



Analytical Resources, Incorporated
Analytical Chemists and Consultants

November 27, 2012

David Gillingham
Anchor QEA
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: Client Project: City of Kenmore Sediments, 120891-01.01
ARI Job No.: VS50

Dear David:

Please find enclosed the Chain of Custody record (COC), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

A handwritten signature in black ink, appearing to read "Cheronne Oreiro", written over a faint circular stamp or watermark.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: VS50

Enclosures

Chain of Custody Documentation

ARI Job ID: VS50

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)



Page: 1 of 1
 Date: 11/14/12
 No. of Coolers: 1
 Ice Present?
 Cooler Temps: _____

ARI Assigned Number: VSSD Turn-around Requested: see COC
 ARI Client Company: Anchor QEA LLC Phone: _____
 Client Contact: David Gillingham
 Client Project Name: City of Kenmore Sediments
 Client Project #: 120891-01.01 Samplers: gc

Sample ID	Date	Time	Matrix	No Containers	Analysis Requested				Notes/Comments
<u>SG-01-S-C-1211</u>	<u>11/13/12</u>	<u>18:02</u>	<u>H2O</u>	<u>1</u>	<u>X</u>				<u>WAS:</u>
<u>SG-02-S-C-1211</u>	<u>17:25</u>			<u>3</u>	<u>X</u>				<u>VR82 X F</u>
<u>SG-03-S-C-1211</u>	<u>14:37</u>			<u>2</u>	<u>X</u>				<u>VR82 A / MS / MSD</u>
<u>SG-04-S-C-1211</u>	<u>17:22</u>			<u>1</u>	<u>X</u>				<u>VR82 B</u>
<u>SG-05-S-C-1211</u>	<u>14:39</u>			<u>2</u>	<u>X</u>				<u>VR82 C</u>
<u>SG-06-S-C-1211</u>	<u>14:42</u>			<u>1</u>	<u>X</u>				<u>VR82 D</u>
<u>SG-07-S-C-1211</u>	<u>18:04</u>			<u>1</u>	<u>X</u>				<u>VR82 E</u>
<u>SG-07-S-C-dup-1211</u>	<u>18:05</u>			<u>1</u>	<u>X</u>				<u>VR82 F</u>
<u>SG-08-S-C-1211</u>	<u>18:39</u>			<u>1</u>	<u>X</u>				<u>VR82 G</u>
<u>SG-09-S-C-1211</u>	<u>18:40</u>		<u>▽</u>	<u>1</u>	<u>X</u>				<u>VR82 H</u>
<u>SG-09-S-C-1211</u>	<u>18:40</u>		<u>▽</u>	<u>1</u>	<u>X</u>				<u>VR82 I</u>
Comments/Special Instructions <u>MS/MSD on</u> <u>SG-02-S-C-1211</u>	Relinquished by (Signature) <u>Guenna Curtis</u> Printed Name <u>Guenna Curtis</u> Company <u>ARI</u>	Relinquished by (Signature) <u>[Signature]</u> Printed Name <u>Jennifer Millsep</u> Company <u>ARI</u>	Received by (Signature) <u>[Signature]</u> Printed Name <u>[Name]</u> Company <u>[Company]</u>	Date & Time <u>11/14/12</u>	Date & Time <u>11/14/12</u>	Date & Time <u>9:00</u>	Date & Time <u>9:00</u>	Date & Time <u>9:00</u>	Date & Time <u>9:00</u>

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release 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 Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

0550 : 00003

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: VS50



Case Narrative

Client: Anchor QEA

Project: City of Kenmore Sediments, 120891-01.01

ARI Job No.: VS50

Sample receipt

Ten pore water samples were received on November 14, 2012 under ARI job VS50. Pore waters were extracted from sediment samples associated ARI jobs VR58 and VR82. The pore waters were analyzed for Tributyltin, as requested.

Tributyltin by Krone 1988 SIM

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit. The LCS percent recovery was within control limits.

The matrix spike duplicate percent recovery of Tributyltin was outside advisory control limits with a wide RPD for sample **SG-02-S-C-1211**. No corrective action is required for matrix QC.

Sample ID Cross Reference Report



ARI Job No: VS50
Client: Anchor QEA, LLC.
Project Event: 120891-01.01
Project Name: City of Kenmore Sediments

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. SG-14-S-E-121107	VS50A	12-22844	Pore Water	11/13/12 18:02	11/14/12 09:00
2. SG-02-S-C-1211	VS50B	12-22845	Pore Water	11/13/12 17:25	11/14/12 09:00
3. SG-03-S-C-1211	VS50C	12-22846	Pore Water	11/13/12 14:37	11/14/12 09:00
4. SG-04-S-C-1211	VS50D	12-22847	Pore Water	11/13/12 17:22	11/14/12 09:00
5. SG-05-S-C-1211	VS50E	12-22848	Pore Water	11/13/12 14:39	11/14/12 09:00
6. SG-06-S-C-1211	VS50F	12-22849	Pore Water	11/13/12 14:42	11/14/12 09:00
7. SG-07-S-C-1211	VS50G	12-22850	Pore Water	11/13/12 18:04	11/14/12 09:00
8. SG-07-S-C-Dup-1211	VS50H	12-22851	Pore Water	11/13/12 18:05	11/14/12 09:00
9. SG-08-S-C-1211	VS50I	12-22852	Pore Water	11/13/12 18:39	11/14/12 09:00
10. SG-09-S-C-1211	VS50J	12-22853	Pore Water	11/13/12 18:40	11/14/12 09:00



Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Duplicate RPD is not within established control limits
- B Reported value is less than the CRDL but \geq the Reporting Limit
- N Matrix Spike recovery not within established control limits
- NA Not Applicable, analyte not spiked
- H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L Analyte concentration is ≤ 5 times the Reporting Limit and the replicate control limit defaults to ± 1 RL instead of the normal 20% RPD

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria ($< 20\%$ RSD, $< 20\%$ Drift or minimum RRF).



- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

- A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F Samples were frozen prior to particle size determination
- SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W Weight of sample in some pipette aliquots was below the level required for accurate weighting



Quality Control Summary for Butyl Tin Compounds EPA Methods 8270D – SIM							
Analyte	DL ¹	LOD ¹	LOQ ¹	Spike Recovery Limits (%) ^{2,3}			RPD ⁴
				LCS	MB/LCS Surrogate	Sample Surrogate	
TBTWSI – Aqueous Samples (Separatory Funnel Extraction – 100 to 0.5 mL) EPA Method 3510C – ARI Benchsheet TBT#1 – 3043F							
Tributyl Tin Ion ⁵	0.043 µg/L	0.096 µg/L	0.193 µg/L	30-160	--	--	≤ 40
Dibutyl Tin Ion ⁵	0.096 µg/L	0.216 µg/L	0.433 µg/L	30-160	--	--	≤ 40
Butyl Tin Ion ⁵	0.108 µg/L	0.153 µg/L	0.306 µg/L	30-160	--	--	≤ 40
Tripentyl Tin	--	--	--	--	30-160	30-160	≤ 40
Tripropyl Tin	--	--	--	--	30-160	30-160	≤ 40
TBTWSI – Pore Water Samples (Separatory Funnel Extraction – 150 to 0.5 mL) EPA Method 3510C – ARI Benchsheet TBT #3 – 3047F							
Tributyl Tin Ion ⁶	--	--	0.0052 µg/L	30-160	--	--	≤ 40
Dibutyl Tin Ion ⁶	--	--	0.0077 µg/L	30-160	--	--	≤ 40
Butyl Tin Ion ⁶	--	--	0.0054 µg/L	30-160	--	--	≤ 40
Tripentyl Tin	--	--	--	--	30-160	30-160	≤ 40
Tripropyl Tin	--	--	--	--	30-160	30-160	≤ 40
TBTSMI – Soil / Sediment Samples (Microwave Extraction – 5g dry wt to 0.5mL) EPA Method 3546 – ARI Benchsheet TBT#4 – 3064F							
Tributyl Tin Ion	1.52 µg/kg	1.93 µg/kg	3.86 µg/kg	40 – 144	--	--	≤ 40
Dibutyl Tin Ion	3.72 µg/kg	4.33 µg/kg	5.78 µg/kg	34 – 115	--	--	≤ 40
Butyl Tin Ion	2.95 µg/kg	3.06 µg/kg	4.08 µg/kg	10 – 111	--	--	≤ 40
Tripentyl Tin	--	--	--	--	35 – 130	25 – 140	≤ 40
Tripropyl Tin	--	--	--	--	28 – 106	32 – 104	≤ 40

(1) Detection Limit (DL), limit of detection (LOD) and limit of quantation (LOQ) as defined in ARI SOP 1018S.

(2) Highlighted control limits (**bold font**) are adjusted from the calculated values to reflect that ARI does not use control limits < 10 for the lower limit or < 100 for the upper limit.

(3) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. These limits are not used as the sole reason to reject data from a batch of analytes.

(4) Acceptance criteria for the relative percent difference (RPD) between analytes in replicate analyzes. If C_O and C_D are the concentrations of the original and duplicate respectively then

$$RPD = \frac{|C_o - C_D|}{\frac{C_o + C_D}{2}} \times 100$$

(5) DL from ARI MDL study QD32

(6) ARI does not report concentrations below the LOQ (low calibration standard concentration) and does not, therefore, determine a DL or LOD for butyl tin analysis in interstitial (pore) water.

**Butyl Tin Analysis
Report and Summary QC Forms**

ARI Job ID: VS50

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-14-S-E-121107
SAMPLE

Lab Sample ID: VS50A
 LIMS ID: 12-22844
 Matrix: Pore Water
 Data Release Authorized: *mw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 14:18
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	0.010	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	67.7%
Triphenyl Tin Chloride	72.6%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-02-S-C-1211
SAMPLE

Lab Sample ID: VS50B
 LIMS ID: 12-22845
 Matrix: Pore Water
 Data Release Authorized: *MW*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 14:39
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	0.69	E

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	70.1%
Triphenyl Tin Chloride	82.5%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-02-S-C-1211
DILUTION

Lab Sample ID: VS50B
 LIMS ID: 12-22845
 Matrix: Pore Water
 Data Release Authorized: *MW*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/23/12 09:39
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 5.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.026	0.67	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	70.4%
Tripentyl Tin Chloride	86.9%

ORGANICS ANALYSIS DATA SHEET

Tributyl Tins by Krone 1988 SIM GC/MS

Extraction Method: SW3510C

Page 1 of 1

Sample ID: SG-03-S-C-1211

SAMPLE

Lab Sample ID: VS50C

LIMS ID: 12-22846

Matrix: Pore Water

Data Release Authorized: *MW*

Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.

Project: City of Kenmore Sediments

Event: 120891-01.01

Date Sampled: 11/13/12

Date Received: 11/14/12

Date Extracted: 11/19/12

Date Analyzed: 11/21/12 15:41

Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	0.058	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	66.0%
Triphenyl Tin Chloride	66.2%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-04-S-C-1211
SAMPLE

Lab Sample ID: VS50D
 LIMS ID: 12-22847
 Matrix: Pore Water
 Data Release Authorized: *mw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 16:01
 Instrument/Analyst: NT12/VTS

Sample Amount: 46.0 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.017	0.049	

Reported in ug/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	68.7%
Triphenyl Tin Chloride	68.4%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-05-S-C-1211
SAMPLE

Lab Sample ID: VS50E
 LIMS ID: 12-22848
 Matrix: Pore Water
 Data Release Authorized: *MW*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 16:22
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	0.008	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	55.1%
Triphenyl Tin Chloride	79.3%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-06-S-C-1211
SAMPLE

Lab Sample ID: VS50F
 LIMS ID: 12-22849
 Matrix: Pore Water
 Data Release Authorized: *mw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 16:42
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	0.023	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	49.7%
Triphenyl Tin Chloride	56.0%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-07-S-C-1211
SAMPLE

Lab Sample ID: VS50G
 LIMS ID: 12-22850
 Matrix: Pore Water
 Data Release Authorized: *mw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 17:03
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	67.4%
Triphenyl Tin Chloride	84.6%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-07-S-C-Dup-1211
SAMPLE

Lab Sample ID: VS50H
 LIMS ID: 12-22851
 Matrix: Pore Water
 Data Release Authorized: *mw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 17:24
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	68.7%
Tripentyl Tin Chloride	75.4%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-08-S-C-1211
SAMPLE

Lab Sample ID: VS50I
 LIMS ID: 12-22852
 Matrix: Pore Water
 Data Release Authorized: *mm*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 17:44
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	52.4%
Tripentyl Tin Chloride	59.5%

ORGANICS ANALYSIS DATA SHEET

Tributyl Tins by Krone 1988 SIM GC/MS

Extraction Method: SW3510C

Page 1 of 1

Sample ID: SG-09-S-C-1211

SAMPLE

Lab Sample ID: VS50J

LIMS ID: 12-22853

Matrix: Pore Water

Data Release Authorized: *mw*

Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.

Project: City of Kenmore Sediments

Event: 120891-01.01

Date Sampled: 11/13/12

Date Received: 11/14/12

Date Extracted: 11/19/12

Date Analyzed: 11/21/12 18:05

Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL

Final Extract Volume: 0.50 mL

Dilution Factor: 1.00

Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	50.0%
Triphenyl Tin Chloride	67.7%

TBT SURROGATE RECOVERY SUMMARY

Matrix: Pore Water

QC Report No: VS50-Anchor QEA, LLC.

Project: City of Kenmore Sediments

Event: 120891-01.01

<u>Client ID</u>	<u>TPRT</u>	<u>TPNT</u>	<u>TOT OUT</u>
SG-14-S-E-121107	67.7%	72.6%	0
MB-111912	74.9%	83.2%	0
LCS-111912	69.8%	73.6%	0
SG-02-S-C-1211	70.1%	82.5%	0
SG-02-S-C-1211 DL	70.4%	86.9%	0
SG-02-S-C-1211 MS	74.9%	83.5%	0
SG-02-S-C-1211 MSD	70.8%	63.8%	0
SG-03-S-C-1211	66.0%	66.2%	0
SG-04-S-C-1211	68.7%	68.4%	0
SG-05-S-C-1211	55.1%	79.3%	0
SG-06-S-C-1211	49.7%	56.0%	0
SG-07-S-C-1211	67.4%	84.6%	0
SG-07-S-C-Dup-1211	68.7%	75.4%	0
SG-08-S-C-1211	52.4%	59.5%	0
SG-09-S-C-1211	50.0%	67.7%	0

LCS/MB LIMITS QC LIMITS

(TPRT) = Tripropyl Tin Chloride

(30-160)

(30-160)

(TPNT) = Tripentyl Tin Chloride

(30-160)

(30-160)

Prep Method: SW3510C

Analytical Method: Low TBT (Hexyl) Krone 1988

Log Number Range: 12-22844 to 12-22853

ORGANICS ANALYSIS DATA SHEET

Tributyl Tins by Krone 1988 SIM GC/MS

Page 1 of 1

Sample ID: SG-02-S-C-1211

MATRIX SPIKE

Lab Sample ID: VS50B

LIMS ID: 12-22845

Matrix: Pore Water

Data Release Authorized: *MW*

Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.

Project: City of Kenmore Sediments

120891-01.01

Date Sampled: 11/13/12

Date Received: 11/14/12

Date Extracted MS: 11/19/12

Sample Amount MS: 150 mL

MSD: 150 mL

Date Analyzed MS: 11/21/12 14:59

Final Extract Volume MS: 0.5 mL

MSD: 11/21/12 15:20

MSD: 0.5 mL

Instrument/Analyst MS: NT12/VTS

Dilution Factor MS: 1.00

MSD: NT12/VTS

MSD: 1.00

Alumina Cleanup: Yes

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Tributyltin Ion	0.688 E	0.737 E	0.074	66.2%	0.628 E	0.074	NA	NA

Results reported in µg/L

NA-No recovery due to high concentration of analyte in original sample and/or calculated negative recovery.

RPD calculated using sample concentrations per SW846.



ORGANICS ANALYSIS DATA SHEET
 Tributyl Tins by Krone 1988 SIM GC/MS
 Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-02-S-C-1211
 MATRIX SPIKE

Lab Sample ID: VS50B
 LIMS ID: 12-22845
 Matrix: Pore Water
 Data Release Authorized: *mm*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 14:59
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	---	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	74.9%
Triphenyl Tin Chloride	83.5%

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: SG-02-S-C-1211
MATRIX SPIKE DUP

Lab Sample ID: VS50B
 LIMS ID: 12-22845
 Matrix: Pore Water
 Data Release Authorized: *mmw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: 11/13/12
 Date Received: 11/14/12

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 15:20
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	---	

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	70.8%
Tripentyl Tin Chloride	63.8%

ORGANICS ANALYSIS DATA SHEET

Tributyl Tins by Krone 1988 SIM GC/MS

Page 1 of 1

Sample ID: LCS-111912

LAB CONTROL SAMPLE

Lab Sample ID: LCS-111912

LIMS ID: 12-22845

Matrix: Pore Water

Data Release Authorized: *MW*

Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.

Project: City of Kenmore Sediments

120891-01.01

Date Sampled: NA

Date Received: NA

Date Extracted LCS: 11/19/12

Date Analyzed LCS: 11/21/12 13:58

Instrument/Analyst LCS: NT12/VTS

Sample Amount LCS: 150 mL

Final Extract Volume LCS: 0.50 mL

Dilution Factor LCS: 1.00

Alumina Cleanup: Yes

Analyte	LCS	Spike Added	Recovery
Tributyltin Ion	0.053	0.074	71.6%

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	69.8%
Triphenyl Tin Chloride	73.6%

4B
SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

VS50MBW1

Lab Name: ANALYTICAL RESOURCES INC
 ARI Job No: VS50
 Lab File ID: VS50MB
 Instrument ID: NT12
 Matrix: LIQUID

Client: ANCHOR QEA, LLC.
 Project: CITY OF KENMORE SEDI
 Date Extracted: 11/19/12
 Date Analyzed: 11/21/12
 Time Analyzed: 1337

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	VS50LCSW1	VS50LCSW1	VS50SB	11/21/12
02	SG-14-S-E-121107	VS50A	VS50A	11/21/12
03	SG-02-S-C-1211	VS50B	VS50B	11/21/12
04	SG-02-S-C-1211 M	VS50BMS	VS50BMS	11/21/12
05	SG-02-S-C-1211 M	VS50BMSD	VS50BMSD	11/21/12
06	SG-03-S-C-1211	VS50C	VS50C	11/21/12
07	SG-04-S-C-1211	VS50D	VS50D	11/21/12
08	SG-05-S-C-1211	VS50E	VS50E	11/21/12
09	SG-06-S-C-1211	VS50F	VS50F	11/21/12
10	SG-07-S-C-1211	VS50G	VS50G	11/21/12
11	SG-07-S-C-DUP-12	VS50H	VS50H	11/21/12
12	SG-08-S-C-1211	VS50I	VS50I	11/21/12
13	SG-09-S-C-1211	VS50J	VS50J	11/21/12
14	SG-02-S-C-1211	VS50B	VS50BDL	11/23/12
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16				
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25				
26				
27				
28				
29				
30				

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS
Extraction Method: SW3510C
 Page 1 of 1

Sample ID: MB-111912
METHOD BLANK

Lab Sample ID: MB-111912
 LIMS ID: 12-22845
 Matrix: Pore Water
 Data Release Authorized: *mw*
 Reported: 11/23/12

QC Report No: VS50-Anchor QEA, LLC.
 Project: City of Kenmore Sediments
 Event: 120891-01.01
 Date Sampled: NA
 Date Received: NA

Date Extracted: 11/19/12
 Date Analyzed: 11/21/12 13:37
 Instrument/Analyst: NT12/VTS

Sample Amount: 150 mL
 Final Extract Volume: 0.50 mL
 Dilution Factor: 1.00
 Alumina Cleanup: Yes

CAS Number	Analyte	RL	Result	Q
36643-28-4	Tributyltin Ion	0.005	< 0.005	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	74.9%
Triphenyl Tin Chloride	83.2%

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

Instrument ID: NT12

Project: CITY OF KENMORE

DFTPP Injection Date: 10/09/12

DFTPP Injection Time: 1625

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	26.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	92.6
70	Less than 2.0% of mass 69	0.5 (0.6)1
127	10.0 - 80.0% of mass 198	63.3
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 60.0% of mass 198	29.5
365	Greater than 1.0% of mass 198	4.78
441	0.0 - 24.0% of mass 442	13.6 (13.5)2
442	50.0 - 200.0% of mass 198	100.3
443	15.0 - 24.0% of mass 442	23.2 (23.1)2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	PW 25	IC1009A	10/09/12	1643
02	PW 100	IC1009B	10/09/12	1704
03	PW 02	IC1009C	10/09/12	1724
04	PW 50	IC1009D	10/09/12	1745
05	PW 5	IC1009E	10/09/12	1806
06	PW 10	IC1009F	10/09/12	1826
07				
08				
09				
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22				

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

Instrument ID: NT12

Project: CITY OF KENMORE

DFTPP Injection Date: 11/21/12

DFTPP Injection Time: 1256

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	24.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	98.6
70	Less than 2.0% of mass 69	1.0 (1.0)1
127	10.0 - 80.0% of mass 198	64.3
197	Less than 2.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.5
275	10.0 - 60.0% of mass 198	28.7
365	Greater than 1.0% of mass 198	4.64
441	0.0 - 24.0% of mass 442	14.9 (16.0)2
442	50.0 - 200.0% of mass 198	93.5
443	15.0 - 24.0% of mass 442	18.0 (19.3)2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		PW 25	CC1121	11/21/12	1314
02	VS50MBW1	VS50MBW1	VS50MB	11/21/12	1337
03	VS50LCSW1	VS50LCSW1	VS50SB	11/21/12	1358
04	SG-14-S-E-121107	VS50A	VS50A	11/21/12	1418
05	SG-02-S-C-1211	VS50B	VS50B	11/21/12	1439
06	SG-02-S-C-1211 M	VS50BMS	VS50BMS	11/21/12	1459
07	SG-02-S-C-1211 M	VS50BMSD	VS50BMSD	11/21/12	1520
08	SG-03-S-C-1211	VS50C	VS50C	11/21/12	1541
09	SG-04-S-C-1211	VS50D	VS50D	11/21/12	1601
10	SG-05-S-C-1211	VS50E	VS50E	11/21/12	1622
11	SG-06-S-C-1211	VS50F	VS50F	11/21/12	1642
12	SG-07-S-C-1211	VS50G	VS50G	11/21/12	1703
13	SG-07-S-C-DUP-12	VS50H	VS50H	11/21/12	1724
14	SG-08-S-C-1211	VS50I	VS50I	11/21/12	1744
15	SG-09-S-C-1211	VS50J	VS50J	11/21/12	1805
16					
17					
18					
19					
20					
21					
22					

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

Instrument ID: NT12

Project: CITY OF KENMORE

DFTPP Injection Date: 11/23/12

DFTPP Injection Time: 0847

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	25.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	100.0
70	Less than 2.0% of mass 69	0.5 (0.5)1
127	10.0 - 80.0% of mass 198	64.5
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 60.0% of mass 198	28.2
365	Greater than 1.0% of mass 198	4.17
441	0.0 - 24.0% of mass 442	12.6 (14.7)2
442	50.0 - 200.0% of mass 198	86.2
443	15.0 - 24.0% of mass 442	17.9 (20.8)2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		PW 25	CC1123	11/23/12	0908
02	SG-02-S-C-1211	VS50B	VS50BDL	11/23/12	0939
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

ARI Job No: VS50

Project: CITY OF KENMORE

Instrument ID: NT12

Cont. Calib. Date: 11/21/12

Init. Calib. Date: 10/09/12

Cont. Calib. Time: 1314

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Tributyl Tin (Hexyl)	0.693	0.682	0.010	AVRG	-1.6
Dibutyl Tin (Hexyl)	0.050	0.048	0.010	AVRG	-4.0
Butyl Tin (Hexyl)	0.079	0.077	0.010	AVRG	-2.5
Tetrabutyl Tin	0.767	0.697	0.010	AVRG	-9.1
Tripropyl Tin (Hexyl)	0.722	0.688	0.010	AVRG	-4.7
Tripentyl Tin (Hexyl)	0.068	0.066	0.010	AVRG	-2.9

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

ARI Job No: VS50

Project: CITY OF KENMORE

Instrument ID: NT12

Cont. Calib. Date: 11/23/12

Init. Calib. Date: 10/09/12

Cont. Calib. Time: 0908

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Tributyl Tin (Hexyl)	0.693	0.683	0.010	AVRG	-1.4
Dibutyl Tin (Hexyl)	0.050	0.047	0.010	AVRG	-6.0
Butyl Tin (Hexyl)	0.079	0.077	0.010	AVRG	-2.5
Tetrabutyl Tin	0.767	0.701	0.010	AVRG	-8.6
Tripentyl Tin (Hexyl)	0.722	0.709	0.010	AVRG	-1.8
Tripentyl Tin (Hexyl)	0.068	0.064	0.010	AVRG	-5.9

<- Exceeds QC limit of 20% D

* RF less than minimum RF

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

ARI Job No: VS50

Project: CITY OF KENMORE

Ical Midpoint ID: IC1009A

Ical Date: 10/09/12

Instrument ID: NT12

Cont. Cal Date: 11/21/12

	IS1 AREA #	RT #	IS2 AREA #	RT #	AREA #	RT #
ICAL MIDPT	124855	10.24	121433	11.20		
UPPER LIMIT	249710		242866			
LOWER LIMIT	62428		60716			
CCAL	145461	10.22	140060	11.20		
UPPER LIMIT		10.72		11.70		
LOWER LIMIT		9.72		10.70		
01 VS50MBW1	135995	10.22	128917	11.20		
02 VS50LCSW1	142227	10.22	136788	11.20		
03 SG-14-S-E-12	142924	10.22	136269	11.20		
04 SG-02-S-C-12	150080	10.22	141482	11.20		
05 SG-02-S-C-12	151315	10.22	145669	11.20		
06 SG-02-S-C-12	152514	10.22	156826	11.20		
07 SG-03-S-C-12	154084	10.22	150801	11.20		
08 SG-04-S-C-12	151535	10.22	152904	11.20		
09 SG-05-S-C-12	155655	10.22	154149	11.20		
10 SG-06-S-C-12	153730	10.22	148002	11.20		
11 SG-07-S-C-12	157028	10.22	158915	11.20		
12 SG-07-S-C-DU	150301	10.22	154551	11.20		
13 SG-08-S-C-12	151700	10.22	150181	11.20		
14 SG-09-S-C-12	155389	10.22	149835	11.20		
15						
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19						
20						
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22						
23						
24						
25						

IS1 = Tetrapentyl Tin

IS2 = p-Terphenyl-d14

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
 AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC.

ARI Job No: VS50

Project: CITY OF KENMORE

Ical Midpoint ID: IC1009A

Ical Date: 10/09/12

Instrument ID: NT12

Cont. Cal Date: 11/23/12

	IS1 AREA #	RT #	IS2 AREA #	RT #	AREA #	RT #
=====	=====	=====	=====	=====	=====	=====
ICAL MIDPT	124855	10.24	121433	11.20		
UPPER LIMIT	249710		242866			
LOWER LIMIT	62428		60716			
=====	=====	=====	=====	=====	=====	=====
CCAL	146285	10.22	140914	11.20		
UPPER LIMIT		10.72		11.70		
LOWER LIMIT		9.72		10.70		
01 SG-02-S-C-12	148160	10.22	147905	11.20		
02						
03						
04						
05						
06						
07						
08						
09						
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IS1 = Tetrapentyl Tin

IS2 = p-Terphenyl-d14

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
 AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

Butyl Tin Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: VS50



ARI Job No.: VS50

Client ID: Anchor QEA, LLC

Parameter: TBT Pore Water

Client Project: City of Kenmore Sediments

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
<input type="checkbox"/> No Anomalies (standard soil/wet sediment/sand/gravel)=	
<input type="checkbox"/> Standing Water Decanted (Not shared)=	
<input type="checkbox"/> Standing Water Homogenized (Shared samples)=	
<input type="checkbox"/> Clay/Clumps (Difficult to homogenize)=	
<input type="checkbox"/> Rocks (%+size)?	
<input type="checkbox"/> Organics (Leaves/sticks/grass)=	
<input type="checkbox"/> Oily, obvious fuel/sulfur odors=	
<input type="checkbox"/> Other (Details)=	
Aqueous:	
<input type="checkbox"/> No Anomalies	
<input checked="" type="checkbox"/> Turbid/Color= <u>VS50 Samples A-D tan turbid E light tan, turbid F tan turbid</u>	<u>AR 11/19/12</u>
<input type="checkbox"/> Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
<input type="checkbox"/> Emulsions (%)=	
<input checked="" type="checkbox"/> Other (Details)= <u>VS50 Samples G-J tan, turbid</u>	<u>AR 11/19/12</u>
<input checked="" type="checkbox"/> Other Notes/Comments= (Note problems, concerns, corrective actions). <u>VS50 sample D</u>	<u>AR 11/19/12</u>
<u>(Centrifuge#1 used for all Centrifugations) had limited volume, used D.I. water to bring extraction to required volume.</u>	



Preparation Test TBT # 2 (TBTPSL)

Low Level (0.0049-0.006ppb)
Batch set up by: JH

ARI Job No(s) V55φ

Page 1 of 1

Bottle #	Extraction Requirements	Volume Extracted	Final Effective Volume	Volume to Lab	Comments	Verify Client ID AR 11/19/12 Analyst Date
	V55φ MBW	150mL	0.5mL	0.5mL	Blanks=Sea H2O	KD Hexane Exchange (20mL X 2) YL 11/19/12 Analyst/Date
	↓ SBW	150mL	0.5mL	0.5mL	Blanks=Sea H2O	
	SBWDup.	150mL	0.5mL	0.5mL	Blanks=Sea H2O	
	QLS	150mL	0.5mL	0.5mL	Blanks=Sea H2O	
1	V55φ A	150mL	0.5mL	0.5mL		TurboVap 123
1	B	150mL	0.5mL	0.5mL		
2	Bms	150mL	0.5mL	0.5mL		SP 11/19/12 Analyst/Date
3	Bmsd	150mL	0.5mL	0.5mL		HexMgBr Addition Vortex 45min +Overnight
1	C	150mL	0.5mL	0.5mL		SP 11/19/12 Analyst/Date
1	D	150mL 46mL	0.5mL	0.5mL	See Analyst note	Analyst/Date
	E	150mL 150mL lab note 11/19/12	0.5mL	0.5mL		(REQ) Derivitize (4mL) 11-20-12 CSZ Analyst/Date
	F	150mL	0.5mL	0.5mL		(REQ) Alumina Clean (2mL) 11-20-12 CSZ Analyst/Date
	G	150mL	0.5mL	0.5mL		TurboVap 123
	H	150mL	0.5mL	0.5mL		Post Alumina Cleanup CSZ
	I	150mL	0.5mL	0.5mL		11-20-12 Analyst/Date
	↓ J	150mL	0.5mL	0.5mL		Analyst/Date
Analyst/Date		AR 11/19/12 →		CSZ 11-20-12	CSZ 11-20-12	11-20-12 Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	J (1915-4)	0.125µg/mL	100µL	11/23/12	AR	JH
Spike	9 (1918-2)	0.125/0.250µg/mL	100µL	11/23/12	AR	JH
QLS Spike	1 ()	0.02µg/mL	40µL			
Extraction Time: <u>8:30</u>						

SPECIAL INSTRUCTIONS: NOTE: TBT Extractions must be completed within 48 hours!

1. Rinse all glassware with 0.02% Tropolone.
2. Pre-wash "Sea Water" blanks with 30mL DCM (2min shake) (Discard DCM).
3. Add Surr/Spk.
4. Acidify with 1:1 HCL.
5. Check pH.
6. Let sit 10 minutes-Check pH again.
7. Extract 1 X with 30mL 0.02% Tropolone (4 min shake-SHAKE VIGOROUSLY)!. Plus 2 X 30mL DCM.
8. KD rinsed with 0.02% Tropolone (NO Drying Column) at 80°.
9. Exchange (2 X with 20mL) to Hexane at 100°.
10. TurboVap to 3mL-Transfer with Hexane to 40mL VOA vial..
11. Derivitize=1 1/2 pipet HexMgBr (Mix by hand) then Vortex. Let sit 45min (vortex every 10 min). Then overnite in fridge.
12. Derivitize: Add (1) pipet conc. HCL. Vortex. Draw off/discard HCL. Add 5mL DI H2O. Vortex. Draw off/discard H2O. Add 5mL DI H2O a second time. Vortex. Draw off/discard H2O.
13. Add sodium sulfate-Let sit 15min.
14. TurboVap to 2mL
15. 7.5g 0% Alumina Clean-up Required. (Collect 6mL).
16. TurboVap.
17. Vial in Hexane.

Archive Y N

22845

V550: 00040

**Butyl Tin Raw Data
Initial Calibration**

ARI Job ID: VS50



GC/MS, SVOA Initial Calibration Notes

ARI SOP: 801S(SIM-PNA) 802S(Butyl Tins) 804S(SVOA-8270D) 805S(op-Pest)

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12
Curve Date(s): 10.9.12 Internal Standard ID 1961-2 Expiration 3.17.13

DFTPP Tune Meets Criteria?	<u>YES</u> / NO	Minimum Response Factors Met/	<u>YES</u> / NO
DDT Breakdown <20%?	<u>YES</u> / NO	ICV Exceeding ±20%?	YES / NO
Peak Tailing Factor ≤2?	YES <u>NO</u>	ICV Exceeding ±30%?	YES / NO
ICal Meets %RSD & r ² Criteria?	<u>YES</u> / NO	Linear Fits Used?	YES / <u>NO</u>
Q flag applied?	YES / <u>NO</u>	Quadratic Fits Used?	YES / <u>NO</u>
Manual Integrations for ICal?	YES / <u>NO</u>	Calibration Points Dropped?	YES / <u>NO</u>
Spectral Library Updated?	<u>YES</u> / NO		

Primary Source	Standard #	Expiration	Secondary Source	Standard #	Expiration
<u>Ar, Stock</u>	<u>1961-4</u>	<u>3.17.13</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Detail problems, corrective actions and/or other pertinent information below:

① PCP @ 2.85, Benzidine @ 2.04

Analyst: VTD Date: 10.10.12
Reviewer: AB Date: 10/10/12

Q-FLAG SUMMARY FOR DATABATCH - /chem1/nt12.i/20121009A.b

Instrument: nt12.i Date: 09-OCT-2012 Method: pw3ul.m

INITIAL CAL: 09-OCT-2012

Compound	%RSD or R ²

NO Q-FLAGS	

CONTINUING CAL: 09-OCT-2012

Compound	%D

NO Q-FLAGS	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt12.i/20121009A.b

ARI Job No.: DF1P Method: DF8270.m Instrument: nt12.i Date: 09-OCT-2012

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
1625	df1009b.d	DF1PP 5		1	NO MANUAL INTEGRATION
1643	ic1009a.d	PW 25		1	NO MANUAL INTEGRATION
1704	ic1009b.d	PW 100		1	NO MANUAL INTEGRATION
1724	ic1009c.d	PW 02		1	NO MANUAL INTEGRATION
1745	ic1009d.d	PW 50		1	NO MANUAL INTEGRATION
1805	ic1009e.d	PW 5		1	NO MANUAL INTEGRATION
1826	ic1009f.d	PW 10		1	NO MANUAL INTEGRATION
1949	v152a.d	V152A	EFS-SC-1-2	1	NO MANUAL INTEGRATION
2010	v152b.d	V152B	PCB-SC-2-1	1	NO MANUAL INTEGRATION
2031	v152c.d	V152C	PCB-SC-3-0	1	NO MANUAL INTEGRATION
1847	v152mb.d	V152MBW1	V152MBW1	1	NO MANUAL INTEGRATION
1908	v152sb.d	V152LCSW1	V152LCSW1	1	NO MANUAL INTEGRATION
1929	v152abd.d	V152LCSDW1	V152LCSDW1	1	NO MANUAL INTEGRATION

Report Date : 10-Oct-2012 09:30

Page 1

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt12.i/20121009A.b/pw3u1.m
Batch File: /chem1/nt12.i/20121009A.b
Inst ID: nt12.i

ID: RT01 RT02 RT03 RT04 RT05 RT06
FILENAME: 1c1009a 1c1009b 1c1009c 1c1009d 1c1009e 1c1009f
INJ. DATE: 09-OCT-2012 09-OCT-2012 09-OCT-2012 09-OCT-2012 09-OCT-2012 09-OCT-2012
INJ. TIME: 16:43 17:04 17:24 17:45 18:06 18:26

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
\$ 1 Tripropyl Tin (Hexyl)	8.594	8.594	8.594	8.594	8.594	8.594	8.594	8.422-8.766	8.594	0.000
2 Tetrapentyl Tin	8.812	8.812	8.801	8.812	8.801	8.812	8.812	8.636-8.989	8.807	0.006
3 Tributyl Tin (Hexyl)	9.583	9.583	9.583	9.583	9.583	9.583	9.583	9.392-9.775	9.583	0.000
* 4 Tetrapentyl Tin	10.237	10.237	10.224	10.237	10.237	10.237	10.237	10.032-10.442	10.235	0.006
5 Dibutyl Tin (Hexyl)	10.277	10.277	10.277	10.277	10.277	10.277	10.277	10.072-10.483	10.277	0.000
\$ 6 Tripentyl Tin (Hexyl)	10.572	10.572	10.572	10.572	10.572	10.572	10.572	10.361-10.784	10.572	0.000
7 Butyl Tin (Hexyl)	10.907	10.908	10.907	10.907	10.907	10.907	10.907	10.689-11.126	10.907	0.000
* 8 p-Terphenyl-d14	11.202	11.203	11.202	11.202	11.202	11.202	11.202	10.978-11.426	11.202	0.000

Reviewer 1 VI
Reviewer 2 _____

Date: 10.10.12
Date: 10/12/12

075000 : 000000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 09-OCT-2012 16:43
 End Cal Date : 09-OCT-2012 18:26
 Quant Method : ISTD
 Origin : Disabled
 Target Version : 3.50
 Integrator : HP RTE
 Method file : /chem1/nt12.i/20121009A.b/pw3ul.m
 Cal Date : 10-Oct-2012 08:24 van
 Curve Type : Average

Calibration File Names:

Level 1: /chem1/nt12.i/20121009A.b/ic1009c.d
 Level 2: /chem1/nt12.i/20121009A.b/ic1009e.d
 Level 3: /chem1/nt12.i/20121009A.b/ic1009f.d
 Level 4: /chem1/nt12.i/20121009A.b/ic1009a.d
 Level 5: /chem1/nt12.i/20121009A.b/ic1009d.d
 Level 6: /chem1/nt12.i/20121009A.b/ic1009b.d

Compound	2.000 Level 1	5.000 Level 2	10.000 Level 3	25.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
2 Tetrabutyl Tin	0.80764	0.72326	0.78169	0.80644	0.73009	0.75098	0.76668	4.865
3 Tributyl Tin (Hexyl)	0.67534	0.61162	0.71507	0.76799	0.67786	0.70823	0.69269	7.503
5 Dibutyl Tin (Hexyl)	0.05537	0.04591	0.04958	0.05161	0.04657	0.04969	0.04979	6.953
7 Butyl Tin (Hexyl)	0.07948	0.06974	0.08283	0.08668	0.07239	0.08230	0.07890	8.295
\$ 1 Tripropyl Tin (Hexyl)	0.60688	0.72596	0.71635	0.81599	0.71486	0.75270	0.72212	9.418
\$ 6 Tripentyl Tin (Hexyl)	0.07411	0.05839	0.06752	0.07356	0.06369	0.07110	0.06806	9.033

Date : 09-OCT-2012 16:25

Client ID:

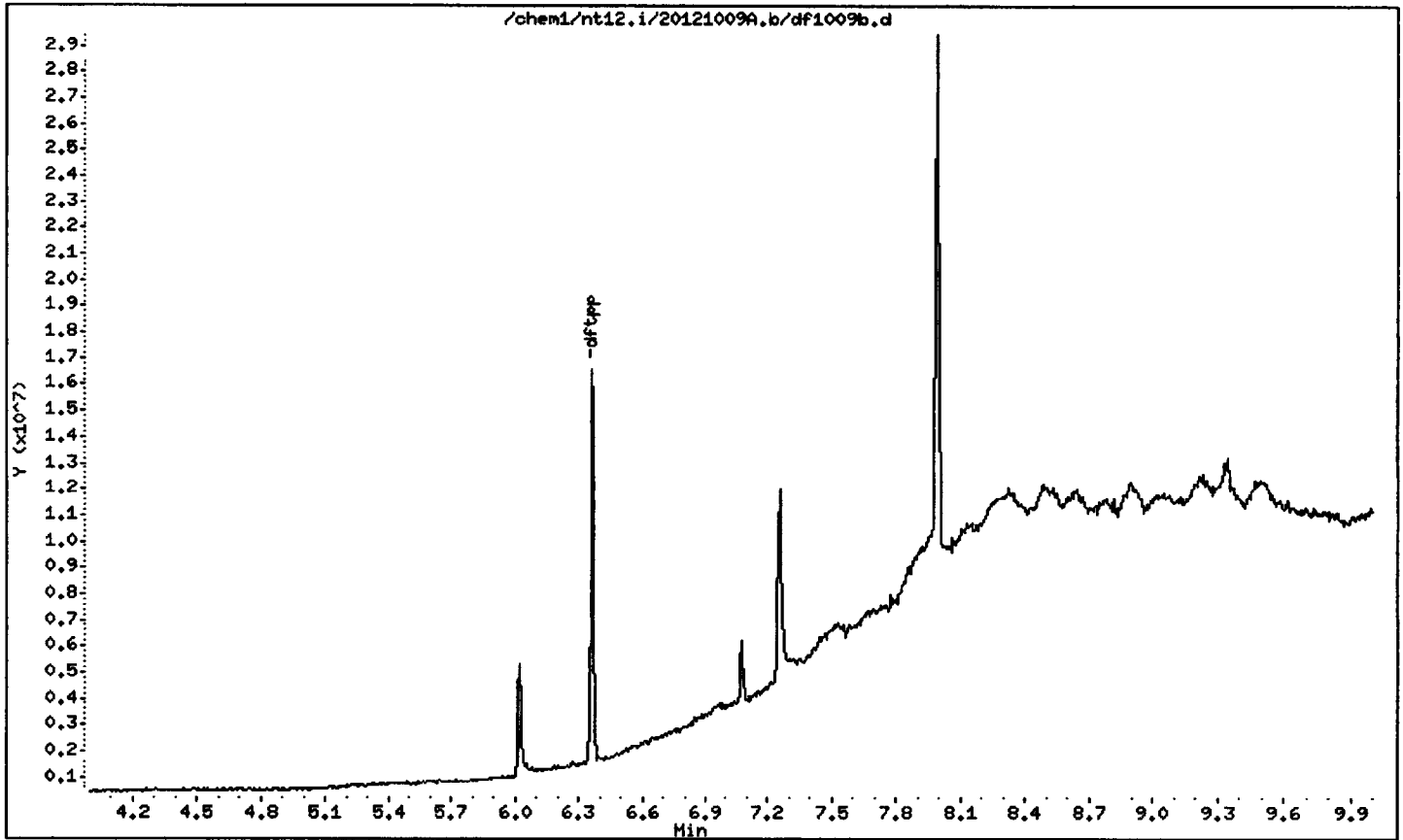
Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25



Date : 09-OCT-2012 16:25

Client ID:

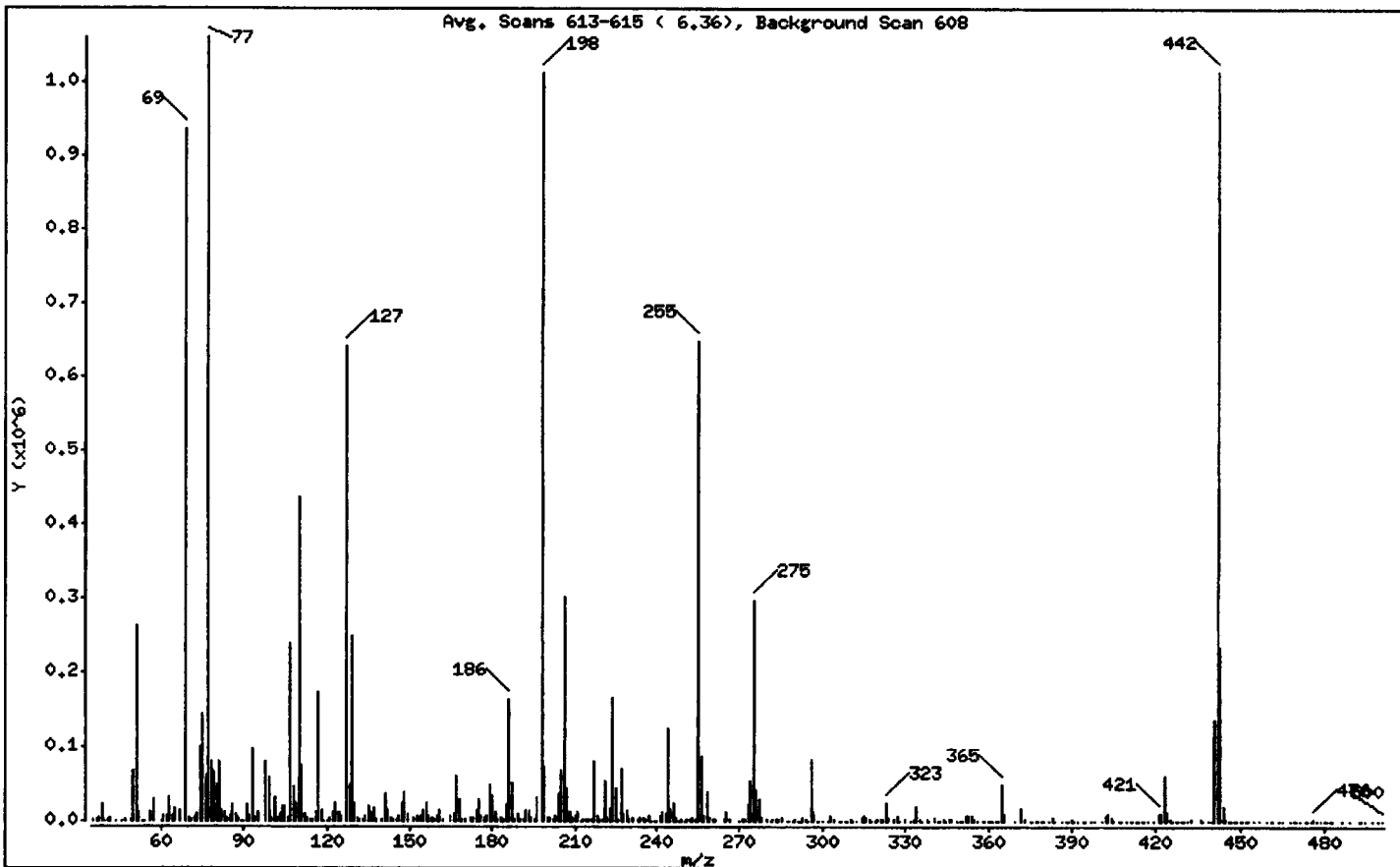
Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JM

Column phase: ZB-5msi
1 dftpp

Column diameter: 0.25



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	26.17
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	92.60
70	Less than 2.00% of mass 69	0.54 (0.59)
127	10.00 - 80.00% of mass 198	63.35
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.19
275	10.00 - 60.00% of mass 198	29.49
365	Greater than 1.00% of mass 198	4.78
441	0.01 - 24.00% of mass 442	13.58 (13.54)
442	50.00 - 200.00% of mass 198	100.31
443	15.00 - 24.00% of mass 442	23.18 (23.11)

Date : 09-OCT-2012 16:25

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

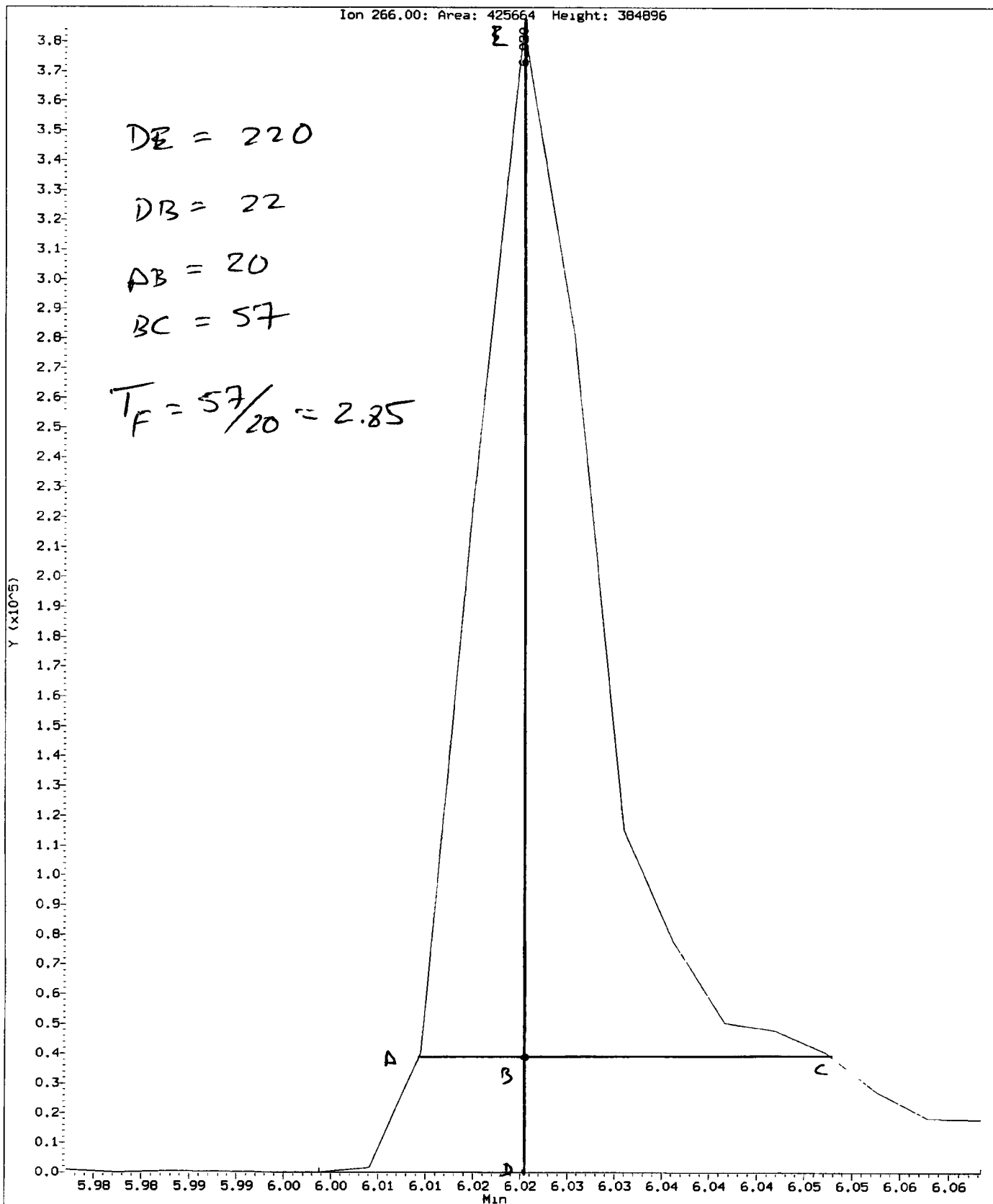
Column diameter: 0.25

Data File: df1009b.d
Spectrum: Avg. Scans 613-615 (6.36), Background Scan 608
Location of Maximum: 77.00
Number of points: 392

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1424	147.00	25248	253.00	5180	373.00	2198
37.00	1472	148.00	39480	254.00	3449	375.00	1037
38.00	4624	149.00	9036	255.00	649152	376.00	197
39.00	21432	151.00	4739	256.00	89056	377.00	110
40.00	382	153.00	6896	257.00	6579	378.00	1054
41.00	3644	154.00	7270	258.00	38832	379.00	84
42.00	5210	155.00	15120	259.00	6095	380.00	466
44.00	940	156.00	25176	260.00	1772	382.00	335
46.00	258	157.00	6754	261.00	3540	383.00	4753
47.00	1319	158.00	5830	264.00	1469	384.00	816
49.00	2765	159.00	2532	265.00	13358	387.00	763
50.00	67824	160.00	8005	266.00	3018	388.00	1065
51.00	264704	161.00	15595	270.00	1143	389.00	772
52.00	13241	162.00	1783	271.00	1346	390.00	2979
53.00	763	165.00	8229	272.00	3152	391.00	638
54.00	1136	166.00	10166	273.00	20840	392.00	1138
56.00	11553	167.00	61576	274.00	53120	394.00	171
57.00	28440	168.00	30200	275.00	298240	395.00	322
60.00	876	169.00	3014	276.00	40848	397.00	1067
61.00	7920	170.00	3003	277.00	28112	398.00	493
62.00	7831	172.00	5704	278.00	4015	401.00	1133
63.00	30984	173.00	5291	280.00	2215	402.00	6263
64.00	6912	174.00	13750	281.00	279	403.00	10076
65.00	17160	175.00	29472	282.00	1640	404.00	3887
67.00	15208	176.00	7088	283.00	2264	405.00	1158
69.00	936512	177.00	5313	284.00	2153	407.00	147
70.00	5509	178.00	7361	285.00	4204	408.00	788
71.00	1557	179.00	49280	287.00	1071	410.00	77
72.00	4357	180.00	33544	288.00	725	411.00	316
73.00	10013	181.00	12442	289.00	116	412.00	416
74.00	99872	182.00	3329	290.00	1952	413.00	653
75.00	143488	183.00	4259	291.00	517	414.00	486
76.00	60232	184.00	3268	292.00	136	415.00	409
77.00	1061376	185.00	22904	293.00	6074	416.00	187
78.00	80392	186.00	162944	294.00	1922	417.00	232

Data File: /chem1/nt12.1/20121009A.b/ddt.b/df1009b.d
Injection Date: 09-OCT-2012 16:25
Instrument: nt12.1
Client Sample ID:

Compound: Pentachlorophenol
CAS Number: 87-86-5



Date : 09-OCT-2012 16:25

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JM

Column phase: ZB-5msi

Column diameter: 0.25

Data File: df1009b.d
 Spectrum: Avg. Scans 613-615 (6.36), Background Scan 608
 Location of Maximum: 77.00
 Number of points: 392

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	65088	187.00	52384	295.00	880	419.00	233
80.00	48336	188.00	3378	296.00	83184	421.00	10491
81.00	79808	189.00	10332	297.00	12688	422.00	9614
82.00	14920	190.00	2492	298.00	646	423.00	60352
83.00	12802	191.00	2160	299.00	1137	424.00	11480
84.00	4053	192.00	13734	300.00	757	425.00	1888
85.00	7493	193.00	15443	302.00	369	426.00	271
86.00	21408	194.00	4549	303.00	7707	427.00	1005
87.00	9658	195.00	2729	304.00	1847	428.00	417
88.00	5970	196.00	32304	306.00	473	429.00	438
89.00	390	198.00	1011392	307.00	1013	430.00	1113
90.00	596	199.00	72744	308.00	85	431.00	883
91.00	21000	200.00	4313	309.00	655	433.00	1675
92.00	7744	201.00	4179	310.00	2015	435.00	146
93.00	98480	202.00	1691	311.00	872	436.00	1869
94.00	4054	203.00	8254	312.00	355	437.00	602
95.00	11642	204.00	37504	314.00	3730	439.00	484
98.00	80656	205.00	68488	315.00	6995	440.00	615
99.00	57376	206.00	301376	316.00	3725	441.00	137280
100.00	4988	207.00	42992	317.00	1322	442.00	1014464
101.00	31936	208.00	11580	318.00	755	443.00	234432
102.00	3956	209.00	4002	319.00	368	444.00	20144
103.00	9976	210.00	7846	320.00	1654	445.00	1501
104.00	20000	211.00	12444	321.00	2937	446.00	533
105.00	19696	212.00	1183	322.00	2001	447.00	534
106.00	4531	213.00	2046	323.00	24528	448.00	173
107.00	238400	214.00	1329	324.00	3708	449.00	116
108.00	47064	215.00	3540	326.00	1338	450.00	812
109.00	23552	216.00	1611	327.00	6498	451.00	504
110.00	435840	217.00	80864	328.00	1027	452.00	359
111.00	75824	218.00	8028	330.00	2298	453.00	681
112.00	10395	219.00	3507	332.00	546	455.00	51
113.00	4951	220.00	1318	333.00	2845	457.00	51
114.00	1673	221.00	53368	334.00	20528	460.00	261
115.00	1281	222.00	5856	335.00	3621	461.00	387

Date : 09-OCT-2012 16:25

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JM

Column phase: ZB-5msi

Column diameter: 0.25

Data File: df1009b.d

Spectrum: Avg. Scans 613-615 (6.36), Background Scan 608

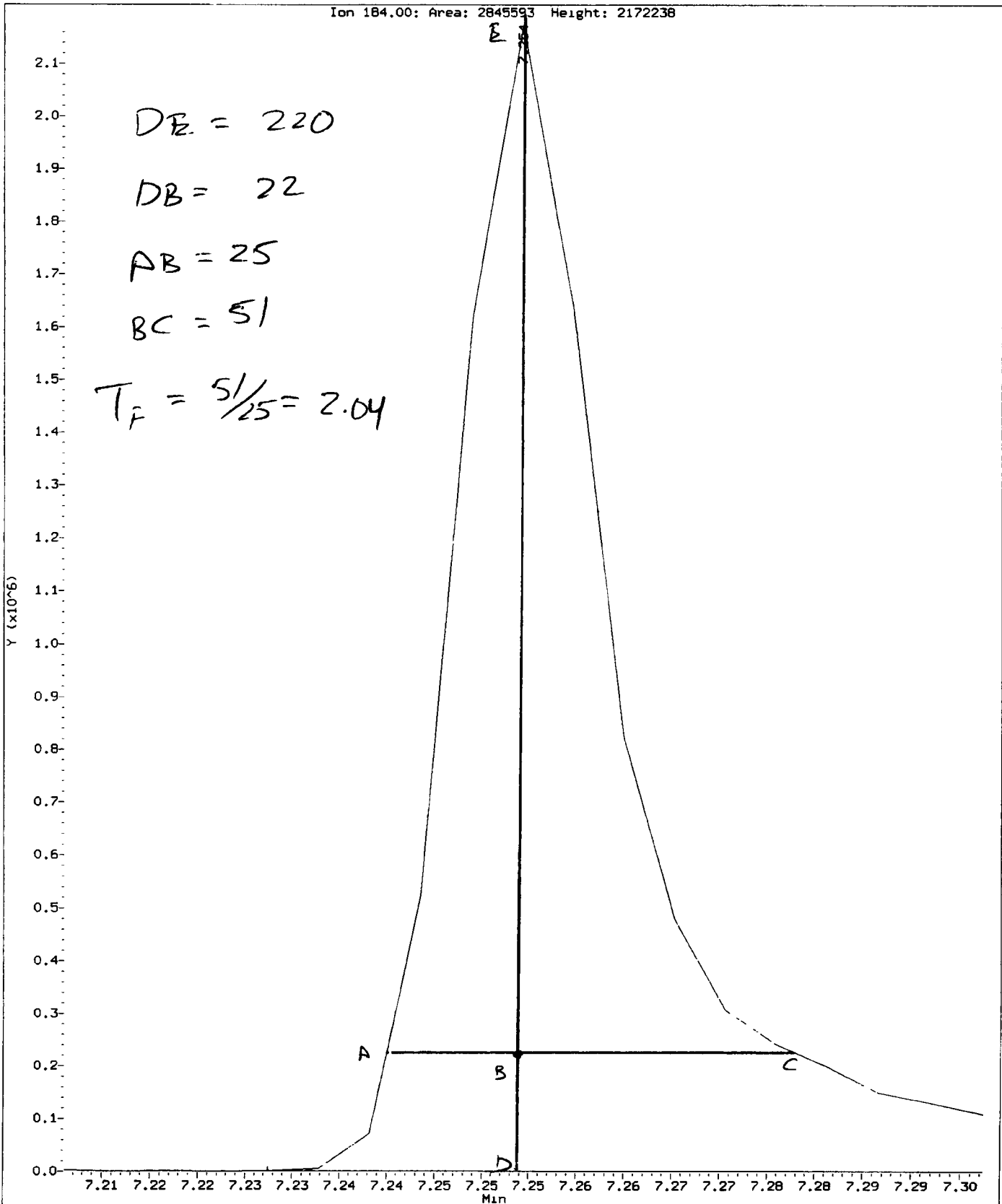
Location of Maximum: 77.00

Number of points: 392

m/z	Y	m/z	Y	m/z	Y	m/z	Y
116.00	13189	223.00	15913	336.00	108	462.00	628
117.00	173312	224.00	165632	338.00	1428	464.00	177
118.00	14853	225.00	44048	339.00	521	465.00	384
119.00	31	226.00	2558	341.00	4447	468.00	1064
120.00	699	227.00	71080	342.00	745	469.00	261
121.00	5564	228.00	10200	343.00	1032	470.00	118
122.00	12082	229.00	13913	344.00	1424	471.00	602
123.00	25032	230.00	2230	345.00	354	473.00	545
124.00	11331	231.00	3934	346.00	3383	474.00	342
125.00	6626	233.00	2014	347.00	2674	475.00	117
127.00	640640	234.00	5363	349.00	843	476.00	1253
128.00	48936	235.00	5775	350.00	48	477.00	1083
129.00	249088	236.00	2137	351.00	163	479.00	173
130.00	23992	237.00	7228	352.00	8023	480.00	74
131.00	6002	238.00	876	353.00	6148	481.00	498
132.00	2692	239.00	598	354.00	7989	482.00	126
133.00	1698	240.00	629	355.00	2231	483.00	508
134.00	6521	241.00	6219	356.00	704	486.00	719
135.00	18336	242.00	11251	358.00	833	489.00	224
136.00	12496	243.00	9588	359.00	1115	492.00	158
137.00	16800	244.00	124600	360.00	87	493.00	203
138.00	3599	245.00	16864	361.00	558	494.00	302
140.00	3262	246.00	25320	362.00	1169	497.00	404
141.00	36064	247.00	4541	363.00	229	499.00	547
142.00	13954	248.00	262	364.00	427	500.00	267
143.00	5719	249.00	1410	365.00	48360		
144.00	2088	250.00	16	366.00	9289		
145.00	1565	251.00	1495	370.00	29		
146.00	6978	252.00	3576	372.00	16480		

Data File: /chem1/nt12.1/20121009A.b/ddt.b/df1009b.d
Injection Date: 09-OCT-2012 16:25
Instrument: nt12.1
Client Sample ID:

Compound: Benzidine
CAS Number:



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem1/nt12.i/20121009A.b/ddt.b/df1009b.d ARI ID: DFTPP 5
Method: /chem1/nt12.i/20121009A.b/ddt.b/sw846ddt.m Misc:
Analysis Date: 09-OCT-2012 16:25 Instrument: nt12.i

COMPOUND	RT	AREA
Pentachlorophenol	6.020	425664
Benzidine	7.254	2845593
4,4'-DDE	7.447	18140
4,4'-DDD	7.735	25351
4,4'-DDT	7.986	2588716

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(18140 + 25351) * 100}{(18140 + 25351 + 2588716)}$$

$$\text{DDT Percent Breakdown} = 1.7 \%$$

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009a.d
 Lab Smp Id: PW 25
 Inj Date : 09-OCT-2012 16:43
 Operator : VTS
 Smp Info : PW 25
 Misc Info :
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121009A.b/pw3ul.m
 Meth Date : 10-Oct-2012 08:24 van
 Cal Date : 09-OCT-2012 16:43
 Als bottle: 2
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 3.50

Inst ID: nt12.i

Quant Type: ISTD
 Cal File: ic1009a.d
 Calibration Sample, Level: 4

Compound Sublist: PW.sub

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/mL)
\$ 1 Tripropyl Tin (Hexyl)	291		8.594	8.594	(0.839)	12735	25.0000	25.00
2 Tetrabutyl Tin	289		8.812	8.812	(0.861)	12586	25.0000	25.00
3 Tributyl Tin (Hexyl)	319		9.583	9.583	(0.936)	11986	25.0000	25.00
* 4 Tetrapentyl Tin	333		10.237	10.237	(1.000)	124855	200.0000	
5 Dibutyl Tin (Hexyl)	347		10.277	10.277	(0.917)	15668	50.0000	50.00
\$ 6 Tripentyl Tin (Hexyl)	347		10.572	10.572	(0.944)	22332	50.0000	50.00
7 Butyl Tin (Hexyl)	347		10.907	10.907	(0.974)	26314	50.0000	50.00
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	121433	20.0000	

VTS
 10-10-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009a.d
Lab Smp Id: PW 25
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

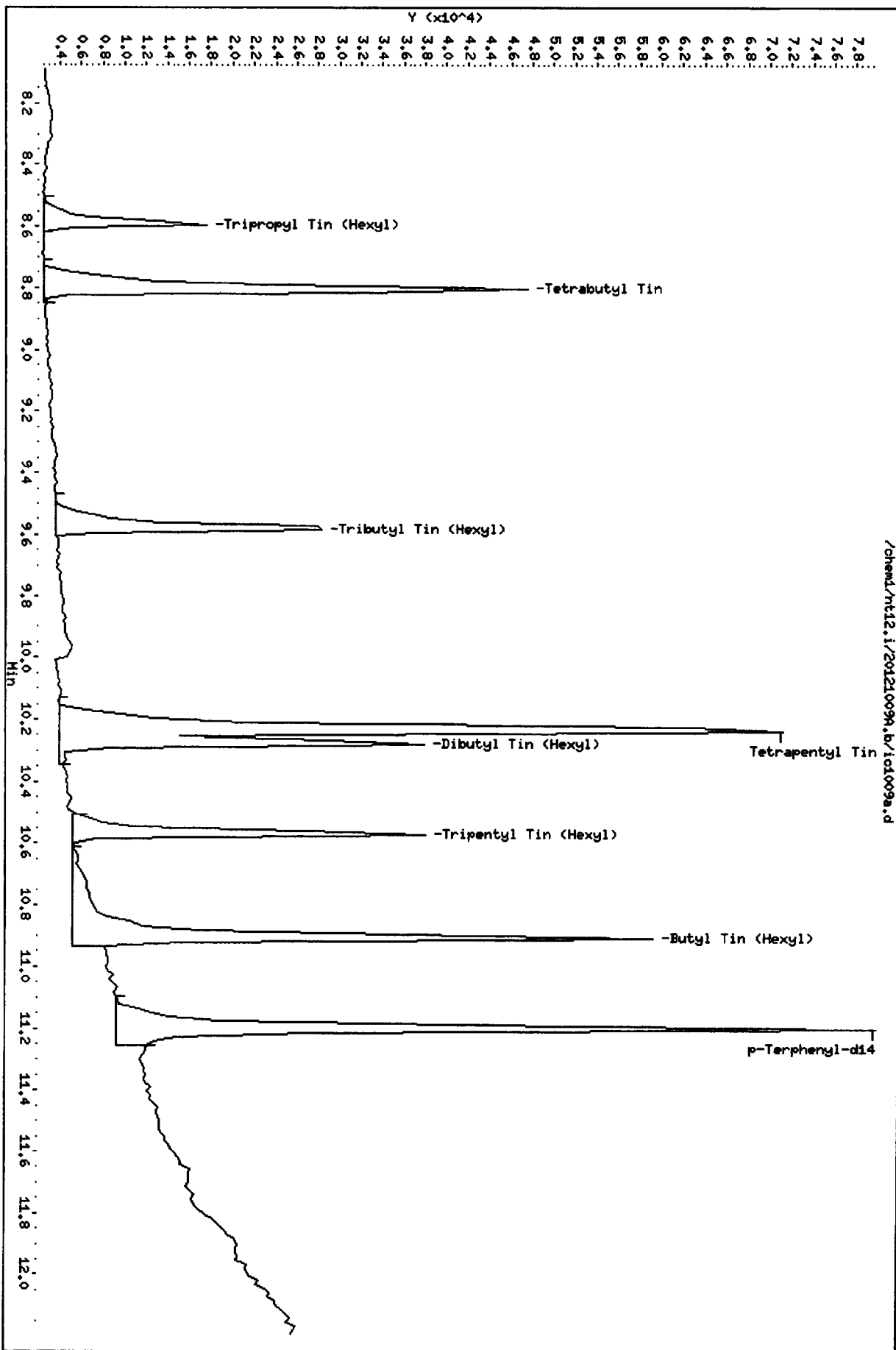
Calibration Date: 09-OCT-2012
Calibration Time: 16:43
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	124855	0.00
8 p-Terphenyl-d14	121433	60716	242866	121433	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



CO-ELUTION SUMMARY FOR FILE - ic1009a.d

Lab ID: PW 25, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009b.d
Lab Smp Id: PW 100
Inj Date : 09-OCT-2012 17:04
Operator : VTS
Smp Info : PW 100
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van
Cal Date : 09-OCT-2012 17:04
Als bottle: 3
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50

Inst ID: nt12.i
Quant Type: ISTD
Cal File: ic1009b.d
Calibration Sample, Level: 6
Compound Sublist: PW.sub

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/mL)
=====	=====	==	=====	=====	=====	=====	=====
\$ 1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	49141	100.000	95.97
2 Tetrabutyl Tin	289	8.812	8.812	(0.861)	49029	100.000	96.44
3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	46238	100.000	95.95
* 4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	130573	200.000	
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	61110	200.000	196.2
\$ 6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	87438	200.000	196.6
7 Butyl Tin (Hexyl)	347	10.908	10.907	(0.974)	101210	200.000	194.8
* 8 p-Terphenyl-d14	244	11.203	11.202	(1.000)	122984	20.0000	

V11
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009b.d
Lab Smp Id: PW 100
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	130573	4.58
8 p-Terphenyl-d14	121433	60716	242866	122984	1.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

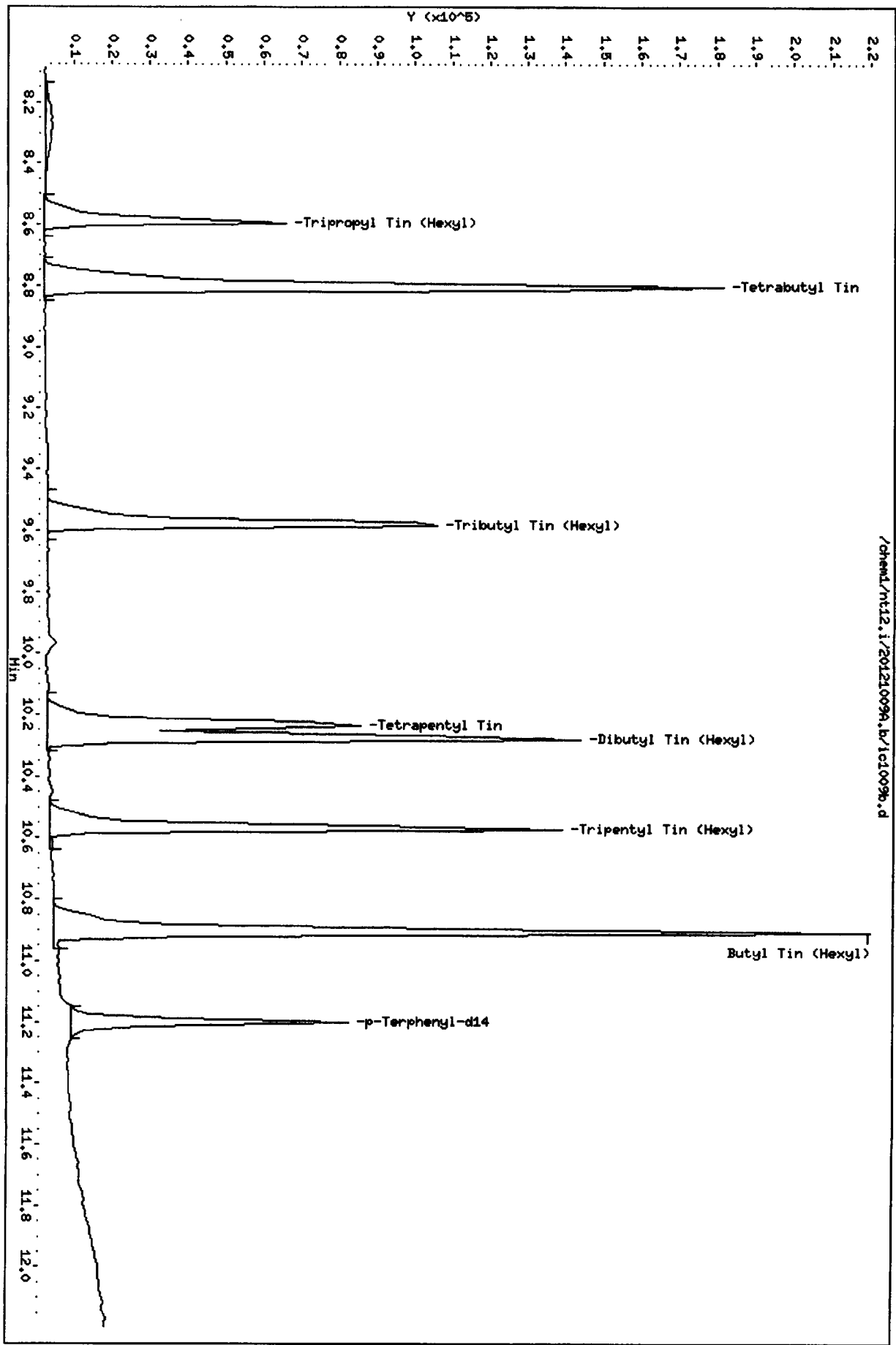
Data File: /chem1/nt12.i/20121009a.b/1c1009b.d
Date: 09-OCT-2012 17:04

Client ID:
Sample Info: PM 100

Column phases: ZB-Smsi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25

/chem1/nt12.i/20121009a.b/1c1009b.d



CO-ELUTION SUMMARY FOR FILE - ic1009b.d

Lab ID: PW 100, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009c.d
Lab Smp Id: PW 02
Inj Date : 09-OCT-2012 17:24
Operator : VTS
Smp Info : PW 02
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van
Cal Date : 09-OCT-2012 17:24
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50

Inst ID: nt12.i
Quant Type: ISTD
Cal File: ic1009c.d
Calibration Sample, Level: 1
Compound Sublist: PW.sub

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/mL)	ON-COL (ng/mL)
\$ 1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.841)	789	2.00000	1.674
2 Tetrabutyl Tin	289	8.801	8.812	(0.861)	1050	2.00000	2.049
3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.937)	878	2.00000	1.883
* 4 Tetrapentyl Tin	333	10.224	10.237	(1.000)	130009	200.000	
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	1394	4.00000	4.241
\$ 6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	1866	4.00000	4.065
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	2001	4.00000	3.839
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	125886	20.0000	

WJ
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009c.d
Lab Smp Id: PW 02
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43

Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

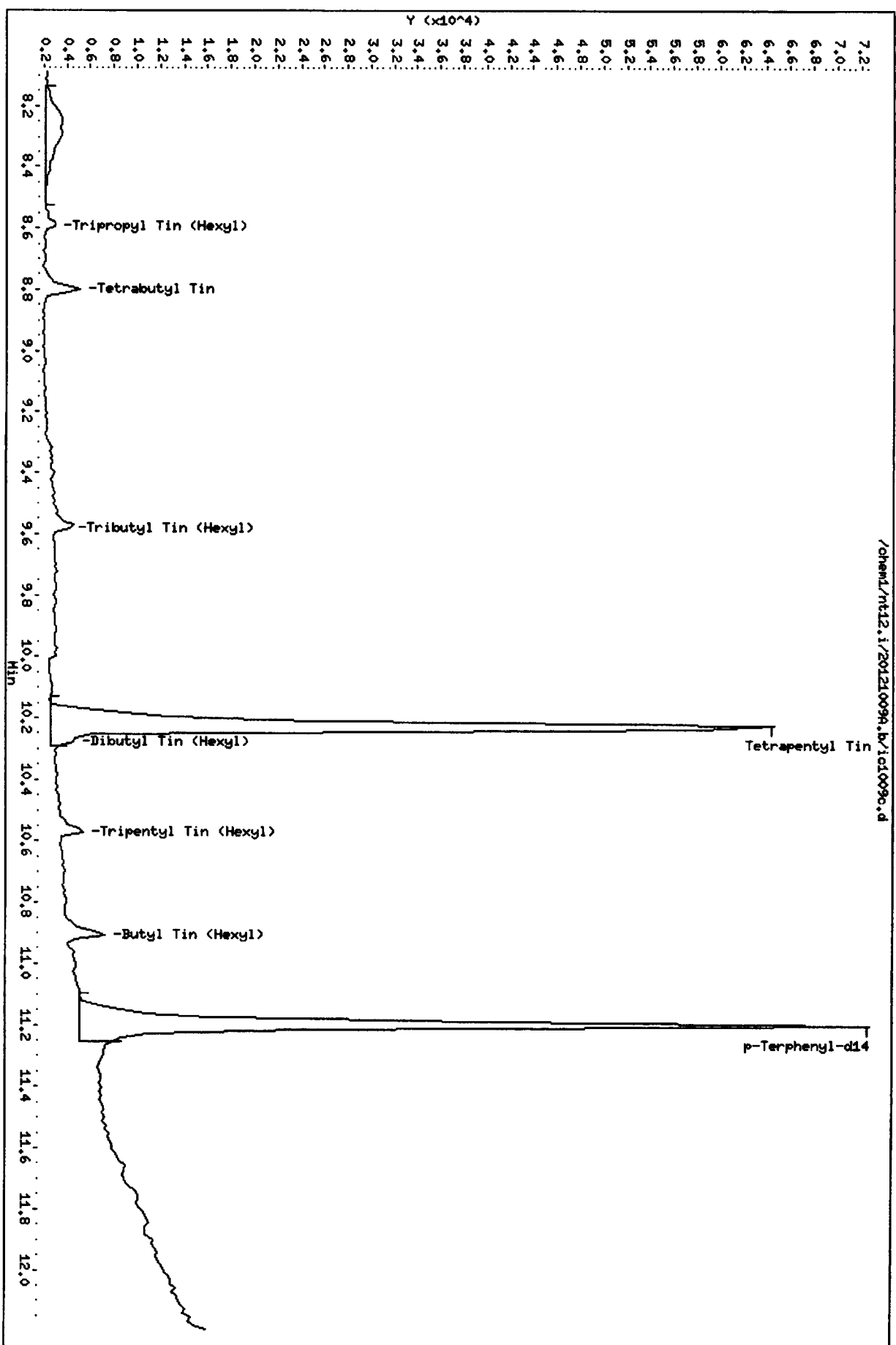
COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	130009	4.13
8 p-Terphenyl-d14	121433	60716	242866	125886	3.67

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.24	9.74	10.74	10.22	-0.13
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt12.i/201210099.b/1c10090.d
Date : 09-OCT-2012 17:24
Client ID:
Sample Info: PM 02
Column phase: ZB-5ms1

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - ic1009c.d

Lab ID: PW 02, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009d.d
Lab Smp Id: PW 50
Inj Date : 09-OCT-2012 17:45
Operator : VTS
Smp Info : PW 50
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van
Cal Date : 09-OCT-2012 17:45
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50

Inst ID: nt12.i
Quant Type: ISTD
Cal File: ic1009d.d
Calibration Sample, Level: 5
Compound Sublist: PW.sub

Compounds	QUANT SIG		AMOUNTS				
	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/mL)	ON-COL (ng/mL)
-----	----	--	-----	-----	-----	-----	-----
\$ 1 Tripropyl Tin (Hexyl)	291	8.594	8.594	(0.839)	22681	50.0000	49.46
2 Tetrabutyl Tin	289	8.812	8.812	(0.861)	23164	50.0000	47.18
3 Tributyl Tin (Hexyl)	319	9.583	9.583	(0.936)	21507	50.0000	47.92
* 4 Tetrapentyl Tin	333	10.237	10.237	(1.000)	126911	200.000	
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	29013	100.000	91.65
\$ 6 Tripentyl Tin (Hexyl)	347	10.572	10.572	(0.944)	39679	100.000	90.19
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	45099	100.000	90.25
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	124605	20.0000	

VTS
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt12.i
 Lab File ID: ic1009d.d
 Lab Smp Id: PW 50
 Analysis Type: SV
 Quant Type: ISTD
 Operator: VTS
 Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
 Misc Info:

Calibration Date: 09-OCT-2012
 Calibration Time: 16:43

Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	126911	1.65
8 p-Terphenyl-d14	121433	60716	242866	124605	2.61

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chemd/nt12.i/20121009a.b/1c1009d.d

Date : 09-OCT-2012 17:45

Client ID:

Sample Info: PM 50

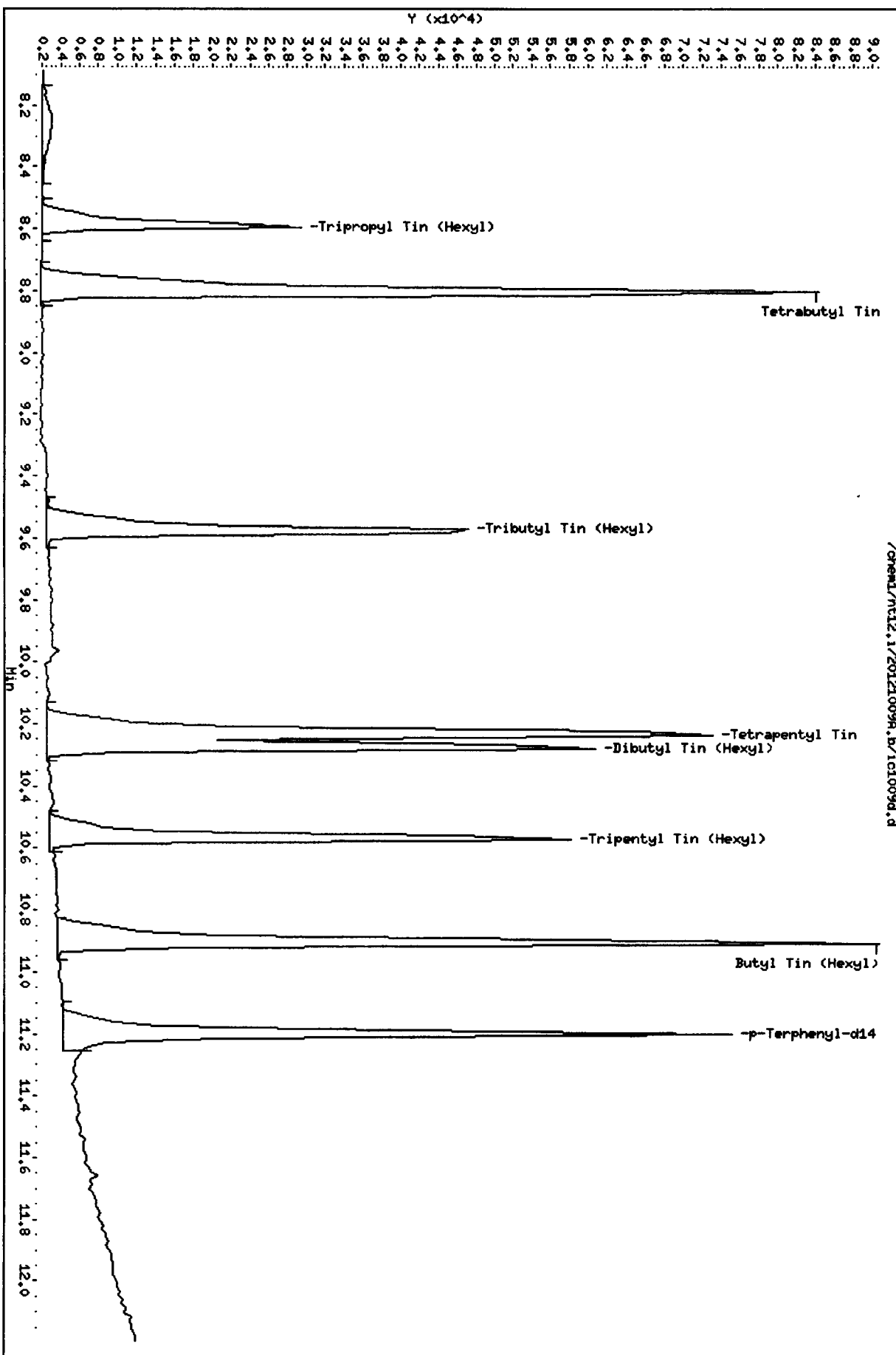
Column phase: ZB-Gem1

Instrument: nt12.i

Operator: VTS

Column diameter: 0.25

Page 3



CO-ELUTION SUMMARY FOR FILE - ic1009d.d

Lab ID: PW 50, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009e.d
Lab Smp Id: PW 5
Inj Date : 09-OCT-2012 18:06
Operator : VTS
Smp Info : PW 5
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van
Cal Date : 09-OCT-2012 18:06
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Inst ID: nt12.i
Quant Type: ISTD
Cal File: ic1009e.d
Calibration Sample, Level: 2
Compound Sublist: PW.sub

Compounds	QUANT	SIG	AMOUNTS					
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng/mL)
-----	----	---	-----	-----	-----	-----	-----	-----
\$ 1 Tripropyl Tin (Hexyl)	291		8.594	8.594	(0.839)	2146	5.00000	5.019
2 Tetrabutyl Tin	289		8.801	8.812	(0.860)	2138	5.00000	4.735
3 Tributyl Tin (Hexyl)	319		9.583	9.583	(0.936)	1808	5.00000	4.444
* 4 Tetrapentyl Tin	333		10.237	10.237	(1.000)	118243	200.000	
5 Dibutyl Tin (Hexyl)	347		10.277	10.277	(0.917)	2607	10.0000	9.213
\$ 6 Tripentyl Tin (Hexyl)	347		10.572	10.572	(0.944)	3316	10.0000	8.566
7 Butyl Tin (Hexyl)	347		10.907	10.907	(0.974)	3960	10.0000	8.927
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	113572	20.0000	

UP
10.10.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: ic1009e.d
Lab Smp Id: PW 5
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
Misc Info:

Calibration Date: 09-OCT-2012
Calibration Time: 16:43

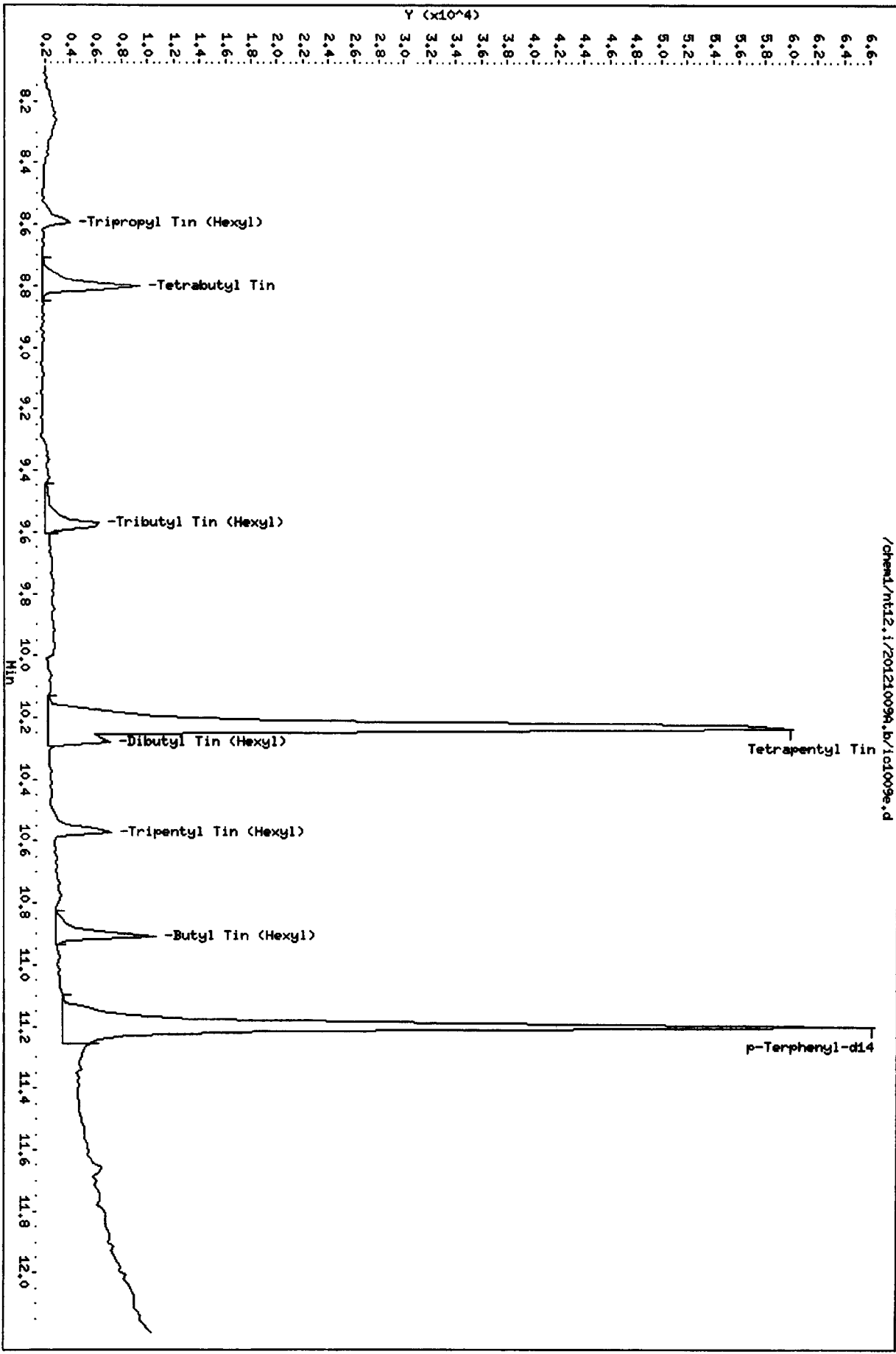
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	118243	-5.30
8 p-Terphenyl-d14	121433	60716	242866	113572	-6.47

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



CO-ELUTION SUMMARY FOR FILE - ic1009e.d

Lab ID: PW 5, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121009A.b/ic1009f.d
Lab Smp Id: PW 10
Inj Date : 09-OCT-2012 18:26
Operator : VTS
Smp Info : PW 10
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121009A.b/pw3ul.m
Meth Date : 10-Oct-2012 08:24 van
Cal Date : 09-OCT-2012 18:26
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50

Inst ID: nt12.i
Quant Type: ISTD
Cal File: ic1009f.d
Calibration Sample, Level: 3
Compound Sublist: PW.sub

Compounds	QUANT	SIG	AMOUNTS				
			MASS	RT	EXP RT	REL RT	RESPONSE
\$ 1 Tripropyl Tin (Hexyl)	291	8.594	8.594	0.839	4462	10.0000	9.920
2 Tetrabutyl Tin	289	8.801	8.812	0.860	4869	10.0000	10.20
3 Tributyl Tin (Hexyl)	319	9.583	9.583	0.936	4454	10.0000	10.32
* 4 Tetrapentyl Tin	333	10.237	10.237	1.000	124576	200.0000	
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	0.917	6007	20.0000	19.92
\$ 6 Tripentyl Tin (Hexyl)	347	10.572	10.572	0.944	8181	20.0000	19.84
7 Butyl Tin (Hexyl)	347	10.907	10.907	0.974	10036	20.0000	21.00
* 8 p-Terphenyl-d14	244	11.202	11.202	1.000	121168	20.0000	

U
10-10-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt12.i
 Lab File ID: ic1009f.d
 Lab Smp Id: PW 10
 Analysis Type: SV
 Quant Type: ISTD
 Operator: VTS
 Method File: /chem1/nt12.i/20121009A.b/pw3ul.m
 Misc Info:

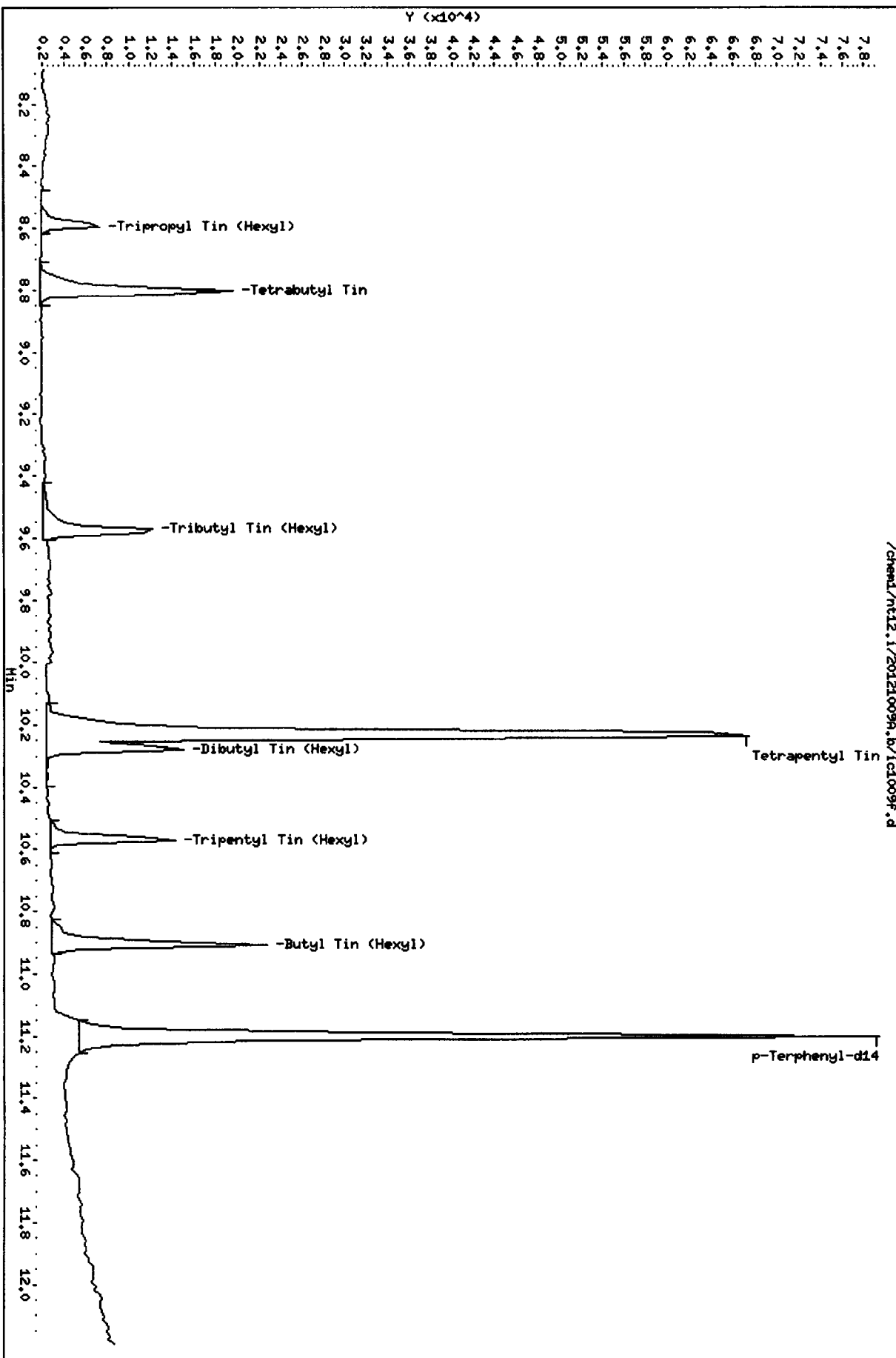
Calibration Date: 09-OCT-2012
 Calibration Time: 16:43
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	124576	-0.22
8 p-Terphenyl-d14	121433	60716	242866	121168	-0.22

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.24	9.74	10.74	10.24	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



CO-ELUTION SUMMARY FOR FILE - ic1009f.d

Lab ID: PW 10, Method: pw3ul.m, Instrument: nt12.i, Date: 09-OCT-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Butyl Tin Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: VS50



GC/MS SVOA Analyst Notes / Corrective Action Log

ARI Project ID: V550 Client ID: Anchor DEA

ARI SOP: 801S(SIM-PNA) PURE WATER 802S(Butyl Tins) 804S(SVOA-8270D) 805S(op-Pest)

Parameter(s): TBT in pure water

Instrument: NT-4 NT-6 NT-8 NT-10 NT11 NT12

Curve Date: 10.9.12 Analysis Start Date: 11.21.12

DFTPP Tune Meets Criteria?	<u>YES</u> / NO	Internal Standard Meets Criteria?	<u>YES</u> / NO
DDT Breakdown <20%?	<u>YES</u> / NO / NA	Method Blank In Control?	<u>YES</u> / NO
Peak Tailing Factor ≤2?	<u>1</u> <u>YES</u> / NO / NA	<u>LCS</u> / LCSD Recovery In Control?	<u>YES</u> / NO
ICal acceptable?	<u>YES</u> / NO	CCal acceptable?	<u>YES</u> / NO
Q flag applied?	YES / <u>NO</u>	Q flag applied?	YES / <u>NO</u>
Surrogate Recovery in Control?	<u>YES</u> / NO	Special Analysis Criteria Met?	<u>YES</u> / NO / NA
Manual Integrations for ICal?	YES / <u>NO</u>	Manual Integrations for Samples?	Yes / NO

Detail problems, corrective actions and/or other pertinent information below (use reverse side when necessary):

1 2nd Queue for dilution run on B (SX),
PCP @ 2.7, Benzilic @ 3.39.
- B required a 5X dilution.
- level IV package.

Additional Details on Reverse: Yes / No

Analyst: WD Date: 11.23.12

Reviewer: AMW Date: 11/23

Analytical Resources Inc.: Organics Instrument Log
NT-12 Serial No.:GC=US00032558, MS= US01180091

Date: 11-21-12 Analysis: pore water - TBT Analyst: VP
 GC Program: porebts Column No: 230930 Column Type: ZB-5ms
 Instrument Tune (.U or .CT.): 120927.U EM Voltage: 2000
 Calibration File: df1121 Curve Date: 10-9-12 Injection Vol.: 3 uL

IS/SS 1961-2 Ical/Ccal 1961-4 LCS/ICV

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem1/nt:

Time	Filename	LabID	ClientId	DF				
1	1256 df1121.d	DFTPP 5		1	NO ISTDs FOUND			
2	1314 cc1121.d	PW 25		1	10.22 145461	11.20 140060		
3	1337 vs50mb.d	VS50MBW1	VS50MBW1	1	10.22 135995	11.20 128917		
4	1358 vs50sb.d	VS50LCSW1	VS50LCSW1	1	10.22 142227	11.20 136788		
5	1418 vs50a.d	VS50A	SG-14-S-E-12	1	10.22 142924	11.20 136269		
6	1439 vs50b.d	VS50B	SG-02-S-C-12	1	10.22 150080	11.20 141482		
7	1459 vs50bms.d	VS50BMS	SG-02-S-C-12	1	10.22 151315	11.20 145669		
8	1520 vs50bmsd.d	VS50BMSD	SG-02-S-C-12	1	10.22 152514	11.20 156826		
9	1541 vs50c.d	VS50C	SG-03-S-C-12	1	10.22 154084	11.20 150801		
10	1601 vs50d.d	VS50D	SG-04-S-C-12	1	10.22 151535	11.20 152904		
11	1622 vs50e.d	VS50E	SG-05-S-C-12	1	10.22 155655	11.20 154149		
12	1642 vs50f.d	VS50F	SG-06-S-C-12	1	10.22 153730	11.20 148002		
13	1703 vs50g.d	VS50G	SG-07-S-C-12	1	10.22 157028	11.20 158915		
14	1724 vs50h.d	VS50H	SG-07-S-C-Du	1	10.22 150301	11.20 154551		
15	1744 vs50i.d	VS50I	SG-08-S-C-12	1	10.22 151700	11.20 150181		
16	1805 vs50j.d	VS50J	SG-09-S-C-12	1	10.22 155389	11.20 149835		

Every line must contain information or be lined out. Make all entries legible.
 Start a new page for each QC period. Document All Maintenance Tasks In StarLIMS

VP
 11-23-12

Date : 21-NOV-2012 12:56

Client ID:

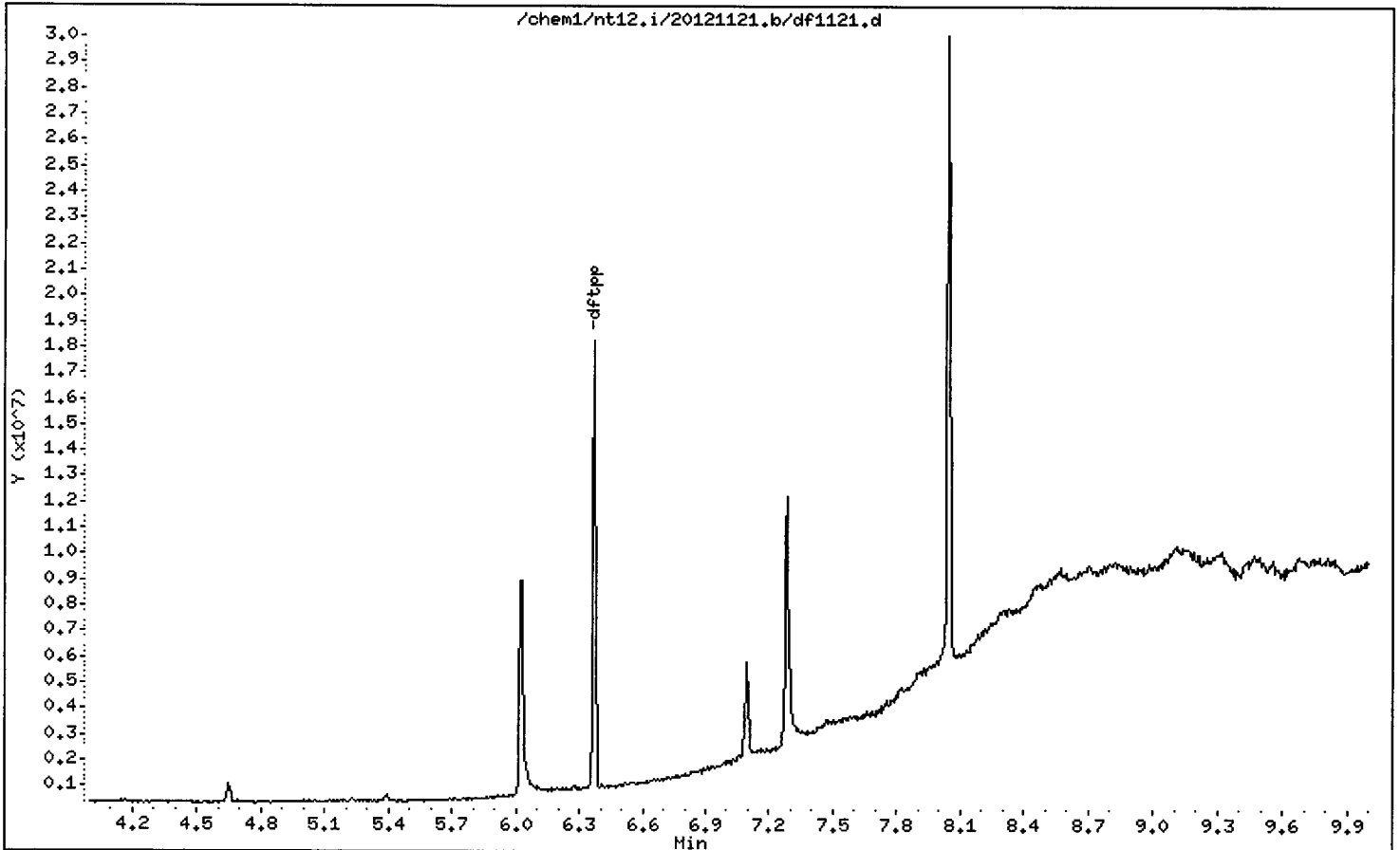
Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25



Date : 21-NOV-2012 12:56

Client ID:

Instrument: nt12.i

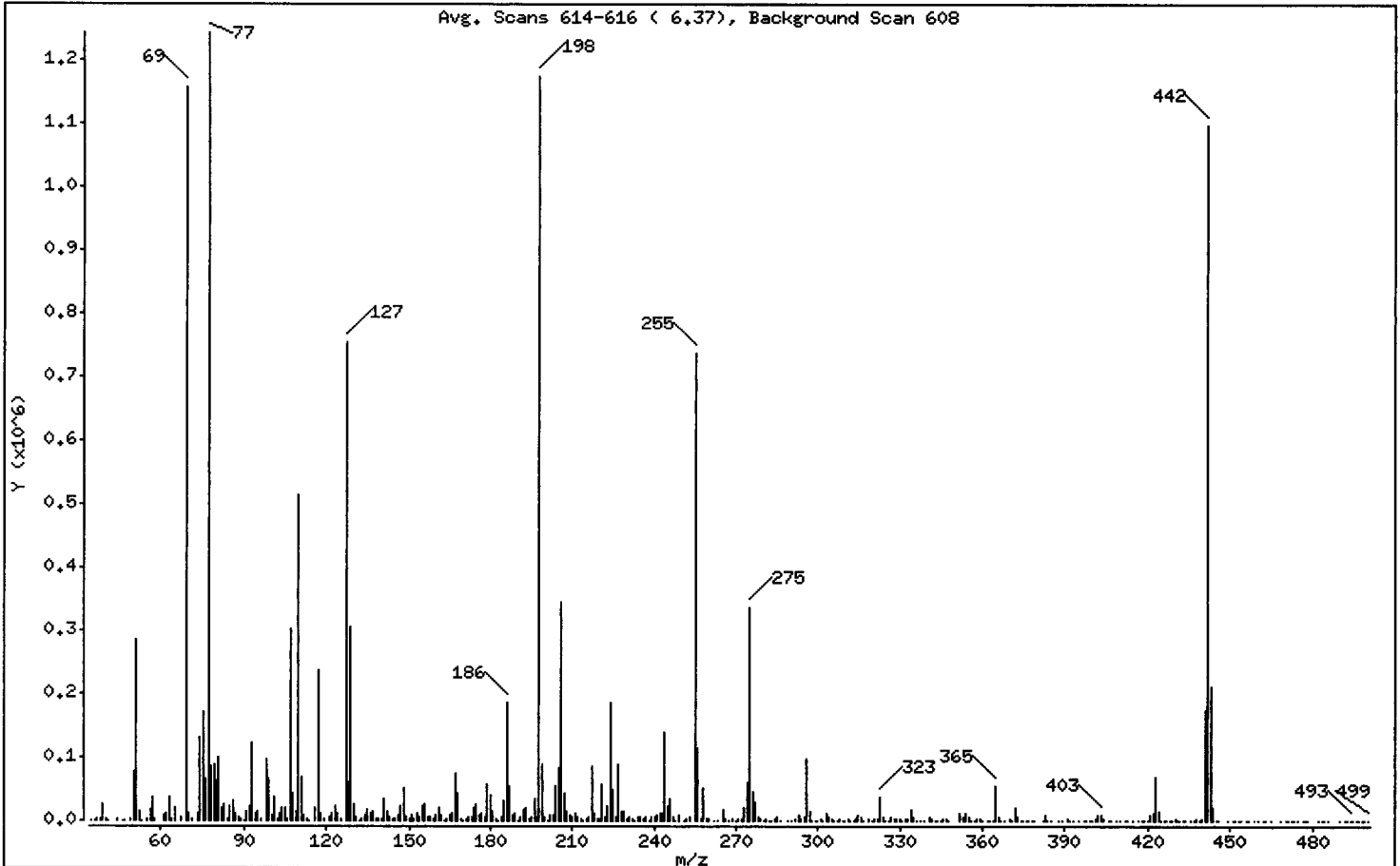
Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	24.37
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	98.59
70	Less than 2.00% of mass 69	0.97 (0.98)
127	10.00 - 80.00% of mass 198	64.34
197	Less than 2.00% of mass 198	0.49
199	5.00 - 9.00% of mass 198	7.54
275	10.00 - 60.00% of mass 198	28.70
365	Greater than 1.00% of mass 198	4.64
441	0.01 - 24.00% of mass 442	14.94 (15.97)
442	50.00 - 200.00% of mass 198	93.53
443	15.00 - 24.00% of mass 442	18.03 (19.27)

Date : 21-NOV-2012 12:56

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

Data File: df1121.d

Spectrum: Avg. Scans 614-616 (6.37), Background Scan 608

Location of Maximum: 77.00

Number of points: 404

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	586	151.00	8530	255.00	738112	371.00	341
36.00	239	152.00	1457	256.00	114392	372.00	20008
37.00	2920	153.00	11981	257.00	3655	373.00	5195
38.00	2876	154.00	6983	258.00	50488	374.00	118
39.00	26320	155.00	23432	259.00	3924	375.00	286
40.00	1930	156.00	26776	260.00	1850	376.00	218
41.00	1326	157.00	4318	262.00	1125	377.00	664
44.00	2132	158.00	4398	263.00	48	378.00	563
46.00	997	159.00	4042	265.00	18128	379.00	186
47.00	1021	160.00	8908	266.00	2412	382.00	147
49.00	1579	161.00	18664	267.00	660	383.00	7581
50.00	78112	162.00	7298	269.00	1877	384.00	681
51.00	285952	163.00	825	270.00	1227	385.00	558
52.00	14980	164.00	3189	271.00	2560	388.00	89
53.00	562	165.00	9466	272.00	2962	389.00	281
55.00	2866	166.00	10443	273.00	21240	391.00	3030
56.00	16091	167.00	75624	274.00	59400	392.00	1192
57.00	37536	168.00	43408	275.00	336768	393.00	14
58.00	1461	169.00	3745	276.00	46704	395.00	551
61.00	8636	170.00	160	277.00	29208	397.00	716
62.00	12569	171.00	3358	278.00	6413	398.00	121
63.00	36112	172.00	5311	279.00	1926	399.00	567
64.00	4101	173.00	6880	280.00	704	400.00	241
65.00	20400	174.00	19424	281.00	3553	401.00	1518
67.00	6002	175.00	26216	282.00	405	402.00	8166
69.00	1156608	176.00	8196	283.00	1119	403.00	9089
70.00	11357	177.00	12833	284.00	3699	404.00	2593
71.00	3978	178.00	4962	285.00	5082	406.00	344
73.00	10693	179.00	56168	286.00	1232	407.00	17
74.00	132736	180.00	38968	289.00	363	409.00	258
75.00	172736	181.00	14737	290.00	92	410.00	394
76.00	66344	182.00	3360	292.00	1583	412.00	299
77.00	1243136	183.00	64	293.00	7691	413.00	144
78.00	86288	184.00	5979	294.00	2175	415.00	919
79.00	89448	185.00	30848	295.00	4954	417.00	350

Date : 21-NOV-2012 12:56

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5ms:

Column diameter: 0.25

Data File: df1121.d

Spectrum: Avg. Scans 614-616 (6.37), Background Scan 608

Location of Maximum: 77.00

Number of points: 404

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	62016	186.00	186432	296.00	95776	418.00	1084
81.00	100120	187.00	54552	297.00	14541	419.00	597
82.00	20392	188.00	8097	298.00	935	420.00	127
83.00	25720	189.00	10746	299.00	526	421.00	8427
84.00	3832	190.00	817	300.00	368	422.00	10133
85.00	23944	191.00	6975	301.00	1818	423.00	67496
86.00	30160	192.00	17112	302.00	1239	424.00	15458
87.00	11743	193.00	20472	303.00	12320	425.00	1368
88.00	5362	194.00	3501	304.00	5809	426.00	451
89.00	3903	195.00	5720	305.00	1458	427.00	675
90.00	947	196.00	33224	306.00	722	428.00	477
91.00	14309	197.00	5802	307.00	670	429.00	642
92.00	21608	198.00	1173504	308.00	2250	430.00	1943
93.00	121808	199.00	88440	309.00	1130	431.00	791
94.00	11226	200.00	4965	310.00	395	432.00	231
95.00	14096	201.00	833	311.00	1513	433.00	369
96.00	3371	202.00	8616	312.00	66	434.00	446
98.00	97376	203.00	8059	313.00	1029	436.00	492
99.00	65816	204.00	53648	314.00	4116	437.00	930
100.00	8722	205.00	82056	315.00	9600	438.00	2707
101.00	37104	206.00	345920	316.00	4808	439.00	1192
102.00	2310	207.00	42784	317.00	13	440.00	2606
103.00	12794	208.00	13608	319.00	1835	441.00	175296
104.00	20784	209.00	8277	320.00	1233	442.00	1097216
105.00	20808	210.00	6316	321.00	2497	443.00	211520
106.00	2047	211.00	12271	322.00	1738	444.00	20688
107.00	302400	212.00	5053	323.00	37416	445.00	1337
108.00	44064	213.00	1807	324.00	5985	446.00	588
109.00	14009	214.00	713	325.00	1294	449.00	513
110.00	513472	215.00	3839	326.00	1046	451.00	400
111.00	69368	216.00	6956	327.00	6042	452.00	294
112.00	9651	217.00	84680	328.00	3009	453.00	341
113.00	2412	218.00	11394	329.00	1586	454.00	220
114.00	540	219.00	2777	330.00	1440	456.00	629
116.00	19072	220.00	3329	331.00	754	457.00	627

Date : 21-NOV-2012 12:56

Client ID:

Instrument: nt12.i

Sample Info: DFTPP 5

Operator: JW

Column phase: ZB-5msi

Column diameter: 0.25

Data File: df1121.d

Spectrum: Avg. Scans 614-616 (6.37), Background Scan 608

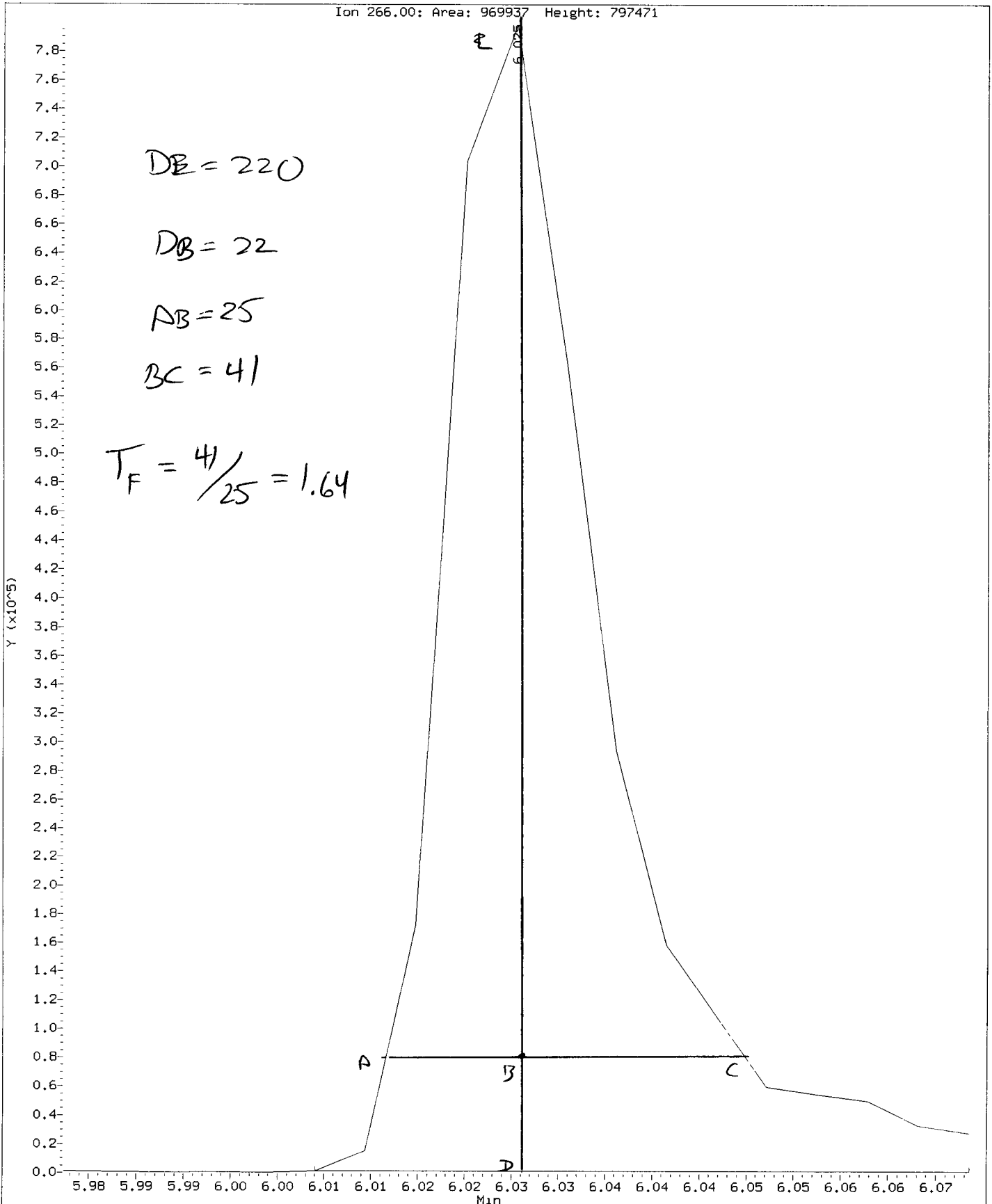
Location of Maximum: 77.00

Number of points: 404

m/z	Y	m/z	Y	m/z	Y	m/z	Y
117.00	235968	221.00	56568	332.00	3292	459.00	169
118.00	12322	222.00	4315	333.00	3198	460.00	389
119.00	2158	223.00	21440	334.00	16252	462.00	968
121.00	4828	224.00	185152	335.00	6115	463.00	87
122.00	12842	225.00	48176	336.00	140	465.00	556
123.00	23400	226.00	5311	338.00	291	468.00	306
124.00	12724	227.00	88080	339.00	975	470.00	287
125.00	3937	228.00	14815	341.00	4443	471.00	120
127.00	755072	229.00	15409	342.00	2437	472.00	312
128.00	59672	230.00	3033	343.00	561	473.00	188
129.00	306816	231.00	4907	344.00	407	474.00	232
130.00	24696	232.00	2144	345.00	511	476.00	53
131.00	7024	233.00	601	346.00	4226	477.00	73
132.00	1324	234.00	5044	347.00	1703	478.00	78
133.00	3387	235.00	4994	348.00	1325	482.00	92
134.00	7438	236.00	1604	352.00	11261	483.00	145
135.00	16373	237.00	6272	353.00	7025	484.00	92
136.00	12557	238.00	1188	354.00	11696	485.00	112
137.00	13957	239.00	5213	355.00	4327	489.00	375
138.00	1599	240.00	4514	356.00	1266	491.00	155
139.00	2015	241.00	7299	357.00	654	492.00	207
140.00	2009	242.00	11150	358.00	1817	493.00	1226
141.00	35312	243.00	10154	359.00	1568	494.00	75
142.00	15044	244.00	139904	360.00	840	495.00	292
143.00	7144	245.00	23160	362.00	446	496.00	483
144.00	1839	246.00	33880	363.00	231	497.00	426
145.00	2370	247.00	5885	364.00	418	498.00	134
146.00	8002	248.00	958	365.00	54416	499.00	213
147.00	23480	249.00	8587	366.00	7110		
148.00	51464	251.00	1308	367.00	333		
149.00	6440	252.00	3990	368.00	230		
150.00	3013	253.00	4510	370.00	2344		

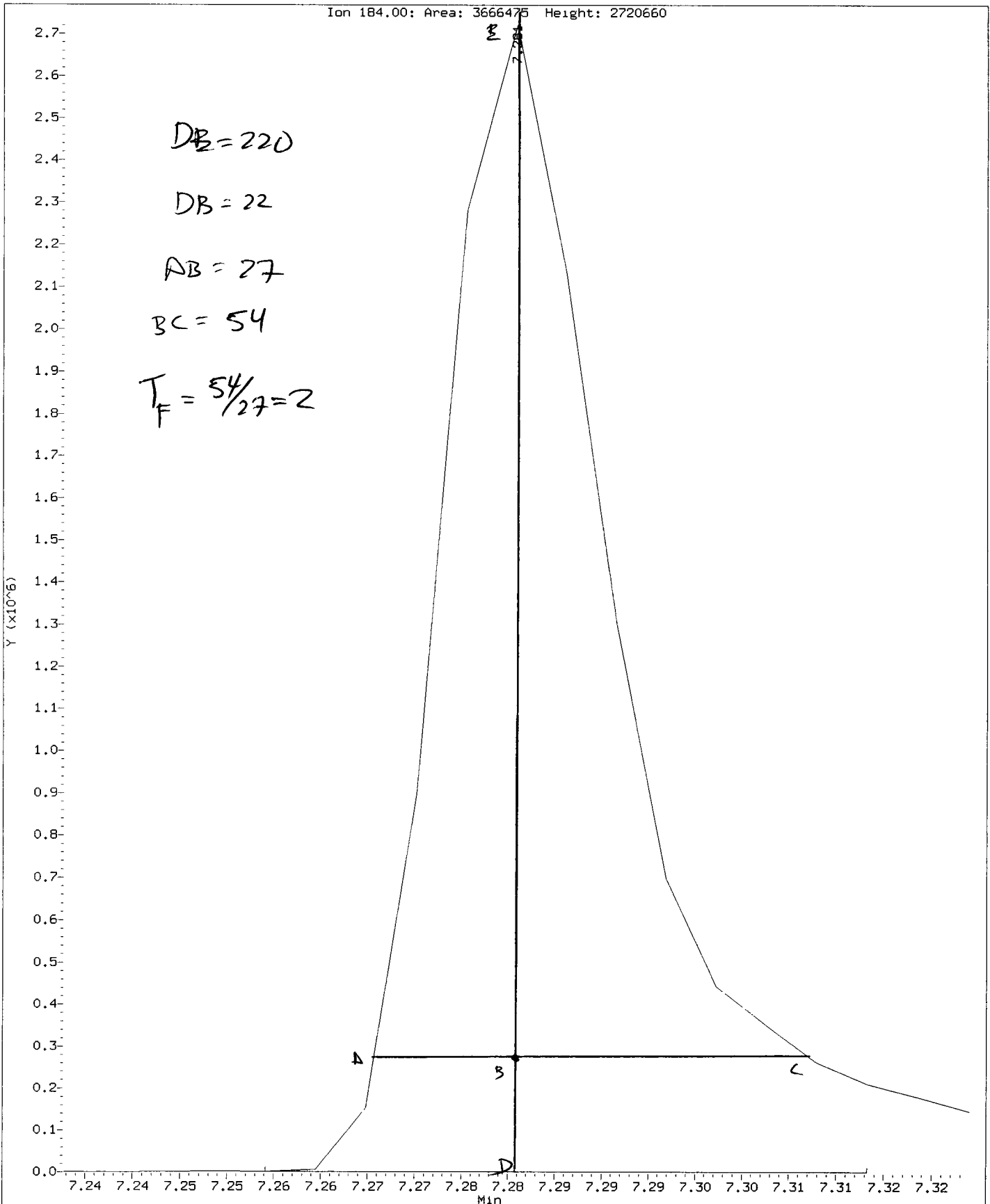
Data File: /chem1/nt12.1/20121121.b/ddt.b/df1121.d
Injection Date: 21-NOV-2012 12:56
Instrument: nt12.1
Client Sample ID:

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem1/nt12.1/20121121.b/ddt.b/df1121.d
Injection Date: 21-NOV-2012 12:56
Instrument: nt12.1
Client Sample ID:

Compound: Benzidine
CAS Number:



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem1/nt12.i/20121121.b/ddt.b/df1121.d ARI ID: DFTPP 5
Method: /chem1/nt12.i/20121121.b/ddt.b/sw846ddt.m Misc:
Analysis Date: 21-NOV-2012 12:56 Instrument: nt12.i

COMPOUND	RT	AREA
Pentachlorophenol	6.025	969937
Benzidine	7.281	3666475
4,4'-DDE	7.468	28154
4,4'-DDD	7.820	33647
4,4'-DDT	8.045	3262817

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(28154 + 33647) * 100}{(28154 + 33647 + 3262817)}$$

DDT Percent Breakdown = 1.9 %

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/cc1121.d
Lab Smp Id: PW 25
Inj Date : 21-NOV-2012 13:14
Operator : VTS
Smp Info : PW 25
Misc Info :
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 21-Nov-2012 13:45 van
Cal Date : 09-OCT-2012 18:26
Als bottle: 2
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Processing Host: cserv3

Inst ID: nt12.i
Quant Type: ISTD
Cal File: ic1009f.d
Continuing Calibration Sample
Compound Sublist: PW.sub

Compounds	QUANT SIG			AMOUNTS			
	MASS	RT	EXP RT REL RT	RESPONSE	CAL-AMT (ng/mL)	ON-COL (ng/mL)	
-----	----	==	=====	=====	-----	-----	
\$ 1 Tripropyl Tin (Hexyl)	291	8.582	8.582 (0.839)	12505	25.0000	23.81	
2 Tetrabutyl Tin	289	8.801	8.801 (0.861)	12680	25.0000	22.74	
3 Tributyl Tin (Hexyl)	319	9.572	9.572 (0.936)	12392	25.0000	24.60	
* 4 Tetrapentyl Tin	333	10.224	10.224 (1.000)	145461	200.000		
5 Dibutyl Tin (Hexyl)	347	10.277	10.277 (0.917)	16729	50.0000	47.98	
\$ 6 Tripentyl Tin (Hexyl)	347	10.572	10.572 (0.944)	23033	50.0000	48.32	
7 Butyl Tin (Hexyl)	347	10.907	10.907 (0.974)	26838	50.0000	48.57	
* 8 p-Terphenyl-d14	244	11.202	11.202 (1.000)	140060	20.0000		

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11-23-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt12.i
 Lab File ID: cc1121.d
 Lab Smp Id: PW 25
 Analysis Type: SV
 Quant Type: ISTD
 Operator: VTS
 Method File: /chem1/nt12.i/20121121.b/pw3ul.m
 Misc Info:

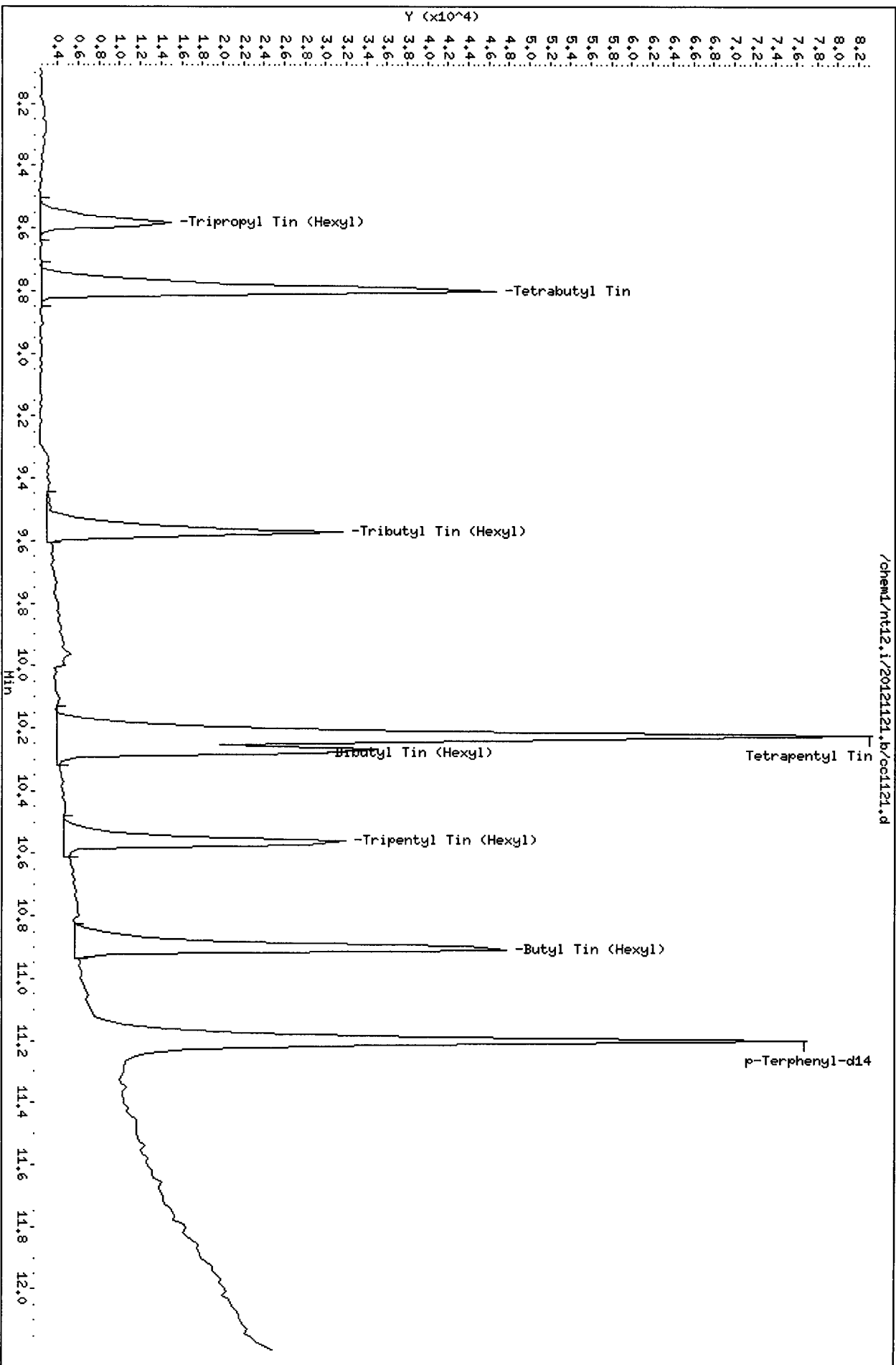
Calibration Date: 21-NOV-2012
 Calibration Time: 12:12
 Level:
 Sample Type:

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
4 Tetrapentyl Tin	124855	62428	249710	145461	16.50
8 p-Terphenyl-d14	121433	60716	242866	140060	15.34

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



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Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt12.i Injection Date: 21-NOV-2012 13:14
Lab File ID: cc1121.d Init. Cal. Date(s): 09-OCT-2012 09-OCT-2012
Analysis Type: Init. Cal. Times: 16:43 18:26
Lab Sample ID: PW 25 Quant Type: ISTD
Method: /chem1/nt12.i/20121121.b/pw3ul.m

COMPOUND	RRF / AMOUNT	RF25	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Tripropyl Tin (Hexyl)	0.72212	0.68774	0.005	-4.76082	20.00000	Averaged
2 Tetrabutyl Tin	0.76668	0.69737	0.010	-9.04065	20.00000	Averaged
3 Tributyl Tin (Hexyl)	0.69269	0.68153	0.005	-1.61051	20.00000	Averaged
5 Dibutyl Tin (Hexyl)	0.04979	0.04778	0.005	-4.03731	20.00000	Averaged
6 Tripentyl Tin (Hexyl)	0.06806	0.06578	0.010	-3.35261	20.00000	Averaged
7 Butyl Tin (Hexyl)	0.07890	0.07665	0.005	-2.85532	20.00000	Averaged

CO-ELUTION SUMMARY FOR FILE - cc1121.d

Lab ID: PW 25, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50mb.d
 Lab Smp Id: VS50MBW1 Client Smp ID: VS50MBW1
 Inj Date : 21-NOV-2012 13:37
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50MBW1
 Misc Info : 12-22845
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 3 QC Sample: BLANK
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP	RT	REL	RT	RESPONSE	CONCENTRATIONS	
										ON-COLUMN	FINAL
										(ng/mL)	(ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291		8.582	8.582	(0.839)	10780	21.9540	0.07318			
2 Tetrabutyl Tin	289					Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319					Compound Not Detected.					
* 4 Tetrapentyl Tin	333		10.224	10.224	(1.000)	135995	200.000				
5 Dibutyl Tin (Hexyl)	347					Compound Not Detected.					
\$ 6 Tripentyl Tin (Hexyl)	347		10.559	10.572	(0.943)	10338	23.5641	0.07855			
7 Butyl Tin (Hexyl)	347					Compound Not Detected.					
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	128917	20.0000				

11/23/12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50mb.d
Lab Smp Id: VS50MBW1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: VS50MBW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	135995	8.92
8 p-Terphenyl-d14	121433	60716	242866	128917	6.16

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

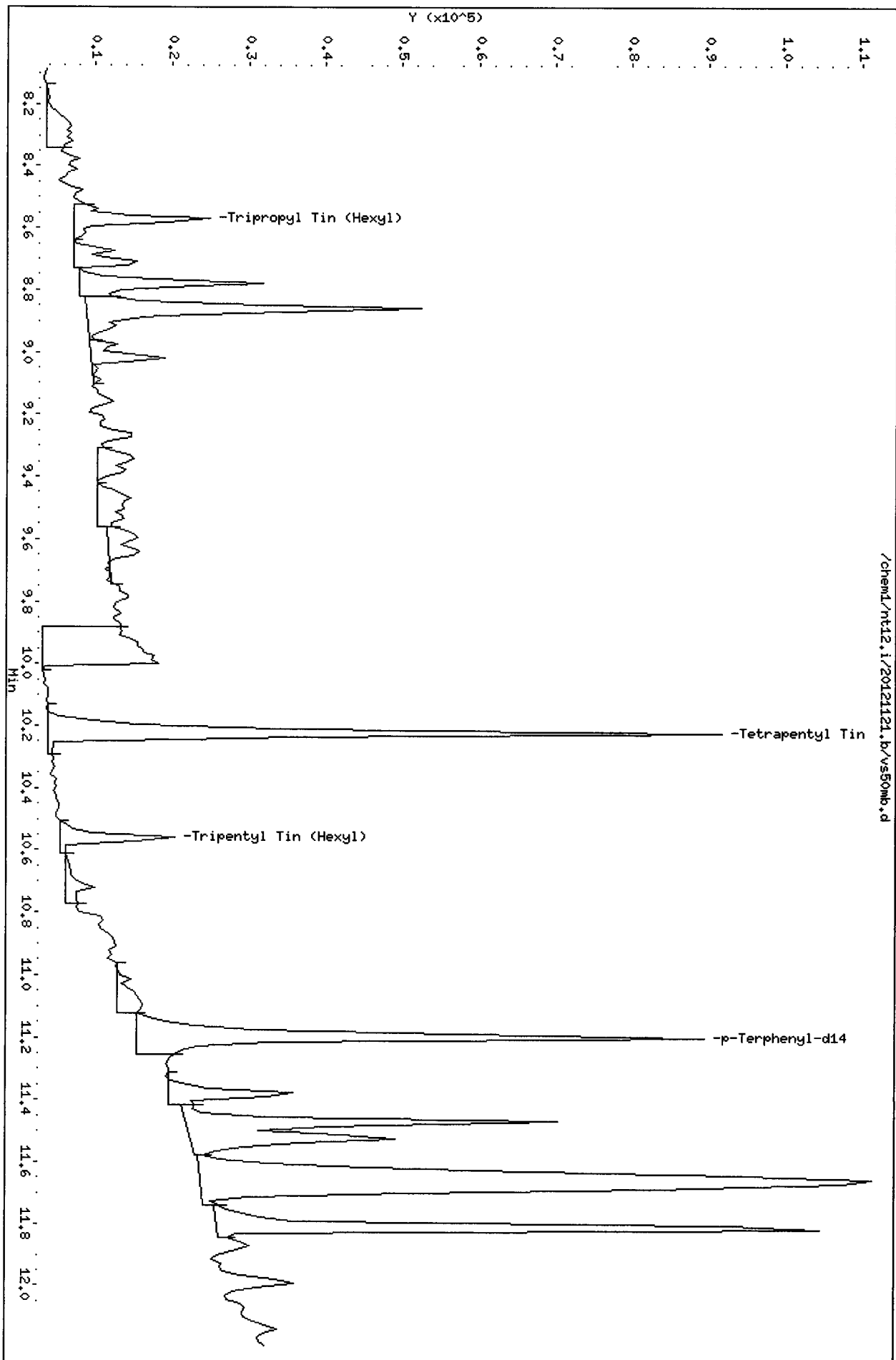
Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50MBW1
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Client SDG: VS50
Fraction: SV
Client Smp ID: VS50MBW1
Operator: VTS
SampleType: BLANK
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.07318	74.71	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.07855	83.03	30-135

Data File: /chem1/nt12.i/20121121.b/vs5omb.d
Date: 21-NOV-2012 13:37
Client ID: VS5OMB.M1
Sample Info: VS5OMB.M1
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50mb.d

Lab ID: VS50MBW1, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VS50 : 00100

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50sb.d
Lab Smp Id: VS50LCSW1 Client Smp ID: VS50LCSW1
Inj Date : 21-NOV-2012 13:58
Operator : VTS Inst ID: nt12.i
Smp Info : VS50LCSW1
Misc Info : 12-22845
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	CONCENTRATIONS					
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/mL)
=====	=====	=====	=====	=====	=====	=====	=====	=====
\$ 1 Tripropyl Tin (Hexyl)	291		8.571	8.582	(0.838)	10532	20.5091	0.06836
2 Tetrabutyl Tin	289		Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319		9.572	9.572	(0.936)	10130	20.5646	0.06855
* 4 Tetrapentyl Tin	333		10.224	10.224	(1.000)	142227	200.000	
5 Dibutyl Tin (Hexyl)	347		10.264	10.277	(0.916)	14964	43.9457	0.1465
\$ 6 Tripentyl Tin (Hexyl)	347		10.559	10.572	(0.943)	9733	20.9085	0.06969
7 Butyl Tin (Hexyl)	347		10.907	10.907	(0.974)	14396	26.6776	0.08893
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	136788	20.0000	

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11.23.12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50sb.d
Lab Smp Id: VS50LCSW1
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: VS50LCSW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
4 Tetrapentyl Tin	124855	62428	249710	142227	13.91
8 p-Terphenyl-d14	121433	60716	242866	136788	12.64

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC. Client SDG: VS50
 Sample Matrix: LIQUID Fraction: SV
 Lab Smp Id: VS50LCSW1 Client Smp ID: VS50LCSW1
 Level: LOW Operator: VTS
 Data Type: MS DATA SampleType: LCS
 SpikeList File: PW.spk Quant Type: ISTD
 Sublist File: PW.sub
 Method File: /chem1/nt12.i/20121121.b/pw3ul.m
 Misc Info: 12-22845

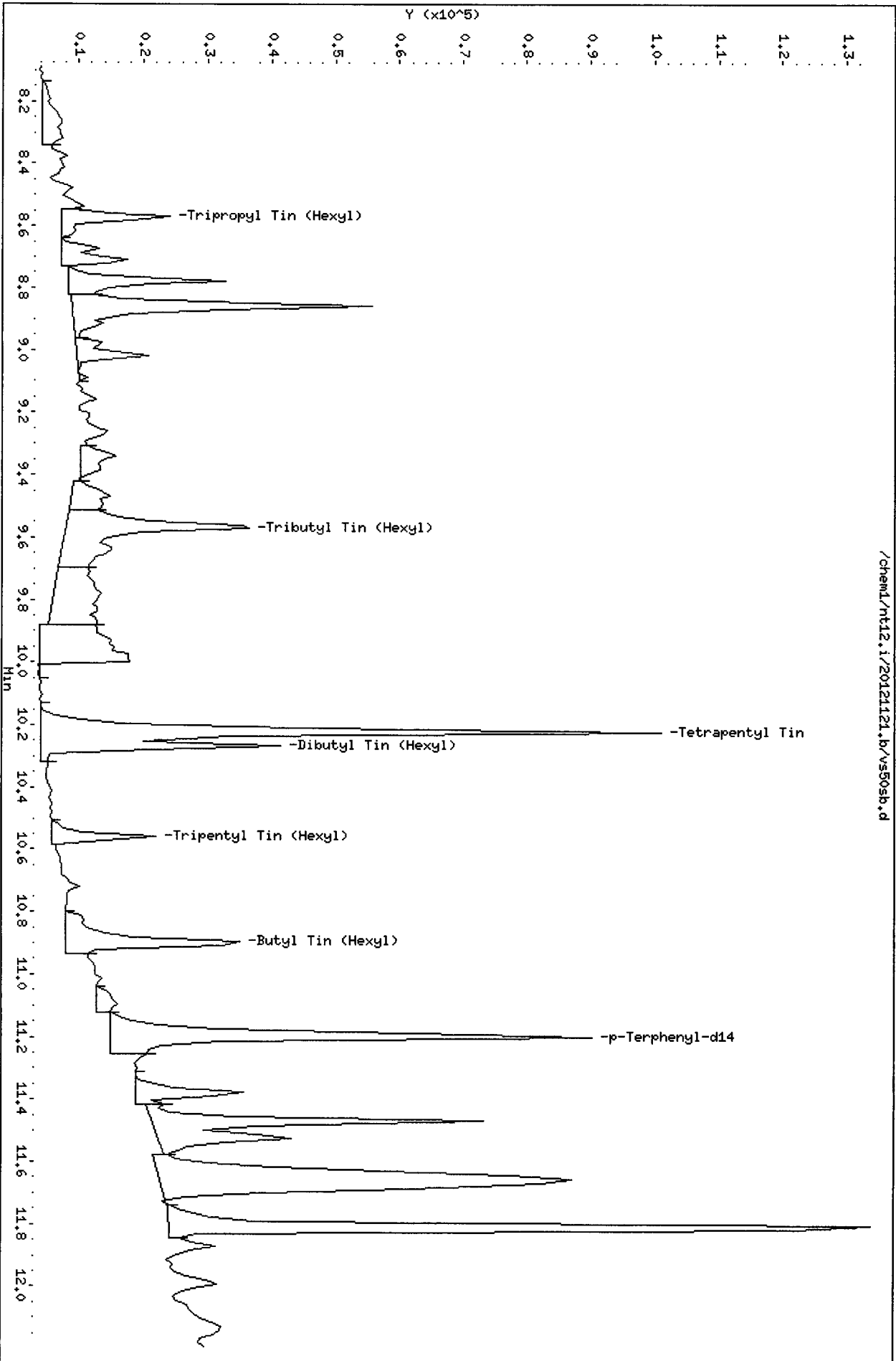
SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Tributyl Tin (Hexy	0.09606	0.06855	71.36	23-133
5 Dibutyl Tin (Hexyl	0.2212	0.1465	66.22	30-118
7 Butyl Tin (Hexyl)	0.2548	0.08893	34.90	10-113

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.06836	69.80	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.06969	73.67	30-135

Data File: /chem1/nt12.i/20121121.b/vs50sb.d
Date: 21-NOV-2012 13:58
Client ID: VS50LCSM1
Sample Info: VS50LCSM1
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25

/chem1/nt12.i/20121121.b/vs50sb.d



CO-ELUTION SUMMARY FOR FILE - vs50sb.d

Lab ID: VS50LCSW1, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50a.d
 Lab Smp Id: VS50A Client Smp ID: SG-14-S-E-121107
 Inj Date : 21-NOV-2012 14:18
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50A
 Misc Info : 12-22844
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 5
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291			8.571	8.582	(0.838)	10292	19.9440	0.06648
2 Tetrabutyl Tin	289			Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319			9.572	9.572	(0.936)	1927	3.89287	0.01298
* 4 Tetrapentyl Tin	333			10.224	10.224	(1.000)	142924	200.000	
5 Dibutyl Tin (Hexyl)	347			Compound Not Detected.					
\$ 6 Tripentyl Tin (Hexyl)	347			10.559	10.572	(0.943)	9570	20.6366	0.06879
7 Butyl Tin (Hexyl)	347			10.907	10.907	(0.974)	3083	5.72495	0.01912
* 8 p-Terphenyl-d14	244			11.202	11.202	(1.000)	136269	20.0000	

11-23-12


Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt12.i
 Lab File ID: vs50a.d
 Lab Smp Id: VS50A
 Analysis Type: SV
 Quant Type: ISTD
 Operator: VTS
 Method File: /chem1/nt12.i/20121121.b/pw3ul.m
 Misc Info: 12-22844

Calibration Date: 21-NOV-2012
 Calibration Time: 13:14
 Client Smp ID: SG-14-S-E-121107
 Level: LOW
 Sample Type: Pore Water

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	142924	14.47
8 p-Terphenyl-d14	121433	60716	242866	136269	12.22

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

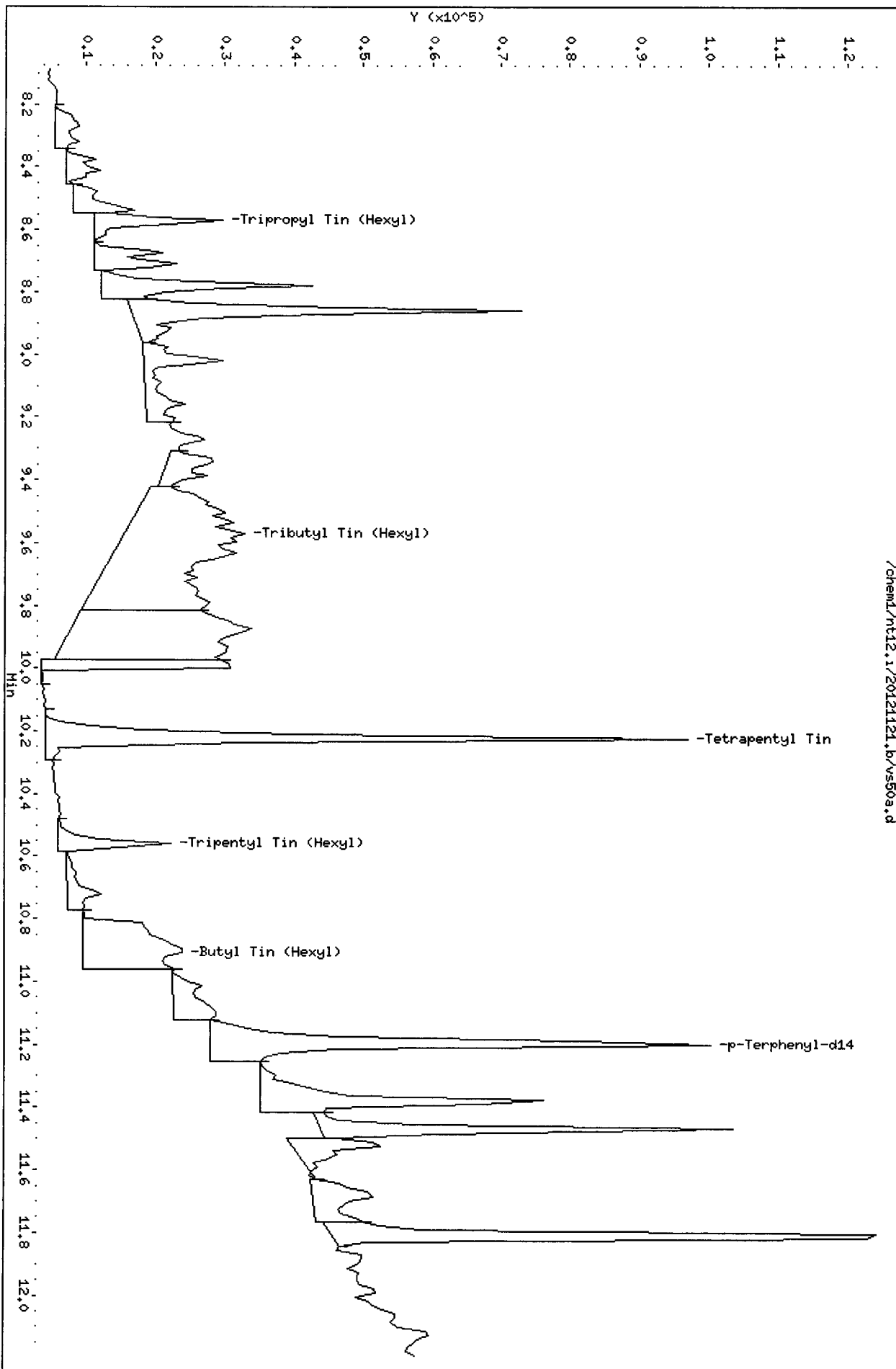
Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50A
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22844

Client SDG: VS50
Fraction: SV
Client Smp ID: SG-14-S-E-121107
Operator: VTS
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.06648	67.87	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.06879	72.72	30-135

Data File: /chem1/nt12.i/20121121.b/vs50a.d
Date : 21-NOV-2012 14:18
Client ID: SG-14-S-E-121107
Sample Info: VS50A
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Date : 21-NOV-2012 14:18

Client ID: SG-14-S-E-121107

Instrument: nt12.i

Sample Info: VS50A

Purge Volume: 150.0

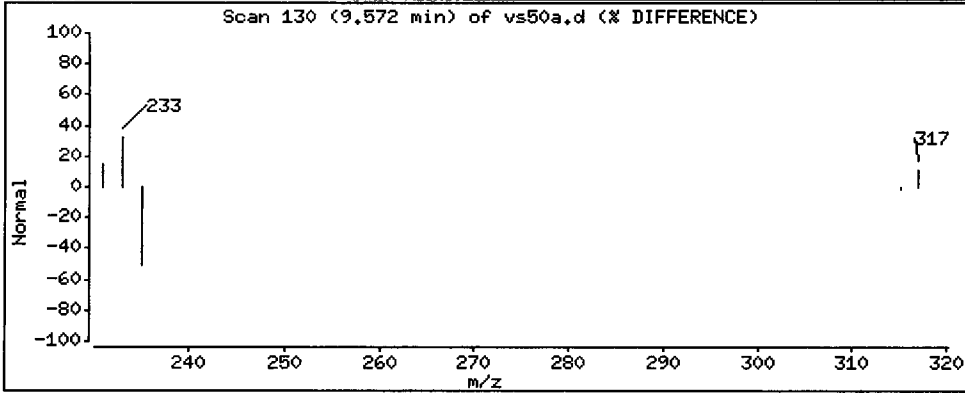
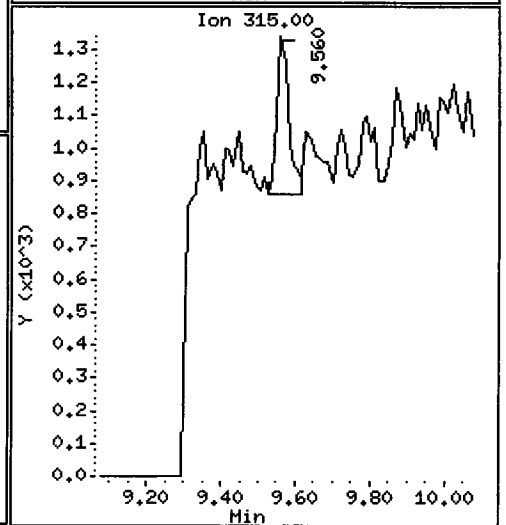
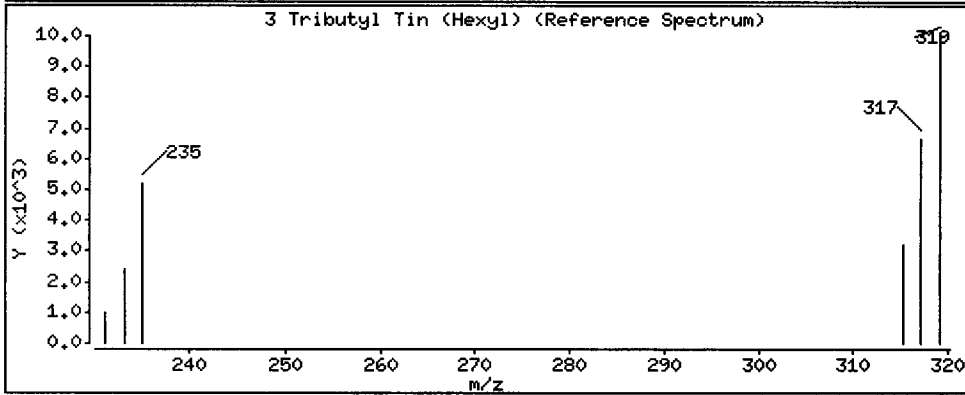
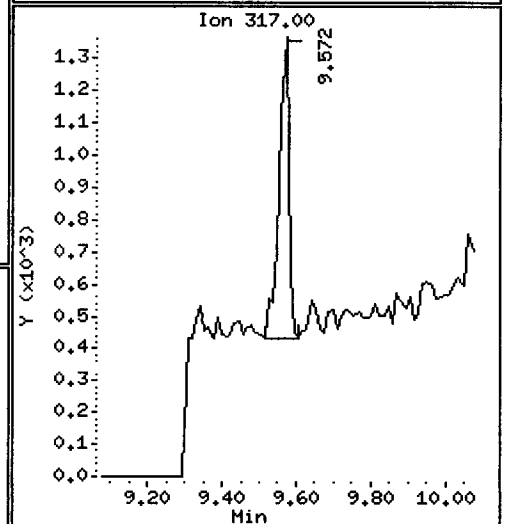
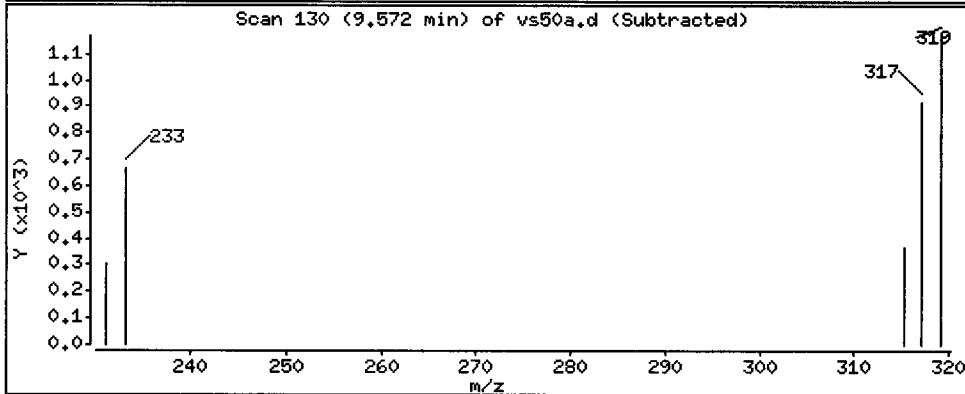
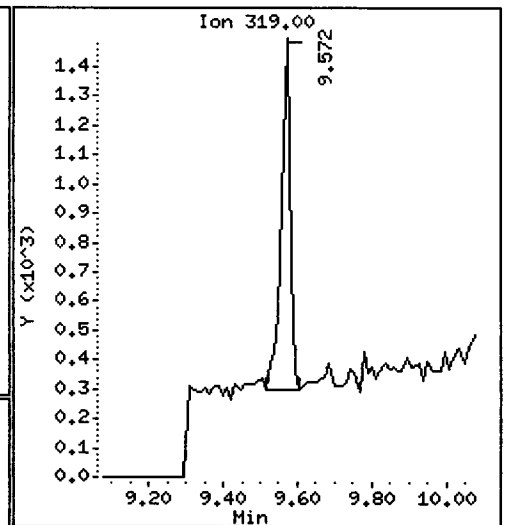
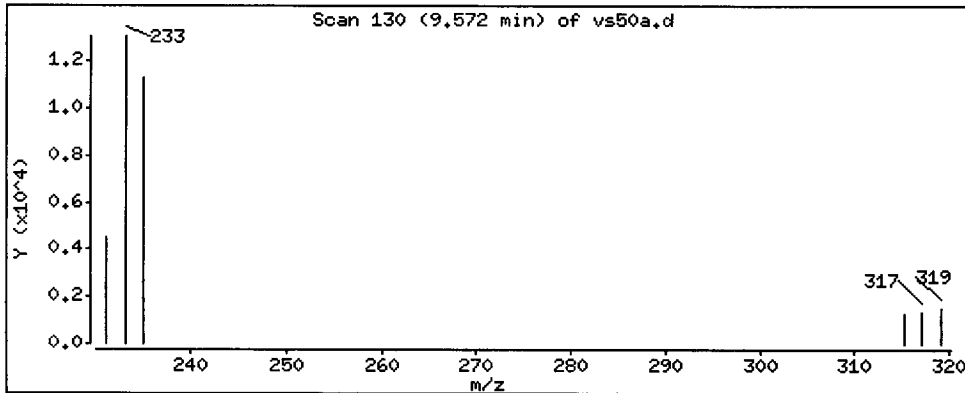
Operator: VTS

Column phase: ZB-5msi

Column diameter: 0.25

3 Tributyl Tin (Hexyl)

Concentration: 0.01298 ug/L



CO-ELUTION SUMMARY FOR FILE - vs50a.d

Lab ID: VS50A, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

VS50:00111

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50b.d
 Lab Smp Id: VS50B Client Smp ID: SG-02-S-C-1211
 Inj Date : 21-NOV-2012 14:39
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50B
 Misc Info : 12-22845
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 6
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291			8.571	8.582	(0.838)	11170	20.6134	0.06871
2 Tetrabutyl Tin	289			Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319			9.572	9.572	(0.936)	138843	267.113	0.8904 E
* 4 Tetrapentyl Tin	333			10.224	10.224	(1.000)	150080	200.000	
5 Dibutyl Tin (Hexyl)	347			10.277	10.277	(0.917)	22830	64.8218	0.2161
\$ 6 Tripentyl Tin (Hexyl)	347			10.559	10.572	(0.943)	11274	23.4153	0.07805
7 Butyl Tin (Hexyl)	347			10.907	10.907	(0.974)	15454	27.6881	0.09229
* 8 p-Terphenyl-d14	244			11.202	11.202	(1.000)	141482	20.0000	

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Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50b.d
Lab Smp Id: VS50B
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-02-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	150080	20.20
8 p-Terphenyl-d14	121433	60716	242866	141482	16.51

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

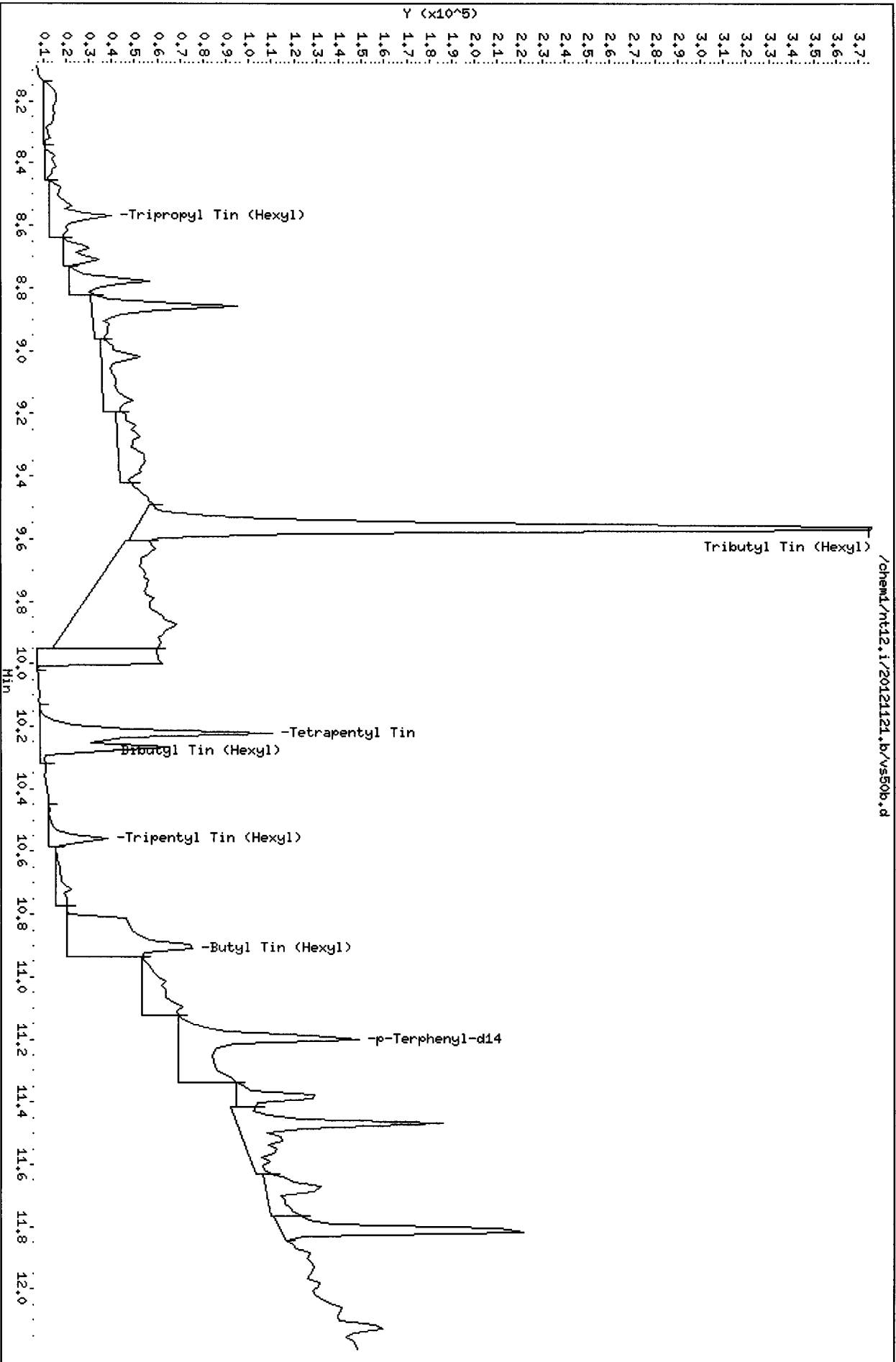
Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50B
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Client SDG: VS50
Fraction: SV
Client Smp ID: SG-02-S-C-1211
Operator: VTS
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.06871	70.15	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.07805	82.51	30-135

Data File: /chem1/nt12.i/20121121.b/vs50b.d
Date: 21-NOV-2012 14:39
Client ID: SG-02-S-C-1211
Sample Info: VS50B
Purge Volume: 150.0
Column phases: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Date : 21-NOV-2012 14:39

Client ID: SG-02-S-C-1211

Instrument: nt12.i

Sample Info: VS50B

Purge Volume: 150.0

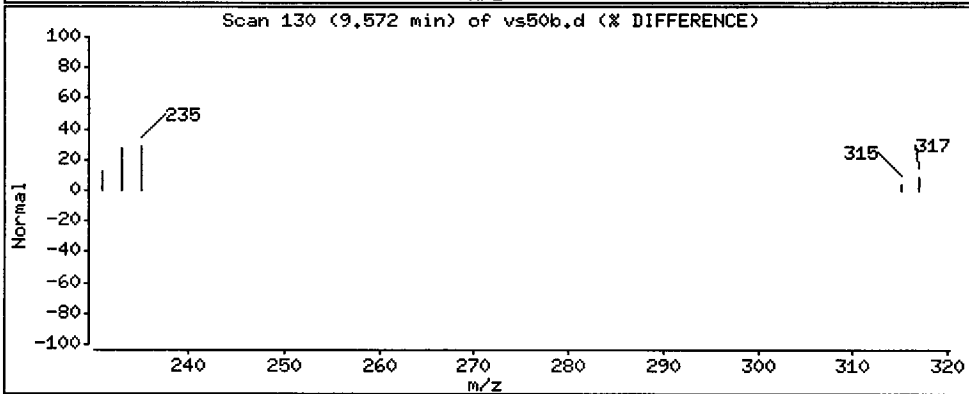
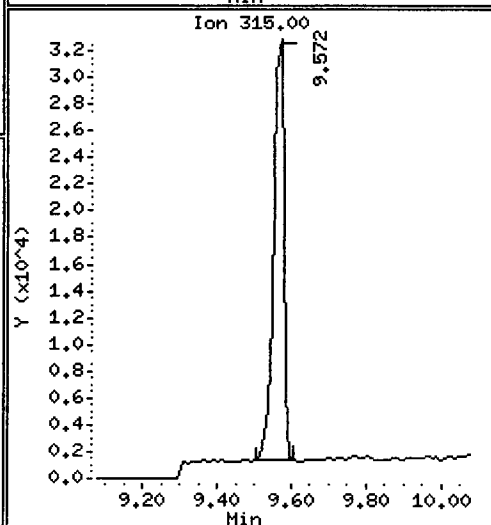
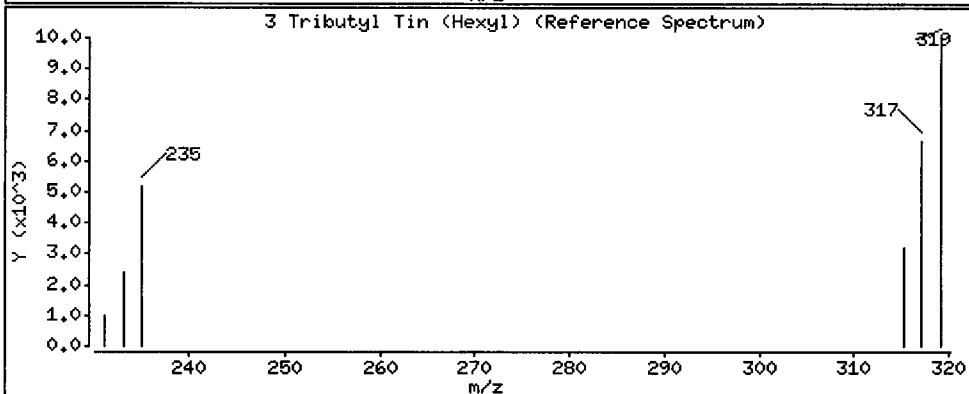
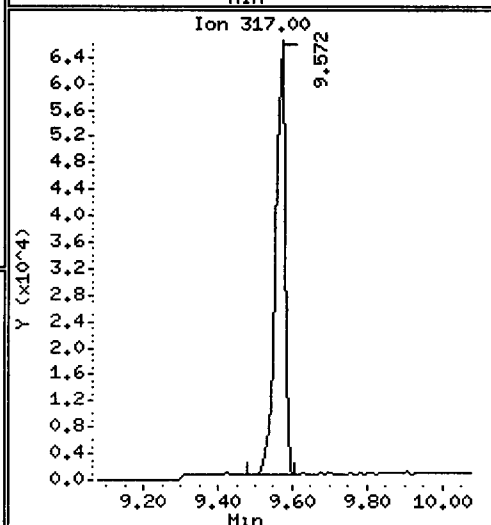
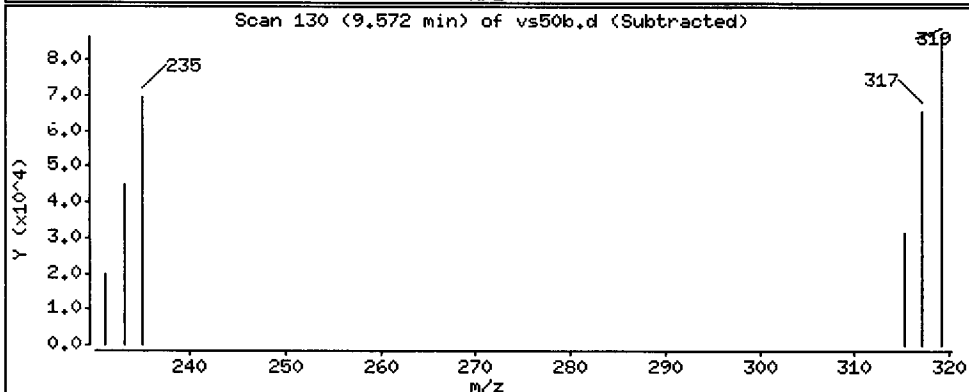
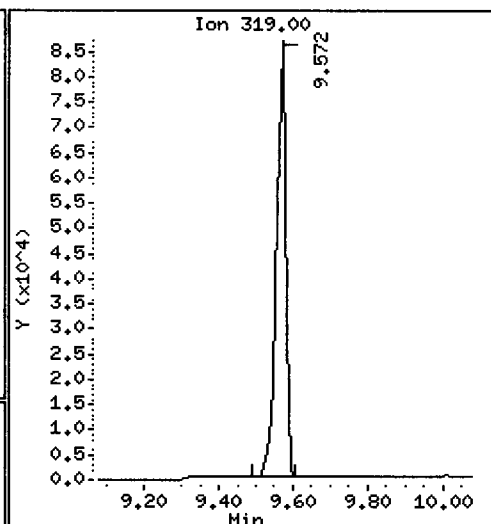
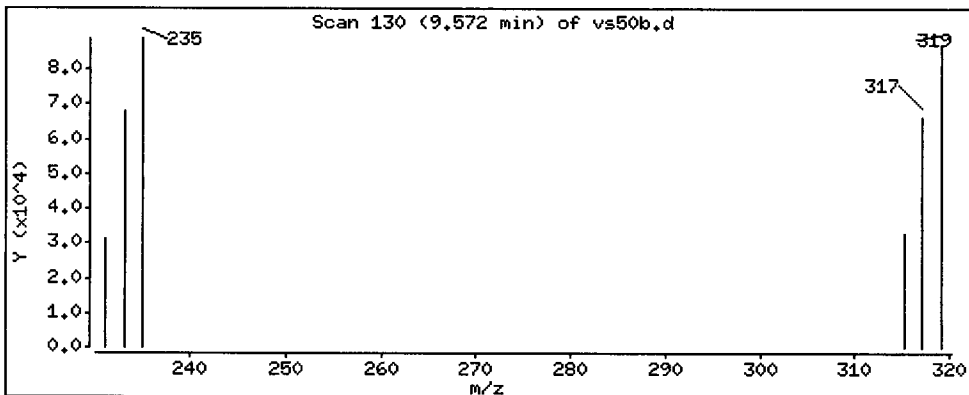
Operator: VTS

Column phase: ZB-5msi

Column diameter: 0.25

3 Tributyl Tin (Hexyl)

Concentration: 0.8904 ug/L



CO-ELUTION SUMMARY FOR FILE - vs50b.d

Lab ID: VS50B, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50bms.d
 Lab Smp Id: VS50BMS Client Smp ID: SG-02-S-C-1211 MS
 Inj Date : 21-NOV-2012 14:59
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50BMS
 Misc Info : 12-22845
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 7 QC Sample: MS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291	8.571	8.582	(0.838)	12034	22.0266	0.07342	
2 Tetrabutyl Tin	289	Compound Not Detected.						
3 Tributyl Tin (Hexyl)	319	9.572	9.572	(0.936)	149848	285.932	0.9531 (R)	E
* 4 Tetrapentyl Tin	333	10.224	10.224	(1.000)	151315	200.000		
5 Dibutyl Tin (Hexyl)	347	10.277	10.277	(0.917)	40850	112.653	0.3755 (R)	
\$ 6 Tripentyl Tin (Hexyl)	347	10.559	10.572	(0.943)	11773	23.7489	0.07916	
7 Butyl Tin (Hexyl)	347	10.907	10.907	(0.974)	35162	61.1870	0.2040	
* 8 p-Terphenyl-d14	244	11.202	11.202	(1.000)	145669	20.0000		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Handwritten: 11-23-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50bms.d
Lab Smp Id: VS50BMS
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-02-S-C-1211 M
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	151315	21.19
8 p-Terphenyl-d14	121433	60716	242866	145669	19.96

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA
 Sample Matrix: LIQUID
 Lab Smp Id: VS50BMS
 Level: LOW
 Data Type: MS DATA
 SpikeList File: PW.spk
 Sublist File: PW.sub
 Method File: /chem1/nt12.i/20121121.b/pw3ul.m
 Misc Info: 12-22845

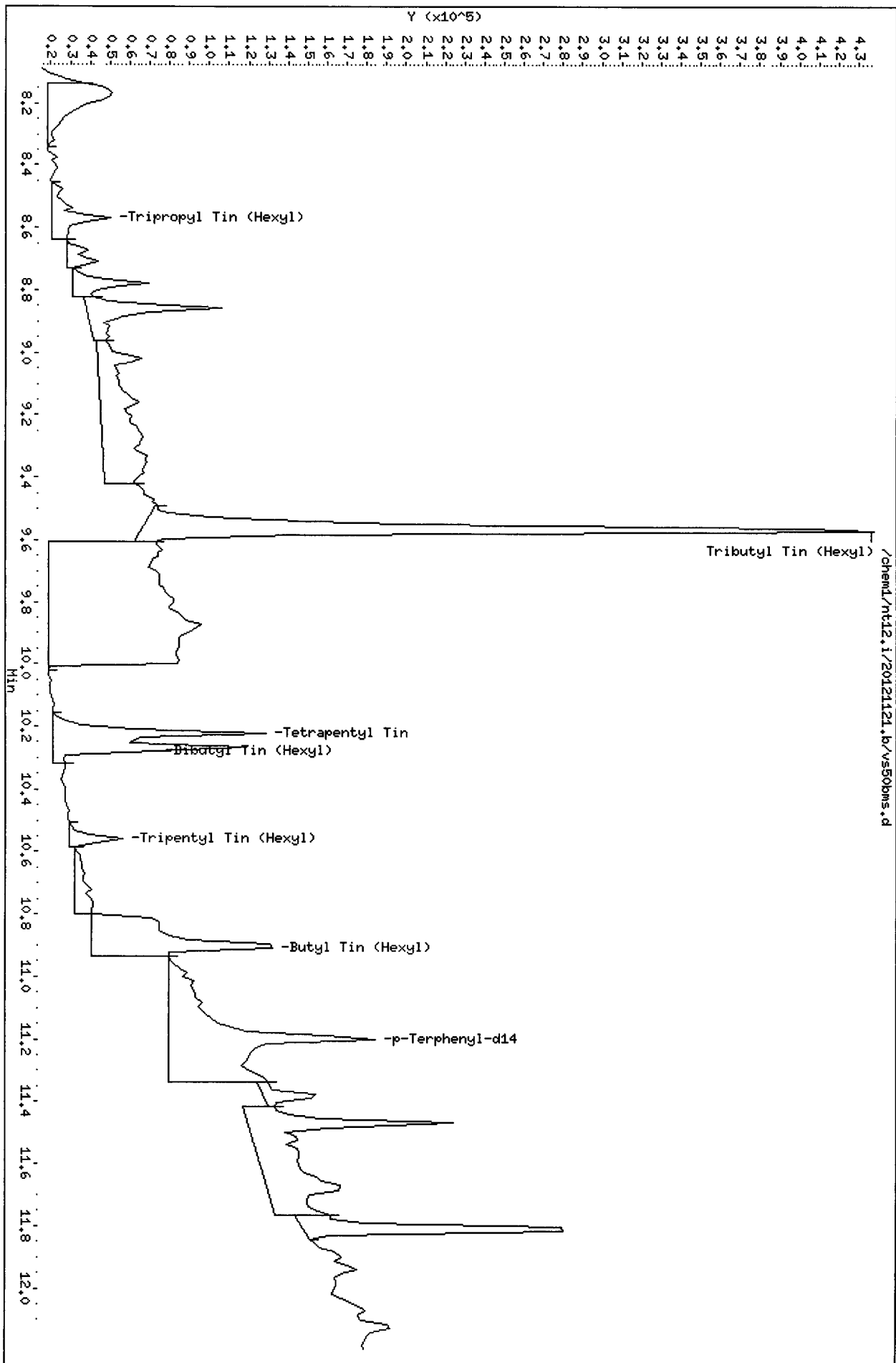
Client SDG: VS50
 Fraction: SV
 Client Smp ID: SG-02-S-C-1211 MS
 Operator: VTS
 SampleType: MS
 Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Tributyl Tin (Hexy	0.09606	0.9531	992.20*	23-133
5 Dibutyl Tin (Hexyl	0.2212	0.3755	169.75*	30-118
7 Butyl Tin (Hexyl)	0.2548	0.2040	80.05	10-113

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.07342	74.96	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.07916	83.68	30-135

Data File: /chem1/nt12.i/20121121.b/vs50bms.d
Date: 21-NOV-2012 14:59
Client ID: SG-02-S-C-1211 MS
Sample Info: VS50BMS
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50bms.d

Lab ID: VS50BMS, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50bmsd.d
 Lab Smp Id: VS50BMSD Client Smp ID: SG-02-S-C-1211 MSD
 Inj Date : 21-NOV-2012 15:20
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50BMSD
 Misc Info : 12-22845
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 8 QC Sample: MSD
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291		8.571	8.582	(0.838)	11478	20.8437	0.06948
2 Tetrabutyl Tin	289		Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319		9.572	9.572	(0.936)	128640	243.534	0.8118(R)
* 4 Tetrapentyl Tin	333		10.224	10.224	(1.000)	152514	200.000	
5 Dibutyl Tin (Hexyl)	347		10.277	10.277	(0.917)	34841	89.2461	0.2975(R)
\$ 6 Tripentyl Tin (Hexyl)	347		10.559	10.572	(0.943)	9651	18.0833	0.06028
7 Butyl Tin (Hexyl)	347		10.907	10.907	(0.974)	34649	56.0049	0.1867
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	156826	20.0000	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Handwritten: MS
11-23-12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50bmsd.d
Lab Smp Id: VS50BMSD
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22845

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-02-S-C-1211 M
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	152514	22.15
8 p-Terphenyl-d14	121433	60716	242866	156826	29.15

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA
 Sample Matrix: LIQUID
 Lab Smp Id: VS50BMSD
 Level: LOW
 Data Type: MS DATA
 SpikeList File: PW.spk
 Sublist File: PW.sub
 Method File: /chem1/nt12.i/20121121.b/pw3ul.m
 Misc Info: 12-22845

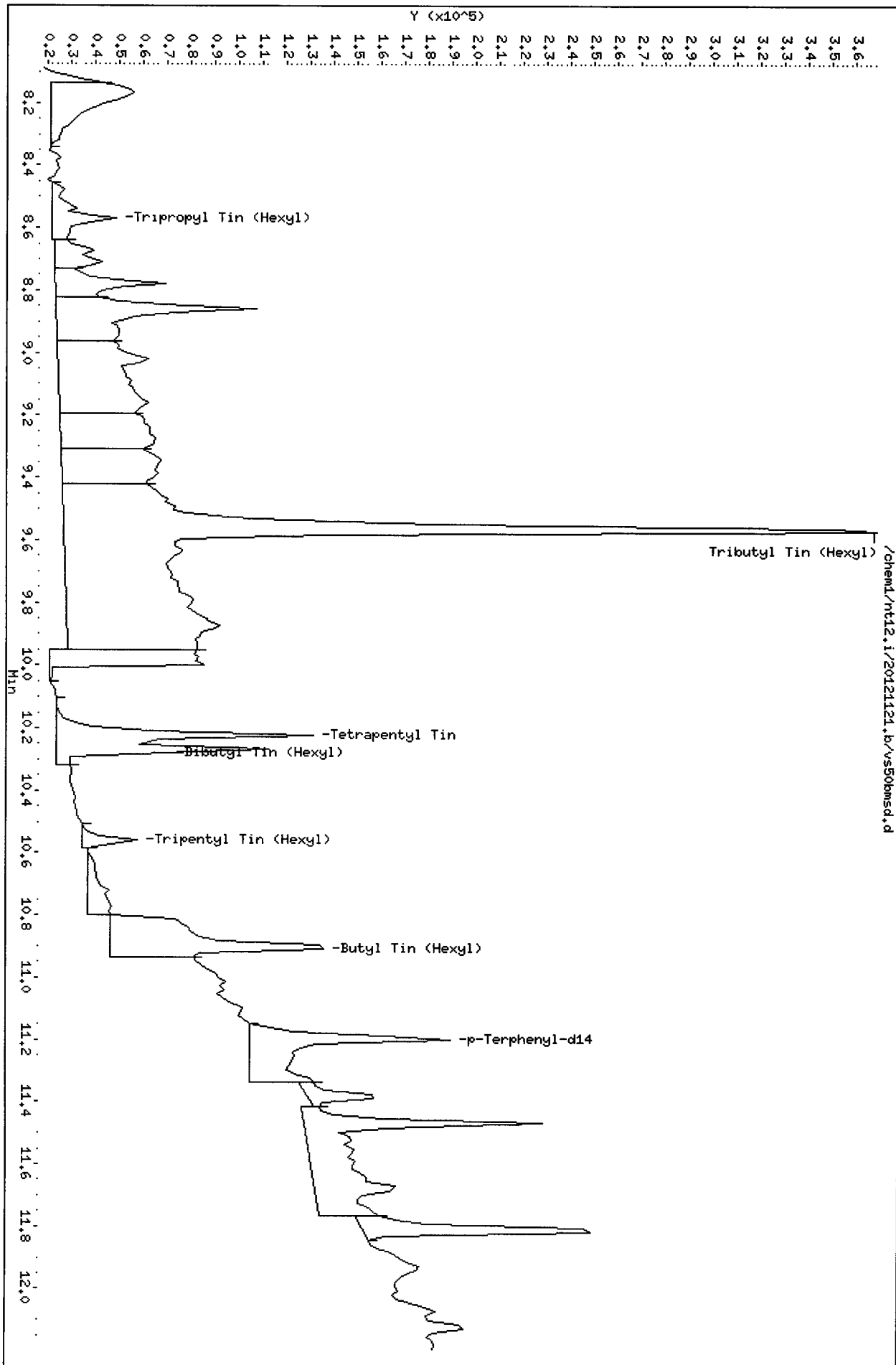
Client SDG: VS50
 Fraction: SV
 Client Smp ID: SG-02-S-C-1211 MSD
 Operator: VTS
 SampleType: MSD
 Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Tributyl Tin (Hexy	0.09606	0.8118	845.08*	23-133
5 Dibutyl Tin (Hexyl	0.2212	0.2975	134.48*	30-118
7 Butyl Tin (Hexyl)	0.2548	0.1867	73.27	10-113

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.06948	70.94	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.06028	63.72	30-135

Data File: /chem1/nt12.i/20121121.b/vs50bmsd.d
Date: 21-NOV-2012 15:20
Client ID: SG-02-S-C-1211 MSD
Sample Info: VS50BMSD
Purge Volume: 150.0
Column phase: ZB-5ms1

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - vs50bmsd.d

Lab ID: VS50BMSD, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50c.d
 Lab Smp Id: VS50C Client Smp ID: SG-03-S-C-1211
 Inj Date : 21-NOV-2012 15:41
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50C
 Misc Info : 12-22846
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 9
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291	==	8.571	8.582	(0.838)	10808	19.4270	0.06476	
2 Tetrabutyl Tin	289		Compound Not Detected.						
3 Tributyl Tin (Hexyl)	319		9.572	9.572	(0.936)	12059	22.5968	0.07532	
* 4 Tetrapentyl Tin	333		10.224	10.224	(1.000)	154084	200.000		
5 Dibutyl Tin (Hexyl)	347		10.277	10.277	(0.917)	3524	18.8389	0.03129	
\$ 6 Tripentyl Tin (Hexyl)	347		10.559	10.572	(0.943)	9668	18.8389	0.06280	
7 Butyl Tin (Hexyl)	347		10.907	10.907	(0.974)	6765	11.3715	0.03790	
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	150801	20.0000		

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Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50c.d
Lab Smp Id: VS50C
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22846

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-03-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
4 Tetrapentyl Tin	124855	62428	249710	154084	23.41
8 p-Terphenyl-d14	121433	60716	242866	150801	24.18

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	%DIFF =====
		LOWER =====	UPPER =====		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

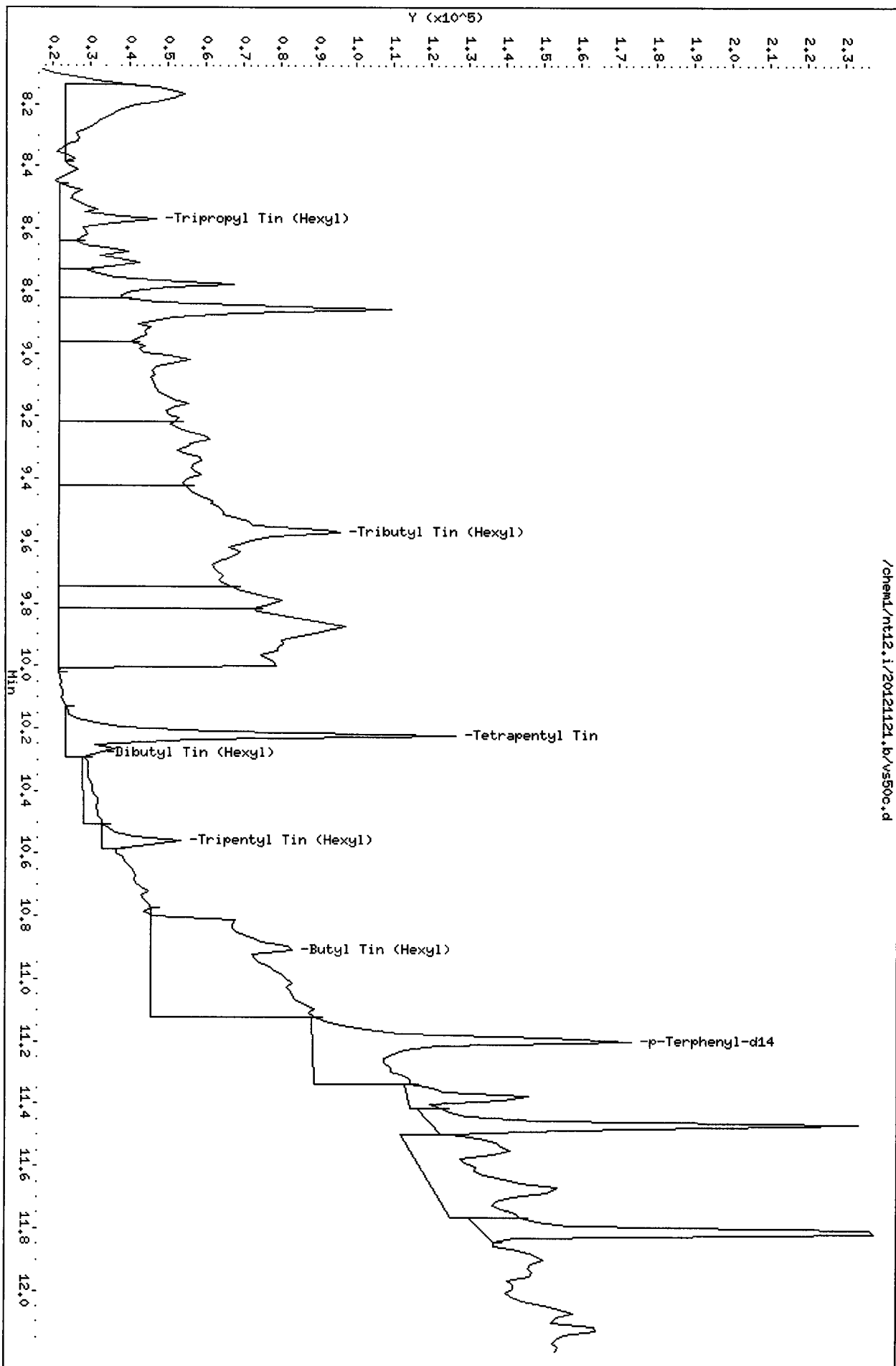
Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50C
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22846

Client SDG: VS50
Fraction: SV
Client Smp ID: SG-03-S-C-1211
Operator: VTS
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.06476	66.11	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.06280	66.38	30-135

Data File: /chem/nt12.i/20121121.b/vs50c.d
Date : 21-NOV-2012 15:41
Client ID: SG-03-S-C-1211
Sample Info: VS50C
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Date : 21-NOV-2012 15:41

Client ID: SG-03-S-C-1211

Instrument: nt12.i

Sample Info: VS50C

Purge Volume: 150.0

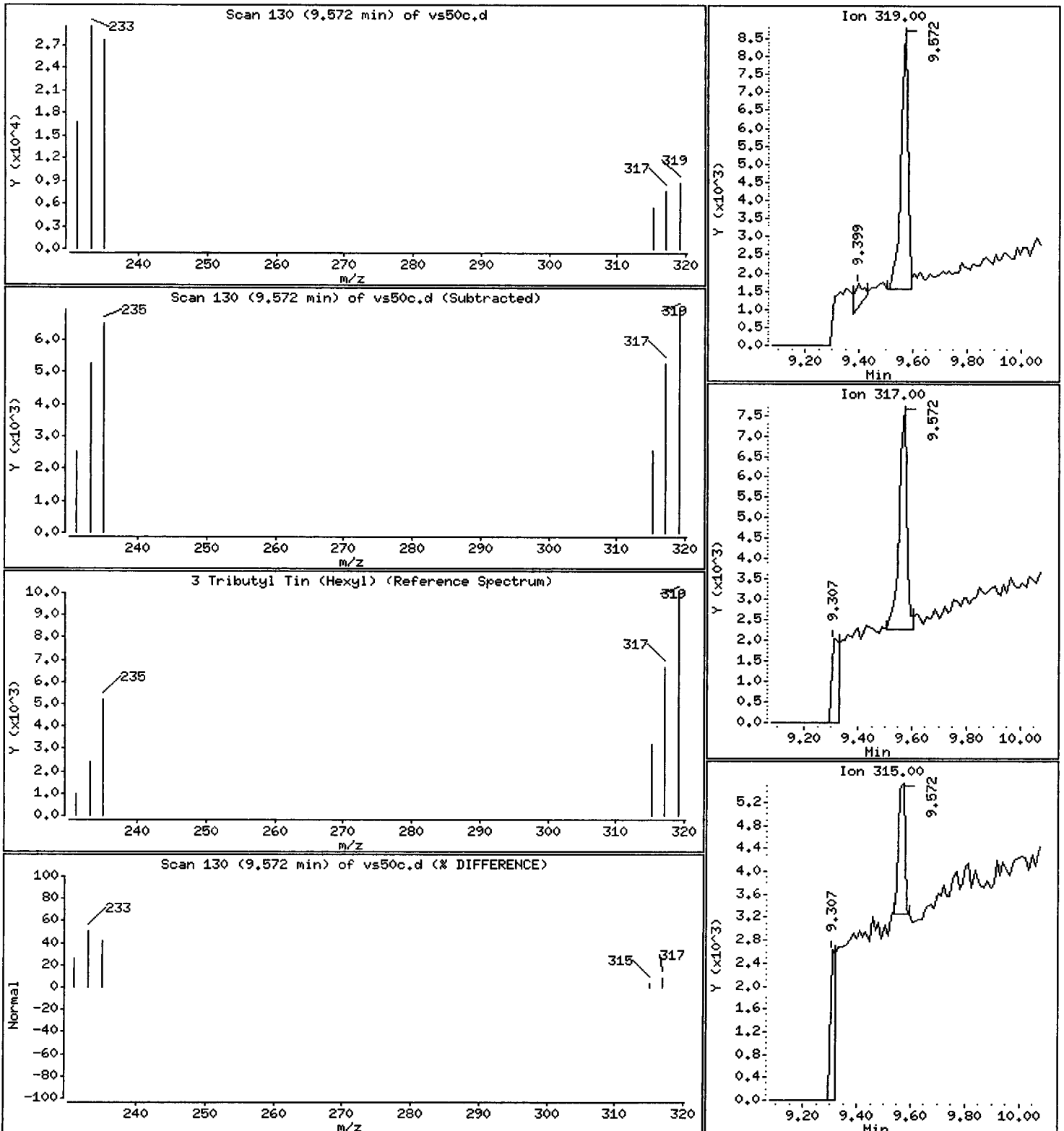
Operator: VTS

Column phase: ZB-5msi

Column diameter: 0.25

3 Tributyl Tin (Hexyl)

Concentration: 0.07532 ug/L



CO-ELUTION SUMMARY FOR FILE - vs50c.d

Lab ID: VS50C, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50d.d
Lab Smp Id: VS50D Client Smp ID: SG-04-S-C-1211
Inj Date : 21-NOV-2012 16:01
Operator : VTS Inst ID: nt12.i
Smp Info : VS50D
Misc Info : 12-22847
Comment : 3 ul Injection
Method : /chem1/nt12.i/20121121.b/pw3ul.m
Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PW.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	46.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	CONCENTRATIONS						
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ng/mL)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====	=====	
\$ 1 Tripropyl Tin (Hexyl)	291		8.571	8.582	(0.838)	11058	20.2107	0.2197	
2 Tetrabutyl Tin	289		Compound Not Detected.						
3 Tributyl Tin (Hexyl)	319		9.572	9.572	(0.936)	3052	5.81521	0.06321	
* 4 Tetrapentyl Tin	333		10.224	10.224	(1.000)	151535	200.000		
5 Dibutyl Tin (Hexyl)	347		Compound Not Detected.						
\$ 6 Tripentyl Tin (Hexyl)	347		10.559	10.572	(0.943)	10069	19.3505	0.2103	
7 Butyl Tin (Hexyl)	347		Compound Not Detected.						
* 8 p-Terphenyl-d14	244		11.202	11.202	(1.000)	152904	20.0000		

11/23/12

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50d.d
Lab Smp Id: VS50D
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22847

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-04-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	151535	21.37
8 p-Terphenyl-d14	121433	60716	242866	152904	25.92

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

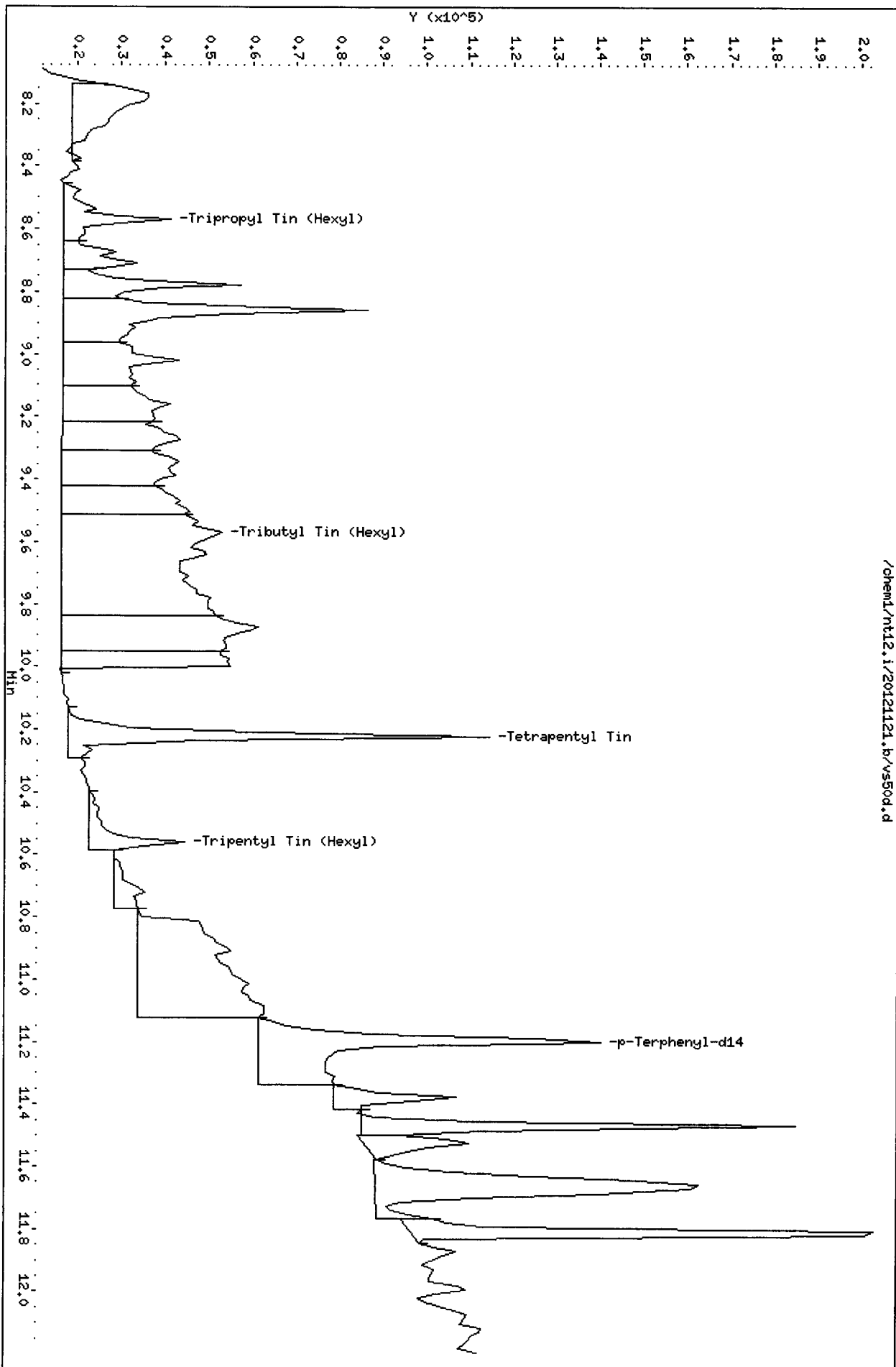
Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50D
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22847

Client SDG: VS50
Fraction: SV
Client Smp ID: SG-04-S-C-1211
Operator: VTS
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.3194	0.2197	68.78	28-100
\$ 6 Tripentyl Tin (Hex	0.3085	0.2103	68.18	30-135

Data File: /chem1/nt12.i/20121121.b/vs50d.d
Date: 21-NOV-2012 16:01
Client ID: SC-04-S-C-1211
Sample Info: VS50D
Purge Volume: 46.0
Column phase: ZB-5msi

Instrument: nt12.1
Operator: VTS
Column diameter: 0.25



Date : 21-NOV-2012 16:01

Client ID: SG-04-S-C-1211

Instrument: nt12.i

Sample Info: VS50D

Purge Volume: 46.0

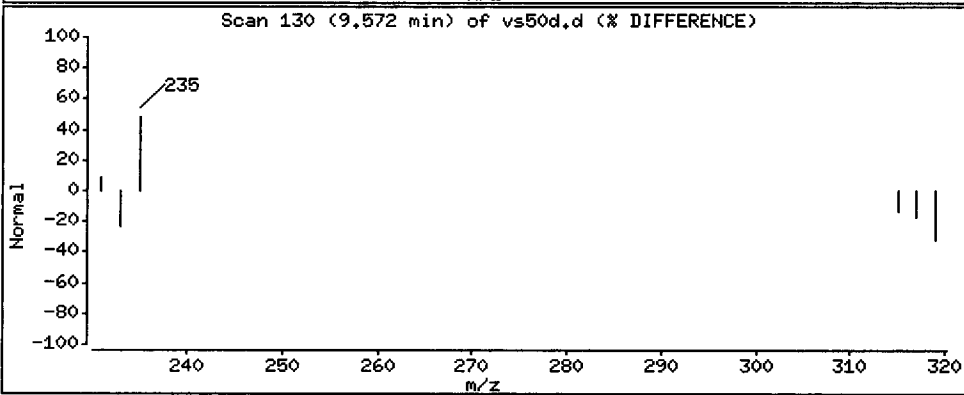
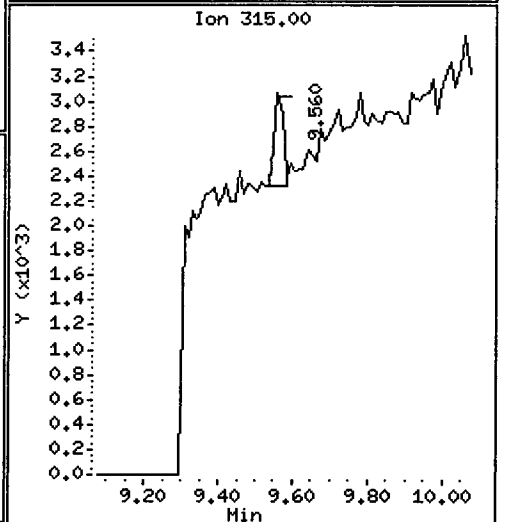
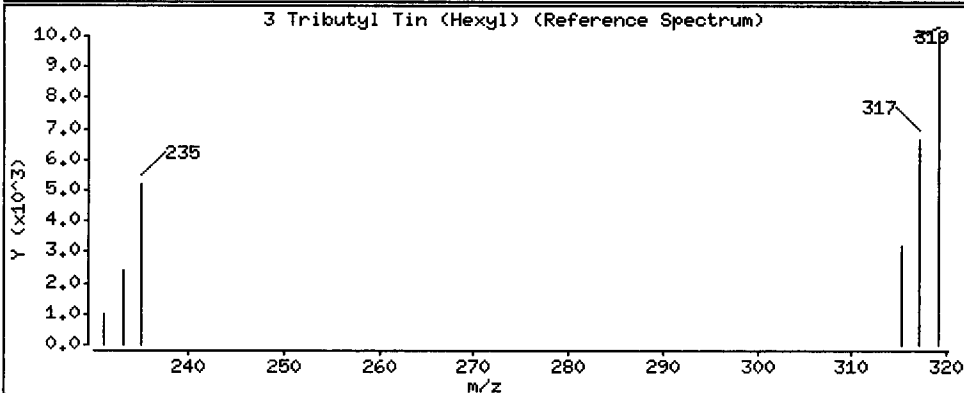
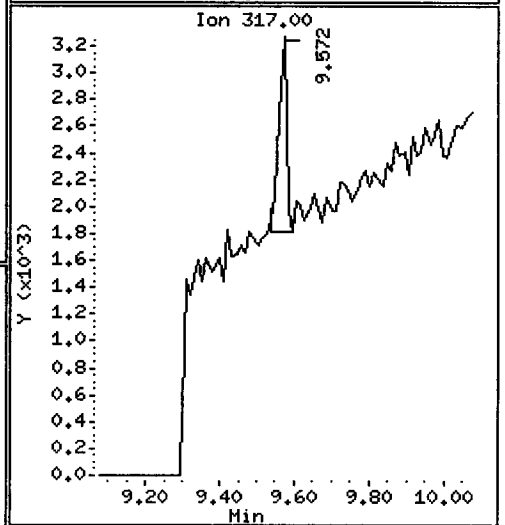
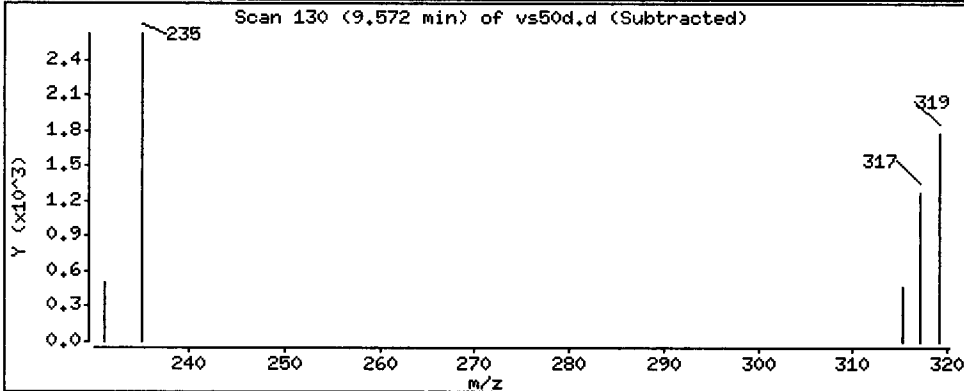
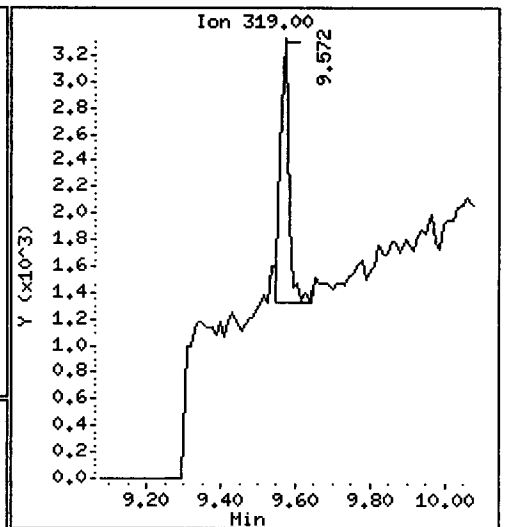
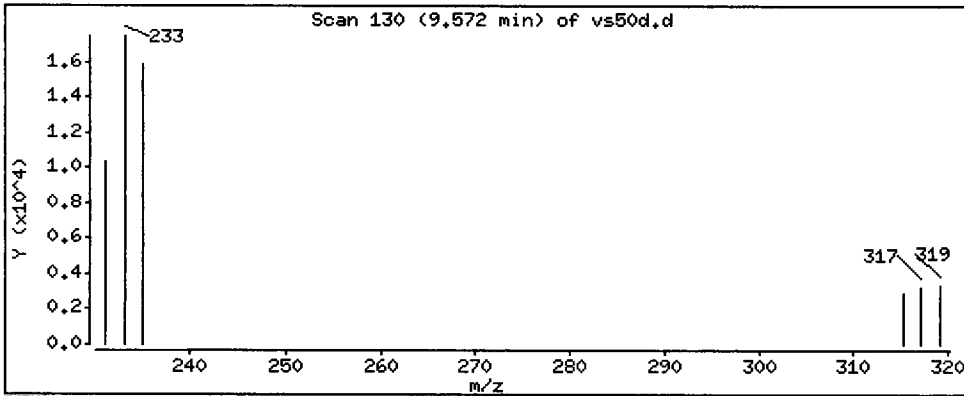
Operator: VTS

Column phase: ZB-5ms1

Column diameter: 0.25

3 Tributyl Tin (Hexyl)

Concentration: 0.06321 ug/L



CO-ELUTION SUMMARY FOR FILE - vs50d.d

Lab ID: VS50D, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50e.d
 Lab Smp Id: VS50E Client Smp ID: SG-05-S-C-1211
 Inj Date : 21-NOV-2012 16:22
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50E
 Misc Info : 12-22848
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 11
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT	SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
								ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)	291		291	8.571	8.582	(0.838)	9079	16.1545	0.05385
2 Tetrabutyl Tin	289		289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)	319		319	9.572	9.572	(0.936)	1712	3.17566	0.01059
* 4 Tetrapentyl Tin	333		333	10.224	10.224	(1.000)	155655	200.000	
5 Dibutyl Tin (Hexyl)	347		347	Compound Not Detected.					
\$ 6 Tripentyl Tin (Hexyl)	347		347	10.559	10.572	(0.943)	11792	22.4787	0.07493
7 Butyl Tin (Hexyl)	347		347	10.908	10.907	(0.974)	2901	27046	0.01590
* 8 p-Terphenyl-d14	244		244	11.203	11.202	(1.000)	154149	20.0000	

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Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt12.i
 Lab File ID: vs50e.d
 Lab Smp Id: VS50E
 Analysis Type: SV
 Quant Type: ISTD
 Operator: VTS
 Method File: /chem1/nt12.i/20121121.b/pw3ul.m
 Misc Info: 12-22848

Calibration Date: 21-NOV-2012
 Calibration Time: 13:14
 Client Smp ID: SG-05-S-C-1211
 Level: LOW
 Sample Type: Pore Water

Test Mode:
 Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	155655	24.67
8 p-Terphenyl-d14	121433	60716	242866	154149	26.94

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

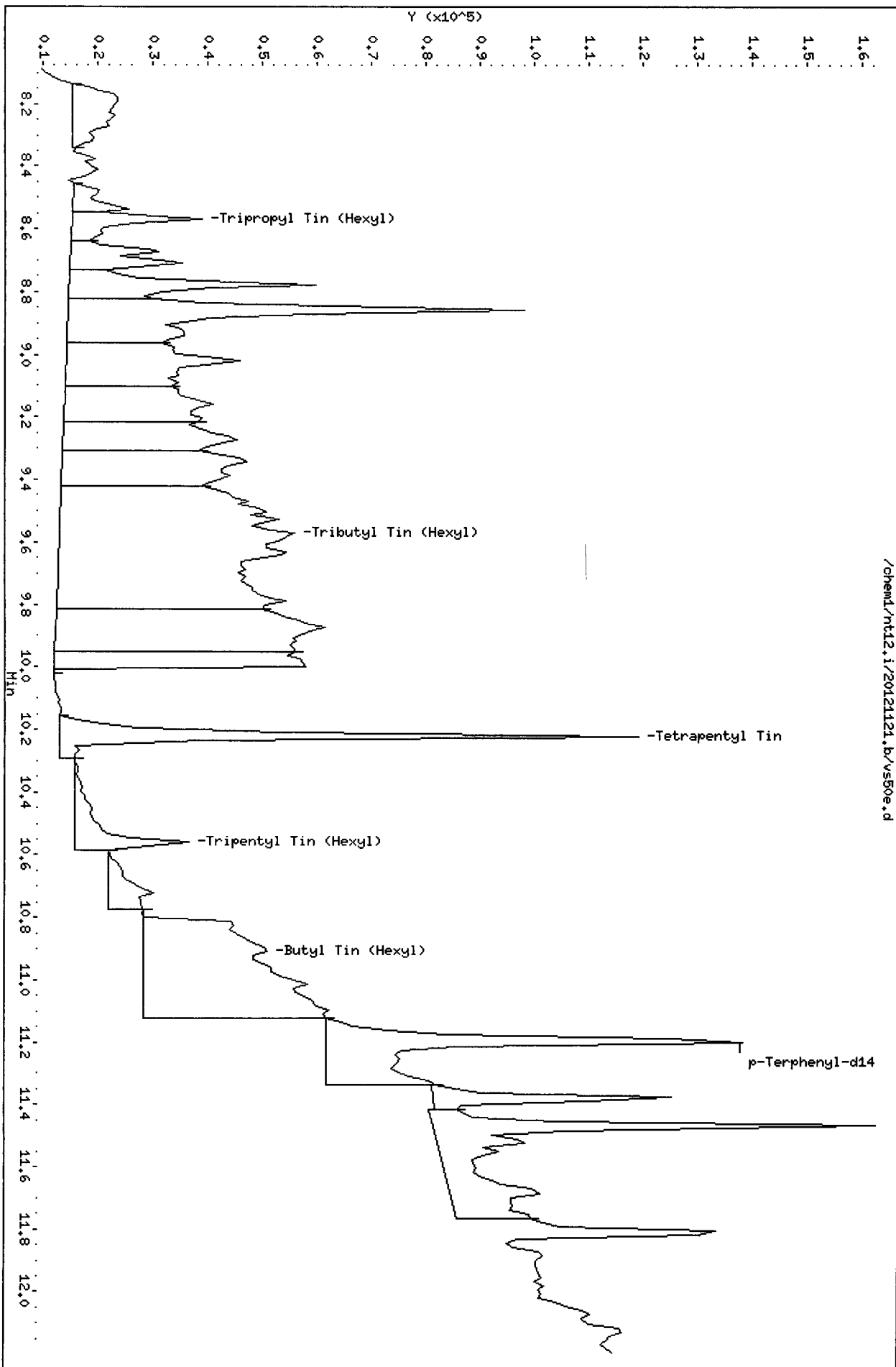
Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50E
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22848

Client SDG: VS50
Fraction: SV
Client Smp ID: SG-05-S-C-1211
Operator: VTS
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.05385	54.98	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.07493	79.21	30-135

Data File: /chem/nt12.i/20121121.b/vs50e.d
Date: 21-NOV-2012 16:22
Client ID: SG-05-S-C-1211
Sample Info: VS50E
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25



Date : 21-NOV-2012 16:22

Client ID: SG-05-S-C-1211

Instrument: nt12.i

Sample Info: VS50E

Purge Volume: 150.0

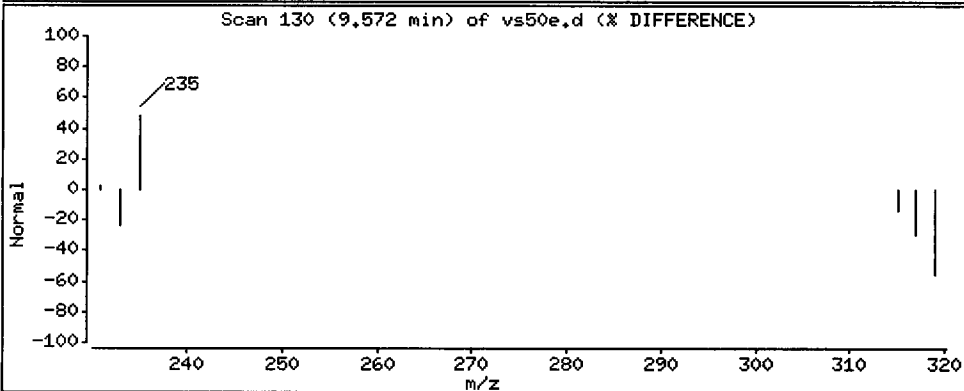
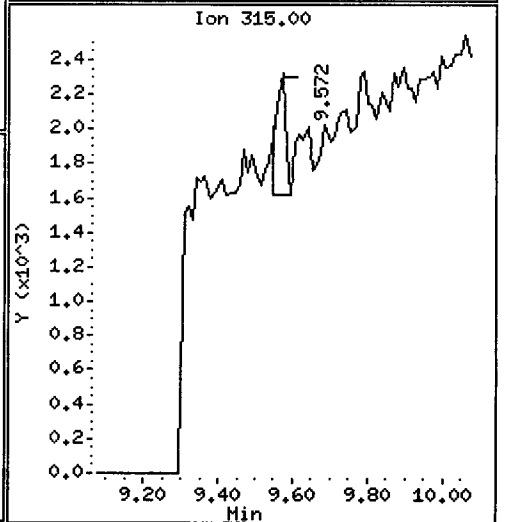
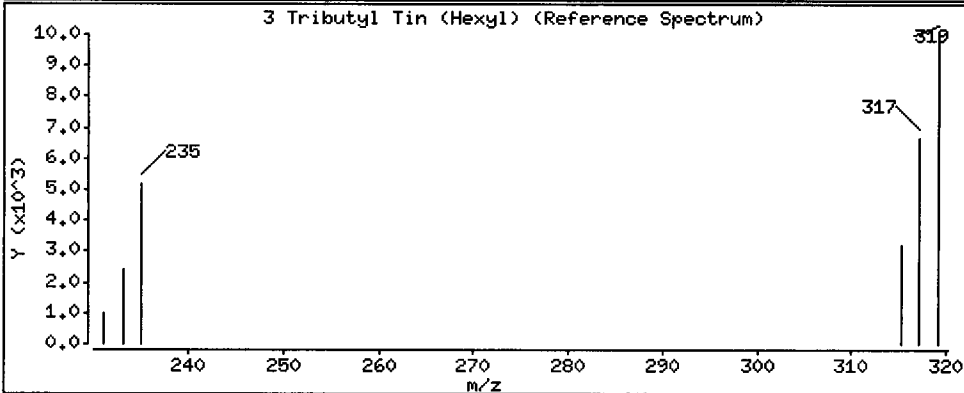
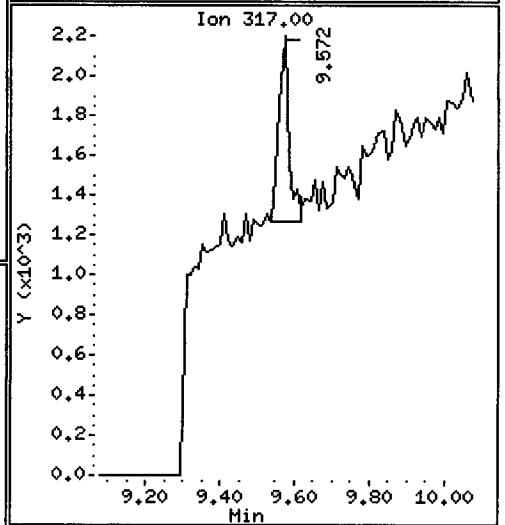
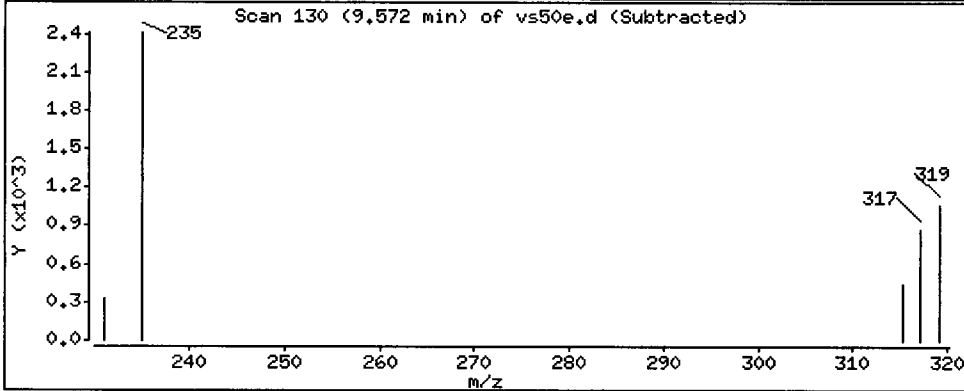
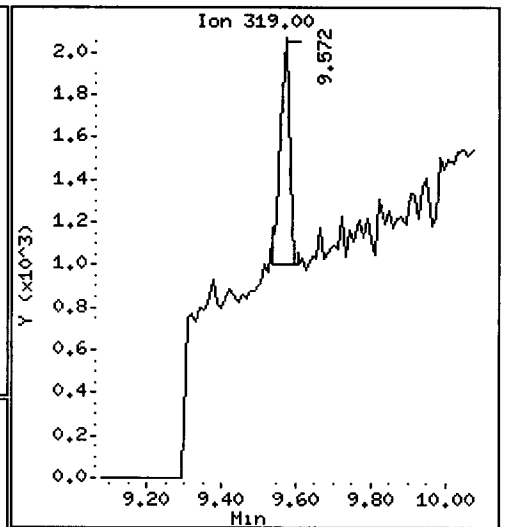
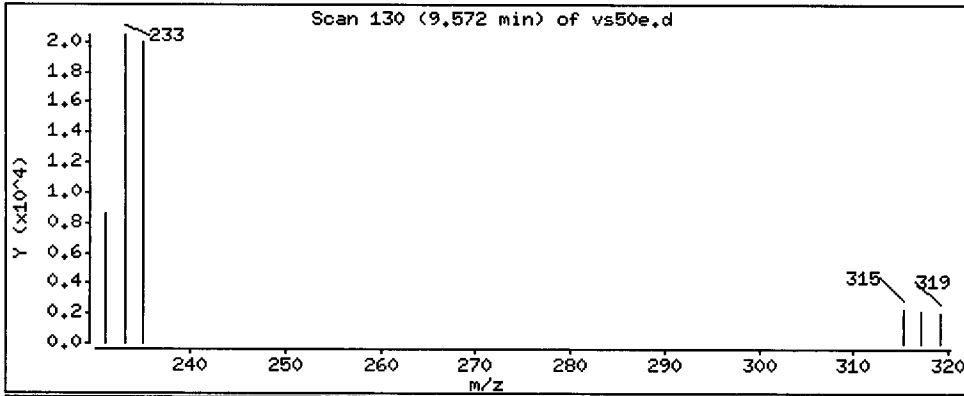
Operator: VTS

Column phase: ZB-5msi

Column diameter: 0.25

3 Tributyl Tin (Hexyl)

Concentration: 0.01059 ug/L



CO-ELUTION SUMMARY FOR FILE - vs50e.d

Lab ID: VS50E, Method: pw3ul.m, Instrument: nt12.i, Date: 21-NOV-2012

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Analytical Resources, Inc.

Krone 1988

Data file : /chem1/nt12.i/20121121.b/vs50f.d
 Lab Smp Id: VS50F Client Smp ID: SG-06-S-C-1211
 Inj Date : 21-NOV-2012 16:42
 Operator : VTS Inst ID: nt12.i
 Smp Info : VS50F
 Misc Info : 12-22849
 Comment : 3 ul Injection
 Method : /chem1/nt12.i/20121121.b/pw3ul.m
 Meth Date : 23-Nov-2012 08:26 van Quant Type: ISTD
 Cal Date : 09-OCT-2012 18:26 Cal File: ic1009f.d
 Als bottle: 12
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: PW.sub
 Target Version: 3.50
 Processing Host: cserv3

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	0.50000	Final Extract Volume (mL)
Vo	150.00000	Volume Extracted (L)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG	MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
							ON-COLUMN (ng/mL)	FINAL (ug/L)
\$ 1 Tripropyl Tin (Hexyl)		291	8.571	8.582	(0.838)	8127	14.6417	0.04881
2 Tetrabutyl Tin		289	Compound Not Detected.					
3 Tributyl Tin (Hexyl)		319	9.572	9.572	(0.936)	4736	8.89502	0.02965
* 4 Tetrapentyl Tin		333	10.224	10.224	(1.000)	153730	200.000	
5 Dibutyl Tin (Hexyl)		347	10.277	10.277	(0.917)	1841	4.99692	0.01666
\$ 6 Tripentyl Tin (Hexyl)		347	10.559	10.572	(0.943)	7987	15.8577	0.05286
7 Butyl Tin (Hexyl)		347	10.907	10.907	(0.974)	4239	7.26020	0.02420
* 8 p-Terphenyl-d14		244	11.202	11.202	(1.000)	148002	20.0000	

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Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt12.i
Lab File ID: vs50f.d
Lab Smp Id: VS50F
Analysis Type: SV
Quant Type: ISTD
Operator: VTS
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22849

Calibration Date: 21-NOV-2012
Calibration Time: 13:14
Client Smp ID: SG-06-S-C-1211
Level: LOW
Sample Type: Pore Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	124855	62428	249710	153730	23.13
8 p-Terphenyl-d14	121433	60716	242866	148002	21.88

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
4 Tetrapentyl Tin	10.22	9.72	10.72	10.22	0.00
8 p-Terphenyl-d14	11.20	10.70	11.70	11.20	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Anchor QEA, LLC.
Sample Matrix: LIQUID
Lab Smp Id: VS50F
Level: LOW
Data Type: MS DATA
SpikeList File: PW.spk
Sublist File: PW.sub
Method File: /chem1/nt12.i/20121121.b/pw3ul.m
Misc Info: 12-22849

Client SDG: VS50
Fraction: SV
Client Smp ID: SG-06-S-C-1211
Operator: VTS
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 1 Tripropyl Tin (Hex	0.09795	0.04881	49.83	28-100
\$ 6 Tripentyl Tin (Hex	0.09460	0.05286	55.88	30-135

Data File: /chem1/nt12.i/20121121.b/vs50f.d
Date: 21-NOV-2012 16:42
Client ID: SG-06-S-C-1211
Sample Info: VS50F
Purge Volume: 150.0
Column phase: ZB-5msi

Instrument: nt12.i
Operator: VTS
Column diameter: 0.25

