1 | Dilution | NA |
| Dry Weight Extracted | 10.1 g | Collected | 04/02/2004 |
| ICAL Date | 04/06/2004 | Received | 04/07/2004 |
| CCal Filename(s) | F40421A_17 & F40421B_15 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/21/2004 22:31 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.59 | ----- | 0.200 | J | 2,3,7,8-TCDF-13C | 2.00 | 73 |
| Total TCDF | 8.40 | ----- | 0.200 | | 2,3,7,8-TCDD-13C | 2.00 | 75 |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 78 |
| 2,3,7,8-TCDD | ND | ----- | 0.200 | | 2,3,4,7,8-PeCDF-13C | 2.00 | 78 |
| Total TCDD | 10.00 | ----- | 0.200 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 80 |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 88 |
| 1,2,3,7,8-PeCDF | ND | ----- | 0.990 | | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 78 |
| 2,3,4,7,8-PeCDF | ND | ----- | 0.990 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 78 |
| Total PeCDF | 4.20 | ----- | 0.990 | J | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 80 |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 91 |
| 1,2,3,7,8-PeCDD | ND | ----- | 0.990 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 75 |
| Total PeCDD | 11.00 | ----- | 0.990 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 78 |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 70 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 0.990 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 80 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 0.990 | | OCDD-13C | 4.00 | 60 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 0.990 | | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 0.990 | | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | 7.20 | ----- | 0.990 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| | | | | | | | |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 0.990 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 70 |
| 1,2,3,6,7,8-HxCDD | 1.50 | ----- | 0.990 | J | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 0.990 | | | | |
| Total HxCDD | 14.00 | ----- | 0.990 | | | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 6.10 | ----- | 0.990 | | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 0.990 | | Equivalence: 0.54 ng/Kg | | |
| Total HpCDF | 10.00 | ----- | 0.990 | | (Using ITE Factors) | | |
| | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 16.00 | ----- | 0.990 | | | | |
| Total HpCDD | 38.00 | ----- | 0.990 | | | | |
| | | | | | | | |
| OCDF | 2.50 | ----- | 2.000 | J | | | |
| OCDD | 100.00 | ----- | 2.000 | | | | |

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1087041

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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-8,4-5 | | |
| Lab Sample ID | 105495501 | | |
| Filename | U40421B_09 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 18.5 g | Matrix | Soil |
| % Moisture | 44.2 | Dilution | NA |
| Dry Weight Extracted | 10.3 g | Collected | 04/02/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40421B_01 & U40421B_17 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 00:27 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery | |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 3.70 | ----- | 0.190 | | 2,3,7,8-TCDF-13C | 2.00 | 80 | |
| Total TCDF | 82.00 | ----- | 0.190 | | 2,3,7,8-TCDD-13C | 2.00 | 86 | |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 78 | |
| 2,3,7,8-TCDD | 0.92 | ----- | 0.210 | JA | 2,3,4,7,8-PeCDF-13C | 2.00 | 76 | |
| Total TCDD | 240.00 | ----- | 0.190 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 83 | |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 94 | |
| 1,2,3,7,8-PeCDF | ----- | 1.3 | 0.970 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 83 | |
| 2,3,4,7,8-PeCDF | 15.00 | ----- | 0.970 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 75 | |
| Total PeCDF | 91.00 | ----- | 0.970 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 43 | |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 90 | |
| 1,2,3,7,8-PeCDD | 6.60 | ----- | 0.970 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 96 | |
| Total PeCDD | 190.00 | ----- | 0.970 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 91 | |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 65 | |
| 1,2,3,4,7,8-HxCDF | 3.10 | ----- | 0.970 | J | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 93 | |
| 1,2,3,6,7,8-HxCDF | 4.00 | ----- | 0.970 | J | OCDD-13C | 4.00 | 94 | * |
| 2,3,4,6,7,8-HxCDF | 3.30 | ----- | 0.970 | J | | | | |
| 1,2,3,7,8,9-HxCDF | 1.50 | ----- | 0.970 | J | 1,2,3,4-TCDD-13C | 2.00 | NA | |
| Total HxCDF | 78.00 | ----- | 0.970 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA | |
| | | | | | | | | |
| 1,2,3,4,7,8-HxCDD | 4.00 | ----- | 0.970 | J | 2,3,7,8-TCDD-37Cl4 | 0.20 | 91 | |
| 1,2,3,6,7,8-HxCDD | 8.10 | ----- | 0.970 | | | | | |
| 1,2,3,7,8,9-HxCDD | 5.20 | ----- | 0.970 | | | | | |
| Total HxCDD | 190.00 | ----- | 0.970 | | | | | |
| | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 14.00 | ----- | 0.970 | | Total 2,3,7,8-TCDD | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.30 | ----- | 0.970 | J | Equivalence: 16 ng/Kg | | | |
| Total HpCDF | 28.00 | ----- | 0.970 | | (Using ITE Factors) | | | |
| | | | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 49.00 | ----- | 0.970 | | | | | |
| Total HpCDD | 91.00 | ----- | 0.970 | | | | | |
| | | | | | | | | |
| OCDF | 13.00 | ----- | 1.900 | | | | | |
| OCDD | 130.00 | ----- | 1.900 | | | | | |

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

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# Method 8290 Analysis Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-8,6-7 | | |
| Lab Sample ID | 105495519 | | |
| Filename | U40421B_10 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 17.4 g | Matrix | Soil |
| % Moisture | 42.1 | Dilution | NA |
| Dry Weight Extracted | 10.1 g | Collected | 04/02/2004 |
| ICAL Date | 10/03/2003 | Received | 04/07/2004 |
| CCal Filename(s) | U40421B_01 & U40421B_17 | Extracted | 04/18/2004 |
| Method Blank ID | BLANK-4676 | Analyzed | 04/22/2004 01:16 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | LRL ng/Kg | | Internal Standards | ng's Added | Percent Recovery | |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 24.0 | ----- | 0.24 | A | 2,3,7,8-TCDF-13C | 2.00 | 79 | |
| Total TCDF | 510.0 | ----- | 0.20 | | 2,3,7,8-TCDD-13C | 2.00 | 87 | |
| | | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 78 | |
| 2,3,7,8-TCDD | 5.0 | ----- | 0.40 | A | 2,3,4,7,8-PeCDF-13C | 2.00 | 71 | |
| Total TCDD | 1100.0 | ----- | 0.20 | | 1,2,3,7,8-PeCDD-13C | 2.00 | 80 | |
| | | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 97 | |
| 1,2,3,7,8-PeCDF | ----- | 31 | 0.99 | E | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 96 | |
| 2,3,4,7,8-PeCDF | 29.0 | ----- | 0.99 | | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 91 | |
| Total PeCDF | 210.0 | ----- | 0.99 | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 84 | |
| | | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 103 | |
| 1,2,3,7,8-PeCDD | 27.0 | ----- | 0.99 | | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 108 | |
| Total PeCDD | 820.0 | ----- | 0.99 | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 71 | |
| | | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 64 | |
| 1,2,3,4,7,8-HxCDF | 17.0 | ----- | 0.99 | | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 73 | |
| 1,2,3,6,7,8-HxCDF | ----- | 20 | 0.99 | E | OCDD-13C | 4.00 | 55 | * |
| 2,3,4,6,7,8-HxCDF | 14.0 | ----- | 0.99 | | | | | |
| 1,2,3,7,8,9-HxCDF | 5.6 | ----- | 0.99 | | 1,2,3,4-TCDD-13C | 2.00 | NA | |
| Total HxCDF | 160.0 | ----- | 0.99 | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA | |
| 1,2,3,4,7,8-HxCDD | 18.0 | ----- | 0.99 | | 2,3,7,8-TCDD-37Cl4 | 0.20 | 87 | |
| 1,2,3,6,7,8-HxCDD | 29.0 | ----- | 0.99 | | | | | |
| 1,2,3,7,8,9-HxCDD | 17.0 | ----- | 0.99 | | | | | |
| Total HxCDD | 770.0 | ----- | 0.99 | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 44.0 | ----- | 0.99 | | Total 2,3,7,8-TCDD | | | |
| 1,2,3,4,7,8,9-HpCDF | 5.0 | ----- | 0.99 | | Equivalence: 48 ng/Kg | | | |
| Total HpCDF | 91.0 | ----- | 0.99 | | (Using ITE Factors) | | | |
| 1,2,3,4,6,7,8-HpCDD | 150.0 | ----- | 0.99 | | | | | |
| Total HpCDD | 250.0 | ----- | 0.99 | | | | | |
| OCDF | 38.0 | ----- | 2.00 | | | | | |
| OCDD | 420.0 | ----- | 2.00 | | | | | |

Results reported on a dry weight basis
Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....1087041

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Minneapolis, MN 55414

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Fax: 612- 607-6444

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# Method 8290 Laboratory Control Spike Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-4677 | | |
| Filename | F40421A_14 | Matrix | Solid |
| Total Amount Extracted | 10.1 g | Dilution | NA |
| ICAL Date | 04/06/2004 | Extracted | 04/18/2004 |
| CCal Filename(s) | F40420B_19 & F40421A_17 | Analyzed | 04/21/2004 12:45 |
| Method Blank ID | BLANK-4676 | Injected By | MRO |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.23 | 115 | 2,3,7,8-TCDF-13C | 2.00 | 98 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 74 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 106 |
| 2,3,7,8-TCDD | 0.20 | 0.21 | 105 | 2,3,4,7,8-PeCDF-13C | 2.00 | 100 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 80 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 99 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.07 | 107 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 93 |
| 2,3,4,7,8-PeCDF | 1.00 | 1.09 | 109 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 95 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 103 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 83 |
| 1,2,3,7,8-PeCDD | 1.00 | 1.11 | 111 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 75 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 69 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 74 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 1.05 | 105 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 1.05 | 105 | OCDD-13C | 4.00 | 86 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 1.03 | 103 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.98 | 98 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 1.05 | 105 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 82 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.97 | 97 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 1.03 | 103 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 1.08 | 108 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 1.00 | 100 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 1.03 | 103 | | | |
| OCDF | 2.00 | 2.29 | 115 | | | |
| OCDD | 2.00 | 2.07 | 104 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

Report No.....1087041

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# Method 8290 Spike Sample Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-3,4-5-MS | | |
| Lab Sample ID | 105495527-MS | | |
| Filename | U40421A_02 | Matrix | Soil |
| Total Amount Extracted | 16.0 g | Dilution | NA |
| ICAL Date | 10/03/2003 | Extracted | 04/18/2004 |
| CCal Filename(s) | U40421A_01 & U40421A_04 | Analyzed | 04/21/2004 13:55 |
| Method Blank ID | BLANK-4676 | Injected By | MRO |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.21 | 104 | 2,3,7,8-TCDF-13C | 2.00 | 65 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 57 |
| 2,3,7,8-TCDD | 0.20 | 0.21 | 106 | 2,3,4,7,8-PeCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.05 | 105 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF | 1.00 | 1.04 | 104 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 67 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 70 |
| 1,2,3,7,8-PeCDD | 1.00 | 1.05 | 105 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 72 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 1.01 | 101 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 60 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 1.02 | 102 | OCDD-13C | 4.00 | 52 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 1.02 | 102 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 1.03 | 103 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 1.03 | 103 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 71 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 1.05 | 105 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.99 | 99 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 1.09 | 109 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 1.03 | 103 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 1.26 | 126 | | | |
| OCDF | 2.00 | 1.95 | 98 | | | |
| OCDD | 2.00 | 3.43 | 171 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range of 40-135%
X = Background subtracted value
E = PCDE Interference
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

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# Method 8290 Spike Sample Results

Client - Analytical Resources Inc.

| | | | |
|---|---|---|---|
| Client's Sample ID | LSB-3,4-5-MSD | | |
| Lab Sample ID | 105495527-MSD | | |
| Filename | U40421A_03 | Matrix | Soil |
| Total Amount Extracted | 16.4 g | Dilution | NA |
| ICAL Date | 10/03/2003 | Extracted | 04/18/2004 |
| CCal Filename(s) | U40421A_01 & U40421A_04 | Analyzed | 04/21/2004 14:42 |
| Method Blank ID | BLANK-4676 | Injected By | MRO |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.20 | 99 | 2,3,7,8-TCDF-13C | 2.00 | 74 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 75 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 66 |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 96 | 2,3,4,7,8-PeCDF-13C | 2.00 | 68 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 66 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 87 |
| 1,2,3,7,8-PeCDF | 1.00 | 0.99 | 99 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 68 |
| 2,3,4,7,8-PeCDF | 1.00 | 1.00 | 100 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 94 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 94 |
| 1,2,3,7,8-PeCDD | 1.00 | 1.01 | 101 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 76 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 84 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 77 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 0.96 | 96 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 84 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.97 | 97 | OCDD-13C | 4.00 | 72 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.95 | 95 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.98 | 98 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 0.97 | 97 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 79 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.98 | 98 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.90 | 90 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 1.06 | 106 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 1.02 | 102 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 1.18 | 118 | | | |
| OCDF | 2.00 | 1.77 | 89 | | | |
| OCDD | 2.00 | 3.64 | 182 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range of 40-135%
X = Background subtracted value
E = PCDE Interference
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

Report No.....1087041

## REPORT OF LABORATORY ANALYSIS

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# Method 8290 Spike Sample Results

Client - Analytical Resources Inc.

| | | | | | |
|---|---|---|---|---|---|
| Client Sample ID | LSB-3,4-5 | | | Dry Weights | |
| Lab Sample ID | 105495527 | Sample Filename | F40421B_09 | Sample Amount | 10.1 g |
| MS ID | 105495527-MS | MS Filename | U40421A_02 | MS Amount | 10.1 g |
| MSD ID | 105495527-MSD | MSD Filename | U40421A_03 | MSD Amount | 10.4 g |

| Analyte | Sample Conc. ng/Kg | MS/MSD Qs (ng) | MS Qm (ng) | MSD Qm (ng) | RPD | Background Subtracted MS % Rec. | Background Subtracted MSD % Rec. | Background Subtracted RPD |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.215 | 0.20 | 0.21 | 0.20 | 5.4 | 103 | 98 | 5.5 |
| 2,3,7,8-TCDD | 0.000 | 0.20 | 0.21 | 0.19 | 10.0 | 106 | 96 | 10.0 |
| 1,2,3,7,8-PeCDF | 0.000 | 1.00 | 1.05 | 0.99 | 6.4 | 105 | 99 | 6.4 |
| 2,3,4,7,8-PeCDF | 0.000 | 1.00 | 1.04 | 1.00 | 4.6 | 104 | 100 | 4.6 |
| 1,2,3,7,8-PeCDD | 0.000 | 1.00 | 1.05 | 1.01 | 4.4 | 105 | 101 | 4.4 |
| 1,2,3,4,7,8-HxCDF | 0.000 | 1.00 | 1.01 | 0.96 | 4.4 | 101 | 96 | 4.4 |
| 1,2,3,6,7,8-HxCDF | 0.000 | 1.00 | 1.02 | 0.97 | 4.8 | 102 | 97 | 4.8 |
| 2,3,4,6,7,8-HxCDF | 0.000 | 1.00 | 1.02 | 0.95 | 6.5 | 102 | 95 | 6.5 |
| 1,2,3,7,8,9-HxCDF | 0.000 | 1.00 | 1.03 | 0.98 | 4.4 | 103 | 98 | 4.4 |
| 1,2,3,4,7,8-HxCDD | 0.000 | 1.00 | 1.03 | 0.97 | 6.1 | 103 | 97 | 6.1 |
| 1,2,3,6,7,8-HxCDD | 0.000 | 1.00 | 1.05 | 0.98 | 6.7 | 105 | 98 | 6.7 |
| 1,2,3,7,8,9-HxCDD | 0.000 | 1.00 | 0.99 | 0.90 | 9.6 | 99 | 90 | 9.6 |
| 1,2,3,4,6,7,8-HpCDF | 1.888 | 1.00 | 1.09 | 1.06 | 3.0 | 108 | 104 | 3.1 |
| 1,2,3,4,7,8,9-HpCDF | 0.000 | 1.00 | 1.03 | 1.02 | 1.5 | 103 | 102 | 1.5 |
| 1,2,3,4,6,7,8-HpCDD | 7.566 | 1.00 | 1.26 | 1.18 | 6.6 | 118 | 110 | 7.2 |
| OCDF | 3.859 | 2.00 | 1.95 | 1.77 | 9.7 | 96 | 87 | 10.0 |
| OCDD | 78.446 | 2.00 | 3.43 | 3.64 | 6.1 | 132 | 141 | 7.1 |

**Definitions**

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa