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Client: Anchor QEA, LLC

Project: 080224-01.02 OMMP Addendum 2-Jorgensen I

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Signature

March-30-2016
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 30, 2016

Joy Dunay
Anchor QEA
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: OMMP Addendum 2–Jorgensen Forge EAA Removal Action, 080224-01.02
ARI Job No.: AXS8

Dear Ms. Dunay:

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

Sample receipt and details regarding requested 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.

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

cc: eFile: AXS8

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: AXS8

RE: Jorgensen Tier 2 triggers

Joy Dunay <jdunay@anchorqea.com>

Thu 3/17/2016 9:23 AM

To:Cheronne Oreiro <cheronneo@arilabs.com>;

Cc:Elizabeth Appy <eappy@anchorqea.com>; Evan Malczyk <emalczyk@anchorqea.com>;

Analyses will include PCBs, TOC, TS, and Grainsize.

Thanks,
Joy

From: Joy Dunay
Sent: Thursday, March 17, 2016 9:15 AM
To: Cheronne Oreiro <cheronneo@arilabs.com>
Cc: Elizabeth Appy <eappy@anchorqea.com>; Evan Malczyk <emalczyk@anchorqea.com>
Subject: Jorgensen Tier 2 triggers

Hi Cheronne,
We would like to trigger **standard turn around** analysis of the following samples:

- JF-PDS-1-2-3ft-160210 -R1 AV29AC, 51-4
- JF-PDS-5-2-3ft-160211 -R1 AV29AL, 57-1
- JF-PDS-7-2-3ft-160212 -R1 AV29AN, 57-1

Let me know if you have any questions.

Thanks,

Joy Dunay

ANCHOR QEA, LLC
jdunay@anchorqea.com
720 Olive Way, Suite 1900
Seattle, Washington 98101
T 206.287.9130
D 206.903.3320
F 206.287.9131

ANCHOR QEA, LLC
www.anchorqea.com

AXS8 : 00003

AV29

Chain of Custody Record and Laboratory Analysis Request

COC#

Date: 2-10-16
Laboratory: Analytical Resources, Inc.
Project Name: OMMP Addendum 2 - Jorgensen Forge EAA Removal Action
Project Number: 080224-01.02
Project Contact: Joy Dunay
Phone Number: (206) 903-3320
Shipment Method: Delivery

ANCHOR QEA

Sediment and Field QC

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	TS/TOC	Total Metals	PCBs	Grain Size	Moisture Content	Specific Gravity	Duplicate Archive	Archive	Comments
1	JF-PDS-4-TZ-160210	9:35 2/10/16	SE	3								X	
2	JF-PDS-4-0-1ft-160210		SE	3	X	X	X	X	X		X		
3	JF-PDS-4-1-2ft-160210		SE	3	X	X	X	X	X		X		
4	JF-PDS-4-2-3ft-160210		SE	3								X	
5	JF-PDS-4-3-4ft-160210		SE	3								X	
6	JF-PDS-4-4-5ft-160210		SE	3								X	
7	JF-PDS-2-0-1ft-160210	12:19	SE	3	X	X	X	X			X		
8	JF-PDS-2-1-2ft-160210	12:19	SE	3	X	X	X	X			X		
9	JF-PDS-2-2-3ft-160210	12:19	SE	3								X	
10	JF-PDS-2-3-4ft-160210	12:19	SE	3								X	
11	JF-PDS-2-4-5ft-160210	12:19	SE	3								X	
12	JF-PDS-1-TZ-160210	15:45	SE	2								X	
13	JF-PDS-1-0-1ft-160210		SE	3	X	X	X	X			X		
14	JF-PDS-1-1-2ft-160210		SE	3	X	X	X	X			X		

1 See project SAP/QAPP for analyte lists and test methods

2 Email sample confirmation report to labdata@anchorqea.com

Additional notes/comments:

Relinquished By:	Company:	Received By:	Company:
EVAN MALCZYK	Anchor QEA LLC.	Chris Atwell	ARI
Signature/Printed Name	Date/Time 2/10/16 1745	Signature/Printed Name	Date/Time 2/10/16 1745
Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

AXS8:000014

AV29

Chain of (...y Record and Laboratory Analysis Request

COC#

ANCHOR QEA

Date: 2-10-16
Laboratory: Analytical Resources, Inc.
Project Name: OMMP Addendum 2 - Jorgensen Forge EAA Removal Action
Project Number: 080224-01.02
Project Contact: Joy Dunay
Phone Number: (206) 903-3320
Shipment Method: Delivery

Sediment and Field QC

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	TS/TOC	Total Metals	PCBs	Grain Size	Moisture Content	Specific Gravity	Duplicate Archive	ARCHIVE	Comments
1	JF-PDS-1-2-3ft-160210	15:45 2/10/16	SE	3								X	
2	JF-PDS-1-3-4ft-160210	15:45 ↓	SE	3								X	
3	JF-PDS-1-4-5ft-160210	15:45 ↓	SE	3								X	
4			SE										
5			SE										
6			SE										
7			SE										
8			SE										
9			SE										
10			SE										
11			SE										
12			SE										
13			SE										
14			SE										

1 See project SAP/QAPP for analyte lists and test methods
2 Email sample confirmation report to labdata@anchorqea.com

Additional notes/comments:

Relinquished By:	Company:	Received By:	Company:
EVAN MALCZYK [signature]	Anchor QEA LLC.	[signature] Chris Atwell	ARI
Signature/Printed Name	2/10/16 1745 Date/Time	Signature/Printed Name	2/10/16 1745 Date/Time
Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

AXS8:00005

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor

COC No(s): NA

Assigned ARI Job No: AV29

Project Name: OMMP Addendum 2-Jorgensen Forge EAA Removal Action

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 2.1 0.2 1.0

Time:

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D0052 76

Cooler Accepted by: CA Date: 2/10/16 Time: 1745

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:

Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Was Sample Split by ARI : NA YES Date/Time: Equipment: Split by:

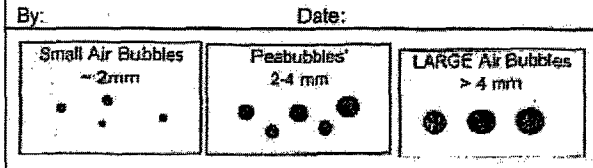
Samples Logged by: TR Date: 2-15-16 Time: 1330

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

AV29

Chain of ... Record and Laboratory Analysis Request

COC#

Date: 2-11-16
Laboratory: Analytical Resources, Inc.
Project Name: OMMP Addendum 2 - Jorgensen Forge EAA Removal Action
Project Number: 080224-01.02
Project Contact: Joy Dunay
Phone Number: (206) 903-3320
Shipment Method: Delivery

ANCHOR QEA

Sediment and Field QC

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	TS/TOC	Total Metals	PCBs	Grain Size	Moisture Content	Specific Gravity	Duplicate Archive	RACHUT	Comments
1	JF-PDS-3-0-1ft-160211	11:06 2/11/16	SE	3	X	X	X	X			X		
2	JF-PDS-3-1-2ft-160211		SE	3	X	X	X	X			X		
3	JF-PDS-3-2-3ft-160211		SE	3								X	
4	JF-PDS-103-1-2ft-160211		SE	2	X	X	X	X					
5	JF-PDS-~~[illegible]~~ 3-TZ-160211		SE	1								X	
6	JF-PDS-3-3-4ft-160211		SE	3								X	
7	JF-PDS-5-0-1ft-160211	15:56	SE	3	X	X	X	X			X		
8	JF-PDS-5-1-2ft-160211		SE	3	X	X	X	X			X		
9	JF-PDS-105-0-1ft-160211		SE	2	X	X	X	X					
10	~~JF-PDS-TZ-160211~~		SE	~~1~~									
11	JF-PDS-5-TZ-160211		SE	1							X		
12	JF-PDS-5-3-4ft-160211		SE	3							X		
13	JF-PDS-5-4-5ft-160211		SE	3							X		
14			SE										

1 See project SAP/QAPP for analyte lists and test methods
2 Email sample confirmation report to labdata@anchorqea.com

Additional notes/comments:

Relinquished By:	Company:	Received By:	Company:
EVAN MALCZYK	Anchor QEA LLC.		ARI
Signature/Printed Name	Date/Time 2/11/16 1745	Signature/Printed Name	Date/Time 2-11-16 @ 1745
Relinquished By:	Company:	Received By:	Company:
Signature/Printed Name	Date/Time	Signature/Printed Name	Date/Time

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page ____ of ____

AXS8:00007

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor

COC No(s): _____ (NA)

Assigned ARI Job No: AV29

Project Name: OMMP Addendum 2- Jorgensen Forge EAA Removal Action

Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: _____

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 5.9 3.4 ___ ___

Time: _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D005276

Cooler Accepted by: TR Date: 2-11-16 Time: 1745

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used? ... Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		YES	(NO)
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TR Date: 2-15-16 Time: 1330

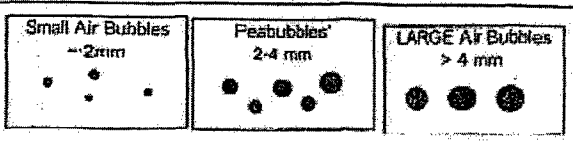
*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

One set of Samples arrived not found on COC JF - PDS-5-2-3ft-160211.
1x Poly 16oz WM Jar and 2x Glass 16oz WM Jars.

By: Date:



Small → "sm" (< 2 mm)	
Peabubbles → "pb" (2 to < 4 mm)	
Large → "lg" (4 to < 6 mm)	
Headspace → "hs" (> 6 mm)	

AV29

Chain of Custody Record and Laboratory Analysis Request

COC#

Date: 2-12-16
Laboratory: Analytical Resources, Inc.
Project Name: OMMP Addendum 2 - Jorgensen Forge EAA Removal Action
Project Number: 080224-01.02
Project Contact: Joy Dunay
Phone Number: (206) 903-3320
Shipment Method: Delivery

ANCHOR QEA

Sediment and Field QC

Line	Field Sample ID	Collection Date/Time	Matrix	No. of Containers	TS/TOC	Total Metals	PCBs	Grain Size	Moisture Content	Specific Gravity	Duplicate Archive	ARCHIVE	Comments
1	JF-PDS-7-0-1ft-160212	9:00 2/12/16	SE	3	X	X	X	X			X		
2	JF-PDS-7-1-2ft-160212		SE	3	X	X	X	X			X		
3	JF-PDS-7-TZ-160212		SE	1								X	
4	JF-PDS-7-2-3ft-160212		SE	3								X	
5	JF-PDS-7-3-4ft-160212		SE	3								X	
6	JF-PDS-7-4-5ft-160212		SE	3								X	
7	JF-RB-160212	10:00 2/12/16	~~SE~~ WATER	5		X	X						Metals - NO3 preservative (2 bottles)
8			SE										
9			SE										
10			SE										
11			SE										
12			SE										
13			SE										
14			SE										

1 See project SAP/QAPP for analyte lists and test methods
2 Email sample confirmation report to labdata@anchorqea.com

Additional notes/comments:

Relinquished By	Company	Date/Time	Received By	Company	Date/Time
Nik Bacher / Nik Bacher	Anchor QEA LLC.	2/12/16 1240	[illegible]	ARI	2/12/16 1240

Signature/Printed Name

Distribution: A copy will be made for the laboratory and client. The Project file will retain the original.

Page _____ of _____

AXS8:5555

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor

COC No(s): _____ NA

Assigned ARI Job No: AV29

Project Name: OMMP Addendum 2- Jorgensen Forge EAA Removal Act

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? ..... YES NO

Were custody papers properly filled out (ink, signed, etc.) ..... YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 2.4 4.9 ___ ___ ___
Time: _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D005276

Cooler Accepted by: CA Date: 2/12/16 Time: 1240

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ..... YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? ..... NA YES NO

Were all bottles sealed in individual plastic bags? ..... YES NO

Did all bottles arrive in good condition (unbroken)? ..... YES NO

Were all bottle labels complete and legible? ..... YES NO

Did the number of containers listed on COC match with the number of containers received? ..... YES NO

Did all bottle labels and tags agree with custody papers? ..... YES NO

Were all bottles used correct for the requested analyses? ..... YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? ..... NA YES NO

Was sufficient amount of sample sent in each bottle? ..... YES NO

Date VOC Trip Blank was made at ARI ..... NA _____

Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TR Date: 2-15-16 Time: 1330

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

* Metals bottle passes preservation check.

By: TR Date: 2-15-16

Small Air Bubbles < 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • • •	• • •

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: AXS8

Case Narrative

Client: Anchor QEA
Project: OMMP Addendum 2-Jorgensen Forge Removal Action
Project No.: 080224-01.02
ARI Job No.: AXS8

Sample Receipt

Three sediment samples were removed from archive on March 17, 2016 and logged under ARI job AXS8. The samples were analyzed for PCBs, TOC, total solids, and grain size, as requested. For details regarding sample receipt, please refer to the Cooler Receipt Form.

PCB Aroclors by SW8082

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

Initial calibrations and initial calibration verifications were within method requirements.

The continuing calibration verification on 3/26/16 at 16:39 was outside the 20% control limit high for Aroclor 1260 on the first column, but was within the control limit on the second column. No corrective action was taken.

The internal standard areas were within control limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limit. The LCS percent recoveries were within control limits. *The PSSRM was analyzed as a reference material.

The matrix spike and matrix spike duplicate percent recoveries were within control limits.

General Chemistry Parameters (TOC/TS)

The samples and associated laboratory QC were prepared and analyzed within the method recommended holding times for samples stored frozen.

The method blanks were clean at the reporting limits. The LCS percent recovery was within control limits.

The SRM percent recovery was within control limits.

The matrix spike percent recovery and replicate RSDs were within control limits.

* Clients are responsible for reporting Puget Sound Sediment Reference Material (PSSRM) results to EPA.

Geotechnical Parameters

Select sample volumes were subcontracted to Materials Testing and Consulting (MTC) in Tukwila, WA. All subcontracted data have been included in this data package.

* Clients are responsible for reporting Puget Sound Sediment Reference Material (PSSRM) results to EPA.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AXS8
Client: Anchor QEA, LLC
Project Event: 080224-01.02
Project Name: OMMP Addendum 2-Jorgensen Forge

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	JF-PDS-1-2-3ft-160210	AXS8A	16-4457	Sediment	02/10/16 15:45	02/12/16 17:45
2.	JF-PDS-5-2-3ft-160211	AXS8B	16-4458	Sediment	02/11/16 15:56	02/12/16 17:45
3.	JF-PDS-7-2-3ft-160212	AXS8C	16-4459	Sediment	02/12/16 09:00	02/12/16 17:45

Data Reporting Qualifiers

Effective 12/31/13

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 ≥ 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.

AXS8 : 00015

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

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 ≥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

AXS8:00017

Analytical Method Information

Printed: 03/30/2016 9:36 am

8082A PCB Solid 4 in Solid (EPA 8082A)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz **Amount Required:** 150 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	1.56	4.00 ug/kg		30	56-120	30	56-120	30
Aroclor-1016 (1)				30	56-120	30	56-120	30
Aroclor-1016 (2)				30	56-120	30	56-120	30
Aroclor-1016 (3)				30	56-120	30	56-120	30
Aroclor-1016 (4)				30	56-120	30	56-120	30
Aroclor 1016 [2C]	1.56	4.00 ug/kg		30	56-120	30	56-120	30
Aroclor-1016 (1) [2C]				30	56-120	30	56-120	30
Aroclor-1016 (2) [2C]				30	56-120	30	56-120	30
Aroclor-1016 (3) [2C]				30	56-120	30	56-120	30
Aroclor-1016 (4) [2C]				30	56-120	30	56-120	30
Aroclor 1221	1.56	4.00 ug/kg		30				
Aroclor-1221 (1)				30				
Aroclor-1221 (2)				30				
Aroclor-1221 (3)				30				
Aroclor 1221 [2C]	1.56	4.00 ug/kg		30				
Aroclor-1221 (1) [2C]				30				
Aroclor-1221 (2) [2C]				30				
Aroclor-1221 (3) [2C]				30				
Aroclor-1221 (4) [2C]				30				
Aroclor 1232	1.56	4.00 ug/kg		30				
Aroclor-1232 (1)				30				
Aroclor-1232 (2)				30				
Aroclor-1232 (3)				30				
Aroclor-1232 (4)				30				
Aroclor 1232 [2C]	1.56	4.00 ug/kg		30				
Aroclor-1232 (1) [2C]				30				
Aroclor-1232 (2) [2C]				30				
Aroclor-1232 (3) [2C]				30				
Aroclor-1232 (4) [2C]				30				
Aroclor 1242	1.56	4.00 ug/kg		30				
Aroclor-1242 (1)				30				
Aroclor-1242 (2)				30				
Aroclor-1242 (3)				30				
Aroclor-1242 (4)				30				
Aroclor 1242 [2C]	1.56	4.00 ug/kg		30				
Aroclor-1242 (1) [2C]				30				
Aroclor-1242 (2) [2C]				30				
Aroclor-1242 (3) [2C]				30				
Aroclor-1242 (4) [2C]				30				
Aroclor 1248	1.56	4.00 ug/kg		30				
Aroclor-1248 (1)				30				
Aroclor-1248 (2)				30				
Aroclor-1248 (3)				30				
Aroclor-1248 (4)				30				
Aroclor 1248 [2C]	1.56	4.00 ug/kg		30				
Aroclor-1248 (1) [2C]				30				
Aroclor-1248 (2) [2C]				30				
Aroclor-1248 (3) [2C]				30				
Aroclor-1248 (4) [2C]				30				
Aroclor 1254	1.56	4.00 ug/kg		30				
Aroclor-1254 (1)				30				
Aroclor-1254 (2)				30				
Aroclor-1254 (3)				30				
Aroclor-1254 (4)				30				

AXS8 : 00018

Analytical Method Information
(Continued)

Printed: 03/30/2016 9:36 an

8082A PCB Solid 4 in Solid (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS- %Rec	RPD
Aroclor-1254 (5)				30				
Aroclor 1254 [2C]	1.56	4.00 ug/kg		30				
Aroclor-1254 (1) [2C]				30				
Aroclor-1254 (2) [2C]				30				
Aroclor-1254 (3) [2C]				30				
Aroclor-1254 (4) [2C]				30				
Aroclor-1254 (5) [2C]				30				
Aroclor 1260	0.589	4.00 ug/kg		30	58-120	30	58-120	30
Aroclor-1260 (1)				30	58-120	30	58-120	30
Aroclor-1260 (2)				30	58-120	30	58-120	30
Aroclor-1260 (3)				30	58-120	30	58-120	30
Aroclor-1260 (4)				30	58-120	30	58-120	30
Aroclor-1260 (5)				30	58-120	30	58-120	30
Aroclor 1260 [2C]	0.589	4.00 ug/kg		30	58-120	30	58-120	30
Aroclor-1260 (1) [2C]				30	58-120	30	58-120	30
Aroclor-1260 (2) [2C]				30	58-120	30	58-120	30
Aroclor-1260 (3) [2C]				30	58-120	30	58-120	30
Aroclor-1260 (4) [2C]				30	58-120	30	58-120	30
Aroclor 1262	0.589	4.00 ug/kg		30				
Aroclor-1262 (1)				30				
Aroclor-1262 (2)				30				
Aroclor-1262 (3)				30				
Aroclor-1262 (4)				30				
Aroclor-1262 (5)				30				
Aroclor 1262 [2C]	0.589	4.00 ug/kg		30				
Aroclor-1262 (1) [2C]				30				
Aroclor-1262 (2) [2C]				30				
Aroclor-1262 (3) [2C]				30				
Aroclor-1262 (4) [2C]				30				
Aroclor-1262 (5) [2C]				30				
Aroclor 1268	0.589	4.00 ug/kg		30				
Aroclor-1268 (1)				30				
Aroclor-1268 (2)				30				
Aroclor-1268 (3)				30				
Aroclor-1268 (4)				30				
Aroclor 1268 [2C]	0.589	4.00 ug/kg		30				
Aroclor-1268 (1) [2C]				30				
Aroclor-1268 (2) [2C]				30				
Aroclor-1268 (3) [2C]				30				
Aroclor-1268 (4) [2C]				30				
Surr: Decachlorobiphenyl			40-126					
Surr: Tetrachlorometaxylene			44-120					
Surr: Decachlorobiphenyl [2C]			40-126					
Surr: Tetrachlorometaxylene [2C]			44-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

AXS8 : 00019

Analytical Method Information

Printed: 03/30/2016 9:37 am

Organic Carbon, Total, Plumb in Solid (Plumb 1981, Combustion IR)

Preservation: Cool <6°C

Container: Glass WM, Clear, 4 oz **Amount Required:** 100 g **Hold Time:** 14 day

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Total Organic Carbon		0.0200 %		20	75-125		75-125	20

AXS8 : 00020

Analytical Method Information

Printed: 03/30/2016 9:37 am

Solids, Fixed SM 2540 G-97 Solid in Solid (SM 2540 G-97)

Preservation: Cool <6°C

Container: HDPE NM, 1000 mL **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Fixed Solids		1.00 mg/L		20				

AXS8 : 00021

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record
Standard ID: E000126

Printed: 1/12/2016 11:48:55AM

Description:	Puget Sound reference-SRM	Expires:	12-Jan-2017
Standard Type:	Reference Mate	Prepared:	12-Jan-2016
Solvent:	NA	Prepared By:	Amanda Volgardsen
Final Volume (mls):	30	Department:	QC
Vials:	1	Last Edit:	12-Jan-2016 11:47 by AV
Vendor:	QATS Lab	Lot #:	SR0431
Vendor Catalog #:			

Comments

PSRM0059 Jorgensen Forge for Cheronne

Analyte	CAS Number	Concentration	Units	SRM Control Limits
1,2,3,7,8-PeCDF	57117-41-6	0.00000123	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDF	67562-39-4	0.0000187	mg/Kg	50-150
1,2,3,4,7,8,9-HpCDF	58200-70-7	0.00000163	mg/Kg	50-150
1,2,3,4,7,8-HxCDD	39227-28-6	0.00000159	mg/Kg	50-150
1,2,3,4,7,8-HxCDF	70648-26-9	0.00000302	mg/Kg	50-150
1,2,3,6,7,8-HxCDD	57653-85-7	0.00000388	mg/Kg	50-150
1,2,3,6,7,8-HxCDF	57117-44-9	0.00000109	mg/Kg	50-150
1,2,3,7,8,9-HxCDD	19408-74-3	0.00000304	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.0000906	mg/Kg	50-150
1,2,3,7,8-PeCDD	40321-76-4	0.00000108	mg/Kg	50-150
OCDF	39001-02-0	0.0000584	mg/Kg	50-150
2,3,4,6,7,8-HxCDF	60851-34-5	0.00000183	mg/Kg	50-150
2,3,4,7,8-PeCDF	57117-31-4	0.00000107	mg/Kg	50-150
2,3,7,8-TCDD	1746-01-6	0.00000105	mg/Kg	50-150
2,3,7,8-TCDF	51207-31-9	0.00000111	mg/Kg	50-150
Aroclor 1260	11096-82-5	0.108	mg/Kg	38-167
Aroclor 1260 [2C]	11096-82-5	0.108	mg/Kg	38-167
OCDD	3268-87-9	0.000811	mg/Kg	50-150
1,2,3,7,8,9-HxCDF	72918-21-9	0.000000511	mg/Kg	50-150

E000126
Puget Sound reference-SRM
Solvent / Lot: NA
Prep: 1/12/2016 by AV
Exp: 1/12/2017
Location:

Reviewed By Date

AXS8 : 00022

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: E000127 **Printed: 1/12/2016 11:48:48AM**

Description:	Puget Sound reference-SRM	Expires:	12-Jan-2017
Standard Type:	Reference Mate	Prepared:	12-Jan-2016
Solvent:	NA	Prepared By:	Amanda Volgardsen
Final Volume (mls):	30	Department:	QC
Vials:	1	Last Edit:	12-Jan-2016 11:48 by AV
Vendor:	QATS Lab	Lot #:	SR0431
Vendor Catalog #:			

Comments

PSRM0060 Jorgensen Forge for Cheronne

Analyte	CAS Number	Concentration	Units	SRM Control Limits
1,2,3,7,8-PeCDF	57117-41-6	0.00000123	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDF	67562-39-4	0.0000187	mg/Kg	50-150
1,2,3,4,7,8,9-HpCDF	58200-70-7	0.00000163	mg/Kg	50-150
1,2,3,4,7,8-HxCDD	39227-28-6	0.00000159	mg/Kg	50-150
1,2,3,4,7,8-HxCDF	70648-26-9	0.00000302	mg/Kg	50-150
1,2,3,6,7,8-HxCDD	57653-85-7	0.00000388	mg/Kg	50-150
1,2,3,6,7,8-HxCDF	57117-44-9	0.00000109	mg/Kg	50-150
1,2,3,7,8,9-HxCDD	19408-74-3	0.00000304	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.0000906	mg/Kg	50-150
1,2,3,7,8-PeCDD	40321-76-4	0.00000108	mg/Kg	50-150
OCDF	39001-02-0	0.0000584	mg/Kg	50-150
2,3,4,6,7,8-HxCDF	60851-34-5	0.00000183	mg/Kg	50-150
2,3,4,7,8-PeCDF	57117-31-4	0.00000107	mg/Kg	50-150
2,3,7,8-TCDD	1746-01-6	0.00000105	mg/Kg	50-150
2,3,7,8-TCDF	51207-31-9	0.00000111	mg/Kg	50-150
Aroclor 1260	11096-82-5	0.108	mg/Kg	38-167
Aroclor 1260 [2C]	11096-82-5	0.108	mg/Kg	38-167
OCDD	3268-87-9	0.000811	mg/Kg	50-150
1,2,3,7,8,9-HxCDF	72918-21-9	0.000000511	mg/Kg	50-150

E000127
Puget Sound reference-SRM
Solvent / Lot: NA
Prep: 1/12/2016 by AV
Exp: 1/12/2017
Location:

Reviewed By Date

AXS8 : 00023

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: E000128 **Printed: 1/12/2016 11:48:37AM**

Description:	Puget Sound reference-SRM	Expires:	12-Jan-2017
Standard Type:	Reference Mate	Prepared:	12-Jan-2016
Solvent:	NA	Prepared By:	Amanda Volgardsen
Final Volume (mls):	30	Department:	QC
Vials:	1	Last Edit:	12-Jan-2016 11:48 by AV
Vendor:	QATS Lab	Lot #:	SR0431
Vendor Catalog #:			

Comments

PSRM0061 Jorgensen Forge for Cheronne

Analyte	CAS Number	Concentration	Units	SRM Control Limits
1,2,3,7,8-PeCDF	57117-41-6	0.00000123	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDF	67562-39-4	0.0000187	mg/Kg	50-150
1,2,3,4,7,8,9-HpCDF	58200-70-7	0.00000163	mg/Kg	50-150
1,2,3,4,7,8-HxCDD	39227-28-6	0.00000159	mg/Kg	50-150
1,2,3,4,7,8-HxCDF	70648-26-9	0.00000302	mg/Kg	50-150
1,2,3,6,7,8-HxCDD	57653-85-7	0.00000388	mg/Kg	50-150
1,2,3,6,7,8-HxCDF	57117-44-9	0.00000109	mg/Kg	50-150
1,2,3,7,8,9-HxCDD	19408-74-3	0.00000304	mg/Kg	50-150
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.0000906	mg/Kg	50-150
1,2,3,7,8-PeCDD	40321-76-4	0.00000108	mg/Kg	50-150
OCDF	39001-02-0	0.0000584	mg/Kg	50-150
2,3,4,6,7,8-HxCDF	60851-34-5	0.00000183	mg/Kg	50-150
2,3,4,7,8-PeCDF	57117-31-4	0.00000107	mg/Kg	50-150
2,3,7,8-TCDD	1746-01-6	0.00000105	mg/Kg	50-150
2,3,7,8-TCDF	51207-31-9	0.00000111	mg/Kg	50-150
Aroclor 1260	11096-82-5	0.108	mg/Kg	38-167
Aroclor 1260 [2C]	11096-82-5	0.108	mg/Kg	38-167
OCDD	3268-87-9	0.000811	mg/Kg	50-150
1,2,3,7,8,9-HxCDF	72918-21-9	0.000000511	mg/Kg	50-150

E000128
Puget Sound reference-SRM
Solvent / Lot: NA
Prep: 1/12/2016 by AV
Exp: 1/12/2017
Location:

Reviewed By Date

AXS8 : 00024

(C) *ANALYSIS REQUIREMENTS*

The SRM is to be analyzed as described in the project-specified methods employed for the analysis of CDD/CDF and/or CB Congener analytes using HRGC/HRMS instrumentation and/or Aroclors using GC/ECD instrumentation. These instructions are for advisory purposes only. If any apparent conflict exists between these instructions and the project-specified methods, or your contract, disregard these instructions.

(D) *SAMPLE ANALYSIS*

General Instructions

The SRM contains CDD/CDF, CB Congener, and Aroclor analytes which are known or suspected to have severe health effects. Employing appropriate safety precautions, this SRM is to be handled, prepared, and analyzed exactly as you would process samples received from a known or suspected hazardous waste site. The SRM should be handled only by trained and experienced analysts in facilities expressly designed to handle such materials. When calculating the concentrations of analytes, use 0% as the soil moisture content.

Allow the bottle(s) to reach ambient temperature before opening and removing gravimetric amounts for sample preparation. To begin the extraction and analysis procedure, break the seal and open the bottle carefully. Weigh out the appropriate aliquot for extraction and analysis as prescribed in the project-specified methods (typically 10 grams for HRGC/HRMS methods and 30 grams for GC/ECD methods), or in accordance with your contract.

Proceed immediately with the extraction and analysis as described in the project-specified methods or your contract.

(E) *REPORTING*

Report the results for the prepared SRM as received.

Report the analytical results for the SRM to EPA or other appropriate Agency, using the format and other instructions for submission of data packages as specified in your contract.

Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 13544

Order Number: CB012994

Date Shipped: 1/11/2016

AirBill No(s): 560847656443

From: QATS LABORATORY
2700 CHANDLER AVENUE, BLDG. C
LAS VEGAS, NV 89120
PHONE: 1-702-895-8712
FAX: 1-702-795-8210

To: CHERONNE OREIRO
ANALYTICAL RESOURCES
4611 S. 134TH PLACE, SUITE 100
TUKWILA WA 98168
206-695-6214

Sample ID	Qty	Description/Remarks	→ Catalogue Number
PSRM0059	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0060	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0061	1	PUGET SOUND SEDIMENT RM	PS-SRM

1/11/16

SITE NAME: JORGENSEN FORGE CORPORATION

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature)	Date/Time 1400 1/11/16	Received by: (Signature) Chris Arnell	Date/Time 1/12/16 1110
Custody Seal(s): Present/Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

Report No. 00, 9/11/2014

SMP Version 3.3

AXS8 : 00026

PCB Analysis
Report and Summary QC Forms

ARI Job ID: AXS8

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: JF-PDS-1-2-3ft-160210
SAMPLE

Lab Sample ID: AXS8A
LIMS ID: 16-4457
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: 02/10/16
Date Received: 02/12/16

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 18:07
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 15.4%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	1.5	3.9	< 3.9 U
53469-21-9	Aroclor 1242	1.5	3.9	< 3.9 U
12672-29-6	Aroclor 1248	1.5	3.9	< 3.9 U
11097-69-1	Aroclor 1254	1.5	3.9	< 3.9 U
11096-82-5	Aroclor 1260	0.58	3.9	< 3.9 U
11104-28-2	Aroclor 1221	1.5	3.9	< 3.9 U
11141-16-5	Aroclor 1232	1.5	3.9	< 3.9 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.2%
Tetrachlorometaxylene	78.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: JF-PDS-5-2-3ft-160211
SAMPLE

Lab Sample ID: AXS8B
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: 02/11/16
Date Received: 02/12/16

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 18:29
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 21.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	1.6	4.0	< 4.0 U
53469-21-9	Aroclor 1242	1.6	4.0	< 4.0 U
12672-29-6	Aroclor 1248	1.6	4.0	< 4.0 U
11097-69-1	Aroclor 1254	1.6	4.0	< 4.0 U
11096-82-5	Aroclor 1260	0.59	4.0	< 4.0 U
11104-28-2	Aroclor 1221	1.6	4.0	< 4.0 U
11141-16-5	Aroclor 1232	1.6	4.0	< 4.0 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	101%
Tetrachlorometaxylene	78.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: JF-PDS-7-2-3ft-160212
SAMPLE

Lab Sample ID: AXS8C
LIMS ID: 16-4459
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: 02/12/16
Date Received: 02/12/16

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 19:35
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 13.0 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 13.6%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	1.5	3.8	< 3.8 U
53469-21-9	Aroclor 1242	1.5	3.8	< 3.8 U
12672-29-6	**Aroclor 1248**	**1.5**	**3.8**	**26**
11097-69-1	**Aroclor 1254**	**1.5**	**3.8**	**8.8**
11096-82-5	Aroclor 1260	0.57	3.8	< 3.8 U
11104-28-2	Aroclor 1221	1.5	3.8	< 3.8 U
11141-16-5	Aroclor 1232	1.5	3.8	< 3.8 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	100%
Tetrachlorometaxylene	77.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: SRM PSR
STANDARD REFERENCE

Lab Sample ID: SRM PSR
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: NA
Date Received: NA

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 17:45
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.00 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 0.0%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	3.9	10	< 10 U
53469-21-9	Aroclor 1242	3.9	10	< 10 U
12672-29-6	Aroclor 1248	3.9	30	< 30 Y
11097-69-1	**Aroclor 1254**	**3.9**	**10**	**79**
11096-82-5	**Aroclor 1260**	**1.5**	**10**	**110**
11104-28-2	Aroclor 1221	3.9	10	< 10 U
11141-16-5	Aroclor 1232	3.9	10	< 10 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.2%
Tetrachlorometaxylene	57.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Sediment

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge
080224-01.02

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
JF-PDS-1-2-3ft-160210	95.2%	40-126	78.5%	44-120	0
MB-032316	104%	40-126	78.5%	44-120	0
LCS-032316	104%	40-126	79.0%	44-120	0
SRM PSR	94.2%	40-126	57.8%	44-120	0
JF-PDS-5-2-3ft-160211	101%	40-126	78.0%	44-120	0
JF-PDS-5-2-3ft-160211 MS	99.0%	40-126	87.2%	44-120	0
JF-PDS-5-2-3ft-160211 MSD	106%	40-126	92.5%	44-120	0
JF-PDS-7-2-3ft-160212	100%	40-126	77.2%	44-120	0

Microwave (MARS) Control Limits PCBSMM
Prep Method: SW3546
Log Number Range: 16-4457 to 16-4459

FORM-II SW8082

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: JF-PDS-5-2-3ft-160211
MS/MSD

Lab Sample ID: AXS8B
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: 02/11/16
Date Received: 02/12/16

Date Extracted MS/MSD: 03/23/16

Date Analyzed MS: 03/26/16 18:51
MSD: 03/26/16 19:13
Instrument/Analyst MS: ECD7/JGR
MSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 12.6 g-dry-wt
MSD: 12.6 g-dry-wt
Final Extract Volume MS: 2.5 mL
MSD: 2.5 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: Yes

Percent Moisture: 21.5%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 4.0 U	87.2	100	87.2%	100	100	100%	13.7%
Aroclor 1260	< 4.0 U	85.1	100	85.1%	87.8	100	87.8%	3.1%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: JF-PDS-5-2-3ft-160211
MATRIX SPIKE

Lab Sample ID: AXS8B
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: 02/11/16
Date Received: 02/12/16

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 18:51
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 21.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	1.6	4.0	---
53469-21-9	Aroclor 1242	1.6	4.0	< 4.0 U
12672-29-6	Aroclor 1248	1.6	4.0	< 4.0 U
11097-69-1	Aroclor 1254	1.6	4.0	< 4.0 U
11096-82-5	Aroclor 1260	0.59	4.0	---
11104-28-2	Aroclor 1221	1.6	4.0	< 4.0 U
11141-16-5	Aroclor 1232	1.6	4.0	< 4.0 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	99.0%
Tetrachlorometaxylene	87.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: JF-PDS-5-2-3ft-160211
MATRIX SPIKE DUP

Lab Sample ID: AXS8B
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: 02/11/16
Date Received: 02/12/16

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 19:13
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: 21.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	1.5	4.0	---
53469-21-9	Aroclor 1242	1.5	4.0	< 4.0 U
12672-29-6	Aroclor 1248	1.5	4.0	< 4.0 U
11097-69-1	Aroclor 1254	1.5	4.0	< 4.0 U
11096-82-5	Aroclor 1260	0.58	4.0	---
11104-28-2	Aroclor 1221	1.5	4.0	< 4.0 U
11141-16-5	Aroclor 1232	1.5	4.0	< 4.0 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	106%
Tetrachlorometaxylene	92.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: LCS-032316
LAB CONTROL

Lab Sample ID: LCS-032316
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: NA
Date Received: NA

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 17:23
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.5 g-dry-wt
Final Extract Volume: 2.50 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	89.0	101	88.1%
Aroclor 1260	94.0	101	93.1%

PCB Surrogate Recovery

Decachlorobiphenyl	104%
Tetrachlorometaxylene	79.0%

Results reported in µg/kg (ppb)

FORM III

PCB METHOD BLANK SUMMARY

BLANK NO.

AXS8MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA, LLC

ARI Job No.: AXS8

Project: OMMP ADDENDUM 2-JORG

Lab Sample ID: AXS8MBS1

Lab File ID: 03261615

Date Extracted: 03/23/16

Matrix: SOLID

Date Analyzed: 03/26/16

Instrument ID: ECD7

Time Analyzed: 1701

GC Columns: ZB5/ZB35

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

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AXS8LCSS1	AXS8LCSS1	03/26/16
02	PSR	AXS8SRM1	03/26/16
03	JF-PDS-1-2-3FT-1602	AXS8A	03/26/16
04	JF-PDS-5-2-3FT-1602	AXS8B	03/26/16
05	JF-PDS-5-2-3FT- MS	AXS8BMS	03/26/16
06	JF-PDS-5-2-3FT- MSD	AXS8BMSD	03/26/16
07	JF-PDS-7-2-3FT-1602	AXS8C	03/26/16

ALL RUNS ARE DUAL COLUMN

FORM IV PCB

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: MB-032316
METHOD BLANK

Lab Sample ID: MB-032316
LIMS ID: 16-4458
Matrix: Sediment
Data Release Authorized:
Reported: 03/29/16

QC Report No: AXS8-Anchor QEA, LLC
Project: OMMP Addendum 2-Jorgensen Forge 080224-01.02
Date Sampled: NA
Date Received: NA

Date Extracted: 03/23/16
Date Analyzed: 03/26/16 17:01
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 12.5 g
Final Extract Volume: 2.5 mL
Dilution Factor: 1.00
Silica Gel: Yes

Percent Moisture: NA

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	1.6	4.0	< 4.0 U
53469-21-9	Aroclor 1242	1.6	4.0	< 4.0 U
12672-29-6	Aroclor 1248	1.6	4.0	< 4.0 U
11097-69-1	Aroclor 1254	1.6	4.0	< 4.0 U
11096-82-5	Aroclor 1260	0.59	4.0	< 4.0 U
11104-28-2	Aroclor 1221	1.6	4.0	< 4.0 U
11141-16-5	Aroclor 1232	1.6	4.0	< 4.0 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	104%
Tetrachlorometaxylene	78.5%

FORM I

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 02/19/16

Aroclor-1016 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	7.94- 8.14	0.0109	0.0108	0.0106	0.0102	0.0097	0.0092	0.0102	6.5
2	8.45- 8.65	0.0324	0.0329	0.0322	0.0314	0.0304	0.0301	0.0316	3.6
3	8.76- 8.96	0.0090	0.0114	0.0113	0.0113	0.0109	0.0108	0.0108	8.3
4	9.57- 9.77	0.0119	0.0126	0.0125	0.0121	0.0117	0.0114	0.0120	4.0

AROCLOR AVERAGE %RSD = 5.6

Aroclor-1260 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	12.16-12.36	0.0215	0.0207	0.0200	0.0189	0.0179	0.0176	0.0194	7.8
2	12.84-13.04	0.0754	0.0890	0.0686	0.0694	0.0689	0.0723	0.0739	10.6
3	13.23-13.43	0.0311	0.0318	0.0316	0.0320	0.0316	0.0325	0.0318	1.5
4	13.33-13.53	0.0197	0.0200	0.0199	0.0199	0.0194	0.0196	0.0197	1.2
5	13.74-13.94	0.0113	0.0118	0.0115	0.0116	0.0114	0.0116	0.0115	1.5

AROCLOR AVERAGE %RSD = 4.5

FORM VI PCB-1

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 02/19/16

Aroclor-1016 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	8.53- 8.73	0.0444	0.0433	0.0415	0.0398	0.0364	0.0337	0.0399	10.3
2	9.25- 9.45	0.0868	0.0849	0.0852	0.0833	0.0781	0.0742	0.0821	6.0
3	9.49- 9.69	0.0336	0.0330	0.0342	0.0341	0.0317	0.0300	0.0328	4.9
4	10.43-10.63	0.0159	0.0157	0.0156	0.0154	0.0146	0.0141	0.0152	4.7

AROCLOR AVERAGE %RSD = 6.5

Aroclor-1260 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	12.72-12.92	0.0828	0.0772	0.0755	0.0736	0.0681	0.0654	0.0738	8.5
2	13.48-13.68	0.1478	0.1501	0.1465	0.1449	0.1366	0.1324	0.1431	4.9
3	13.98-14.18	0.1012	0.1011	0.0964	0.0934	0.0890	0.0858	0.0945	6.7
4	14.53-14.73	0.0395	0.0369	0.0371	0.0359	0.0345	0.0335	0.0362	5.8

AROCLOR AVERAGE %RSD = 6.5

FORM VI PCB-1

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB5

Instrument ID: ECD7

Calibration Date: 02/19/16

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	4.714	4.61- 4.81	0.00253
2	6.690	6.59- 6.79	0.00407
3	6.815	6.72- 6.92	0.01215

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	4.715	4.61- 4.81	0.00144
2	6.690	6.59- 6.79	0.00273
3	6.815	6.71- 6.91	0.00806
4	8.554	8.45- 8.65	0.01317

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.556	8.46- 8.66	0.02459
2	8.864	8.76- 8.96	0.00903
3	9.671	9.57- 9.77	0.01142
4	10.072	9.97-10.17	0.00825

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	8.552	8.45- 8.65	0.01443
2	9.477	9.38- 9.58	0.01074
3	9.670	9.57- 9.77	0.01613
4	10.072	9.97-10.17	0.01341

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 02/19/16

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.464	10.36-10.56	0.01771
2	10.545	10.45-10.65	0.00590
3	10.850	10.75-10.95	0.01448
4	10.990	10.89-11.09	0.02841
5	11.345	11.25-11.45	0.02782

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.260	12.16-12.36	0.02589
2	12.940	12.84-13.04	0.07590
3	13.330	13.23-13.43	0.02405
4	13.430	13.33-13.53	0.03625
5	14.055	13.96-14.16	0.04072

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.431	13.33-13.53	0.10548
2	13.495	13.39-13.59	0.13079
3	13.827	13.73-13.93	0.11835
4	14.446	14.35-14.55	0.42847

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 02/19/16

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.585	5.49- 5.69	0.00745
2	7.623	7.52- 7.72	0.00694
3	7.763	7.66- 7.86	0.02196
4	8.643	8.54- 8.74	0.00728

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.586	5.49- 5.69	0.00449
2	7.623	7.52- 7.72	0.00423
3	7.852	7.75- 7.95	0.00239
4	8.628	8.53- 8.73	0.01855

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.628	8.53- 8.73	0.03098
2	9.354	9.25- 9.45	0.06413
3	9.781	9.68- 9.88	0.01656
4	10.879	10.78-10.98	0.02230

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.347	9.25- 9.45	0.03827
2	9.882	9.78- 9.98	0.02820
3	10.798	10.70-10.90	0.04309
4	11.243	11.14-11.34	0.04304

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 02/19/16

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	11.112	11.01-11.21	0.04022
2	11.211	11.11-11.31	0.01884
3	11.654	11.55-11.75	0.03019
4	11.807	11.71-11.91	0.06887
5	12.817	12.72-12.92	0.05075

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.905	12.80-13.00	0.08135
2	13.349	13.25-13.45	0.07518
3	13.581	13.48-13.68	0.15342
4	14.075	13.98-14.18	0.09981
5	14.625	14.53-14.73	0.05116

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	14.021	13.92-14.12	0.15952
2	14.076	13.98-14.18	0.14915
3	14.388	14.29-14.49	0.12004
4	14.973	14.87-15.07	0.34255

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1248

Time Analyzed :1617

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	8.56	8.46	8.66	276.4	250.0	10.6
Aroclor-1248-2	9.48	9.38	9.58	284.1	250.0	13.6
Aroclor-1248-3	9.67	9.57	9.77	284.1	250.0	13.6
Aroclor-1248-4	10.07	9.97	10.17	273.7	250.0	9.5

AROCLOR AVG: 279.6 CAL %D = 11.8

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1248

Time Analyzed :1617

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248 [2C]-1	9.35	9.25	9.45	240.7	250.0	-3.7
Aroclor-1248 [2C]-2	9.88	9.78	9.98	255.4	250.0	2.2
Aroclor-1248 [2C]-3	10.80	10.70	10.90	215.7	250.0	-13.7
Aroclor-1248 [2C]-4	11.24	11.14	11.34	240.4	250.0	-3.8

AROCLOR AVG: 238.1 CAL %D = -4.8

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1660 Time Analyzed :1639

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.05	7.95	8.15	262.6	250.0	5.0
Aroclor-1016-2	8.56	8.46	8.66	259.8	250.0	3.9
Aroclor-1016-3	8.87	8.77	8.97	275.6	250.0	10.2
Aroclor-1016-4	9.67	9.57	9.77	264.9	250.0	6.0

AROCLOR AVG: 265.7 CAL %D = 6.3

Date Analyzed :03/26/16

Lab Standard ID: AR1660 Time Analyzed :1639

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D	
Aroclor-1260-1	12.26	12.16	12.36	331.9	250.0	32.8	<-
Aroclor-1260-2	12.94	12.84	13.04	299.3	250.0	19.7	
Aroclor-1260-3	13.33	13.23	13.43	318.2	250.0	27.3	<-
Aroclor-1260-4	13.43	13.33	13.53	314.7	250.0	25.9	<-
Aroclor-1260-5	13.84	13.74	13.94	300.7	250.0	20.3	

AROCLOR AVG: 312.9 CAL %D = 25.2

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC
Client: ANCHOR QEA

ARI Job No.: AXS8
Project: OMMP ADDENDUM

GC Column: ZB35
Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1660
Time Analyzed :1639

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016 [2C]-1	8.63	8.53	8.73	261.8	250.0	4.7
Aroclor-1016 [2C]-2	9.36	9.26	9.46	245.3	250.0	-1.9
Aroclor-1016 [2C]-3	9.59	9.49	9.69	273.0	250.0	9.2
Aroclor-1016 [2C]-4	10.53	10.43	10.63	263.0	250.0	5.2

AROCLOR AVG: 260.8 CAL %D = 4.3

Date Analyzed :03/26/16

Lab Standard ID: AR1660
Time Analyzed :1639

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260 [2C]-1	12.81	12.71	12.91	214.1	250.0	-14.4
Aroclor-1260 [2C]-2	13.58	13.48	13.68	229.4	250.0	-8.2
Aroclor-1260 [2C]-3	14.07	13.97	14.17	232.6	250.0	-7.0
Aroclor-1260 [2C]-4	14.62	14.52	14.72	246.0	250.0	-1.6

AROCLOR AVG: 230.5 CAL %D = -7.8

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC
Client: ANCHOR QEA

ARI Job No.: AXS8
Project: OMMP ADDENDUM

GC Column: ZB5
Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1242C
Time Analyzed :1957

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.56	8.46	8.66	269.9	250.0	8.0
Aroclor-1242-2	8.87	8.77	8.97	269.8	250.0	7.9
Aroclor-1242-3	9.67	9.57	9.77	284.2	250.0	13.7
Aroclor-1242-4	10.07	9.97	10.17	295.4	250.0	18.2

AROCLOR AVG: 279.8 CAL %D = 11.9

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: ANCHOR QEA

ARI Job No.: AXS8

Project: OMMP ADDENDUM

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1242C

Time Analyzed :1957

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242 [2C]-1	8.63	8.53	8.73	271.1	250.0	8.4
Aroclor-1242 [2C]-2	9.36	9.26	9.46	250.9	250.0	0.4
Aroclor-1242 [2C]-3	9.78	9.68	9.88	272.4	250.0	8.9
Aroclor-1242 [2C]-4	10.88	10.78	10.98	217.7	250.0	-12.9

AROCLOR AVG: 253.0 CAL %D = 1.2

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1660C Time Analyzed :2019

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.05	7.95	8.15	264.2	250.0	5.7
Aroclor-1016-2	8.56	8.46	8.66	260.4	250.0	4.2
Aroclor-1016-3	8.87	8.77	8.97	278.6	250.0	11.4
Aroclor-1016-4	9.67	9.57	9.77	271.0	250.0	8.4

AROCLOR AVG: 268.5 CAL %D = 7.4

Date Analyzed :03/26/16

Lab Standard ID: AR1660C Time Analyzed :2019

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.26	12.16	12.36	300.6	250.0	20.2
Aroclor-1260-2	12.94	12.84	13.04	276.0	250.0	10.4
Aroclor-1260-3	13.33	13.23	13.43	297.8	250.0	19.1
Aroclor-1260-4	13.43	13.33	13.53	295.8	250.0	18.3
Aroclor-1260-5	13.84	13.74	13.94	287.5	250.0	15.0

AROCLOR AVG: 291.6 CAL %D = 16.6

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 02/19/16

Date Analyzed :03/26/16

Lab Standard ID: AR1660C Time Analyzed :2019

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016 [2C]-1	8.63	8.53	8.73	260.5	250.0	4.2
Aroclor-1016 [2C]-2	9.36	9.26	9.46	243.4	250.0	-2.6
Aroclor-1016 [2C]-3	9.59	9.49	9.69	274.6	250.0	9.8
Aroclor-1016 [2C]-4	10.53	10.43	10.63	271.3	250.0	8.5

AROCLOR AVG: 262.5 CAL %D = 5.0

Date Analyzed :03/26/16

Lab Standard ID: AR1660C Time Analyzed :2019

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260 [2C]-1	12.82	12.71	12.91	197.7	250.0	-20.9
Aroclor-1260 [2C]-2	13.58	13.48	13.68	213.8	250.0	-14.5
Aroclor-1260 [2C]-3	14.07	13.97	14.17	226.7	250.0	-9.3
Aroclor-1260 [2C]-4	14.62	14.52	14.72	254.5	250.0	1.8

AROCLOR AVG: 223.2 CAL %D = -10.7

FORM VII PCB

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 02/19/16

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	IS1 AREA	RT	IS2 AREA	RT
ICAL MIDPT	10288295	3.051	12470452	15.000
UPPER LIMIT	20576590	3.151	24940904	15.100
LOWER LIMIT	5144148	2.951	6235226	14.900

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	02/19/16	1636	10661131	3.053	12970613	15.000
02		0.25PPMAR166	02/19/16	1658	10288295	3.051	12470452	15.000
03		0.02PPMAR166	02/19/16	1720	10285465	3.053	12728591	15.000
04		0.05PPMAR166	02/19/16	1742	10300735	3.052	12566786	15.000
05		1PPMAR1660	02/19/16	1804	10289010	3.051	12487766	15.000
06		0.1PPMAR1660	02/19/16	1826	10414273	3.050	12696349	15.000
07		0.5PPMAR1660	02/19/16	1848	10603199	3.051	12934017	15.000
08		AR1242	02/19/16	1909	10337924	3.050	12790976	14.999
09		AR1248	02/19/16	1931	10440311	3.049	12823180	15.000
10		AR1254	02/19/16	1953	10412067	3.050	12687497	15.000
11		AR2162	02/19/16	2015	10564168	3.047	12962486	15.000
12		AR3268	02/19/16	2037	10714563	3.048	12920228	15.000
13	ZZZZZ	ZZZZZ	02/19/16	2059	10549054	3.050	13095374	15.000
14	ZZZZZ	ZZZZZ	02/19/16	2121	10275020	3.048	12703587	15.000
15	ZZZZZ	ZZZZZ	02/19/16	2143	10543721	3.049	12966998	15.000
16	ZZZZZ	ZZZZZ	02/19/16	2205	10636230	3.049	13075443	14.999
17	ZZZZZ	ZZZZZ	02/19/16	2227	10606807	3.049	13078185	14.999
18	ZZZZZ	ZZZZZ	02/19/16	2248	10344269	3.047	12738843	15.000
19		DDT	02/19/16	2310	10877871	3.048		
20	ZZZZZ	ZZZZZ	02/19/16	2332	10348457	3.048		
21		AR1248	03/26/16	1617	9274209	3.050	8289011	14.998
22		AR1660	03/26/16	1639	11372263	3.050	11092942	14.998
23	AXS8MBS1	AXS8MBS1	03/26/16	1701	10673931	3.050	11241908	14.999
24	AXS8LCSS1	AXS8LCSS1	03/26/16	1723	10799577	3.051	11843586	14.998
25	PSR	AXS8SRM1	03/26/16	1745	10661708	3.050	10495240	14.998
26	JF-PDS-1-2-3	AXS8A	03/26/16	1807	10930646	3.052	11799707	14.998
27	JF-PDS-5-2-3	AXS8B	03/26/16	1829	11074201	3.050	10935051	14.998
28	JF-PDS-5-2-3	AXS8BMS	03/26/16	1851	11437365	3.051	11675820	14.998
29	JF-PDS-5-2-3	AXS8BMSD	03/26/16	1913	10905791	3.051	10966646	14.998
30	JF-PDS-7-2-3	AXS8C	03/26/16	1935	10664010	3.051	12243877	14.998
31		AR1242C	03/26/16	1957	9609209	3.051	10624712	14.998
32		AR1660C	03/26/16	2019	11845485	3.051	12895387	14.998

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min
IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: ANCHOR QEA

ARI Job No.: AXS8 Project: OMMP ADDENDUM

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 02/19/16

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

	IS1 AREA	RT	IS2 AREA	RT
ICAL MIDPT	15804744	4.218	11807823	15.850
UPPER LIMIT	31609488	4.318	23615646	15.950
LOWER LIMIT	7902372	4.118	5903912	15.750

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	02/19/16	1636	16365254	4.220	12236117	15.850
02		0.25PPMAR166	02/19/16	1658	15804744	4.218	11807823	15.850
03		0.02PPMAR166	02/19/16	1720	15956467	4.221	12010990	15.850
04		0.05PPMAR166	02/19/16	1742	15794112	4.220	11898490	15.850
05		1PPMAR1660	02/19/16	1804	15681274	4.217	12053412	15.850
06		0.1PPMAR1660	02/19/16	1826	15861283	4.218	12076541	15.849
07		0.5PPMAR1660	02/19/16	1848	16055838	4.218	12279136	15.850
08		AR1242	02/19/16	1909	15715878	4.216	12072326	15.850
09		AR1248	02/19/16	1931	15779494	4.216	12170945	15.850
10		AR1254	02/19/16	1953	15601559	4.216	12105453	15.850
11		AR2162	02/19/16	2015	15598166	4.214	12406205	15.850
12		AR3268	02/19/16	2037	15611734	4.215	12383383	15.849
13	ZZZZZ	ZZZZZ	02/19/16	2059	15836921	4.216	12530415	15.850
14	ZZZZZ	ZZZZZ	02/19/16	2121	15382250	4.215	12283948	15.850
15	ZZZZZ	ZZZZZ	02/19/16	2143	15624847	4.216	12579889	15.850
16	ZZZZZ	ZZZZZ	02/19/16	2205	15787121	4.215	12674307	15.850
17	ZZZZZ	ZZZZZ	02/19/16	2227	15534505	4.216	12718711	15.850
18	ZZZZZ	ZZZZZ	02/19/16	2248	15382140	4.214	12461313	15.850
19		DDT	02/19/16	2310				
20	ZZZZZ	ZZZZZ	02/19/16	2332				
21		AR1248	03/26/16	1617	13204587	4.218	9106898	15.849
22		AR1660	03/26/16	1639	16184257	4.218	11645595	15.849
23	AXS8MBS1	AXS8MBS1	03/26/16	1701	15414823	4.218	10941043	15.849
24	AXS8LCSS1	AXS8LCSS1	03/26/16	1723	15687044	4.219	11193184	15.849
25	PSR	AXS8SRM1	03/26/16	1745	15271769	4.217	11366465	15.848
26	JF-PDS-1-2-3	AXS8A	03/26/16	1807	15380867	4.219	12123900	15.849
27	JF-PDS-5-2-3	AXS8B	03/26/16	1829	15058053	4.218	11574028	15.848
28	JF-PDS-5-2-3	AXS8BMS	03/26/16	1851	15477185	4.218	11780098	15.849
29	JF-PDS-5-2-3	AXS8BMSD	03/26/16	1913	14908595	4.218	11619654	15.848
30	JF-PDS-7-2-3	AXS8C	03/26/16	1935	15437266	4.218	12291386	15.849
31		AR1242C	03/26/16	1957	14134010	4.218	11360318	15.849
32		AR1660C	03/26/16	2019	17039158	4.219	13608161	15.850

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min
IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: AXS8

SAMPLE RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: ✓
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: 02/10/16
Date Received: 02/12/16

Client ID: JF-PDS-1-2-3ft-160210
ARI ID: 16-4457 AXS8A

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/18/16 031816#1	SM2540G	Percent	0.01	83.10
Total Organic Carbon	03/22/16 032216#1	Plumb,1981	Percent	0.020	0.062

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: JF-PDS-5-2-3ft-160211
ARI ID: 16-4458 AXS8B

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/18/16 031816#1	SM2540G	Percent	0.01	79.61
Total Organic Carbon	03/22/16 032216#1	Plumb,1981	Percent	0.020	0.051

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: ✓
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: 02/12/16
Date Received: 02/12/16

Client ID: JF-PDS-7-2-3ft-160212
ARI ID: 16-4459 AXS8C

Analyte	Date	Method	Units	RL	Sample
Total Solids	03/18/16 031816#1	SM2540G	Percent	0.01	85.00
Total Organic Carbon	03/22/16 032216#1	Plumb,1981	Percent	0.020	0.034

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: ✓
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fc
Event: 080224-01.02
Date Sampled: 02/10/16
Date Received: 02/12/16

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AXS8A Client ID: JF-PDS-1-2-3ft-160210						
Total Organic Carbon	03/22/16	Percent	0.062	2.71	2.82	93.9%

REPLICATE RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: W
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: 02/10/16
Date Received: 02/12/16

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AXS8A Client ID: JF-PDS-1-2-3ft-160210					
Total Solids	03/18/16	Percent	83.10	83.91 83.88	0.5%
Total Organic Carbon	03/22/16	Percent	0.062	0.083 0.085	16.6%

LAB CONTROL RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: ✓
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon Plumb,1981	ICVL	03/22/16	Percent	0.106	0.100	106.0%

METHOD BLANK RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: W
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	03/18/16	Percent	< 0.01 U	ICB
Total Organic Carbon	03/22/16	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
AXS8-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized: ✓
Reported: 03/23/16

Project: OMMP Addendum 2-Jorgensen Fo
Event: 080224-01.02
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	03/22/16	Percent	2.80	2.99	93.6%

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: AXS8

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: OMMP Addendum 2-Jorgensen Forge
Project #: AXS8
Client : Analytical Resources, Inc.
Source: Multiple
MTC Sample#: T16-0435 - T16-0437

Date Received: March 18, 2016
Sampled By: Others
Date Tested: March 28, 2016
Tested By: A. Urban, K. O' Connell

CASE NARRATIVE

1. Three samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. Two samples did not contain the required amount of fines (5-25 grams). A sample could not be resplit to meet the required amount of fines and stay within the capacity of the balance. The samples have been qualified on the QA summary.
4. During the sieving step, two samples were combined into one stack of sieves. The sample was resplit and due to limited sample volume, a new triplicate was chosen. The original bench sheets are included in the raw data.
5. The data is provided in summary tables and plots.
6. There were no other noted anomalies in this project.

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: _____

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Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: OMMP Addendum 2-Jorgensen Forge
Project #: AXS8
Date Received: March 18, 2016
Date Tested: March 28, 2016

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: A. Urban, K. O' Connell

Apparent Grain Size Distribution Summary

Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.0	15.6	7.8	3.9	2.0	1.0
JF-PDS-5-2-3ft-160211	100.0	100.0	100.0	99.4	86.6	15.0	2.2	1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
	100.0	100.0	99.9	99.4	86.2	14.0	1.7	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	100.0	100.0	100.0	99.4	86.4	14.9	2.4	1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
JF-PDS-1-2-3ft-160210	100.0	96.9	93.8	88.3	71.1	48.0	4.8	2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
JF-PDS-7-2-3ft-160212	100.0	98.5	95.6	86.5	45.2	10.9	5.1	4.0	3.0	2.6	2.1	1.6	1.2	0.8

Notes to the Testing: Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

Reviewed by:

AXS8 : 00096

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Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: OMMP Addendum 2-Jorgensen Forge
Project #: AXS8
Date Received: March 18, 2016
Date Tested: March 28, 2016

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: A. Urban, K. O' Connell

Apparent Grain Size Distribution Summary

Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10-18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
JF-PDS-5-2-3ft-160211	0.0	0.5	12.9	71.6	12.7	0.7	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	1.5
	0.1	0.5	13.2	72.2	12.3	0.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0
	0.0	0.6	13.0	71.4	12.5	0.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	1.7
JF-PDS-1-2-3ft-160210	6.2	5.5	17.2	23.0	43.2	2.6	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	2.2
JF-PDS-7-2-3ft-160212	4.4	9.1	41.2	34.4	5.7	1.2	1.0	0.4	0.5	0.6	0.4	0.3	0.8	4.0

Notes to the Testing: Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

Reviewed by:

AXS8 : 99997

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
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Visit our website: www.mtc-inc.net

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: OMMP Addendum 2-Jorgensen Forge
Project #: AXS8
Date Received: March 18, 2016
Date Tested: March 28, 2016

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: A. Urban, K. O' Connell

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
JF-PDS-5-2-3ft-160211	100.0	100.0	100.0	99.4	86.6	15.0	2.2	1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
	100.0	100.0	99.9	99.4	86.2	14.0	1.7	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	100.0	100.0	100.0	99.4	86.4	14.9	2.4	1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
AVE	100.0	100.0	100.0	99.4	86.4	14.6	2.1	1.4	NA	NA	NA	NA	NA	NA
STDEV	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	NA	NA	NA	NA	NA	NA
%RSD	0.0	0.0	0.0	0.0	0.2	3.0	14.8	21.2	NA	NA	NA	NA	NA	NA

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
JF-PDS-5-2-3ft-160211	2/11/2016	3/21/2016	3/28/2016	99.9	SS	1.8
	2/11/2016	3/21/2016	3/28/2016	99.6	SS	1.2
	2/11/2016	3/21/2016	3/28/2016	100.3	SS	2.0
JF-PDS-1-2-3ft-160210	2/10/2016	3/18/2016	3/28/2016	100.0	SS	2.7
JF-PDS-7-2-3ft-160212	2/12/2016	3/18/2016	3/28/2016	100.6		5.0

* MTC Internal QA limits = 95-105%

Notes to the Testing: Organic matter was not removed prior to testing, thus the reported values are the "apparent" grain size distribution. See narrative for discussion of the testing.

Reviewed by: _____

AXS8 : 99998

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project:	OMMP Addendum 2-Jorgensen Forge	**Date Received:**	March 18, 2016
Project #:	AXS8	**Sampled By:**	Others
Client :	Analytical Resources, Inc.	**Date Tested:**	March 28, 2016
Source:	Multiple	**Tested By:**	A. Urban, K. O' Connell
MTC Sample#:	T16-0435 - T16-0437		

Data Qualifiers

PSEP Grain Size Analysis

SM - The 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 - The sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis.

W - The weight of the sample in some pipette aliquots was below the level required for accurate weighing.

F - The samples were frozen prior to particle size determination.

LV - Due to low sample volume provided, the samples could not be rerun to meet QA requirements.

Reviewed by: _____

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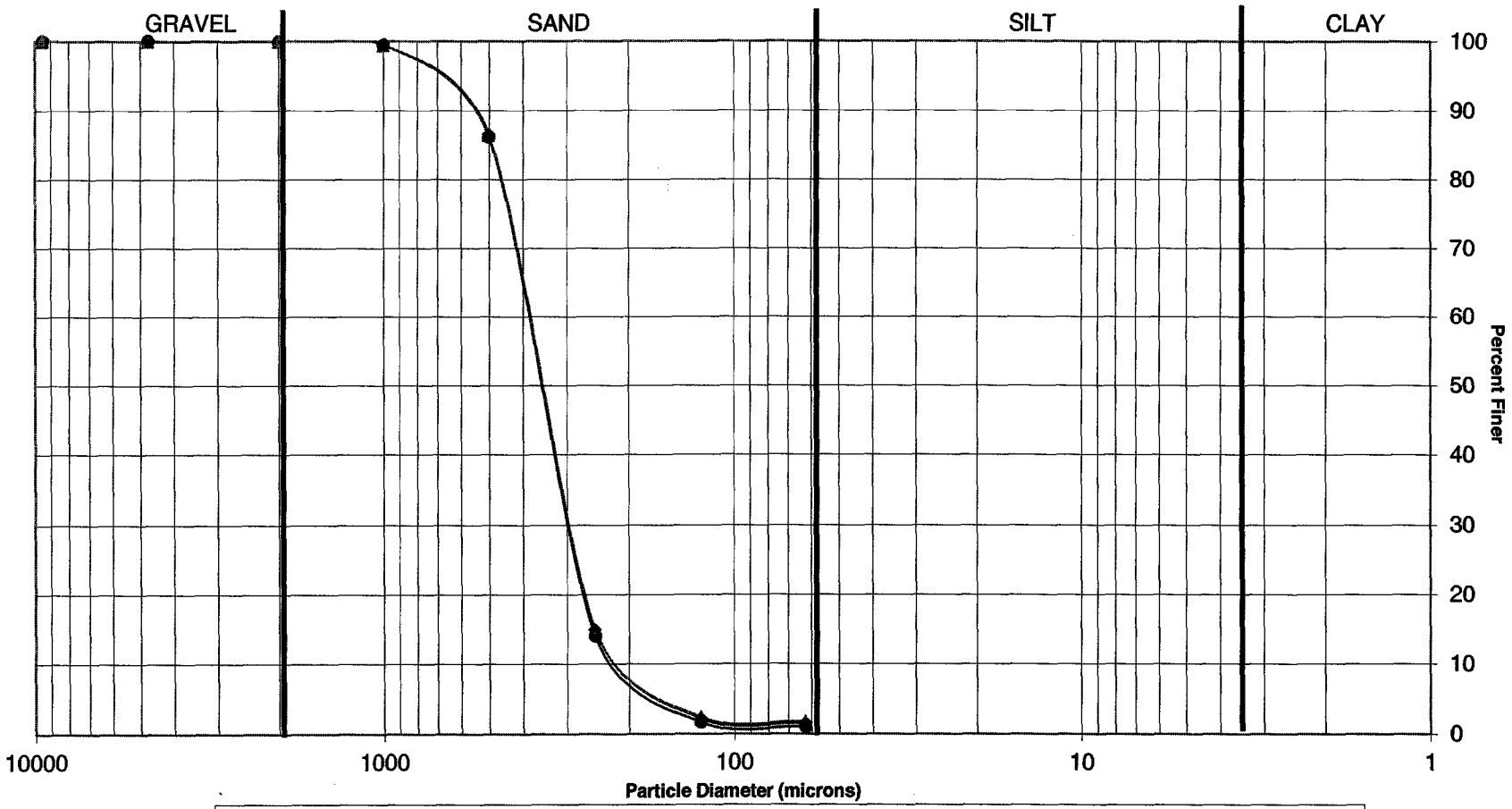
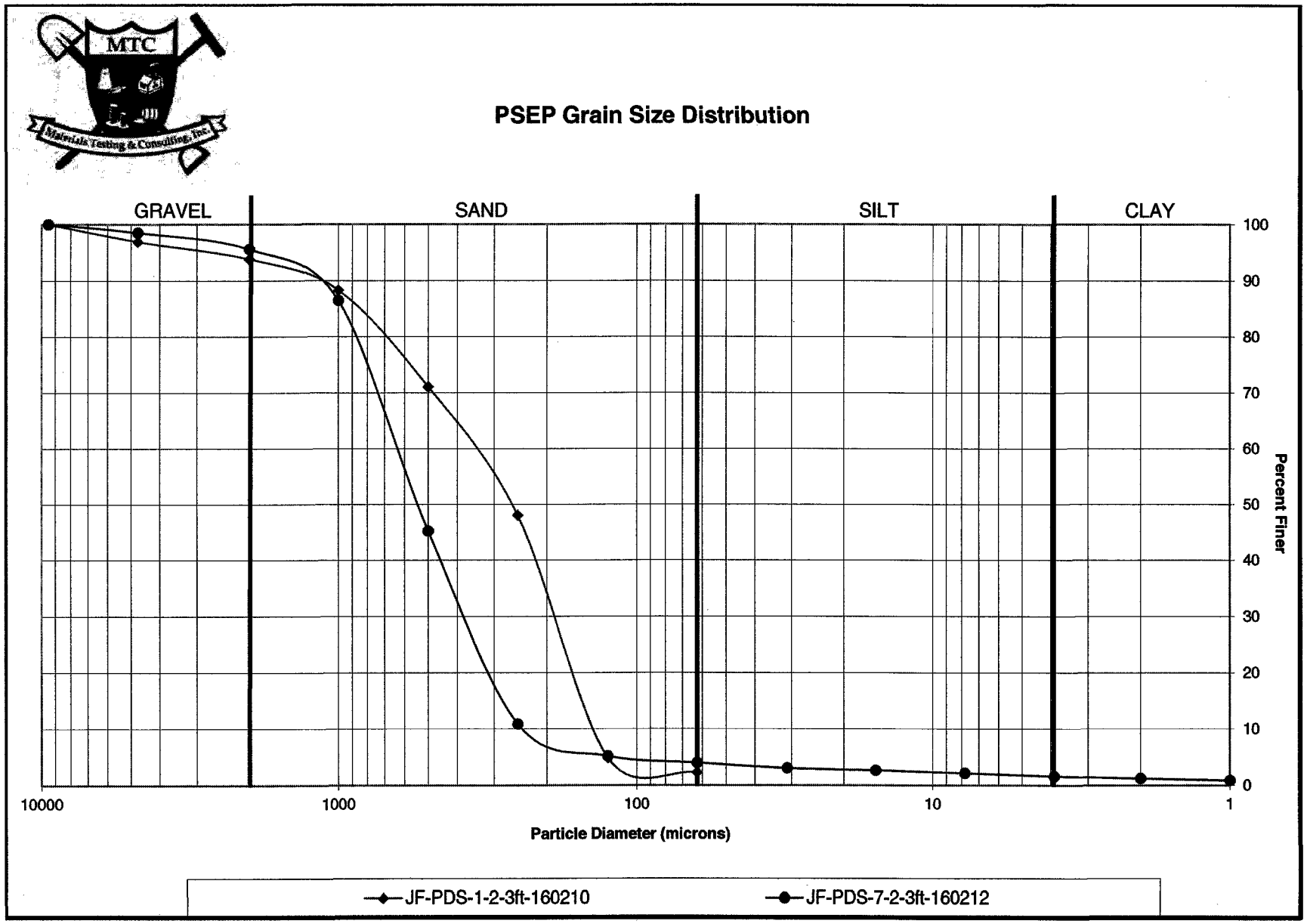
PSEP Grain Size Distribution

Triplicate Sample Plot



AXS8 : 00070


MTC
Materials Testing & Consulting, Inc.
PSEP Grain Size Distribution
GRAVEL
SAND
SILT
CLAY
100
90
80
70
60
50
40
30
20
10
0
Percent Finer
10000
1000
100
10
1
Particle Diameter (microns)
JF-PDS-1-2-3ft-160210
JF-PDS-7-2-3ft-160212

AXS8 : 00071

Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15T001-120 MTC Sample ID: 1160436-1 Client Sample No.: JF-PDS-5-2-3ft-160211

Set Up Date: 3/21/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KD
Container No.	175
Tare Weight	1.5268
Wet Weight + Tare	53.2495
Dry Weight + Tare	41.8736

Test Sample	Initials: KD
Container No.	175
Tare Weight	51.6562
Wet Weight + Tare	200.1503
Dry Weight + Tare	165.8~~360~~51 KD

Calgon Batch #: 322

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 1 Initials: KD

Sieve Size	Weight Retained
Tare	51.6594
4	51.6594
10	51.6973
18	52.3272
35	67.2262
60	150.1720
120	164.9069
230	165.7046
PAN	0.1055

1.89

PIPETTE ANALYSIS

3/22/2016

Temp:22

Initials: QW

TIME	Tare ID	Tare Wt	Dry Wt & Tare
8:00:00	43~~5~~-1	1.5318	1.5805
8:00:20			
8:01:49			
8:07:15			
8:28:59			
9:56:00			
13:34:00			
7:08:00			

SALT CORRECTION

Date: _____ Initials: ____

Tare Weight	
Dry Weight + Tare	

1115F A
PSEP Particle Size Distribution

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9/21/13

* Sample Consumed 3/21/16 KD

Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15T001-120 MTC Sample ID: 1160436-2 Client Sample No.: JF-PDS-S-2-3PL-160211

Set Up Date: 3/21/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	198
Tare Weight	~~50.5888~~ 1.5274 KO
Wet Weight + Tare	45.7805
Dry Weight + Tare	36.1372

Test Sample	Initials: KO
Container No.	198
Tare Weight	~~1.5274~~ 50.5888 KO
Wet Weight + Tare	200.4322
Dry Weight + Tare	166.5018

Calgon Batch #: 322

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 2 Initials: KO

Sieve Size	Weight Retained
Tare	50.5900
4	50.5900
10	50.6540
18	51.2726
35	66.7941
60	151.3654
120	165.8140
230	166.5828
PAN	0.1203

3/22/2016

Temp:22

PIPETTE ANALYSIS

Initials: DU

TIME	Tare ID	Tare Wt	Dry Wt & Tare
8:03:00			
8:03:20	436-2	1.5321	1.57520 @
8:04:49			
8:10:15			
8:31:59			
9:59:00			
13:37:00			
7:11:00			

SALT CORRECTION

1.2g

Date: _____ Initials: ____

Tare Weight	
Dry Weight + Tare	

1115F A
PSEP Particle Size Distribution

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9/21/13

Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15T001-120 MTC Sample ID: T160436-3 Client Sample No.: SF-PDS-5-2-3ft-1[redacted]211

Set Up Date: 3/21/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	227
Tare Weight	1.5355
Wet Weight + Tare	48.4442
Dry Weight + Tare	38.3030

Test Sample	Initials: KO
Container No.	227
Tare Weight	50.4161
Wet Weight + Tare	200.2813
Dry Weight + Tare	165.8307

Calgon Batch #: 323

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 1 Initials: KO

Sieve Size	Weight Retained
Tare	50.4208
4	50.4208
10	50.4542
18	51.1018
35	66.4120
60	150.3321
120	165.0516
230	165.8364
PAN	0.0875

2.0g

PIPETTE ANALYSIS

3/22/2016

Temp:22

Initials: QU

TIME	Tare ID	Tare Wt	Dry Wt & Tare
8:06:00	436-3	1.5428	1.5881
8:06:20			
8:07:49			
8:13:15			
8:34:59			
10:02:00			
13:40:00			
7:14:00			

SALT CORRECTION

Date: _____ Initials: ____

Tare Weight	
Dry Weight + Tare	

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PSEP Particle Size Distribution

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Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15D001-120 MTC Sample ID: 16-0435-3 KO Client Sample No.: JF-PDS-1-2-3ft-160210

Set Up Date: 3/18/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	108
Tare Weight	1.5362
Wet Weight + Tare	61.4581
Dry Weight + Tare	50.7185

Test Sample	Initials: KO
Container No.	108
Tare Weight	50.5977
Wet Weight + Tare	201.5175
Dry Weight + Tare	172.1822

Calgon Batch #: 322

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 2 Initials: KO

Sieve Size	Weight Retained
Tare	50.6055
4	54.4541
10	58.2677
18	65.0895
35	86.4520
60	114.9773
120	168.5215
230	171.7201
PAN	0.4104

2.79

3/22/2016

Temp:22

PIPETTE ANALYSIS

Initials: AM

TIME	Tare ID	Tare Wt	Dry Wt & Tare
8:09:00	435	1.5289	1.5949
8:09:20			
8:10:49			
8:16:15			
8:37:59			
10:05:00			
13:43:00			
7:17:00			

SALT CORRECTION

Date: _____ Initials: ____

Tare Weight	
Dry Weight + Tare	

1115F A
PSEP Particle Size Distribution

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Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 151001-120 MTC Sample ID: T16-0437 Client Sample No.: JF-PDS-7-2-3ft-160212

Set Up Date: 3/18/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	120
Tare Weight	1.5285
Wet Weight + Tare	84.6468
Dry Weight + Tare	71.1846

Test Sample	Initials: KO
Container No.	120
Tare Weight	50.4100
Wet Weight + Tare	202.476323 KO
Dry Weight + Tare	173.1102

Calgon Batch #: 322

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 2 Initials: KO

Sieve Size	Weight Retained
Tare	50.4210
4	52.3207
10	56.0806
18	67.67692 KO
35	120.2013
60	163.9783
120	171.2501
230	172.7630
PAN	0.5221

3/22/2016

Temp:22

PIPETTE ANALYSIS

Initials: AU

TIME	Tare ID	Tare Wt	Dry Wt & Tare
8:12:00			
8:12:20	437-1	1.5416	1.6372
8:13:49	437-2	1.5429	1.6290
8:19:15	437-3	1.5351	1.6118
8:40:59	437-4	1.5412	1.6051
10:08:00	437-5	1.5425	1.5923
13:46:00	437-6	1.5446	1.5844
7:20:00	437-7	1.5425	1.5739

SALT CORRECTION

Date: _____ Initials: ____

Tare Weight	
Dry Weight + Tare	

* Re-doing Triplicate *

Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15T001-120 MTC Sample ID: 0436 Client Sample No.: JF-PDS-5-2-3E-160211

Set Up Date: 3/18/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	114
Tare Weight	1.5335
Wet Weight + Tare	73.7502
Dry Weight + Tare	57.9364

Test Sample	Initials: KO
Container No.	114
Tare Weight	49.7981
Wet Weight + Tare	199.8609
Dry Weight + Tare	164.9206

Calgon Batch #: _____

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 1 Initials: KO

Sieve Size	Weight Retained
Tare	49.8036
4	49.8036
10	50.0102
18	50.6987
35	65.7524
60	150.1892
120	163.9534
230	164.7390
PAN	0.1084

2.3g

PIPETTE ANALYSIS

Initials: ____

	Tare ID	Tare Wt	Dry Wt & Tare

SALT CORRECTION

Date: _____ Initials: ____

Tare Weight	
Dry Weight + Tare	

1115F A
PSEP Particle Size Distribution

Rev. 001
9/21/13

* Re-done Triplicate *

Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15T001-129 MTC Sample ID: 16-0135-1 Client Sample No.: JF-PDS-1-2-3Pt-160210

Set Up Date: 3/18/16 Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	101
Tare Weight	1.5330
Wet Weight + Tare	55.3606
Dry Weight + Tare	46.9344

Test Sample	Initials: KO
Container No.	101
Tare Weight	50.2228
Wet Weight + Tare	201.3590
Dry Weight + Tare	171.608 111 KO

Calgon Batch #: _____

PIPETTE ANALYSIS

Initials: _____

	Tare ID	Tare Wt	Dry Wt & Tare

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 1 Initials: KO

Sieve Size	Weight Retained
Tare	50.2285
4	
10	
18	
35	
60	
120	
230	
PAN	

SALT CORRECTION

Date: _____ Initials: _____

Tare Weight	
Dry Weight + Tare	

1115F A
PSEP Particle Size Distribution

Rev. 001
9/21/13

* Re-doing Triplicate *

Materials Testing & Consulting, Inc.

PSEP GRAIN SIZE ANALYSIS

MTC Job No.: 15T001-120 MTC Sample ID: TW-0135-2 Client Sample No.: JF-PDS-1-2-3PL-160210

Set Up Date: _____ Sample Description: Dark Brown Sand

SOLIDS CONTENT

Moisture Content	Initials: KO
Container No.	107
Tare Weight	1.5315
Wet Weight + Tare	~~60~~. 62.6497
Dry Weight + Tare	51.5685

Test Sample	Initials: KO
Container No.	107
Tare Weight	51.0937
Wet Weight + Tare	201.8015
Dry Weight + Tare	171.4801

Calgon Batch #: _____

SIEVE ANALYSIS

Sieve Date: 3/21/16

Sieve Set #: 2 Initials: KO

Sieve Size	Weight Retained
Tare	
4	
10	
18	
35	
60	
120	
230	
PAN	

PIPETTE ANALYSIS

Initials: _____

	Tare ID	Tare Wt	Dry Wt & Tare

SALT CORRECTION

Date: _____ Initials: _____

Tare Weight	
Dry Weight + Tare	

1115F A
PSEP Particle Size Distribution

Rev. 001
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Calgon Batch #322 3.2.16

	Tare wt (g)	Dry Calgon + tare wt (g)	Calgon (w
1	1.5388	2.0491	0.5103
2	1.5306	2.0386	0.5080
3	1.5364	2.0463	0.5099
4	1.5389	2.0501	0.5112
5	1.5441	2.0687	0.5246

Average = 0.5128

SUBCONTRACTOR ANALYSIS REQUEST
CUSTODY TRANSFER 03/18/16

ANALYTICAL RESOURCES INCORPORATED

ARI Project: AXS8

MTC PROJECT #: 5T001-120

Laboratory: Materials Testing & Consulting, In
Lab Contact: Harold Benny
Lab Address: 4611 S. 134th Pl
Tukwila, WA 98168
Phone: 360-255-9802
Fax:

ARI Client: Anchor QEA, LLC
Project ID: OMMP Addendum 2-Jorgensen Forge
ARI PM: Cheronne Oreiro
Phone: 206-695-6214
Fax: 206-695-6201
Email: subdata@arilabs.com

Analytical Protocol: PSDDA
Special Instructions: WH

Requested Turn Around: ~~03/31/16~~ 4/1/16
Email Results (Y/N): **Yes**

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

ARI ID	Client ID/ Add'l ID	Sampled	Matrix	Bottles	Analyses
16-4457-AXS8A T16-0435	JF-PDS-1-2-3ft-160210	02/10/16 15:45	Sediment	1	PSEP, 1986 Sub GSPSEP
Special Instructions: None					
16-4458-AXS8B T16-0436	JF-PDS-5-2-3ft-160211	02/11/16 15:56	Sediment	1	PSEP, 1986 Sub GSPSEP
Special Instructions: None					
16-4459-AXS8C T16-0437	JF-PDS-7-2-3ft-160212	02/12/16 09:00	Sediment	1	PSEP, 1986 Sub GSPSEP
Special Instructions: None					

- $110 per sample
- Need QC - N/C
- Need WH pkg - N/C

6.2°C

Carrier		Airbill		Date	
Relinquished by	Company ARI		Date 3-18-16		Time 1225
Received by	Company MTC		Date 3/18/16		Time 12:25

Subcontractor Custody Form - **AXS8**
Page 1 of 1

Total Solids

ARI Job ID: AXS8

Extractions Total Solids-extts
Data By: Anna C. Martinez
Created: 3/21/16

Worklist: 752
Analyst: ACM
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% TS	Dcnt	5g	10g	12.5g
1.	AXS8A 16-4457 JF-PDS-1-2-3ft-160210	1.15	11.05	9.53	84.6	No	5.91	11.82	14.78
2.	AXS8B 16-4458 JF-PDS-5-2-3ft-160211	1.16	11.02	8.90	78.5	No	6.37	12.74	15.92
3.	AXS8C 16-4459 JF-PDS-7-2-3ft-160212	1.17	11.13	9.78	86.4	No	5.79	11.57	14.47

Extractions Total Solids-extts
Data By: Anna C. Martinez
Created: 3/21/16

Worklist: 752
Analyst: ACM
Comments:

Oven ID: 015

Balance ID: B534705934

Samples In: Date: 03/21/16 Time: 1240 Temp: 98 Analyst: [illegible]

Samples Out: Date: 3/22/16 Time: 0755 Temp: 101 Analyst: SC

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% TS	Dcnt	5g	10g	12.5g
1.	AXS8A 16-4457 JF-PDS-1-2-3ft-160210	1.15	11.05	9.53		No			
2.	AXS8B 16-4458 JF-PDS-5-2-3ft-160211	1.16	11.02	8.50		No			
3.	AXS8C 16-4459 JF-PDS-7-2-3ft-160212	~~1.14~~ 1.17 [illegible] 03/21/16	11.13	9.78		No			

PCB Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AXS8

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8082A) PCB – Soil / Sediment
Microwave (3546) (SOP # 3304S)

Preparation Test PCB PSDDA # 19

Lab Number(s) AX58
Batch ID

Page 1 of 1

PSDDA (4ppb)
Batch set up by: [signature]

JAR ID	Extraction Requirements	Weight Extracted (eq. to 12.5g dry wt)	(REQ) Acid Clean (2.5mL)	(REQ) Sulfur Clean High Sulfur ~~(2.5mL)~~ ~~content~~ 1 2 3	(REQ) Silica Gel Clean (1:2.5)	Final Effective Volume	Volume to Lab	Comments	Verify Client ID
	BLK AX58	12.50g	2.5mL	2.5mL	1mL	2.5mL	1mL	(10g Actual Wt)	[signature] 03/23/16 Analyst/Date
	BS	12.50g	2.5mL	2.5mL	1mL	2.5mL	1mL	(10g Actual Wt)	Microwave 1 2 3 [signature] / CT 03/23/16 Analyst/Date
	~~BSDup~~	~~12.50g~~	~~2.5mL~~	~~2.5mL~~	~~1mL~~	~~2.5mL~~	~~1mL~~	~~(10g Actual Wt)~~	
	~~MRL Check~~	~~12.50g~~	~~2.5mL~~	~~2.5mL~~	~~1mL~~	~~2.5mL~~	~~1mL~~	~~(10g Actual Wt)~~	KD 100°C Hexane Exchang (2 X 20mL) 1 2 3 4 5 6
PSRM	AX58 CRM	5.00	2.5mL	2.5mL	1mL	2.5mL	1mL	CRM E000127	
2	A	15.03	2.5mL	2.5mL	1mL	2.5mL	1mL		RH 3/25/16 Analyst/Date
2	B	16.00	2.5mL	2.5mL	1mL	2.5mL	1mL		
2	BMS	16.03	2.5mL	2.5mL	1mL	2.5mL	1mL		
2	BMSd	16.05	2.5mL	2.5mL	1mL	2.5mL	1mL		TurboVap 1 2 3 4 5 Pre-Cleanups
2	C	15.03	2.5mL	2.5mL	1mL	2.5mL	1mL		
			~~2.5mL~~	~~2.5mL~~	~~1mL~~	~~2.5mL~~	~~1mL~~		PD 3/25/16 Analyst/Date
			2.5mL	2.5mL	1mL	2.5mL	~~1mL~~		
			~~2.5mL~~	~~2.5mL~~	~~1mL~~	~~2.5mL~~	~~1mL~~		TurboVap 1 2 3 4 5 Post Cleanups
			2.5mL	2.5mL	1mL	2.5mL	1mL	PD 3/25/16	
			~~2.5mL~~	~~2.5mL~~	~~1mL~~	~~2.5mL~~	~~1mL~~		
Analyst/Date	[signature] 03/23/16		PD 3/25/16	PD 3/25/16	PD 3/25/16	PD 3/25/16	PD 3/25/16	Reviewed by/Date PD 3/25/16	PD 3/25/16 Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	N(E000671)	2µg/mL	50µL	9/17/16	CT	[signature]
Spike	1 (D005226)	20µg/mL	63µL	8/31/16	CT	[signature]
~~MRL Spike~~	~~5 ( )~~	~~2µg/mL~~	~~25µL~~			

Extraction Time: 13:15 Balance ID: B139297442

SPECIAL INSTRUCTIONS: 1. Weigh and lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). 3. Add 1:1 Hexane/Acetone to the vessels (until the solvent layer is 3" inches above the soil layer after homogenization). 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then cool vessels in cold in Ref 5. Re-homogenize while cool (12°C). 7. Decant 1:1 Hex/Ace into E. flask with funnel containing neutral glasswool. 8. Rinse with Hexane. 9. Microwave a 2nd time using 8:2 Hexane/Acetone. 10. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 11. KD at 100°C. 12. Exchange (2 X with 20mL) Hexane. 13. TurboVap. 14. Vial 2.5mL into labeled scintillation vials using Hexane. 15. Acid/Sulfur/Silica SPE Clean-ups REQ. 16. TurboVap. 17. Vial 1mL in Hexane.

A. Need Total Solids Y / N B. ~~Archive~~/Freeze Y / N

Revision 05
01/25/2016

AX58 : 00086

Organic Extractions
Reagent and Solutions Identification

(8082A) PCB – Soil / Sediment
Microwave (3546) (SOP # 3304S)

Lab Number(s) AX58

(8082A) PCB PSDDA (4ppb) Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station: Anhydrous Sodium Sulfate: (E000674) Neutral Glasswool: (D004624) 1:1 Hexane/Acetone: (E000815) 80:20 Hexane/Acetone: (E000816) Hexane: (E000442)	Microwave JL/CT 03/23/16
KD Station: Hexane: (E000654) Anhydrous Sodium Sulfate: (NA) Neutral Glasswool: (NA)	KD RH 3/25/16
Vialing Station: Hexane: (E000654) Concentrated Sulfuric Acid: (E000405) Tetrabutylammonium hydrogensulfate (TBAS): (E000707) Sodium Sulfite: (D005307) Silica Gel (SPE) Darts: (D004029)	Vialing PD 3/25/16

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AX58

Client ID: Anchor QEA, LLC

Batch ID:

Parameter: PCB PSODA (4ppb)

Client Project: OMMP Addendum 2-Jorgensen For.

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= A, C	[illegible] 03/21/16
☒ Standing Water Decanted (Not shared)= B	[illegible] 03/21/16
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions). Sample pre-screens indicate possible aroclor activity.	[illegible] 3/22/16
☒ Share Samples Y (N)	[illegible] 03/21/16
☒ Multiple Jars Y (N)	[illegible] 03/21/16
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen= [illegible] 3/22/16	

3056F

Revision 12
08/11/15

PCB Raw Data
Initial Calibration

ARI Job ID: AXS8

Checklist for SEQUENCE SEB0053

2/23/2016

Analysis	Matrix	Method
8082A PCB	Water	EPA 8082A
8082A PCB (20 ug/kg) or (MTCA 0.1 ug/L)	Water	EPA 8082A
8082A PCB Solid 4	Water	EPA 8082A
8082A PCB Water 0.01	Water	EPA 8082A

Checklist: Initial Calibration Checklist-ECD

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JGR	02/23/2016
	Comments: *ZB00017 and ZB00018*			
2	ICal meets 20 %RSD, LR COD, and QR COD limits	YES	JGR	02/23/2016
3	Manual integrations include before/after pictures	NA	JGR	02/23/2016
4	Internal Standard areas within 50-200% from reference	YES	JGR	02/23/2016
5	All SCV within +/- 20% (DOD)	NO	JGR	02/23/2016
	Comments: *AR1262 high at128%*			
6	All SCV within +/- 30%	YES	JGR	02/23/2016
7	NO Linear or Quadratic Fits Used	YES	JGR	02/23/2016
8	NO Calibration points dropped	YES	JGR	02/23/2016
9	Additional Notes	NA	VTS	02/23/2016
10	Reviewer Approval (Reviewer)	YES	VTS	02/23/2016

* = Indicates Automated Response from Element DataSyst

Analysis	Matrix	Method
8082A PCB Medium Level Oils	Oil	EPA 8082A

Checklist: Initial Calibration Checklist-ECD

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JGR	02/23/2016
	Comments: *ZB00017 and ZB00018*			
2	ICal meets 20 %RSD, LR COD, and QR COD limits	YES	JGR	02/23/2016
3	Manual integrations include before/after pictures	NA	JGR	02/23/2016
4	Internal Standard areas within 50-200% from reference	YES	JGR	02/23/2016
5	All SCV within +/- 20% (DOD)	NO	JGR	02/23/2016
	Comments: *AR1268 high at 128%*			
6	All SCV within +/- 30%	YES	JGR	02/23/2016
7	NO Linear or Quadratic Fits Used	YES	JGR	02/23/2016
8	NO Calibration points dropped	YES	JGR	02/23/2016
9	Additional Notes	NA	VTS	02/23/2016
10	Reviewer Approval (Reviewer)	YES	VTS	02/23/2016

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SEB0053

ZB17

Instrument: ECD7
Calibnration ID: ZB00017

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client
SEB0053-CAL1	QC		1		D003965	D001415	
SEB0053-CAL2	QC		2		D003960	D001415	
SEB0053-CAL3	QC		3		D003959	D001415	
SEB0053-CAL4	QC		4		D003916	D001415	
SEB0053-CAL5	QC		5		D003957	D001415	
SEB0053-CAL6	QC		6		D003961	D001415	
SEB0053-CAL7	QC		7		D003917	D001415	
SEB0053-CAL8	QC		8		D003918	D001415	
SEB0053-CAL9	QC		9		D003919	D001415	
SEB0053-CALA	QC		10		D003920	D001415	
SEB0053-CALB	QC		11		D003921	D001415	
SEB0053-SCV1	QC		12		D003925	D001415	
SEB0053-SCV2	QC		13		D003917	D001415	
SEB0053-SCV3	QC		14		D003918	D001415	
SEB0053-SCV4	QC		15		D003919	D001415	
SEB0053-SCV5	QC		16		D003920	D001415	
SEB0053-SCV6	QC		17		D003921	D001415	

Samples Loaded By _____ Date _____ Data Processed By _____ Date _____

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SEB0054

ZB18

Instrument: ECD7
Calibnration ID: ZB00018

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client
SEB0054-CAL1	QC		1		D003965	D001415	
SEB0054-CAL2	QC		2		D003960	D001415	
SEB0054-CAL3	QC		3		D003959	D001415	
SEB0054-CAL4	QC		4		D003916	D001415	
SEB0054-CAL5	QC		5		D003957	D001415	
SEB0054-CAL6	QC		6		D003961	D001415	
SEB0054-CAL7	QC		7		D003917	D001415	
SEB0054-CAL8	QC		8		D003918	D001415	
SEB0054-CAL9	QC		9		D003919	D001415	
SEB0054-CALA	QC		10		D003920	D001415	
SEB0054-CALB	QC		11		D003921	D001415	
SEB0054-SCV1	QC		12		D003925	D001415	
SEB0054-SCV2	QC		13		D003917	D001415	
SEB0054-SCV3	QC		14		D003918	D001415	
SEB0054-SCV4	QC		15		D003919	D001415	
SEB0054-SCV5	QC		16		D003920	D001415	
SEB0054-SCV6	QC		17		D003921	D001415	

Samples Loaded By Date

Data Processed By Date

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 02/19/16 Analysis: PCB Analyst: fm

Column 1 Serial No.: 311350 Column Type: ZB5

Column 2 Serial No.: 330557 Column Type: ZB35

GC Method: PCB ICal Date: 02/19/16 Injection Volume: 2µL

IS	Ical/Ccal	ICV
	D3916	
D4740		
	D3917 - D3921	
	D3925	

Document All Maintenance Tasks In Element

	Inject Date/Time	Filename	DF	LabID
1	19-FEB-2016 14:24	02191616.D	1	RINSE
2	19-FEB-2016 14:46	02191617.D	1	RINSE
3	19-FEB-2016 15:08	02191618.D	1	RINSE
4	19-FEB-2016 15:30	02191619.D	1	RINSE
5	19-FEB-2016 15:52	02191620.D	1	RINSE
6	19-FEB-2016 16:14	02191621.D	1	RINSE
7	19-FEB-2016 16:36	02191622.D	1	IB
8	19-FEB-2016 16:58	02191623.D	1	0.25PPMAR1660
9	19-FEB-2016 17:20	02191624.D	1	0.02PPMAR1660
10	19-FEB-2016 17:42	02191625.D	1	0.05PPMAR1660
11	19-FEB-2016 18:04	02191626.D	1	1PPMAR1660
12	19-FEB-2016 18:26	02191627.D	1	0.1PPMAR1660
13	19-FEB-2016 18:48	02191628.D	1	0.5PPMAR1660
14	19-FEB-2016 19:09	02191629.D	1	AR1242
15	19-FEB-2016 19:31	02191630.D	1	AR1248
16	19-FEB-2016 19:53	02191631.D	1	AR1254
17	19-FEB-2016 20:15	02191632.D	1	AR2162
18	19-FEB-2016 20:37	02191633.D	1	AR3268
19	19-FEB-2016 20:59	02191634.D	1	AR1660ICV
20	19-FEB-2016 21:21	02191635.D	1	AR1242ICV
21	19-FEB-2016 21:43	02191636.D	1	AR1248ICV
22	19-FEB-2016 22:05	02191637.D	1	AR1254ICV
23	19-FEB-2016 22:27	02191638.D	1	AR2162ICV
24	19-FEB-2016 22:48	02191639.D	1	AR3268ICV
25	19-FEB-2016 23:10	02191640.D	1	DDT
26	19-FEB-2016 23:32	02191641.D	1	DDT BD
27	19-FEB-2016 23:54	02191642.D	1	AR1242
28	20-FEB-2016 00:16	02191643.D	1	AR1660
29	20-FEB-2016 00:38	02191644.D	1	AVWOMBW1
30	20-FEB-2016 01:00	02191645.D	1	AVWOLCSW1
31	20-FEB-2016 01:22	02191646.D	1	AVWOA
32	20-FEB-2016 01:44	02191647.D	1	AVWOB
33	20-FEB-2016 02:05	02191648.D	1	AVWOC
34	20-FEB-2016 02:27	02191649.D	1	AVWOD
35	20-FEB-2016 02:49	02191650.D	1	AVWOE
36	20-FEB-2016 03:11	02191651.D	1	AWD3MBW1
37	20-FEB-2016 03:33	02191652.D	1	AWD3LCSW1
38	20-FEB-2016 03:55	02191653.D	1	AWD3A
39	20-FEB-2016 04:17	02191654.D	1	AR1248
40	20-FEB-2016 04:38	02191655.D	1	AR1660

02/23/16

Every line must contain information or be lined out. Make all entries legible.
Start a new 00874ch QC period. Document All Maintenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160219b.b\20160219.b

ARI Job No.: IB Method: b\PCB.m\PCB2.m Instrument: ecd7.i Date: 19-FEB-2016

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1636	02191622.D	IB		1	NO MANUAL INTEGRATION
1658	02191623.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1720	02191624.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1742	02191625.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1804	02191626.D	1PPMAR1660		1	NO MANUAL INTEGRATION
1826	02191627.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1848	02191628.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1909	02191629.D	AR1242		1	NO MANUAL INTEGRATION
1931	02191630.D	AR1248		1	NO MANUAL INTEGRATION
1953	02191631.D	AR1254		1	NO MANUAL INTEGRATION
2015	02191632.D	AR2162		1	NO MANUAL INTEGRATION
2037	02191633.D	AR3268		1	NO MANUAL INTEGRATION
2059	02191634.D	AR1660ICV		1	NO MANUAL INTEGRATION
2121	02191635.D	AR1242ICV		1	NO MANUAL INTEGRATION
2143	02191636.D	AR1248ICV		1	NO MANUAL INTEGRATION
2205	02191637.D	AR1254ICV		1	NO MANUAL INTEGRATION
2227	02191638.D	AR2162ICV		1	NO MANUAL INTEGRATION

AXS0 - 00095

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160219b.b\20160219.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2248	02191639.D	AR3268ICV		1	NO MANUAL INTEGRATION
2310	02191640.D	DDT		1	NO MANUAL INTEGRATION
2332	02191641.D	DDT BD		1	NO MANUAL INTEGRATION
2354	02191642.D	AR1242		1	NO MANUAL INTEGRATION
0016	02191643.D	AR1660		1	NO MANUAL INTEGRATION

AXSB-00096

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160219b.b

ARI Job No.: IB Method: b\PCB.m Instrument: ecd7.i Date: 19-FEB-2016

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1636	02191622.D	IB		1	NO MANUAL INTEGRATION
1658	02191623.D	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1720	02191624.D	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1742	02191625.D	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1804	02191626.D	1PPMAR1660		1	NO MANUAL INTEGRATION
1826	02191627.D	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1848	02191628.D	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1909	02191629.D	AR1242		1	NO MANUAL INTEGRATION
1931	02191630.D	AR1248		1	NO MANUAL INTEGRATION
1953	02191631.D	AR1254		1	NO MANUAL INTEGRATION
2015	02191632.D	AR2162		1	NO MANUAL INTEGRATION
2037	02191633.D	AR3268		1	NO MANUAL INTEGRATION
2059	02191634.D	AR1660ICV		1	NO MANUAL INTEGRATION
2121	02191635.D	AR1242ICV		1	NO MANUAL INTEGRATION
2143	02191636.D	AR1248ICV		1	NO MANUAL INTEGRATION
2205	02191637.D	AR1254ICV		1	NO MANUAL INTEGRATION
2227	02191638.D	AR2162ICV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160219b.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2248	02191639.D	AR3268ICV	1	NO	MANUAL INTEGRATION
2310	02191640.D	DDT	1	NO	MANUAL INTEGRATION
2332	02191641.D	DDT BD	1	NO	MANUAL INTEGRATION
2354	02191642.D	AR1242	1	NO	MANUAL INTEGRATION
0016	02191643.D	AR1660	1	NO	MANUAL INTEGRATION

AXS8 00098

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:54
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Last Edit : 23-Feb-2016 06:25 jrains
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\20160219b.b\02191624.D
Level 2: \\target\share\chem4\ecd7.i\20160219b.b\02191625.D
Level 3: \\target\share\chem4\ecd7.i\20160219b.b\02191627.D
Level 4: \\target\share\chem4\ecd7.i\20160219b.b\02191623.D
Level 5: \\target\share\chem4\ecd7.i\20160219b.b\02191628.D
Level 6: \\target\share\chem4\ecd7.i\20160219b.b\02191626.D
Level 7: \\target\share\chem4\ecd7.i\20160219b.b\02191633.D
Level 8: \\target\share\chem4\ecd7.i\20160219b.b\02191640.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00253	+++++					0.00253	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00407	+++++					0.00407	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01215	+++++					0.01215	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02459	+++++					0.02459	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00903	+++++					0.00903	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01142	+++++					0.01142	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00825	+++++					0.00825	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00144	+++++					0.00144	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:54
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Last Edit : 23-Feb-2016 06:25 jrains
Curve Type : Average

Compound	20.000 Level 1 / 250.000 Level 7	50.000 Level 2 / 0.000e+00 Level 8	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
(2)	+++++ / 0.00273	+++++ / +++++	+++++	+++++	+++++	+++++	0.00273	0.000
(3)	+++++ / 0.00806	+++++ / +++++	+++++	+++++	+++++	+++++	0.00806	0.000
(4)	+++++ / 0.01317	+++++ / +++++	+++++	+++++	+++++	+++++	0.01317	0.000
7 Aroclor-1016(1)	0.01089 / +++++	0.01082 / +++++	0.01058	0.01024	0.00967	0.00924	0.01024	6.469
(2)	0.03238 / +++++	0.03293 / +++++	0.03219	0.03140	0.03042	0.03011	0.03157	3.572
(3)	0.00902 / +++++	0.01138 / +++++	0.01135	0.01125	0.01089	0.01078	0.01078	8.325
(4)	0.01193 / +++++	0.01263 / +++++	0.01247	0.01208	0.01166	0.01135	0.01202	3.991
6 Aroclor-1248(1)	+++++ / 0.01443	+++++ / +++++	+++++	+++++	+++++	+++++	0.01443	0.000
(2)	+++++ / 0.01074	+++++ / +++++	+++++	+++++	+++++	+++++	0.01074	0.000
(3)	+++++ / 0.01613	+++++ / +++++	+++++	+++++	+++++	+++++	0.01613	0.000
(4)	+++++ / 0.01341	+++++ / +++++	+++++	+++++	+++++	+++++	0.01341	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:54
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Last Edit : 23-Feb-2016 06:25 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01771	+++++					0.01771	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00590	+++++					0.00590	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01448	+++++					0.01448	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02841	+++++					0.02841	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02782	+++++					0.02782	0.000
9 Aroclor-1260(1)	0.02145	0.02066	0.01997	0.01893	0.01794	0.01764		
	+++++	+++++					0.01943	7.822
(2)	0.07542	0.08899	0.06856	0.06944	0.06893	0.07230		
	+++++	+++++					0.07394	10.574
(3)	0.03107	0.03176	0.03156	0.03203	0.03158	0.03250		
	+++++	+++++					0.03175	1.520
(4)	0.01966	0.01997	0.01992	0.01988	0.01938	0.01956		
	+++++	+++++					0.01973	1.176
(5)	0.01133	0.01178	0.01146	0.01155	0.01138	0.01164		
	+++++	+++++					0.01152	1.465
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02589	+++++					0.02589	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:54
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Last Edit : 23-Feb-2016 06:25 jrains
Curve Type : Average

Compound	20.000 Level 1 / 250.000 Level 7	50.000 Level 2 / 0.000e+00 Level 8	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
(2)	+++++ / 0.07590	+++++ / +++++	+++++	+++++	+++++	+++++	0.07590	0.000
(3)	+++++ / 0.02405	+++++ / +++++	+++++	+++++	+++++	+++++	0.02405	0.000
(4)	+++++ / 0.03625	+++++ / +++++	+++++	+++++	+++++	+++++	0.03625	0.000
(5)	+++++ / 0.04072	+++++ / +++++	+++++	+++++	+++++	+++++	0.04072	0.000
11 Aroclor-1268(1)	+++++ / 0.10548	+++++ / +++++	+++++	+++++	+++++	+++++	0.10548	0.000
(2)	+++++ / 0.13079	+++++ / +++++	+++++	+++++	+++++	+++++	0.13079	0.000
(3)	+++++ / 0.11835	+++++ / +++++	+++++	+++++	+++++	+++++	0.11835	0.000
(4)	+++++ / 0.42847	+++++ / +++++	+++++	+++++	+++++	+++++	0.42847	0.000
42 2,4-DDE	+++++ / +++++	+++++ / 702	+++++	+++++	+++++	+++++	702	0.000
43 2,4-DDD	+++++ / +++++	+++++ / 622	+++++	+++++	+++++	+++++	622	0.000
44 2,4-DDT	+++++ / +++++	+++++ / 781	+++++	+++++	+++++	+++++	781	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:54
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Last Edit : 23-Feb-2016 06:25 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1360					1360	0.000
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	994					994	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	872					872	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 1 Tetrachloro-m-xylene	0.42226	0.42231	0.42641	0.43629	0.44100	0.45193		
	+++++	+++++					0.43337	2.741
$ 13 Decachlorobiphenyl	1.04323	1.04486	1.04137	1.05878	1.08269	1.13616		
	+++++	+++++					1.06785	3.455

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:10
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Last Edit : 22-Feb-2016 16:49 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191624.D
Level 2: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191625.D
Level 3: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191627.D
Level 4: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191623.D
Level 5: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191628.D
Level 6: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191626.D
Level 7: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191633.D
Level 8: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b\02191640.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
1 Aroclor-1221 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00745	+++++					0.00745	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00694	+++++					0.00694	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02196	+++++					0.02196	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00728	+++++					0.00728	0.000
4 Aroclor-1232 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00449	+++++					0.00449	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00423	+++++					0.00423	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00239	+++++					0.00239	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01855	+++++					0.01855	0.000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:10
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Last Edit : 22-Feb-2016 16:49 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
3 Aroclor-1242 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03098	+++++					0.03098	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06413	+++++					0.06413	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01656	+++++					0.01656	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02230	+++++					0.02230	0.000
6 Aroclor-1248 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03827	+++++					0.03827	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02820	+++++					0.02820	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04309	+++++					0.04309	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04304	+++++					0.04304	0.000
7 Aroclor-1016 [2C] (1)	0.04442	0.04332	0.04147	0.03982	0.03641	0.03375		
	+++++	+++++					0.03986	10.320
(2)	0.08676	0.08494	0.08520	0.08327	0.07808	0.07420		
	+++++	+++++					0.08207	5.952
(3)	0.03356	0.03299	0.03422	0.03407	0.03166	0.03005		
	+++++	+++++					0.03276	4.938

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:10
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Last Edit : 22-Feb-2016 16:49 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(4)	0.01590	0.01569	0.01559	0.01544	0.01458	0.01409	0.01522	4.704
	+++++	+++++						
8 Aroclor-1254 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04022	0.000
	0.04022	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01884	0.000
	0.01884	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03019	0.000
	0.03019	+++++						
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.06887	0.000
	0.06887	+++++						
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.05075	0.000
	0.05075	+++++						
10 Aroclor-1262 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.08135	0.000
	0.08135	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.07518	0.000
	0.07518	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.15342	0.000
	0.15342	+++++						
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.09981	0.000
	0.09981	+++++						
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.05116	0.000
	0.05116	+++++						

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:10
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Last Edit : 22-Feb-2016 16:49 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
9 Aroclor-1260 [2C] (1)	0.08279	0.07724	0.07549	0.07359	0.06807	0.06541		
	+++++	+++++					0.07376	8.548
(2)	0.14784	0.15010	0.14652	0.14488	0.13657	0.13240		
	+++++	+++++					0.14305	4.879
(3)	0.10124	0.10108	0.09642	0.09336	0.08896	0.08576		
	+++++	+++++					0.09447	6.711
(4)	0.03946	0.03694	0.03708	0.03586	0.03446	0.03354		
	+++++	+++++					0.03622	5.812
11 Aroclor-1268 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.15952	+++++					0.15952	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14915	+++++					0.14915	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12004	+++++					0.12004	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.34255	+++++					0.34255	0.000
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 19-FEB-2016 16:58
End Cal Date : 19-FEB-2016 23:10
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Last Edit : 22-Feb-2016 16:49 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	0.89070	0.91043	0.92972	0.96434	0.94189	0.92633		
	+++++	+++++					0.92723	2.735
$ 13 Decachlorobiphenyl [2C]	1.11573	1.12711	1.02315	0.98748	0.95150	0.93610		
	+++++	+++++					1.02351	7.981

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160219b.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	19-FEB-2016 14:24	02191616.D	1	RINSE	
2	19-FEB-2016 14:46	02191617.D	1	RINSE	
3	19-FEB-2016 15:08	02191618.D	1	RINSE	
4	19-FEB-2016 15:30	02191619.D	1	RINSE	
5	19-FEB-2016 15:52	02191620.D	1	RINSE	
6	19-FEB-2016 16:14	02191621.D	1	RINSE	
7	19-FEB-2016 16:36	02191622.D	1	IB	
8	19-FEB-2016 16:58	02191623.D	1	0.25PPMAR1660	
9	19-FEB-2016 17:20	02191624.D	1	0.02PPMAR1660	
10	19-FEB-2016 17:42	02191625.D	1	0.05PPMAR1660	
11	19-FEB-2016 18:04	02191626.D	1	1PPMAR1660	
12	19-FEB-2016 18:26	02191627.D	1	0.1PPMAR1660	
13	19-FEB-2016 18:48	02191628.D	1	0.5PPMAR1660	
14	19-FEB-2016 19:09	02191629.D	1	AR1242	
15	19-FEB-2016 19:31	02191630.D	1	AR1248	
16	19-FEB-2016 19:53	02191631.D	1	AR1254	
17	19-FEB-2016 20:15	02191632.D	1	AR2162	
18	19-FEB-2016 20:37	02191633.D	1	AR3268	
19	19-FEB-2016 20:59	02191634.D	1	AR1660ICV	
20	19-FEB-2016 21:21	02191635.D	1	AR1242ICV	
21	19-FEB-2016 21:43	02191636.D	1	AR1248ICV	
22	19-FEB-2016 22:05	02191637.D	1	AR1254ICV	
23	19-FEB-2016 22:27	02191638.D	1	AR2162ICV	
24	19-FEB-2016 22:48	02191639.D	1	AR3268ICV	
25	19-FEB-2016 23:10	02191640.D	1	DDT	
26	19-FEB-2016 23:32	02191641.D	1	DDT BD	
27	19-FEB-2016 23:54	02191642.D	1	AR1242	
28	20-FEB-2016 00:16	02191643.D	1	AR1660	
29	20-FEB-2016 00:38	02191644.D	1	AVW0MBW1	
30	20-FEB-2016 01:00	02191645.D	1	AVW0LCSW1	
31	20-FEB-2016 01:22	02191646.D	1	AVW0A	
32	20-FEB-2016 01:44	02191647.D	1	AVW0B	
33	20-FEB-2016 02:05	02191648.D	1	AVW0C	
34	20-FEB-2016 02:27	02191649.D	1	AVW0D	
35	20-FEB-2016 02:49	02191650.D	1	AVW0E	
36	20-FEB-2016 03:11	02191651.D	1	AWD3MBW1	
37	20-FEB-2016 03:33	02191652.D	1	AWD3LCSW1	
38	20-FEB-2016 03:55	02191653.D	1	AWD3A	
39	20-FEB-2016 04:17	02191654.D	1	AR1248	
40	20-FEB-2016 04:38	02191655.D	1	AR1660	

Report Date : 23-Feb-2016 06:57

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\20160219b.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	02191623	02191624	02191625	02191626	02191627	02191628
INJ.DATE:	19-FEB-2016	19-FEB-2016	19-FEB-2016	19-FEB-2016	19-FEB-2016	19-FEB-2016
INJ.TIME:	16:58	17:20	17:42	18:04	18:26	18:48

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.051	3.053	3.052	3.051	3.050	3.051	3.050	2.950-3.150	3.051	0.001
$ 1 Tetrachloro-m-xylene	6.028	6.030	6.030	6.027	6.028	6.027	6.025	5.925-6.125	6.028	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.714	4.614-4.814	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.555	8.455-8.655	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.715	4.615-4.815	+++++	+++++
7 Aroclor-1016	8.049	8.051	8.051	8.046	8.050	8.048	8.048	7.948-8.148	8.049	0.002
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.553	8.453-8.653	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.464	10.364-10.564	+++++	+++++
9 Aroclor-1260	12.261	12.262	12.262	12.260	12.260	12.260	12.260	12.160-12.360	12.261	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.260	12.160-12.360	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.431	13.331-13.531	+++++	+++++
$ 13 Decachlorobiphenyl	14.743	14.743	14.744	14.744	14.743	14.743	14.743	14.643-14.843	14.743	0.000
* 12 IS-HBBP	15.000	15.000	15.000	15.000	15.000	15.000	14.999	14.899-15.099	15.000	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.428	10.378-10.478	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	10.996	10.946-11.046	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.508	11.458-11.558	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.872	10.772-10.972	+++++	+++++

Reviewer 1 _____ Date: 02/23/16
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\20160219b.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.454	11.354-11.554	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.969	11.869-12.069	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

AX68 00111

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	02191623	02191624	02191625	02191626	02191627	02191628
INJ.DATE:	19-FEB-2016	19-FEB-2016	19-FEB-2016	19-FEB-2016	19-FEB-2016	19-FEB-2016
INJ.TIME:	16:58	17:20	17:42	18:04	18:26	18:48

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	4.218	4.221	4.220	4.217	4.218	4.218	4.218	4.118-4.318	4.219	0.001
$ 2 Tetrachloro-m-xylene [	6.486	6.488	6.489	6.484	6.487	6.485	6.486	6.386-6.586	6.487	0.002
1 Aroclor-1221 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	5.585	5.485-5.685	+++++	+++++
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	5.586	5.486-5.686	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	8.628	8.528-8.728	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.348	9.248-9.447	+++++	+++++
7 Aroclor-1016 [2C]	8.631	8.633	8.633	8.629	8.631	8.629	8.631	8.531-8.731	8.631	0.002
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.112	11.012-11.212	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.905	12.805-13.005	+++++	+++++
9 Aroclor-1260 [2C]	12.818	12.819	12.819	12.817	12.817	12.816	12.818	12.718-12.918	12.818	0.001
11 Aroclor-1268 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	14.021	13.921-14.121	+++++	+++++
$ 13 Decachlorobiphenyl [2C]	15.261	15.261	15.261	15.260	15.260	15.261	15.261	15.161-15.361	15.261	0.000
* 12 IS-HBBP [2C]	15.850	15.850	15.850	15.850	15.849	15.850	15.850	15.750-15.950	15.850	0.000
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.209	11.159-11.259	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.591	11.541-11.641	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	11.902	11.802-12.002	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.355	12.255-12.455	+++++	+++++

Reviewer 1 _____ Date: 02/23/16
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\20160219b.b\20160219.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.796	12.696-12.896	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++

AXS8 00113

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191622.D
Data file 2: /20160219b.b/20160219.b/02191622.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 19-FEB-2016 16:36
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.030	0.005	1138879	6.488	0.006	3960549	19.7	20.9	5.7	Tetrachloro-m-xyle
14.744	0.000	6785499	15.260	-0.000	5617697	39.2	35.9	8.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.3	52.2
Decachlorobiphenyl	98.0	89.7

02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10661131	3.6
Hexabromobiphenyl	12470452	12970613	4.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	16365254	3.5
Hexabromobiphenyl	11807823	12236117	3.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	10.430	-0.034	38968	16.5	1	11.211	0.099	77687	9.4
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	10.997	0.007	71023	18.8	4	11.904	0.097	159748	11.3
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	12.987	0.046	73366	6.1	2	---			0.0
Aroclor-1260	3	---			0.0	3	14.003	-0.072	170913	11.8
Aroclor-1260	4	---			0.0	4	14.626	0.001	8003	1.4
Aroclor-1260	5	13.837	-0.006	12642	6.8	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	12.987	0.047	73366	6.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	14.003	-0.072	170913	11.2
Aroclor-1262	5	14.050	-0.005	38105	5.8	5	14.626	0.001	8003	1.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	14.003	-0.018	170913	7.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	13.837	0.009	12642	0.7	3	---			0.0
Aroclor-1268	4	14.444	-0.002	16851	0.2	4	14.949	-0.024	56005	1.1
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

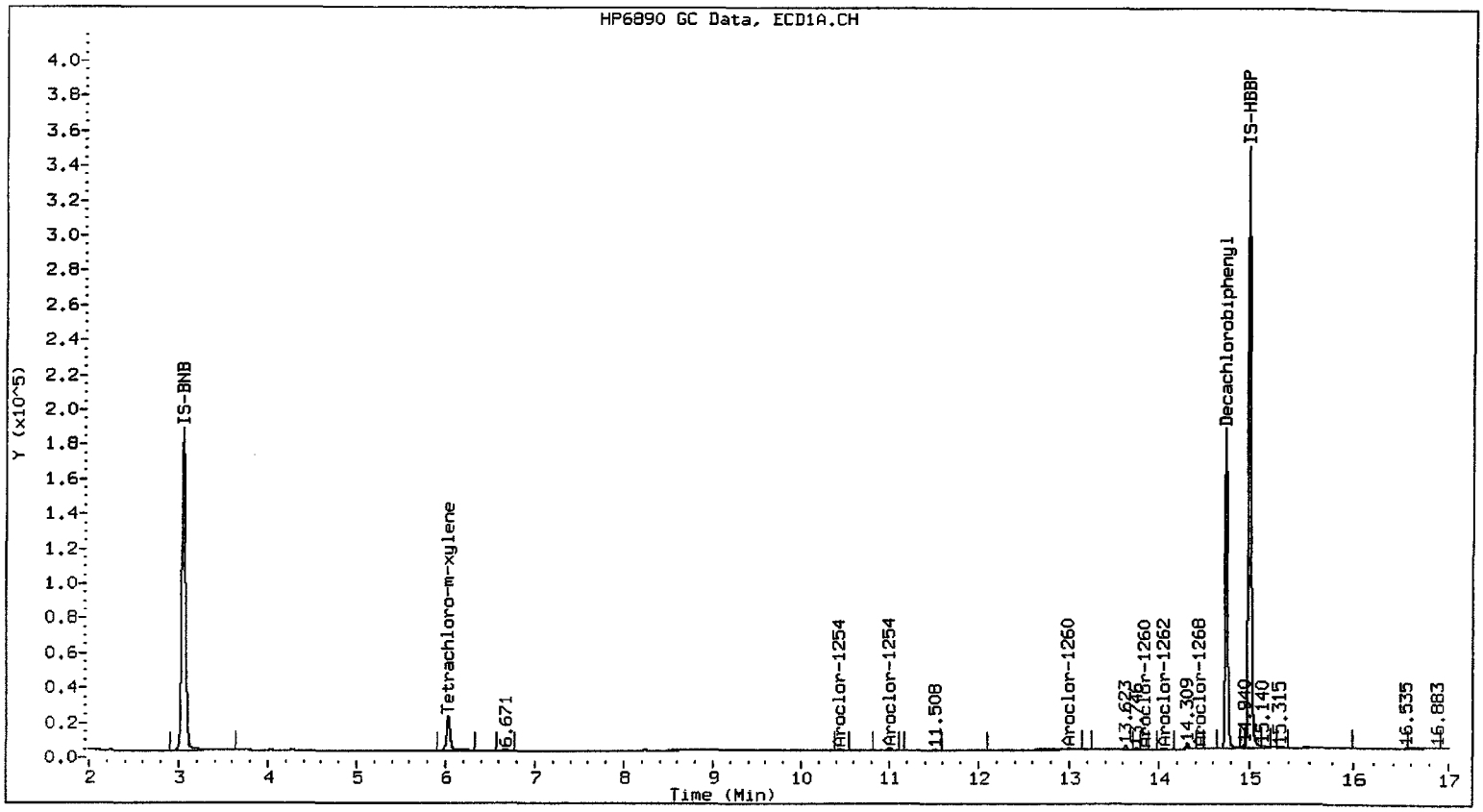
Total PCB Area Col1 (6.125 - 14.643) = 544074 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 4667873 Col2 Total PCB = 0.0 ppm*

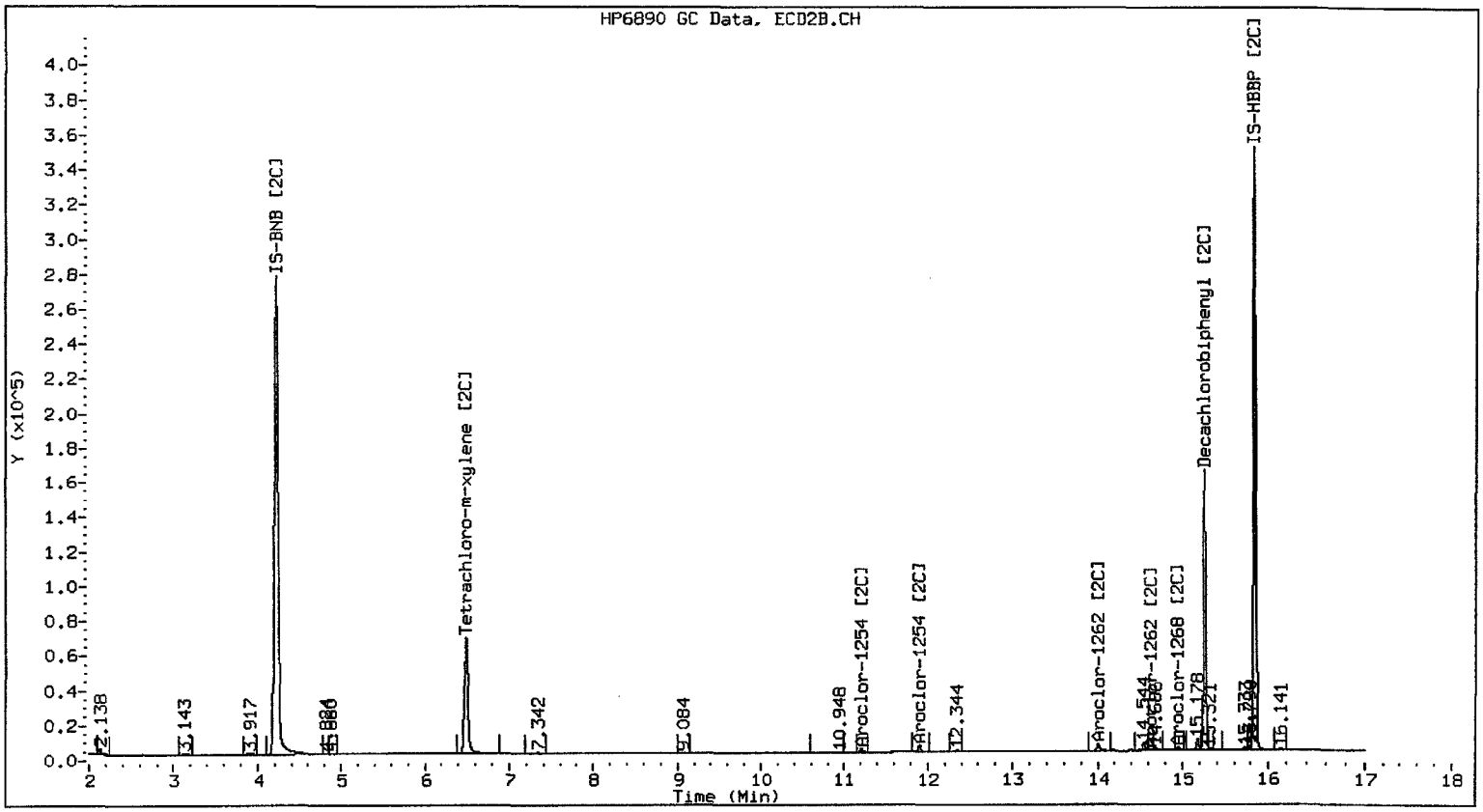
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 IB 19-FEB-2016 16:36, 2ul

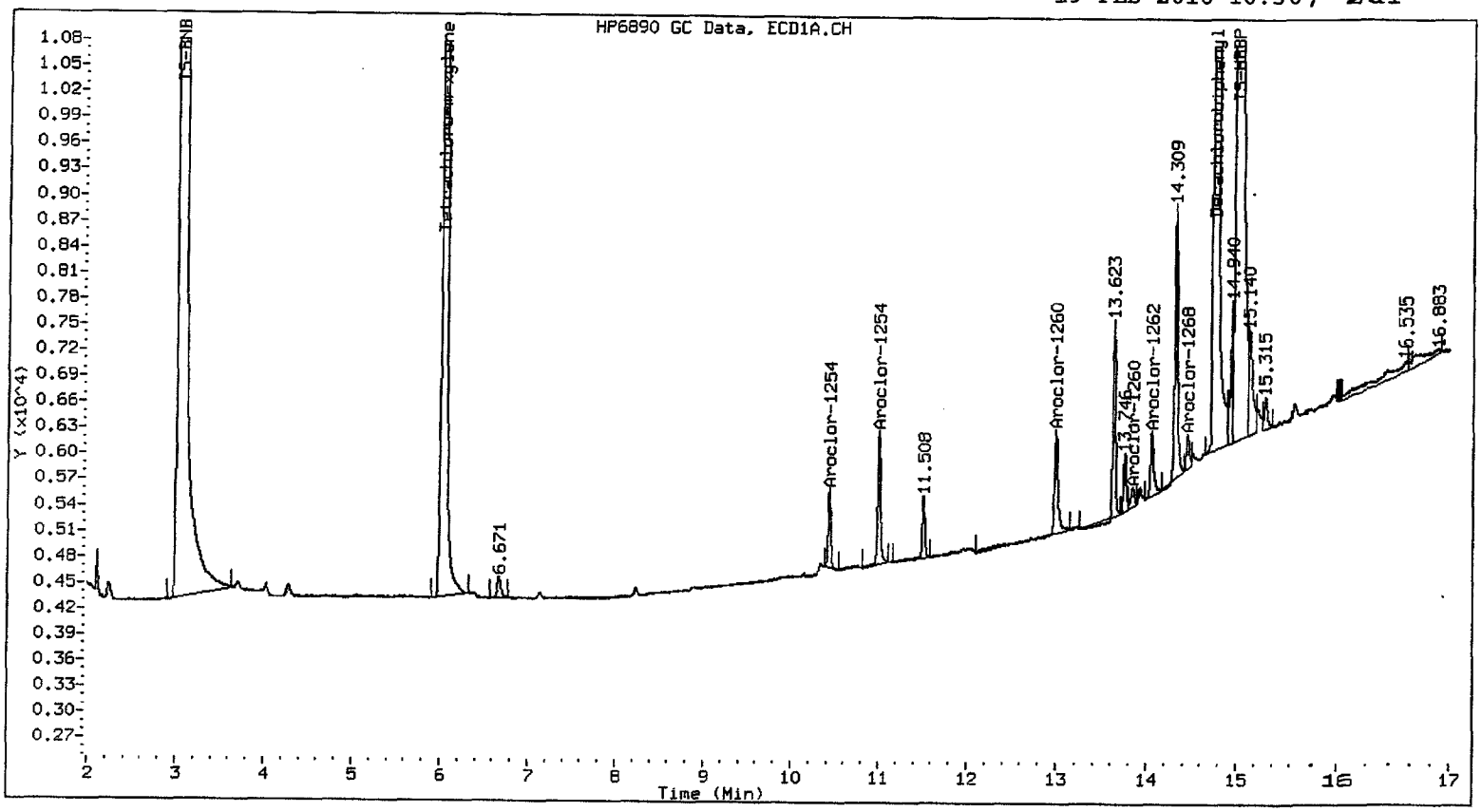


ECD7-ZB35 IB 19-FEB-2016 16:36, 2ul



ECD7-ZB5 IB

19-FEB-2016 16:36, 2ul



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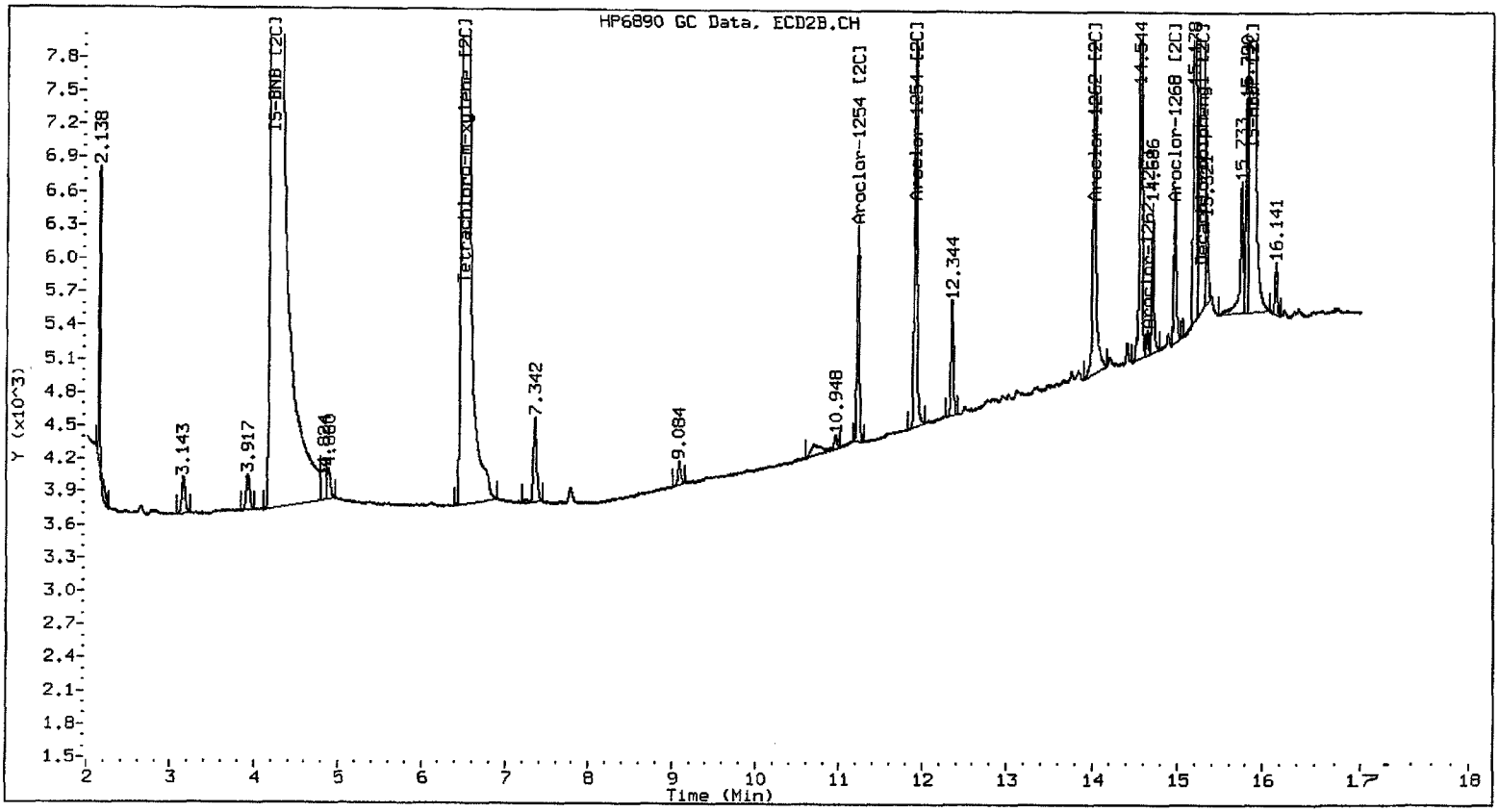


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191623.D
Data file 2: /20160219b.b/20160219.b/02191623.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 19-FEB-2016 16:58
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	0.003	1122176	6.486	0.004	3810285	20.1	20.8	3.3	Tetrachloro-m-xyle
14.743	0.000	3300870	15.261	0.000	2914997	19.8	19.3	2.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	50.3	52.0
Decachlorobiphenyl	49.6	48.2

02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10288295	0.0
Hexabromobiphenyl	12470452	12470452	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15804744	0.0
Hexabromobiphenyl	11807823	11807823	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

//target/share/chem4/ecd7.i/20160219b.b/02191623.D 0.25PPMAR1660 pa

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.049	0.001	329231	250.0	1	8.631	0.001	1966704	249.7
Aroclor-1016	2	8.558	0.001	1009426	248.6	2	9.355	0.003	4112558	253.6
Aroclor-1016	3	8.866	0.002	361833	261.0	3	9.587	0.001	1682561	260.0
Aroclor-1016	4	9.673	0.002	388299	251.2	4	10.528	0.002	762379	253.6

Total Col1Ave (4 peaks): 252.7 Total Col2Ave (4 peaks): 254.2 RPD = 1
Corrected Ave (3 peaks): 249.9 Corrected Ave (3 peaks): 252.3 RPD = 1

CalAmt %D: 1.1 CalAmt %D: 1.7

Aroclor-1260	1	12.261	0.001	737771	243.6	1	12.818	0.002	2715569	249.4
Aroclor-1260	2	12.942	0.001	2706223	234.8	2	13.582	0.001	5345845	253.2
Aroclor-1260	3	13.329	0.001	1248130	252.2	3	14.076	0.001	3444801	247.1
Aroclor-1260	4	13.431	0.001	774725	251.9	4	14.626	0.001	1323137	247.5
Aroclor-1260	5	13.843	0.001	450106	250.6	NS	---			----

Total Col1Ave (5 peaks): 246.6 Total Col2Ave (4 peaks): 249.3 RPD = 1
Corrected Ave (4 peaks): 245.2 Corrected Ave (3 peaks): 248.0 RPD = 1

CalAmt %D: -1.4 CalAmt %D: -0.3

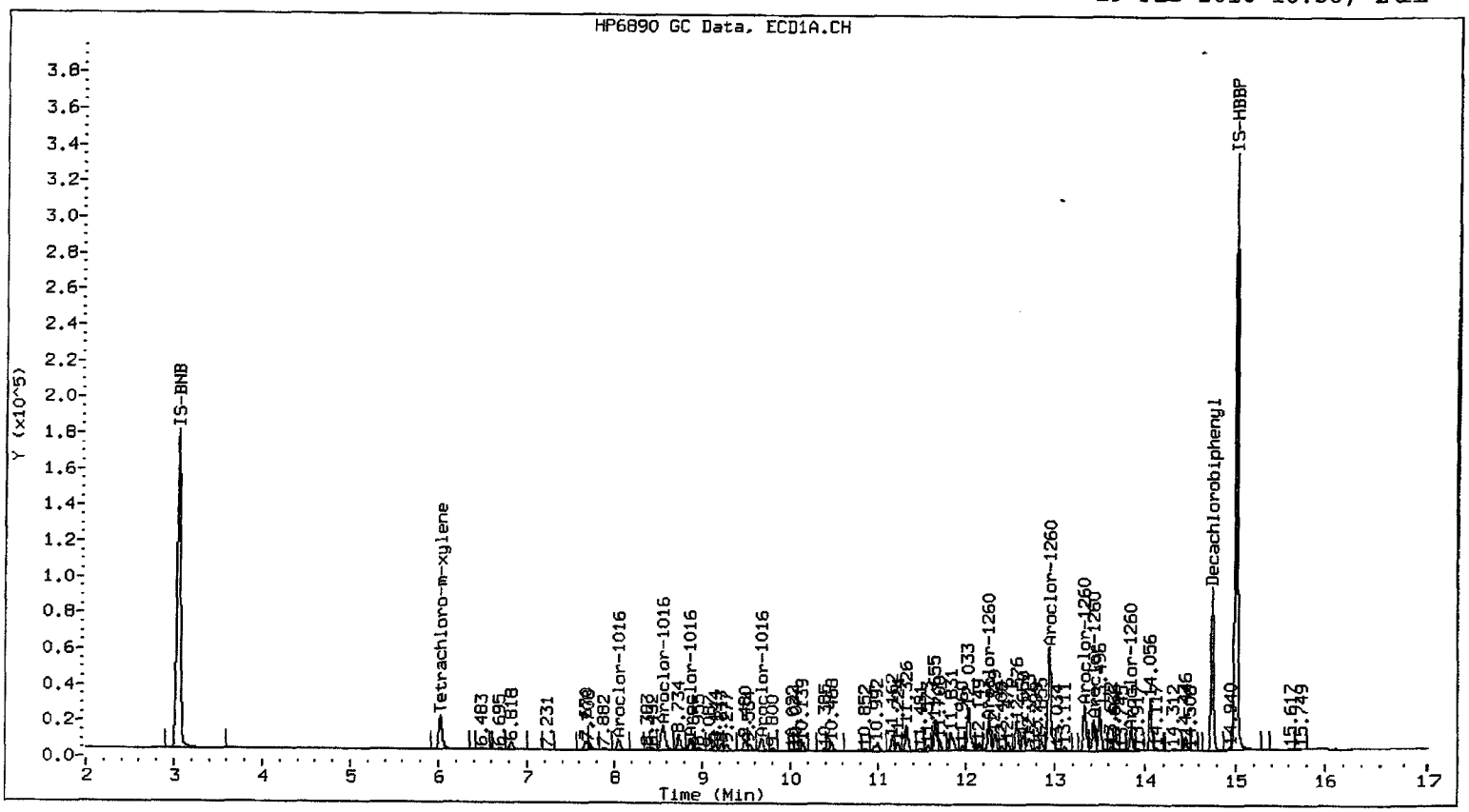
Total PCB Area Col1 (6.125 - 14.643) = 21309438 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 65025767 Col2 Total PCB = 0.5 ppm*

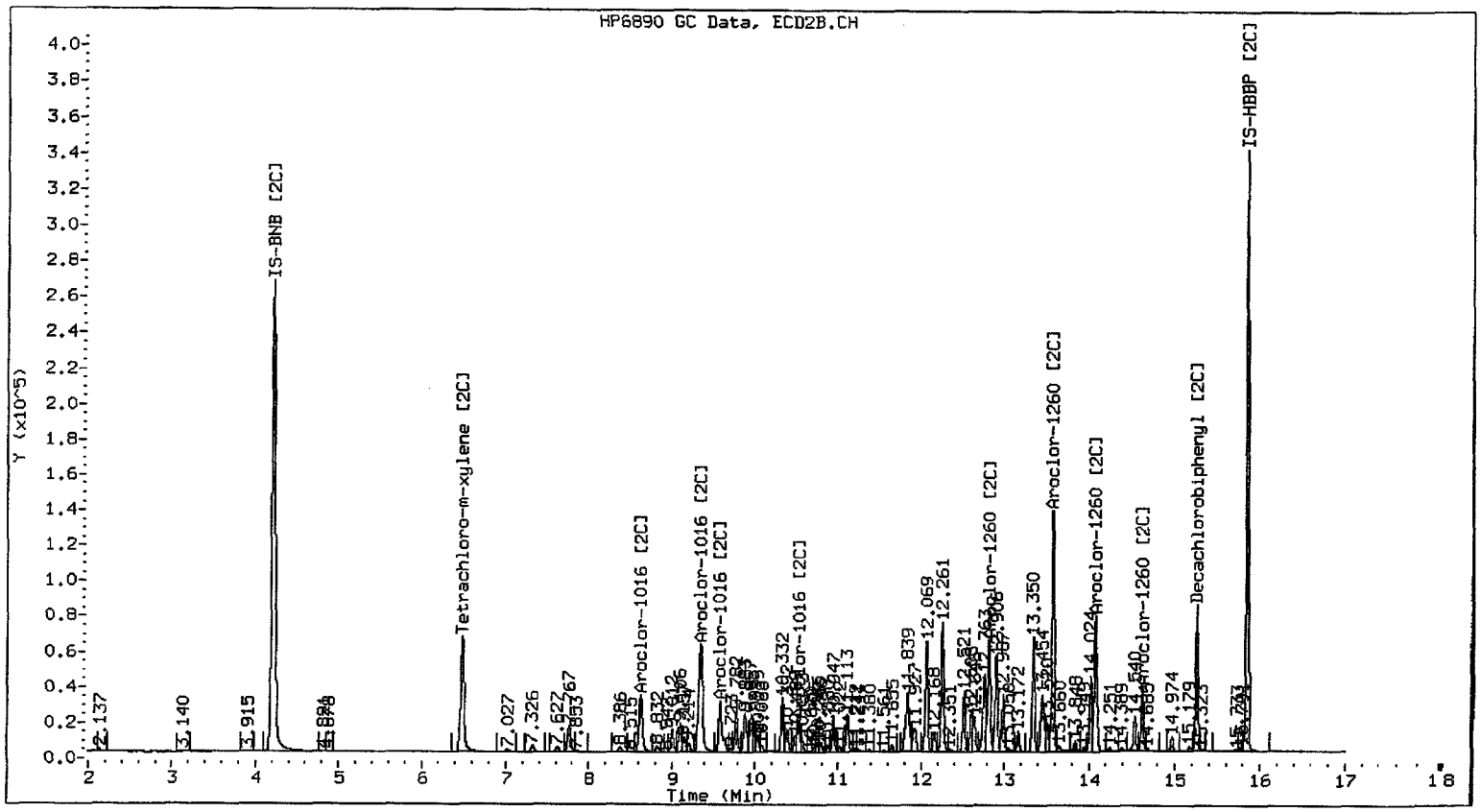
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

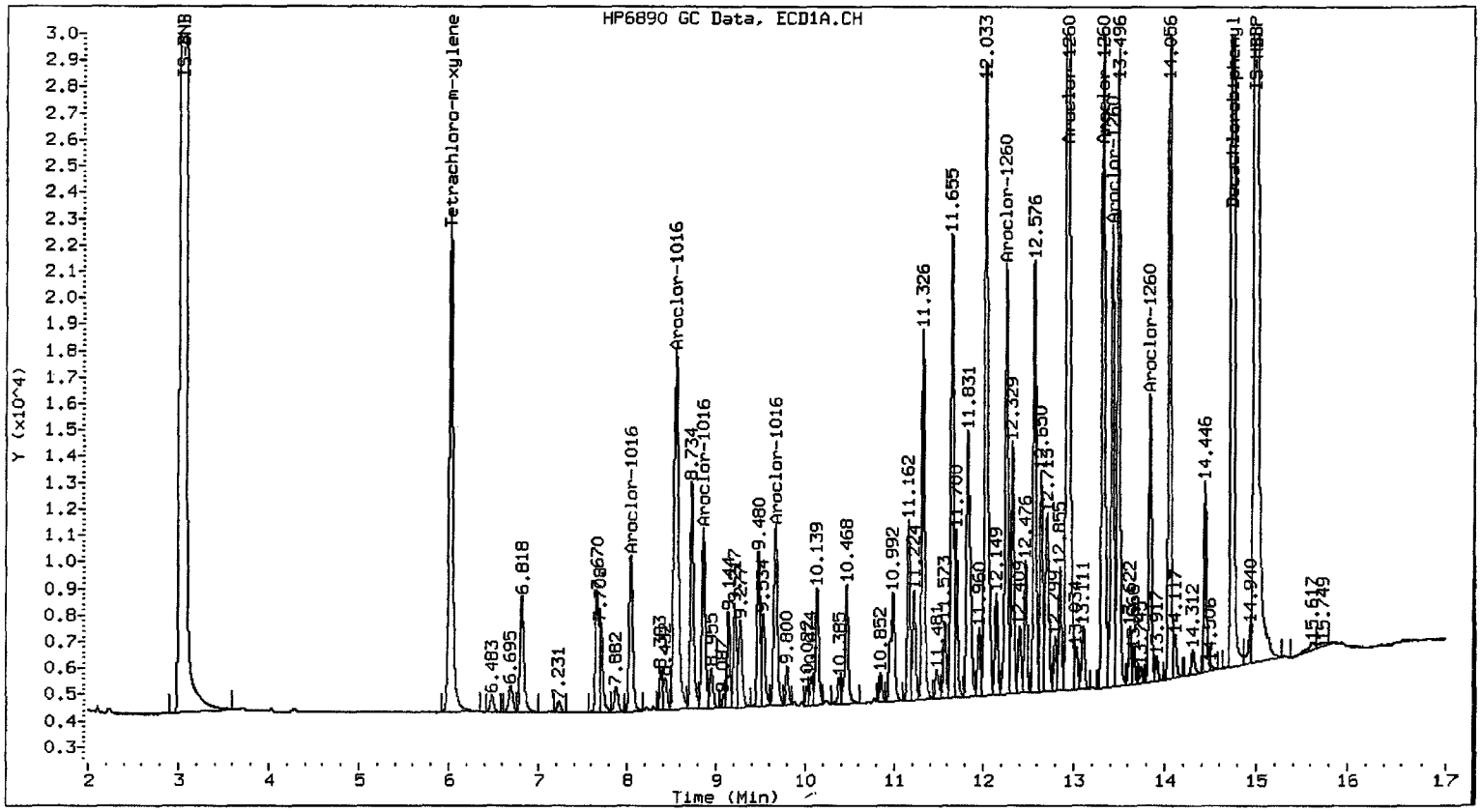
ECD7-ZB5 0.25PPMAR1660 19-FEB-2016 16:58, 2ul



ECD7-ZB35 0.25PPMAR1660 19-FEB-2016 16:58, 2u



ECD7-ZB5 0.25PPMAR1660 19-FEB-2016 16:58, 2ul



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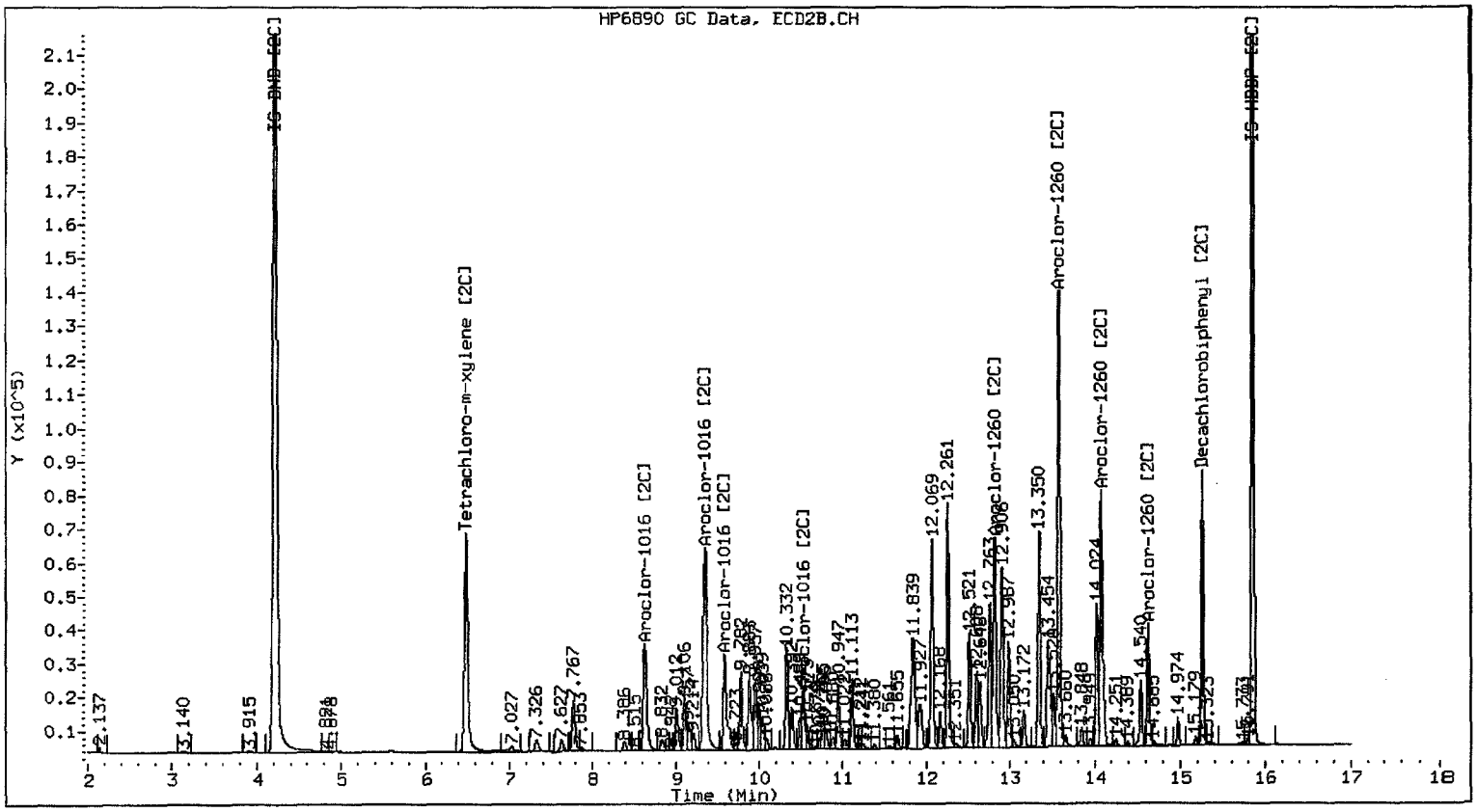


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191624.D
Data file 2: /20160219b.b/20160219.b/02191624.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 19-FEB-2016 17:20
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.030	0.005	86862	6.488	0.005	284248	1.6	1.5	1.4	Tetrachloro-m-xyle
14.743	0.000	265576	15.261	-0.000	268021	1.6	1.7	10.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	3.9	3.8
Decachlorobiphenyl	3.9	4.4

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10285465	-0.0
Hexabromobiphenyl	12470452	12728591	2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15956467	1.0
Hexabromobiphenyl	11807823	12010990	1.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

//target/share/chem4/ecd7.i/20160219b.b/02191624.D 0.02PPMAR1660 pa

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	8.051	0.004	28012	21.3	1	8.633	0.003	177178	22.3
Aroclor-1016	2	8.561	0.003	83258	20.5	2	9.357	0.005	346076	21.1
Aroclor-1016	3	8.869	0.005	23187	16.7	3	9.590	0.004	133890	20.5
Aroclor-1016	4	9.674	0.004	30686	19.9	4	10.529	0.003	63439	20.9

Total Col1Ave (4 peaks): 19.6 Total Col2Ave (4 peaks): 21.2 RPD = 8
Corrected Ave (3 peaks): 19.0 Corrected Ave (3 peaks): 20.8 RPD = 9

CalAmt %D: -2.0 CalAmt %D: 6.0

Aroclor-1260	1	12.262	0.002	68259	22.1	1	12.819	0.002	248590	22.4
Aroclor-1260	2	12.942	0.001	239993	20.4	2	13.582	0.001	443938	20.7
Aroclor-1260	3	13.329	0.002	98876	19.6	3	14.075	0.000	304010	21.4
Aroclor-1260	4	13.432	0.002	62546	19.9	4	14.626	0.001	118494	21.8
Aroclor-1260	5	13.843	0.001	36056	19.7	NS	---			----

Total Col1Ave (5 peaks): 20.3 Total Col2Ave (4 peaks): 21.6 RPD = 6
Corrected Ave (4 peaks): 19.9 Corrected Ave (3 peaks): 21.3 RPD = 7

CalAmt %D: 1.6 CalAmt %D: 7.9

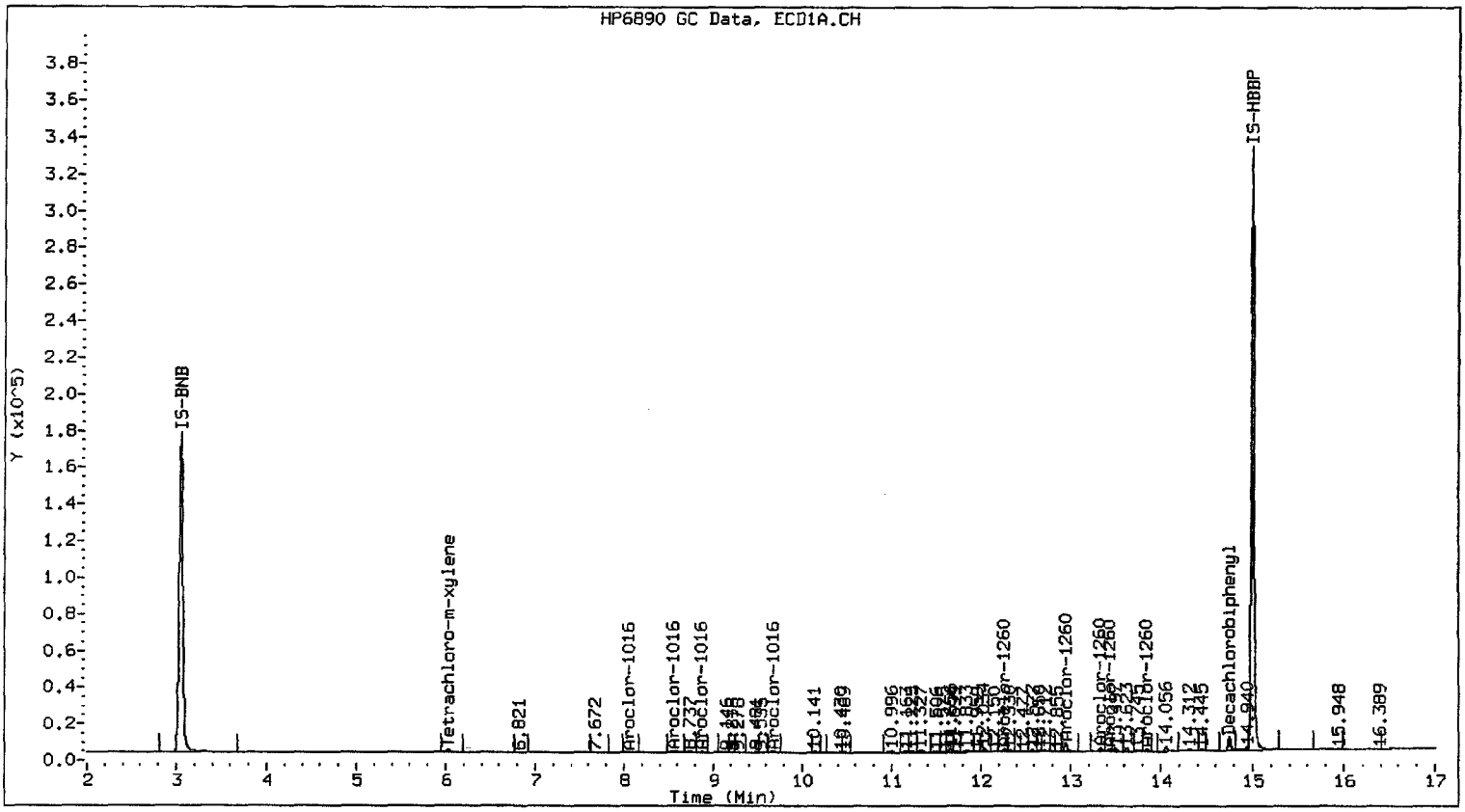
Total PCB Area Col1 (6.125 - 14.643) = 1946152 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 5721353 Col2 Total PCB = 0.0 ppm*

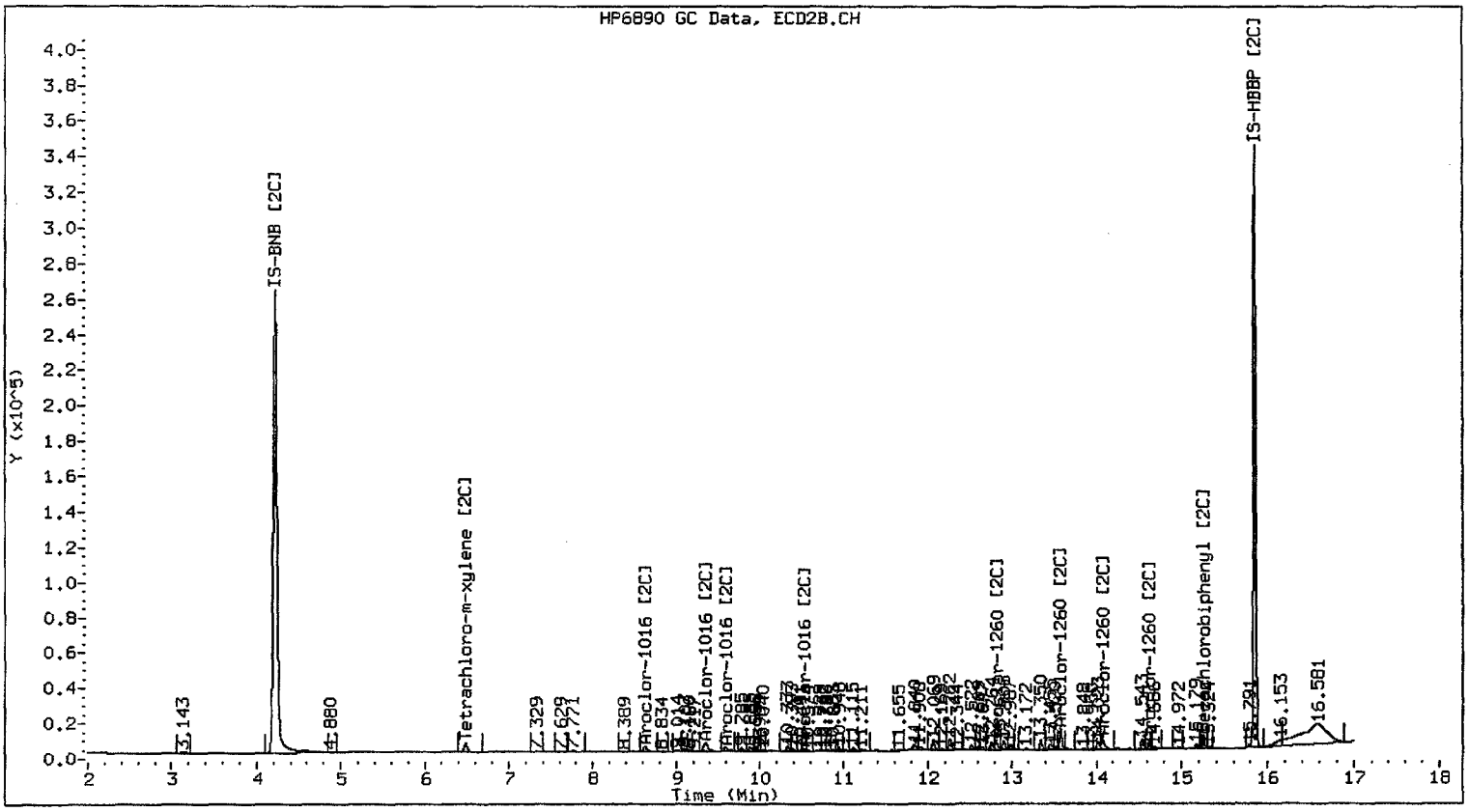
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 0.02PPMAR1660 19-FEB-2016 17:20, 2ul



ECD7-ZB35 0.02PPMAR1660 19-FEB-2016 17:20, 2u



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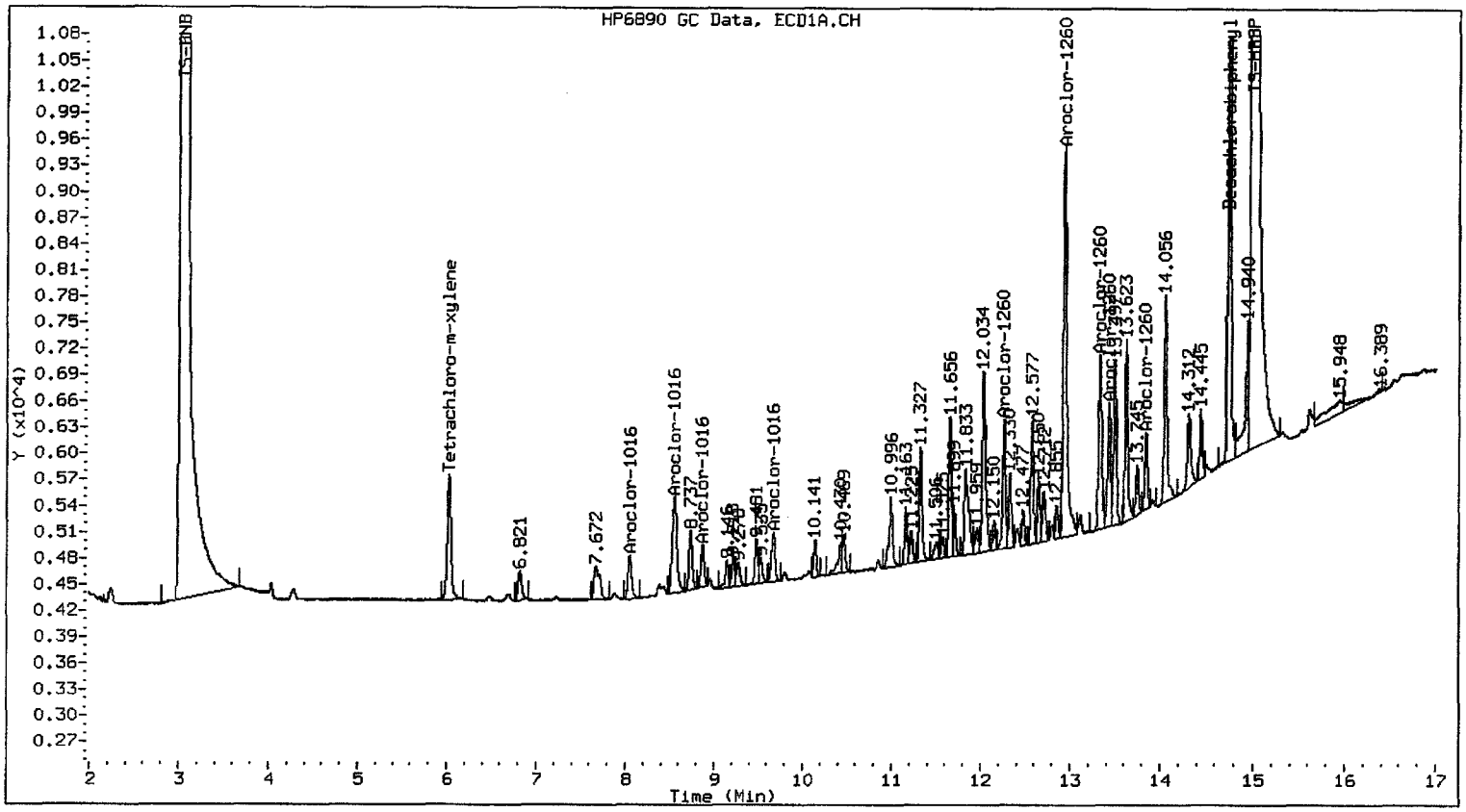
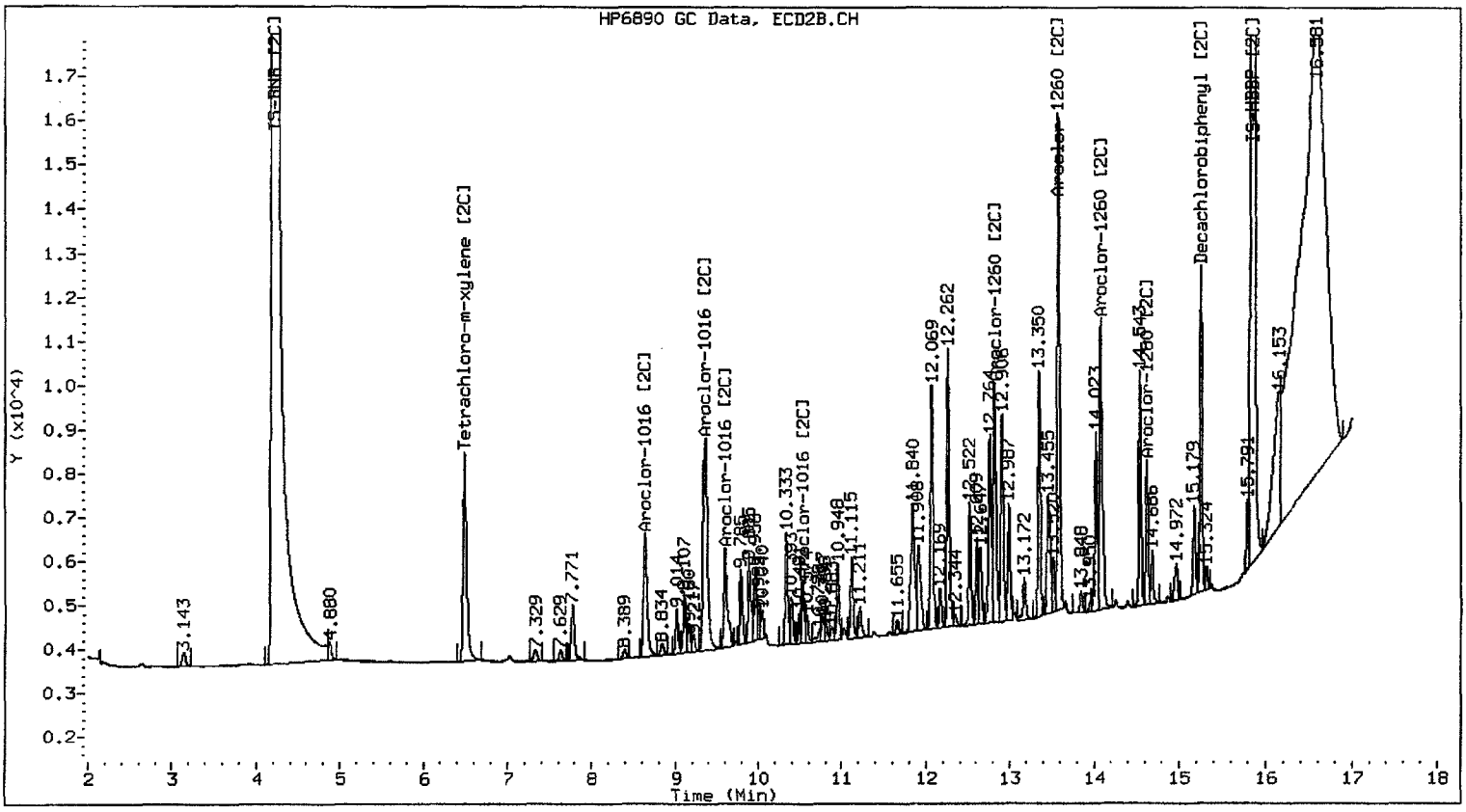


ECD7-ZB35 0.02PPMAR1660 19-FEB-2016 17:20, 2u



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191625.D
Data file 2: /20160219b.b/20160219.b/02191625.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 19-FEB-2016 17:42
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.030	0.005	217506	6.489	0.006	718970	3.9	3.9	0.8	Tetrachloro-m-xyle
14.744	0.000	656524	15.261	0.000	670547	3.9	4.4	11.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	9.7	9.8
Decachlorobiphenyl	9.8	11.0

k 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10300735	0.1
Hexabromobiphenyl	12470452	12566786	0.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15794112	-0.1
Hexabromobiphenyl	11807823	11898490	0.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

//target/share/chem4/ecd7.i/20160219b.b/02191625.D 0.05PPMAR1660 pa

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.051	0.003	69629	52.8	1	8.633	0.004	427669	54.3
Aroclor-1016	2	8.561	0.004	212023	52.2	2	9.357	0.005	838448	51.7
Aroclor-1016	3	8.868	0.004	73263	52.8	3	9.591	0.004	325698	50.4
Aroclor-1016	4	9.674	0.003	81294	52.5	4	10.528	0.002	154898	51.6

Total Col1Ave (4 peaks): 52.6 Total Col2Ave (4 peaks): 52.0 RPD = 1

Corrected Ave (3 peaks): 52.5 Corrected Ave (3 peaks): 51.2 RPD = 2

CalAmt %D: 5.1 CalAmt %D: 4.0

Aroclor-1260	1	12.262	0.002	162256	53.2	1	12.819	0.002	574398	52.4
Aroclor-1260	2	12.943	0.002	698950	60.2	2	13.582	0.001	1116240	52.5
Aroclor-1260	3	13.329	0.001	249449	50.0	3	14.075	0.000	751699	53.5
Aroclor-1260	4	13.432	0.001	156857	50.6	4	14.626	0.001	274689	51.0
Aroclor-1260	5	13.843	0.001	92524	51.1	NS	---			----

Total Col1Ave (5 peaks): 53.0 Total Col2Ave (4 peaks): 52.3 RPD = 1

Corrected Ave (4 peaks): 51.2 Corrected Ave (3 peaks): 51.9 RPD = 1

CalAmt %D: 6.0 CalAmt %D: 4.7

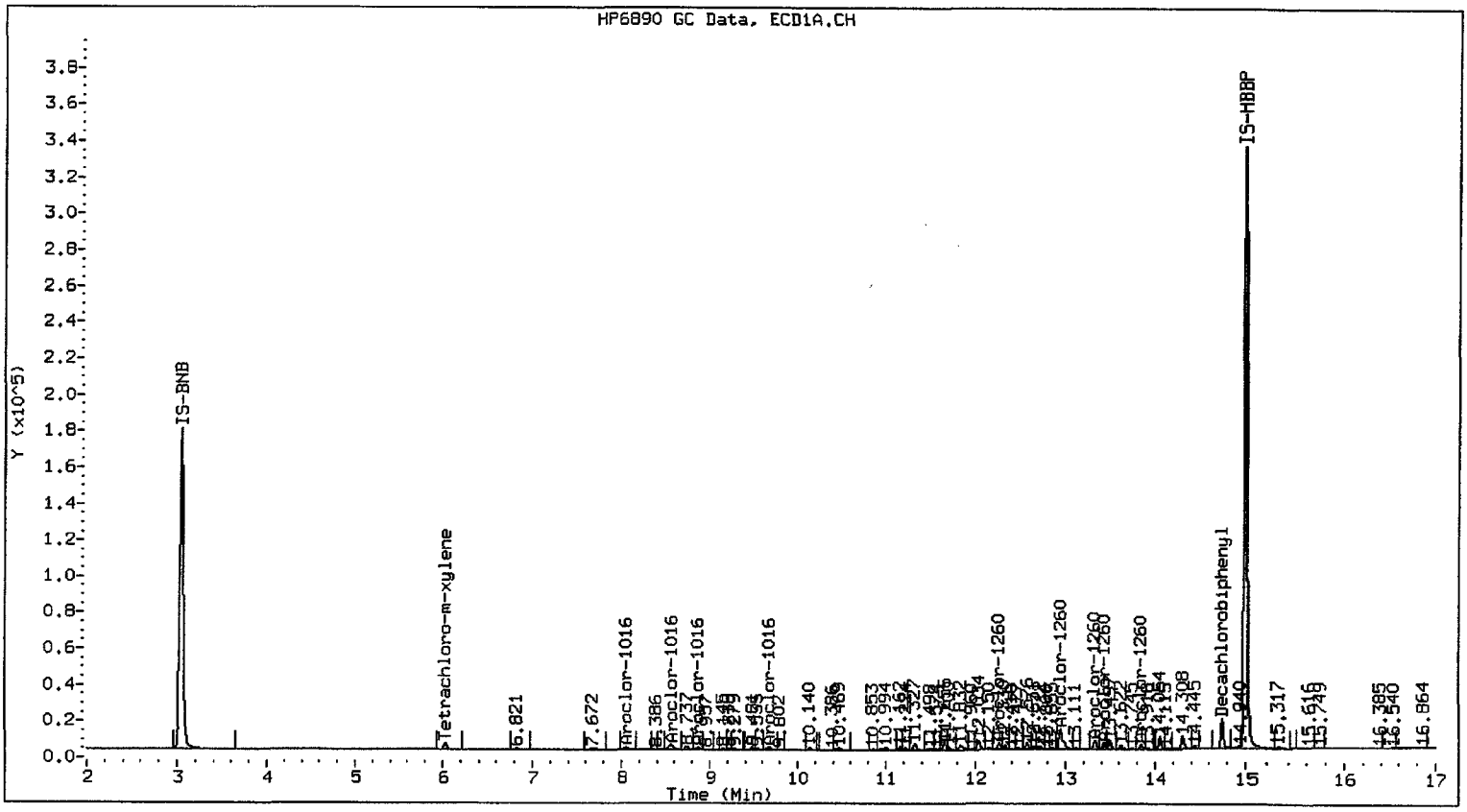
Total PCB Area Col1 (6.125 - 14.643) = 4991121 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 13847786 Col2 Total PCB = 0.1 ppm*

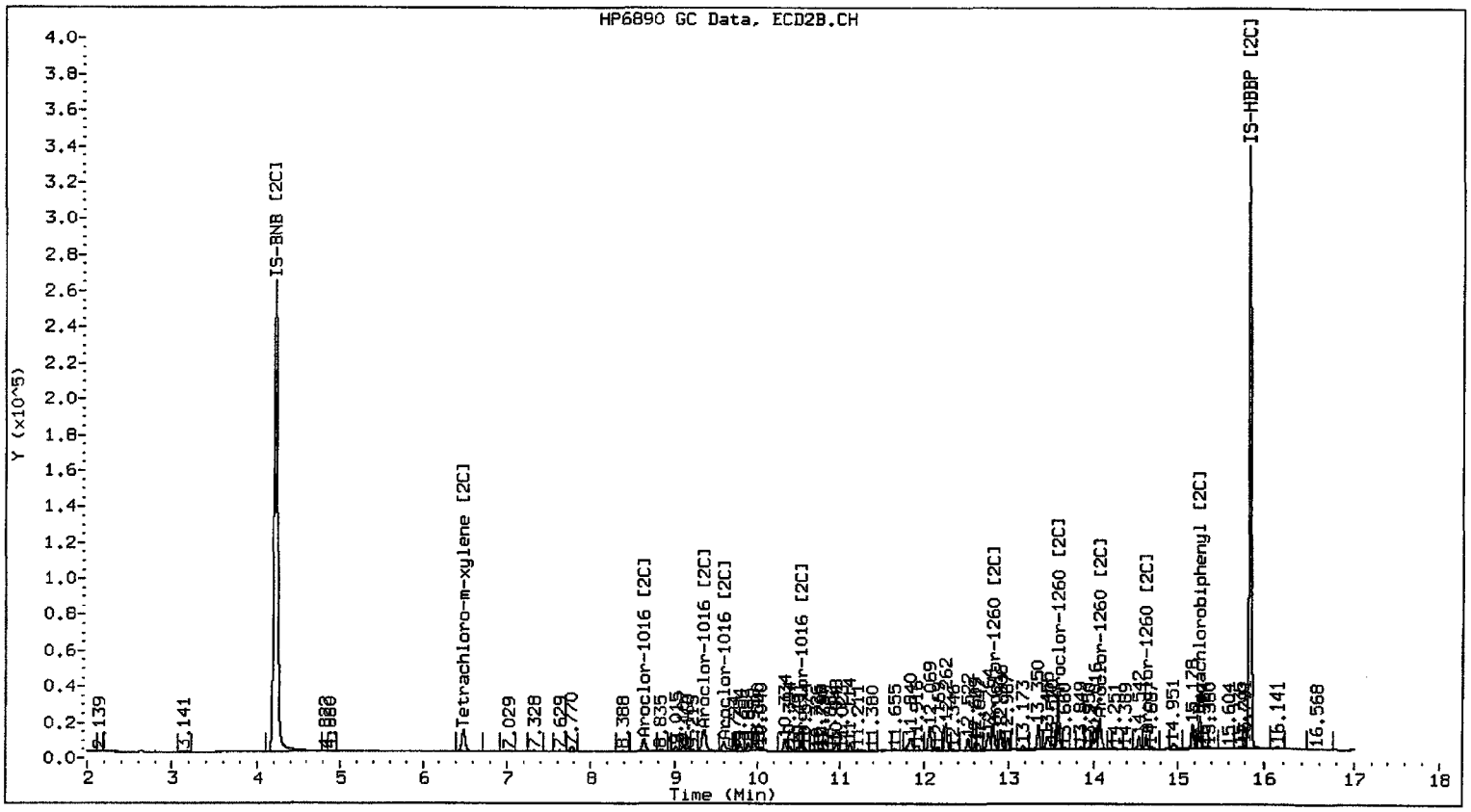
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

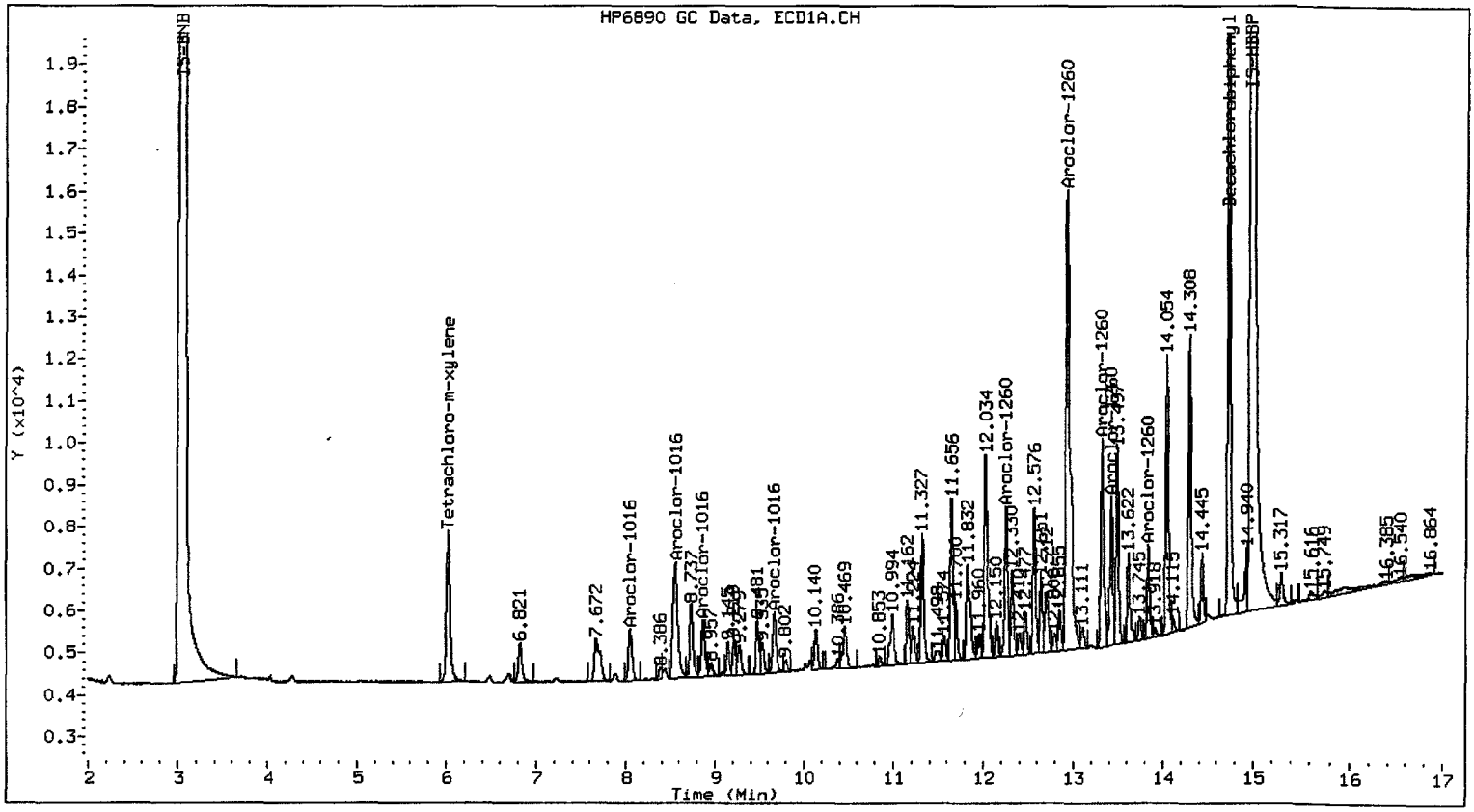
ECD7-ZB5 0.05PPMAR1660 19-FEB-2016 17:42, 2ul



ECD7-ZB35 0.05PPMAR1660 19-FEB-2016 17:42, 2u



ECD7-ZB5 0.05PPMAR1660 19-FEB-2016 17:42, 2ul



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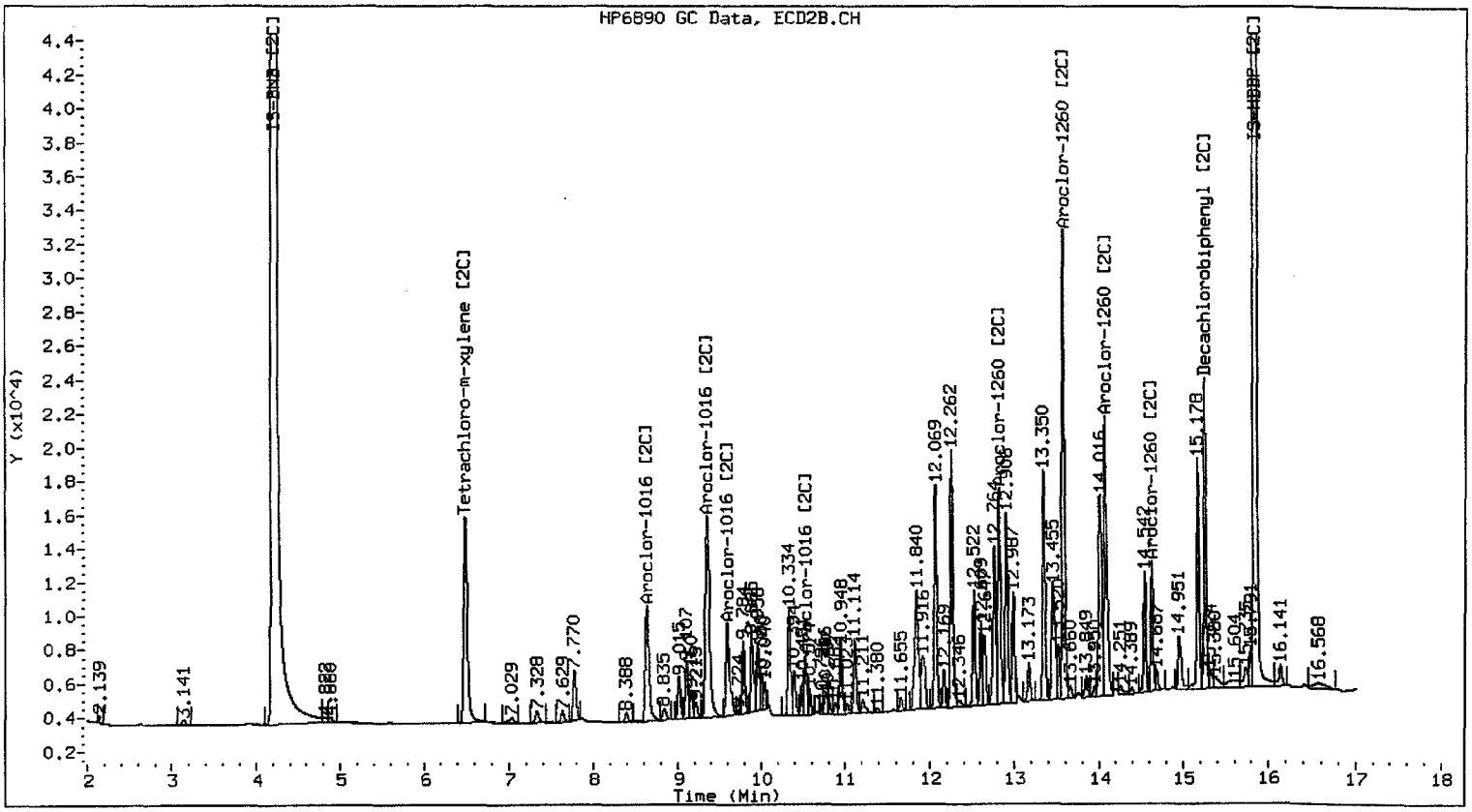


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191626.D
Data file 2: /20160219b.b/20160219.b/02191626.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 19-FEB-2016 18:04
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.027	0.003	4649901	6.484	0.002	14526013	83.4	79.9	4.3	Tetrachloro-m-xyle
14.744	0.000	14188106	15.260	-0.000	11283195	85.1	73.2	15.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	208.6	199.8
Decachlorobiphenyl	212.8	182.9

k 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10289010	0.0
Hexabromobiphenyl	12470452	12487766	0.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15681274	-0.8
Hexabromobiphenyl	11807823	12053412	2.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

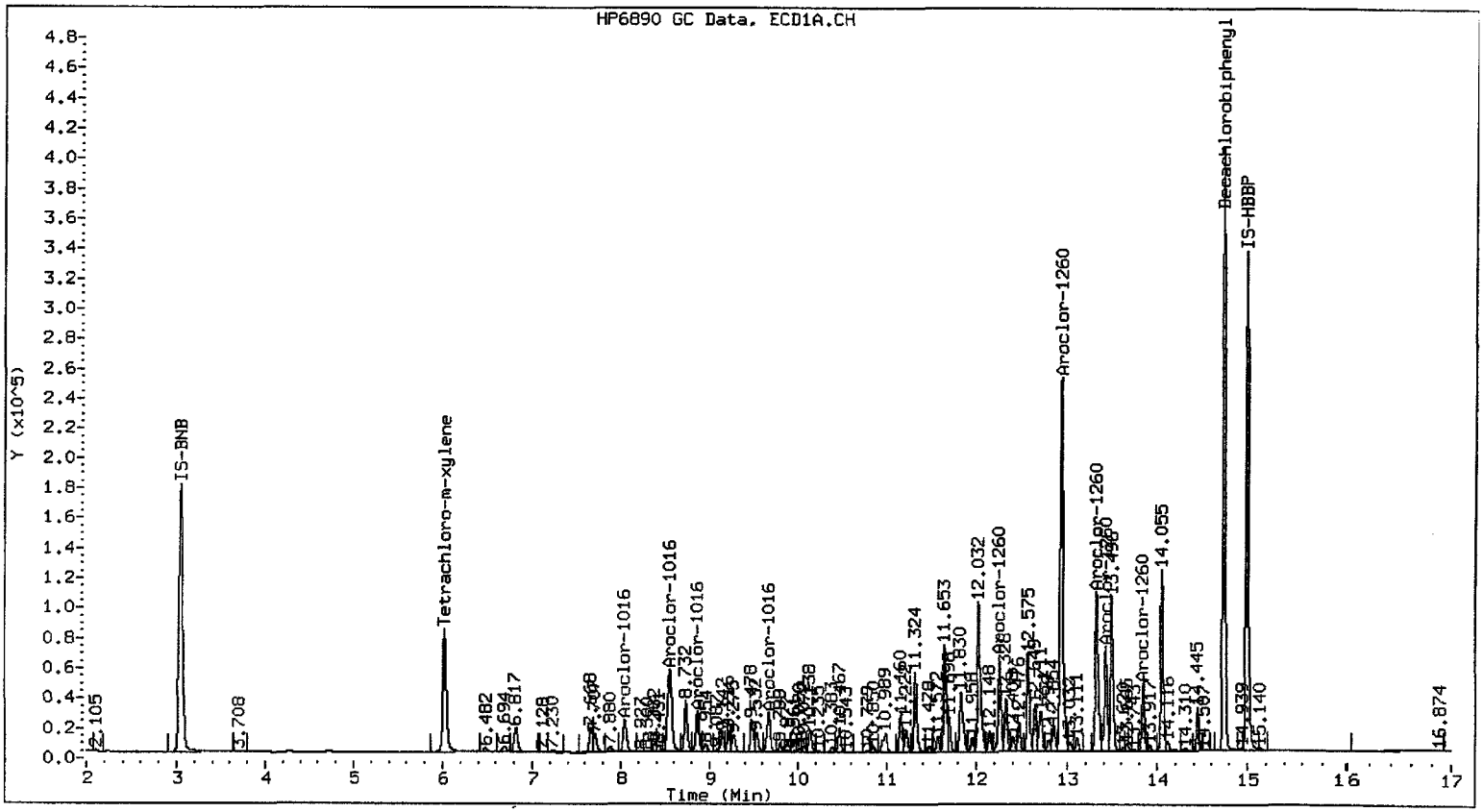
Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	8.046	-0.001	1188792	902.6	1	8.629	-0.001	6615159	846.6
Aroclor-1016	2	8.557	-0.001	3872908	953.8	2	9.353	0.001	14543536	904.0
Aroclor-1016	3	8.864	-0.000	1386555	1000.2	3	9.586	-0.000	5890070	917.3
Aroclor-1016	4	9.671	0.000	1460012	944.4	4	10.526	0.000	2761461	925.9
Total Col1Ave (4 peaks):				950.3		Total Col2Ave (4 peaks):			898.4	RPD = 6
Corrected Ave (3 peaks):				933.6		Corrected Ave (3 peaks):			889.3	RPD = 5
CalAmt %D:				-5.0		CalAmt %D:			-10.2	
Aroclor-1260	1	12.260	-0.000	2753351	907.7	1	12.817	0.000	9854878	886.7
Aroclor-1260	2	12.941	-0.000	11285931	977.8	2	13.581	0.000	19947742	925.5
Aroclor-1260	3	13.329	0.001	5073336	1023.6	3	14.074	-0.001	12920507	907.7
Aroclor-1260	4	13.430	-0.000	3053920	991.7	4	14.625	-0.000	5053821	926.0
Aroclor-1260	5	13.843	0.001	1816668	1010.1	NS	---			----
Total Col1Ave (5 peaks):				982.2		Total Col2Ave (4 peaks):			911.5	RPD = 7
Corrected Ave (4 peaks):				971.8		Corrected Ave (3 peaks):			906.7	RPD = 7
CalAmt %D:				-1.8		CalAmt %D:			-8.9	

Total PCB Area Col1 (6.125 - 14.643) = 81561327 Col1 Total PCB = 1.9 ppm*

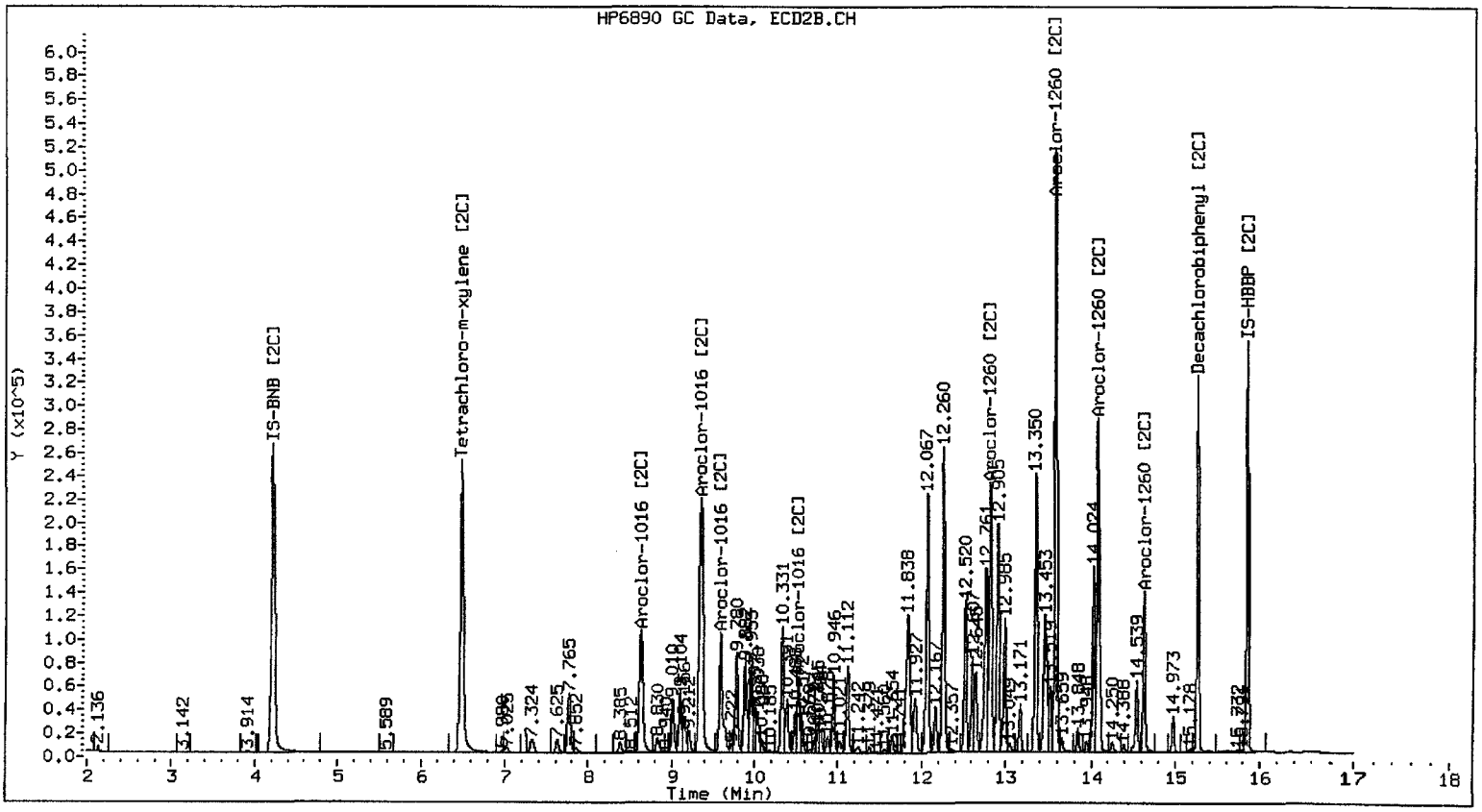
Total PCB Area Col2 (6.125 - 14.643) = 234252963 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

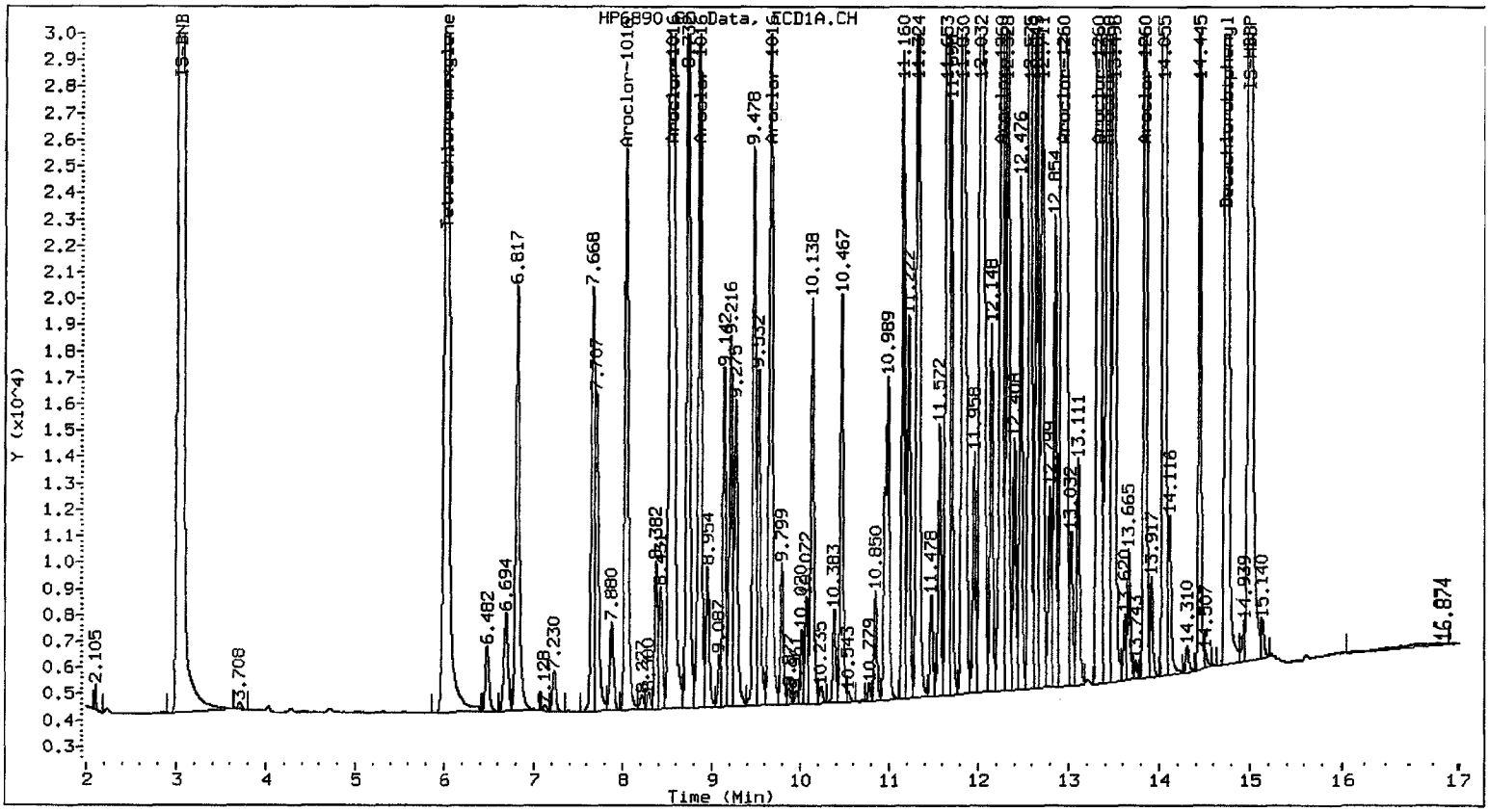
ECD7-ZB5 1PPMAR1660 19-FEB-2016 18:04, 2ul



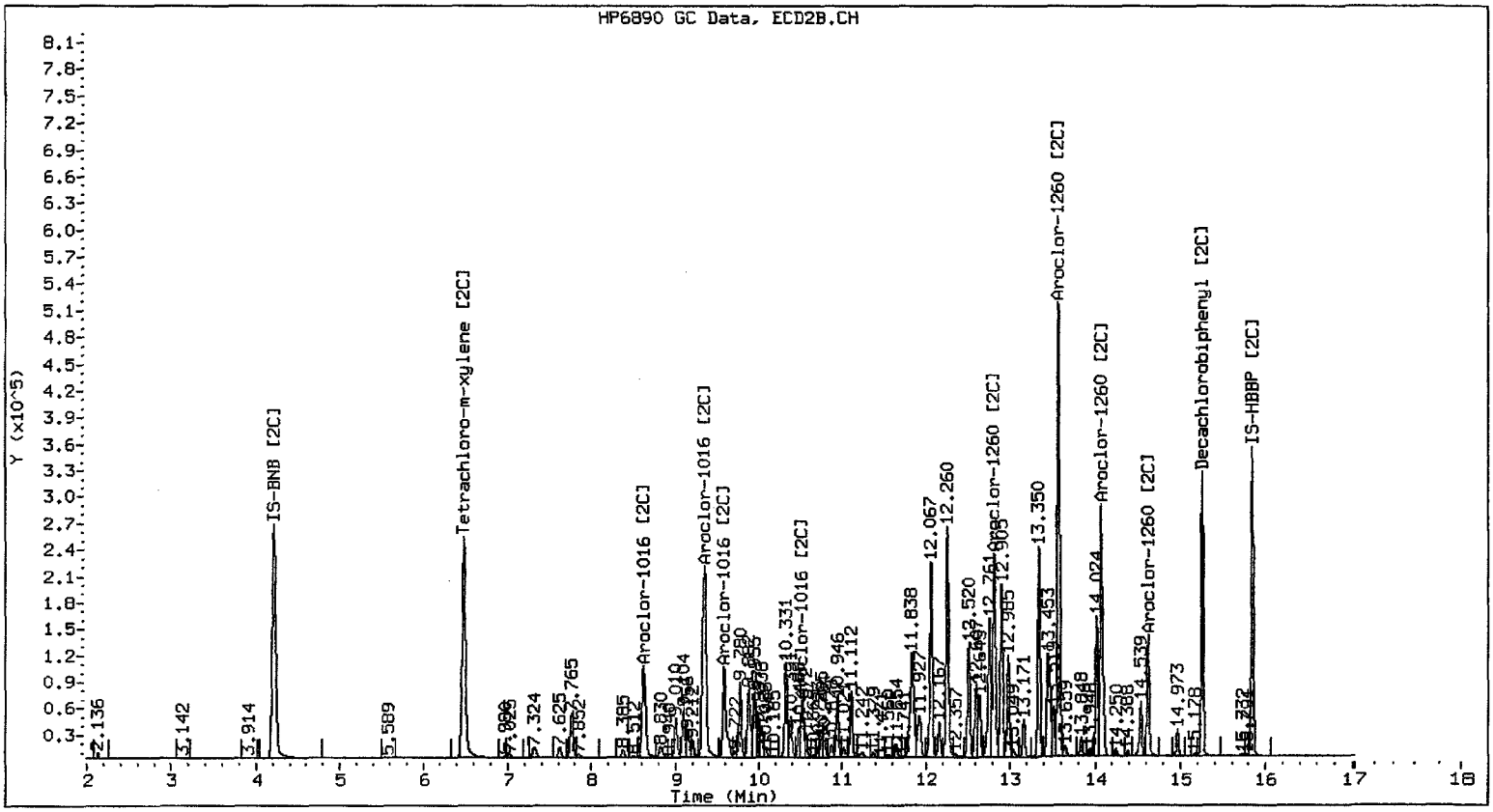
ECD7-ZB35 1PPMAR1660 19-FEB-2016 18:04, 2ul



ECD7-ZB5 1PPMAR1660 19-FEB-2016 18:04, 2ul



ECD7-ZB35 1PPMAR1660 19-FEB-2016 18:04, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191627.D
Data file 2: /20160219b.b/20160219.b/02191627.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 19-FEB-2016 18:26
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	0.003	444076	6.487	0.004	1474652	7.9	8.0	1.9	Tetrachloro-m-xyle
14.743	0.000	1322157	15.260	-0.000	1235615	7.8	8.0	2.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	19.7	20.1
Decachlorobiphenyl	19.5	20.0

02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10414273	1.2
Hexabromobiphenyl	12470452	12696349	1.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15861283	0.4
Hexabromobiphenyl	11807823	12076541	2.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

//target/share/chem4/ecd7.i/20160219b.b/02191627.D 0.1PPMAR1660 pag

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.050	0.002	137747	103.3	1	8.631	0.001	822266	104.0
Aroclor-1016	2	8.559	0.002	418990	101.9	2	9.355	0.004	1689243	103.8
Aroclor-1016	3	8.866	0.002	147713	105.3	3	9.588	0.001	678409	104.5
Aroclor-1016	4	9.673	0.002	162268	103.7	4	10.527	0.001	309121	102.5
Total Col1Ave (4 peaks):				103.6		Total Col2Ave (4 peaks):			103.7	RPD = 0
Corrected Ave (3 peaks):				103.0		Corrected Ave (3 peaks):			103.4	RPD = 0
CalAmt %D:				3.6		CalAmt %D:			3.7	
Aroclor-1260	1	12.260	0.000	316901	102.8	1	12.817	0.001	1139590	102.3
Aroclor-1260	2	12.942	0.001	1088125	92.7	2	13.581	0.000	2211798	102.4
Aroclor-1260	3	13.329	0.001	500899	99.4	3	14.076	0.001	1455571	102.1
Aroclor-1260	4	13.431	0.000	316098	101.0	4	14.626	0.001	559712	102.4
Aroclor-1260	5	13.844	0.001	181806	99.4	NS	---			----
Total Col1Ave (5 peaks):				99.1		Total Col2Ave (4 peaks):			102.3	RPD = 3
Corrected Ave (4 peaks):				98.1		Corrected Ave (3 peaks):			102.3	RPD = 4
CalAmt %D:				-0.9		CalAmt %D:			2.3	

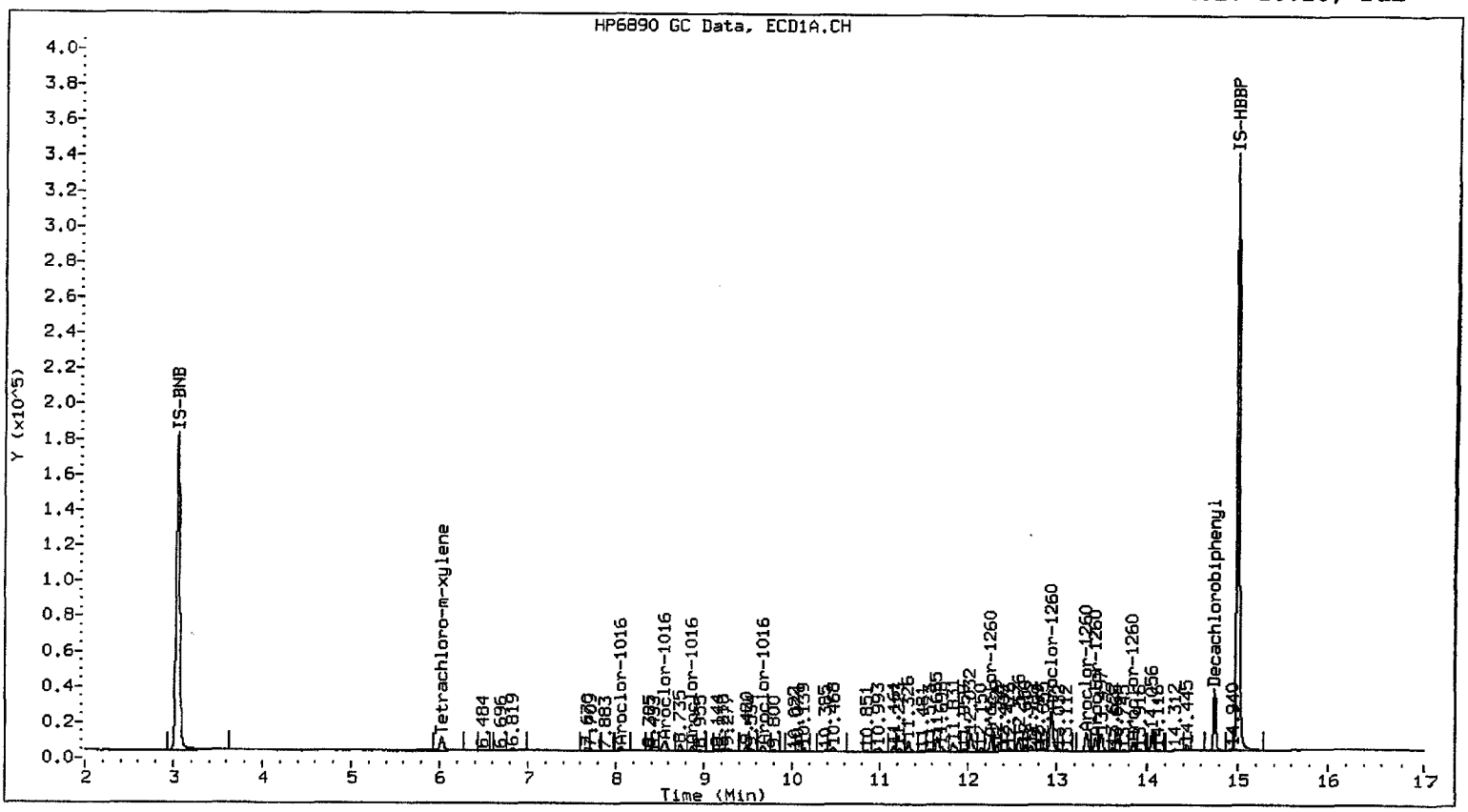
Total PCB Area Col1 (6.125 - 14.643) = 8901404 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 26875489 Col2 Total PCB = 0.2 ppm*

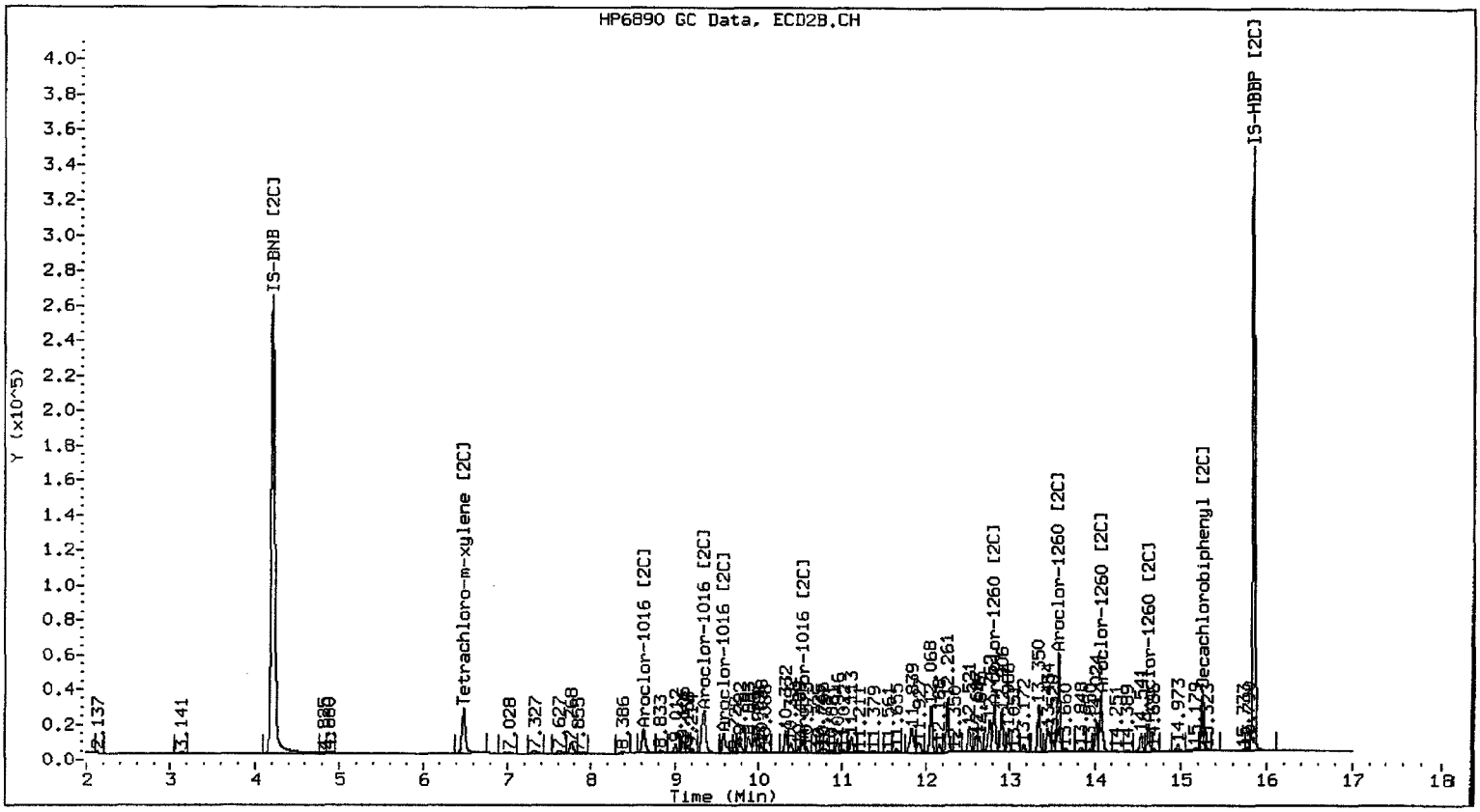
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

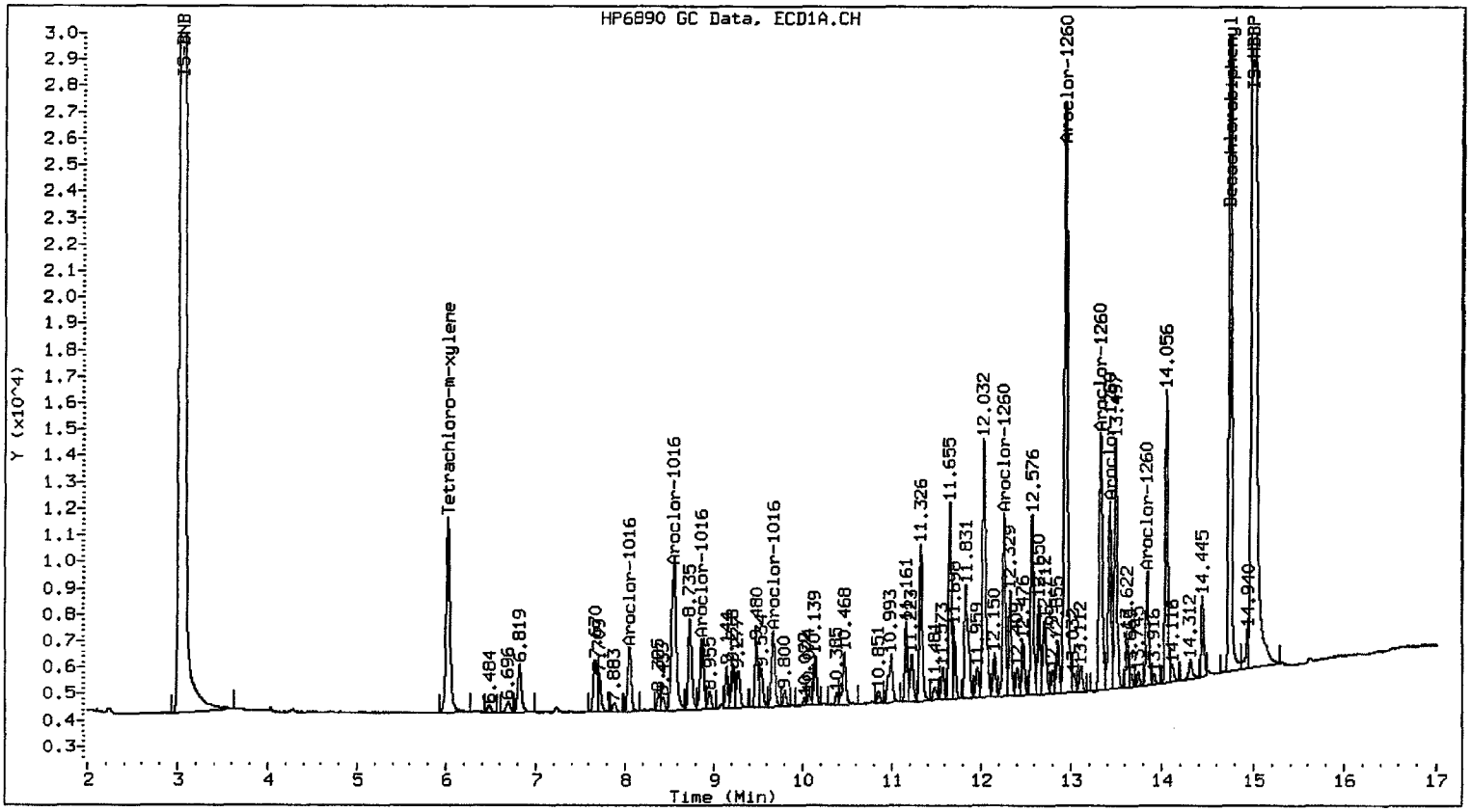
ECD7-ZB5 0.1PPMAR1660 19-FEB-2016 18:26, 2ul



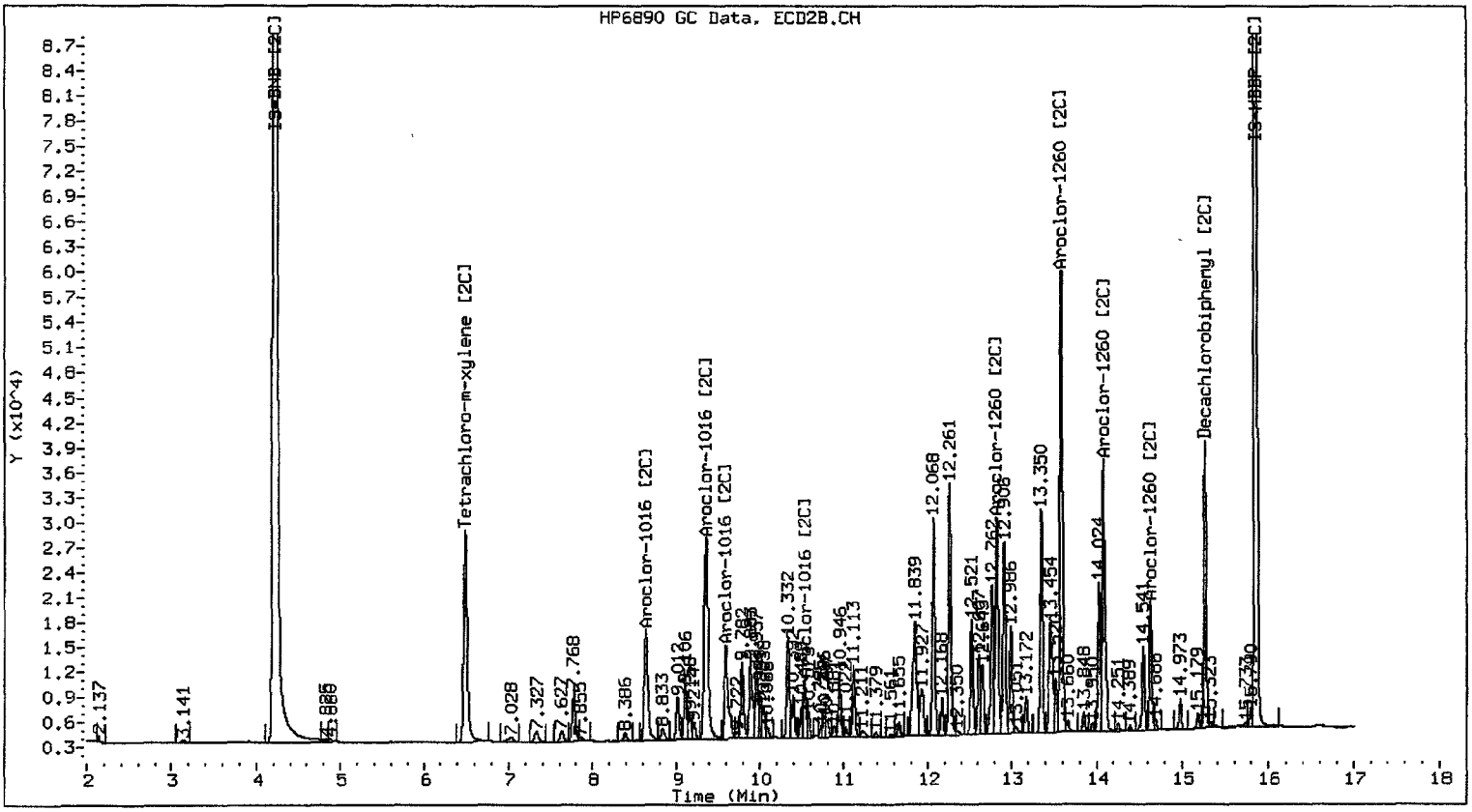
ECD7-ZB35 0.1PPMAR1660 19-FEB-2016 18:26, 2ul



ECD7-ZB5 0.1PPMAR1660 19-FEB-2016 18:26, 2ul



ECD7-ZB35 0.1PPMAR1660 19-FEB-2016 18:26, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191628.D
Data file 2: /20160219b.b/20160219.b/02191628.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 19-FEB-2016 18:48
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.027	0.002	2338010	6.485	0.003	7561405	40.7	40.6	0.2	Tetrachloro-m-xyle
14.743	-0.000	7001773	15.261	-0.000	5841791	40.6	37.2	8.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	101.8	101.6
Decachlorobiphenyl	101.4	93.0

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10603199	3.1
Hexabromobiphenyl	12470452	12934017	3.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	16055838	1.6
Hexabromobiphenyl	11807823	12279136	4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

//target/share/chem4/ecd7.i/20160219b.b/02191628.D 0.5PPMAR1660 pag

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	8.048	0.000	640809	472.1	1	8.629	0.000	3653461	456.6
Aroclor-1016	2	8.557	0.000	2016188	481.8	2	9.352	0.000	7835559	475.7
Aroclor-1016	3	8.864	0.000	721926	505.3	3	9.587	0.000	3177376	483.3
Aroclor-1016	4	9.671	0.000	772987	485.2	4	10.526	0.000	1463360	479.2
Total Col1Ave (4 peaks):				486.1		Total Col2Ave (4 peaks):			473.7	RPD = 3
Corrected Ave (3 peaks):				479.7		Corrected Ave (3 peaks):			470.5	RPD = 2
CalAmt %D:				-2.8		CalAmt %D:			-5.3	
Aroclor-1260	1	12.260	0.000	1450387	461.7	1	12.816	0.000	5223929	461.4
Aroclor-1260	2	12.941	0.000	5571755	466.1	2	13.581	0.000	10480990	477.3
Aroclor-1260	3	13.328	0.000	2552878	497.3	3	14.075	0.000	6827235	470.8
Aroclor-1260	4	13.431	0.000	1566866	491.2	4	14.625	0.000	2644458	475.6
Aroclor-1260	5	13.842	0.000	919836	493.8	NS	---			----
Total Col1Ave (5 peaks):				482.0		Total Col2Ave (4 peaks):			471.3	RPD = 2
Corrected Ave (4 peaks):				478.2		Corrected Ave (3 peaks):			469.3	RPD = 2
CalAmt %D:				-3.6		CalAmt %D:			-5.7	

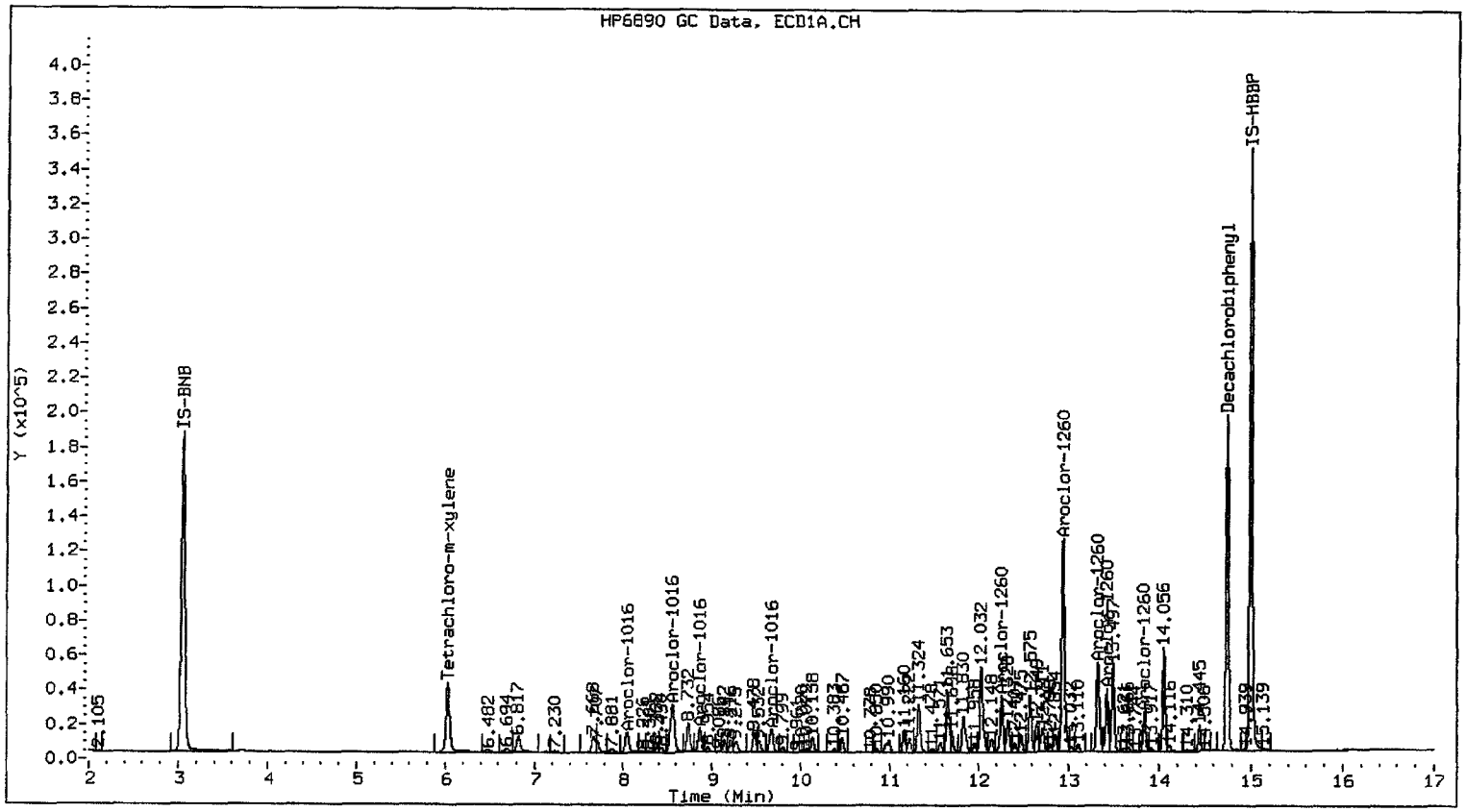
Total PCB Area Col1 (6.125 - 14.643) = 42340328 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 124843505 Col2 Total PCB = 0.9 ppm*

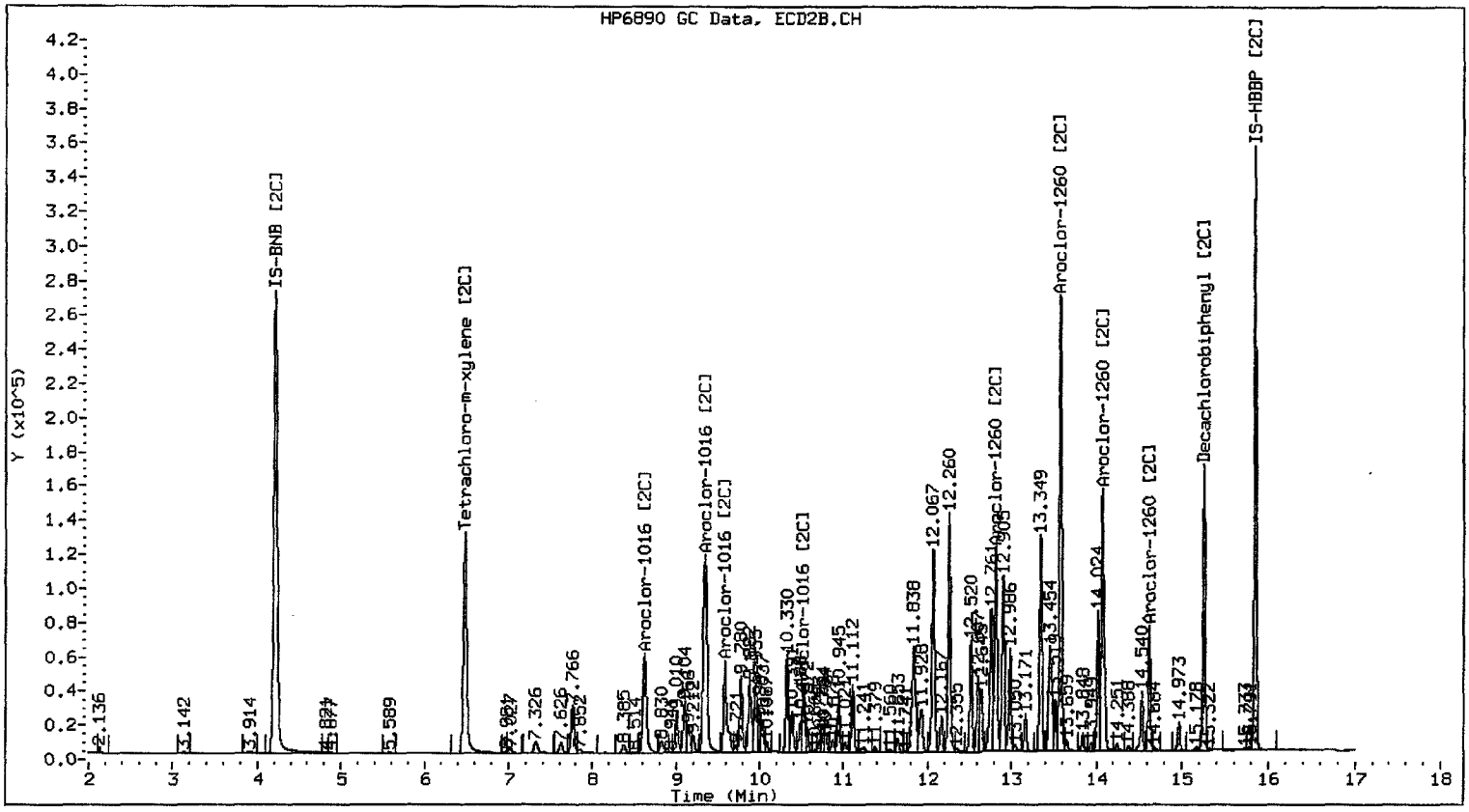
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

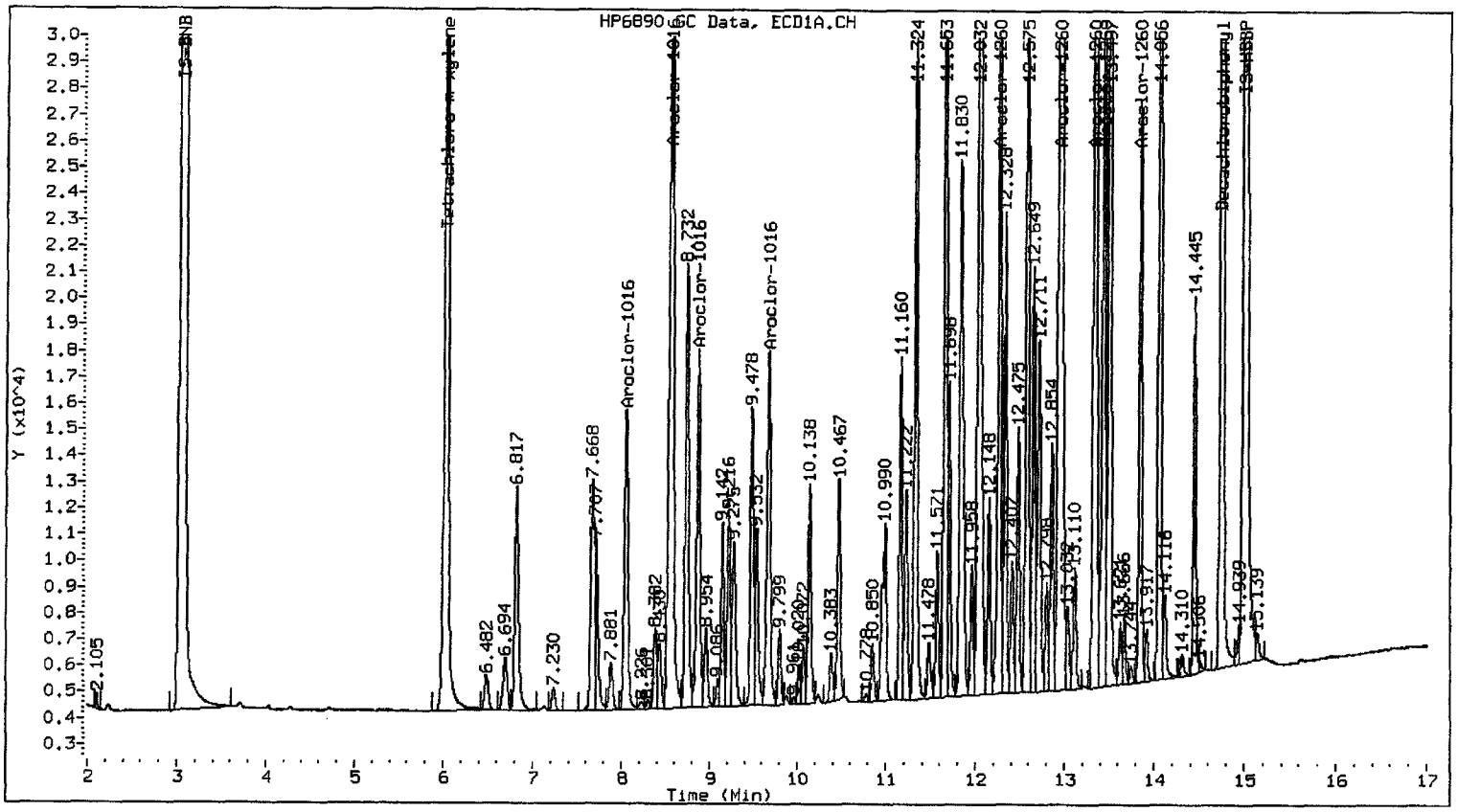
ECD7-ZB5 0.5PPMAR1660 19-FEB-2016 18:48, 2ul



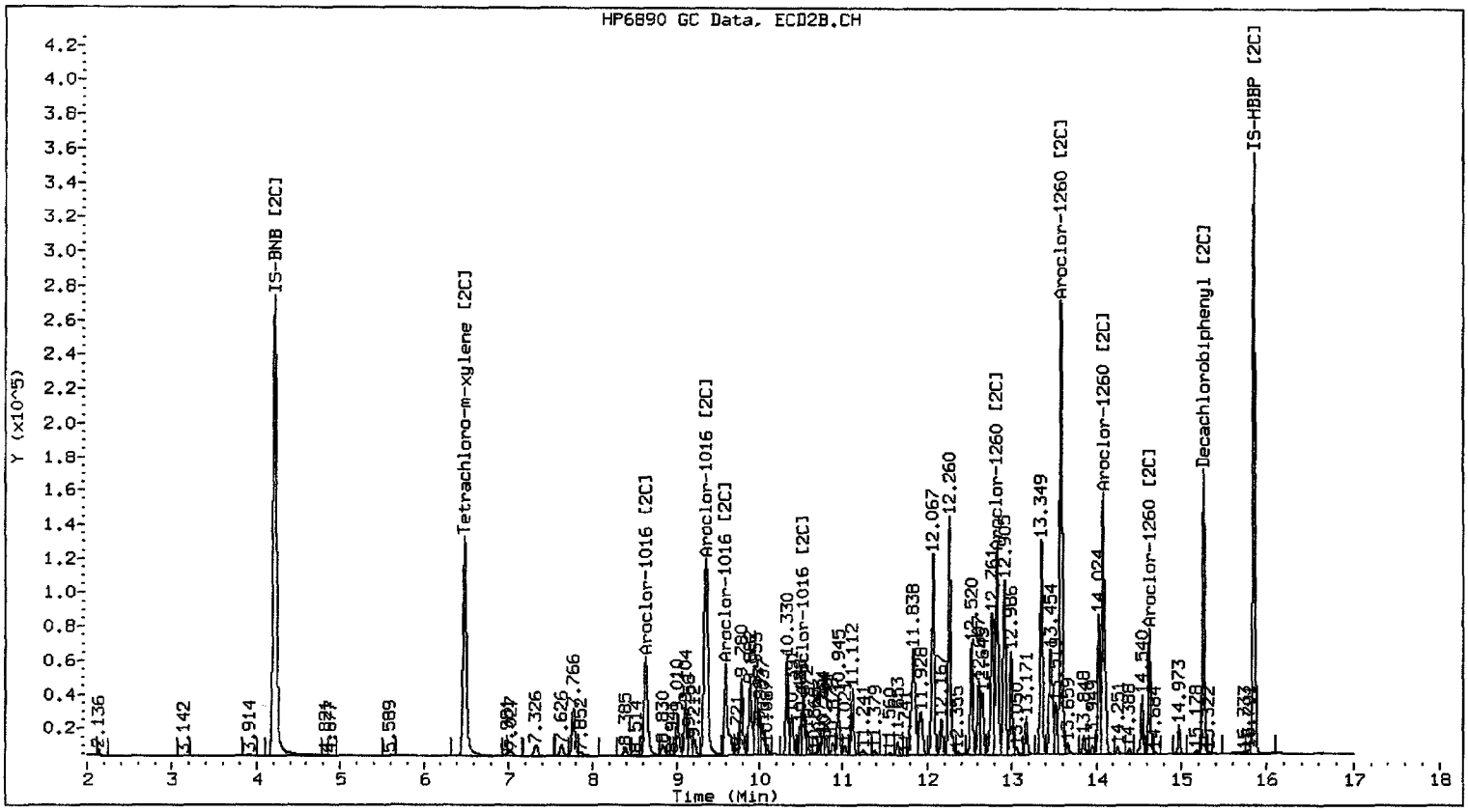
ECD7-ZB35 0.5PPMAR1660 19-FEB-2016 18:48, 2ul



ECD7-ZB5 0.5PPMAR1660 19-FEB-2016 18:48, 2ul



ECD7-ZB35 0.5PPMAR1660 19-FEB-2016 18:48, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191629.D
Data file 2: /20160219b.b/20160219.b/02191629.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 19-FEB-2016 19:09
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.025	0.000	2218924	6.484	0.001	7200540	39.6	39.5	0.2	Tetrachloro-m-xyle
14.743	0.000	6467027	15.261	-0.000	5407354	37.9	35.0	7.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	99.1	98.8
Decachlorobiphenyl	94.7	87.5

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10337924	0.5
Hexabromobiphenyl	12470452	12790976	2.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15715878	-0.6
Hexabromobiphenyl	11807823	12072326	2.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	8.555	0.000	794517	250.0	1	8.628	-0.000	1521322	250.0
Aroclor-1242	2	8.863	0.000	291674	250.0	2	9.353	-0.000	3149801	250.0
Aroclor-1242	3	9.670	0.000	368778	250.0	3	9.780	-0.001	813103	250.0
Aroclor-1242	4	10.071	0.000	266510	250.0	4	10.878	-0.001	1095130	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

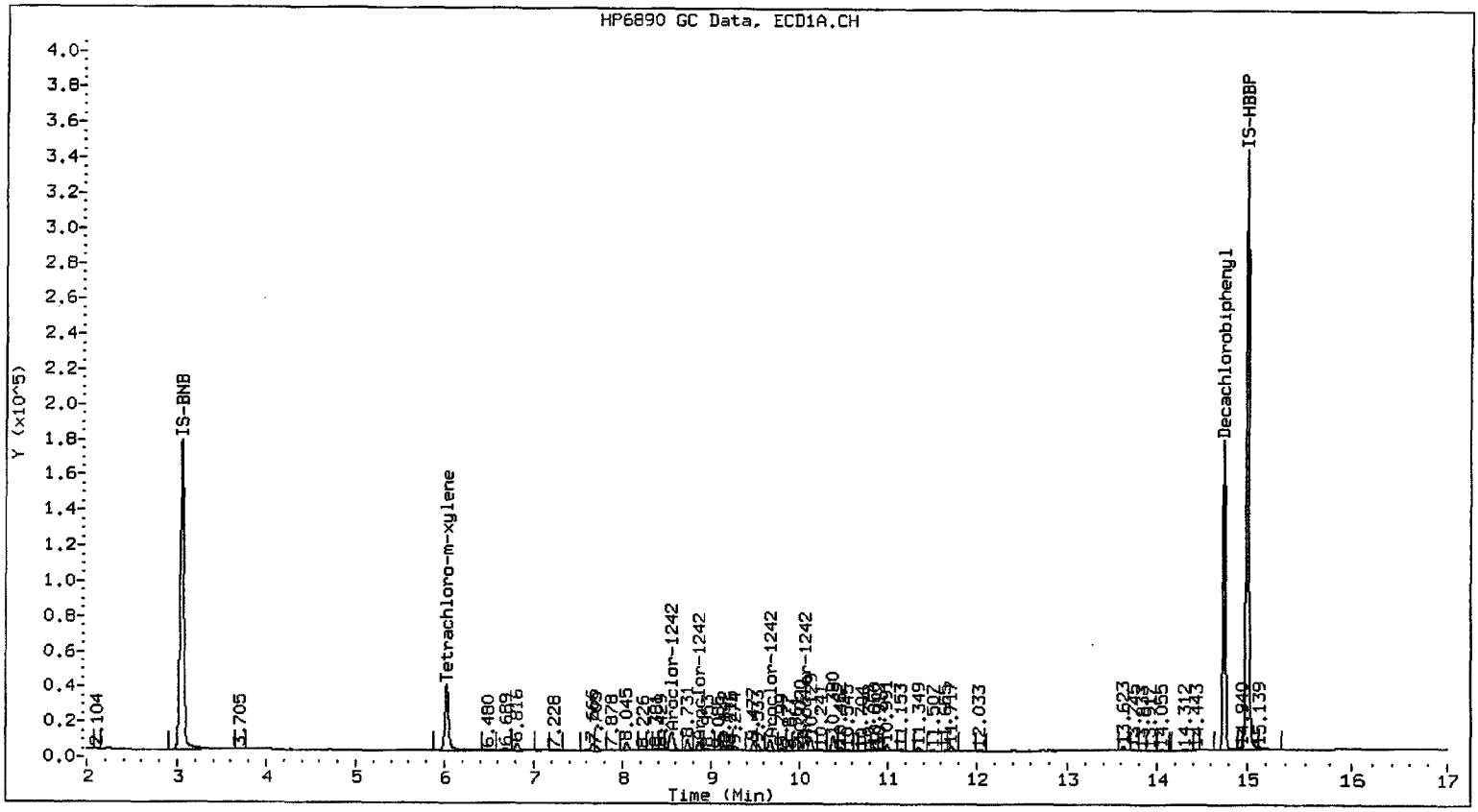
Total PCB Area Col1 (6.125 - 14.643) = 6400576 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 30044201 Col2 Total PCB = 0.2 ppm*

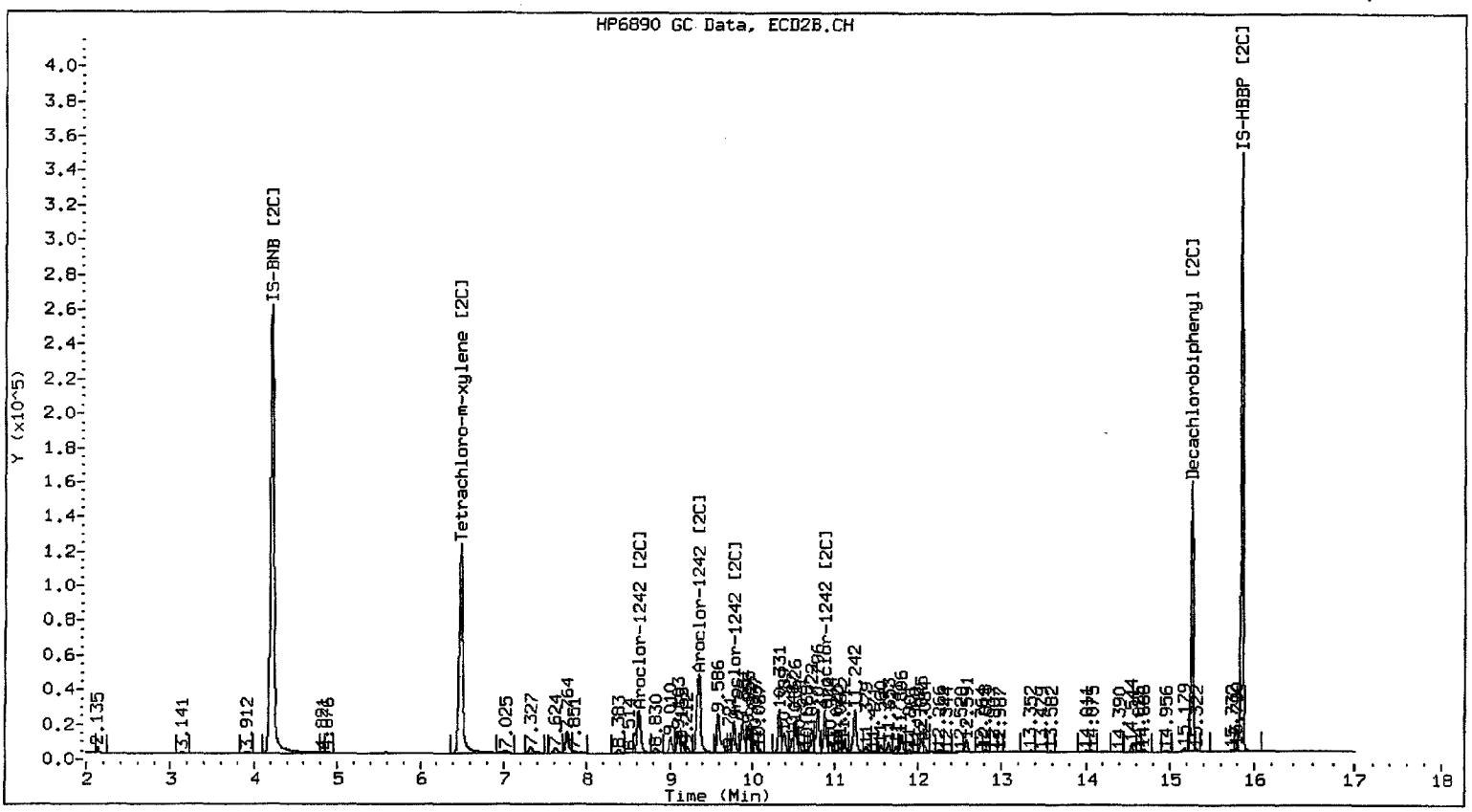
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

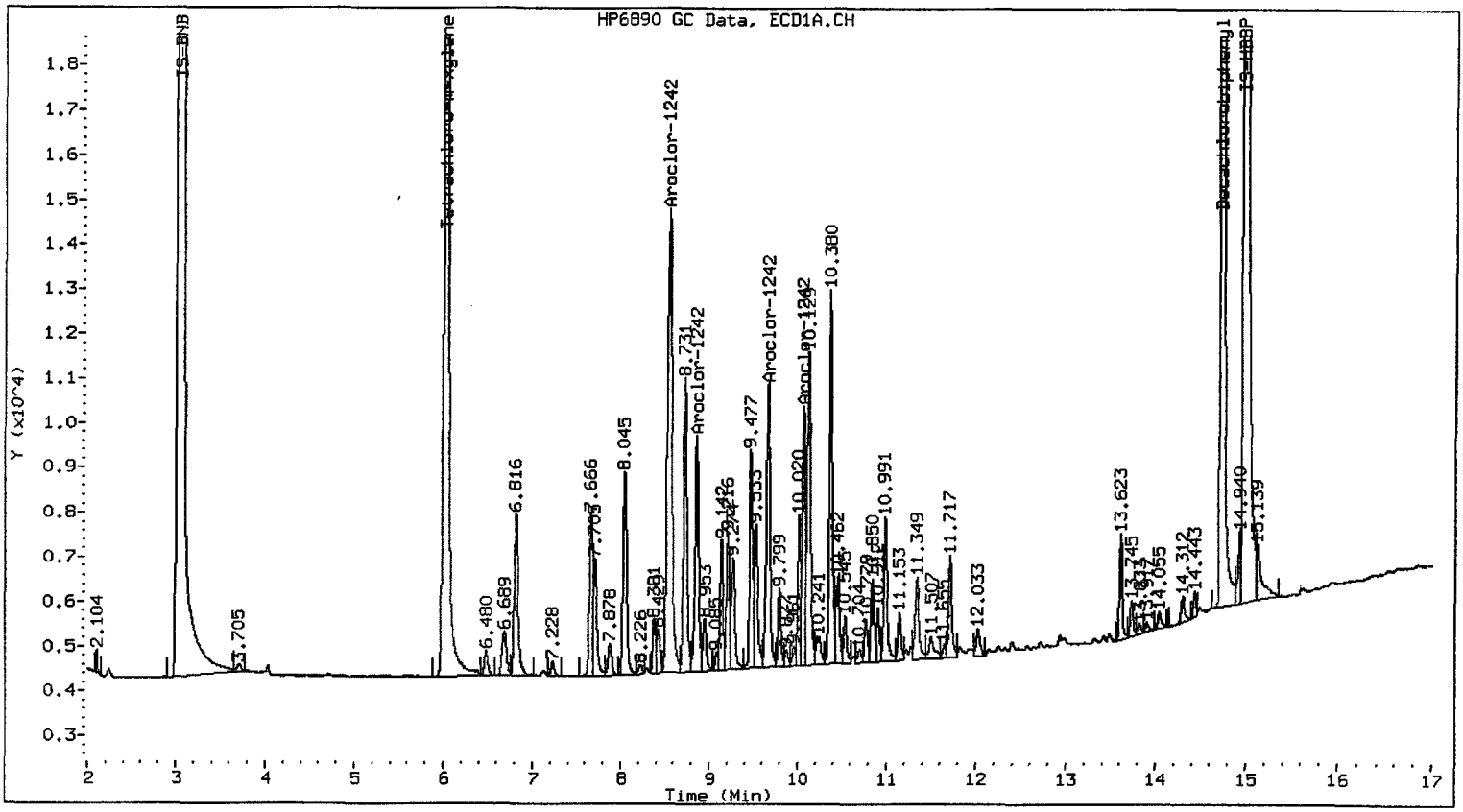
ECD7-ZB5 AR1242 19-FEB-2016 19:09, 2ul



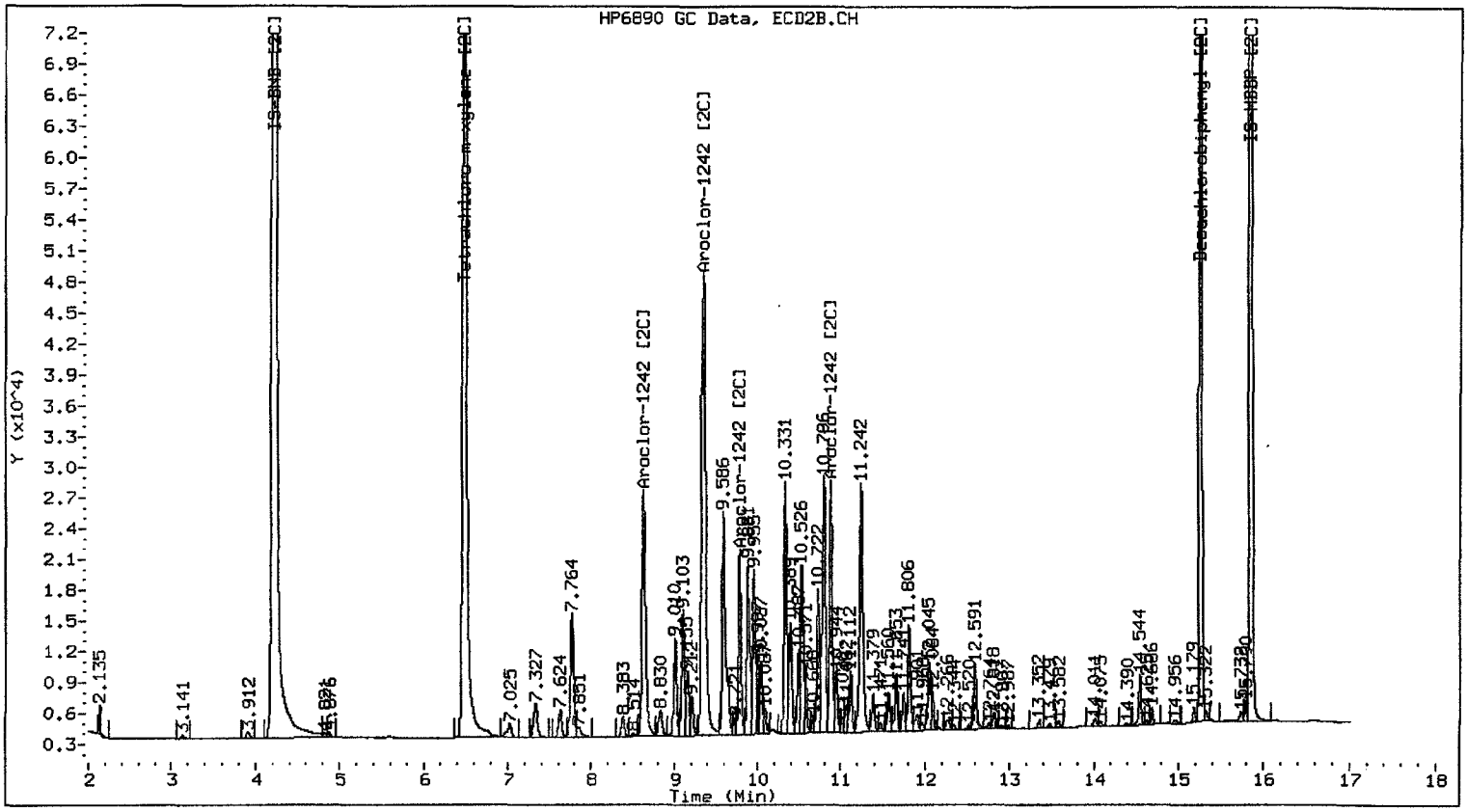
ECD7-ZB35 AR1242 19-FEB-2016 19:09, 2ul



ECD7-ZB5 AR1242 19-FEB-2016 19:09, 2ul



ECD7-ZB35 AR1242 19-FEB-2016 19:09, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191630.D
Data file 2: /20160219b.b/20160219.b/02191630.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 19-FEB-2016 19:31
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.025	-0.000	2309439	6.483	0.001	7599381	40.8	41.6	1.7	Tetrachloro-m-xyle
14.743	0.000	6724748	15.261	-0.000	5654163	39.3	36.3	7.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	102.1	103.9
Decachlorobiphenyl	98.2	90.8

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10440311	1.5
Hexabromobiphenyl	12470452	12823180	2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15779494	-0.2
Hexabromobiphenyl	11807823	12170945	3.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

//target/share/chem4/ecd7.i/20160219b.b/02191630.D AR1248 page

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	8.553	0.000	470710	250.0	1	9.348	0.000	1887001	250.0
Aroclor-1248	2	9.477	0.000	350530	250.0	2	9.881	0.000	1390709	250.0
Aroclor-1248	3	9.670	0.000	526186	250.0	3	10.796	0.000	2124762	250.0
Aroclor-1248	4	10.070	0.000	437578	250.0	4	11.241	0.000	2122447	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

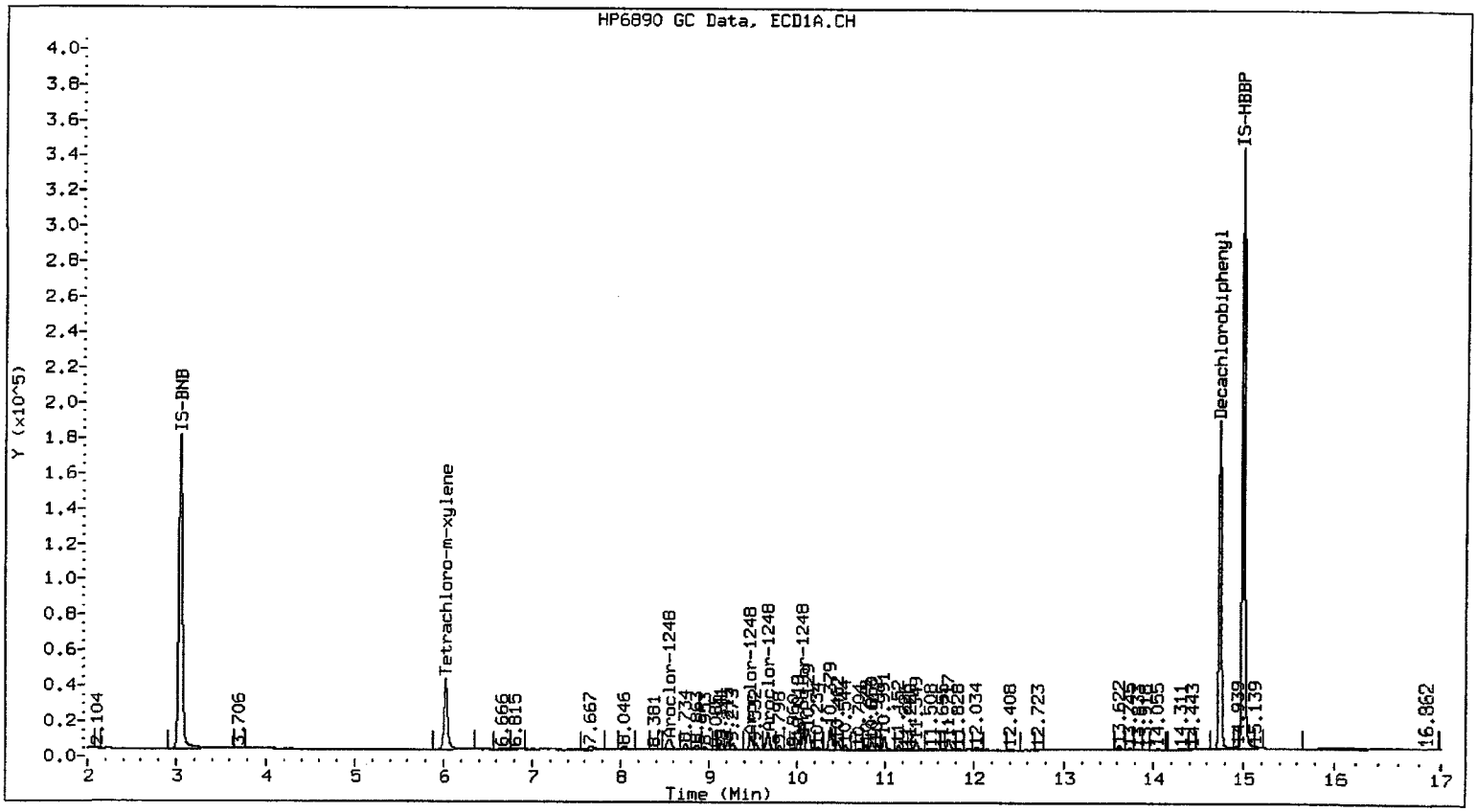
Total PCB Area Col1 (6.125 - 14.643) = 7416692 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 34251274 Col2 Total PCB = 0.3 ppm*

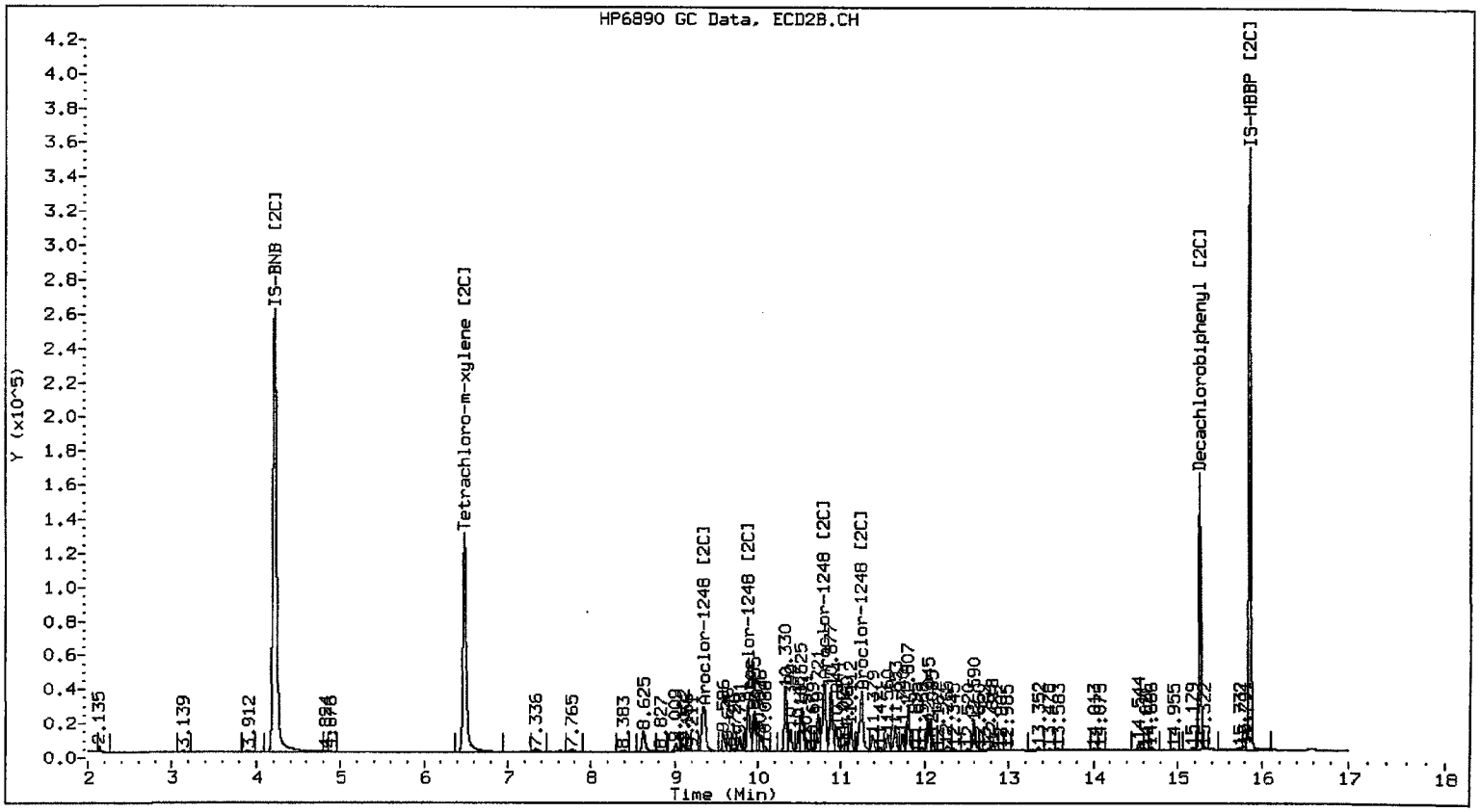
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

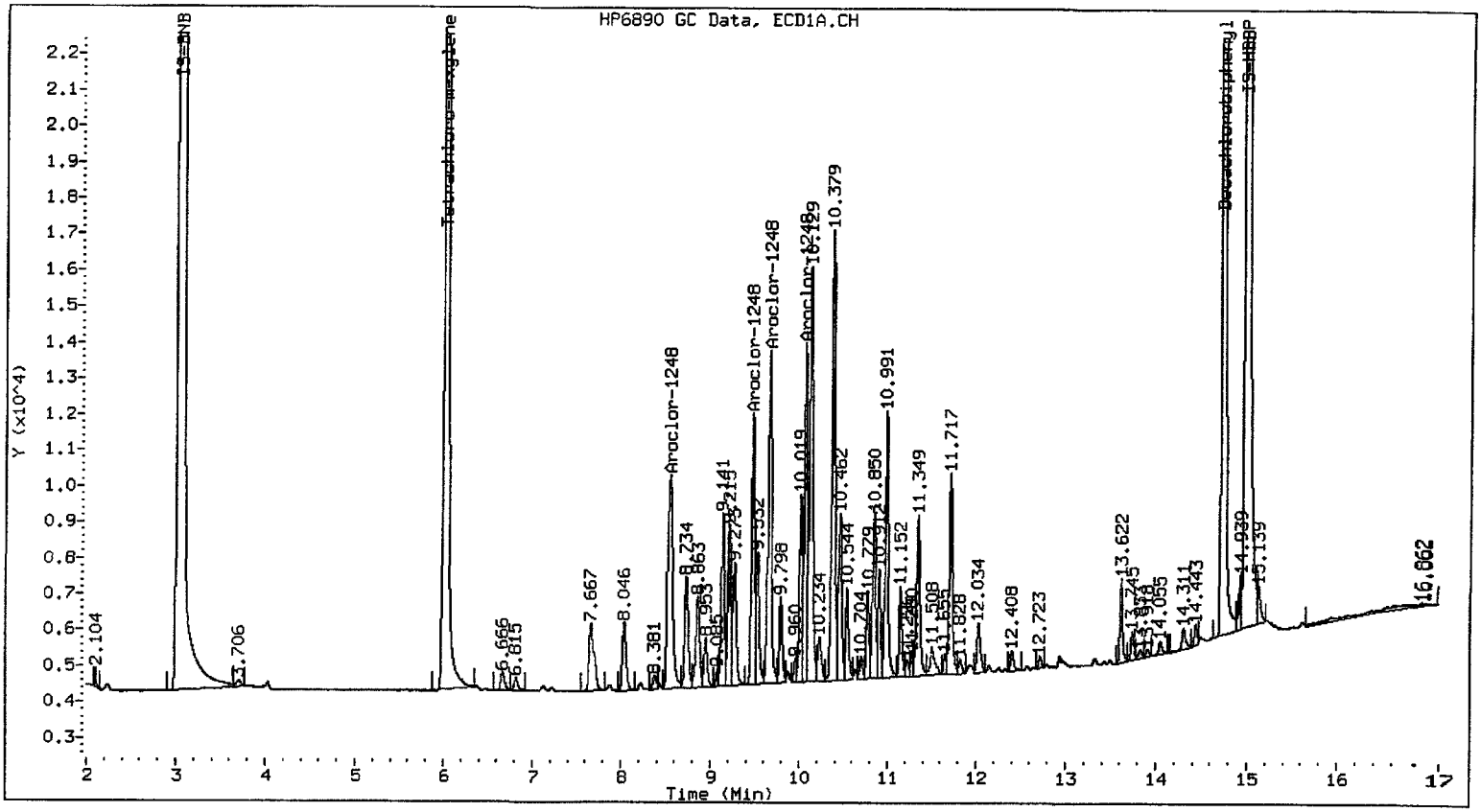
ECD7-ZB5 AR1248 19-FEB-2016 19:31, 2ul



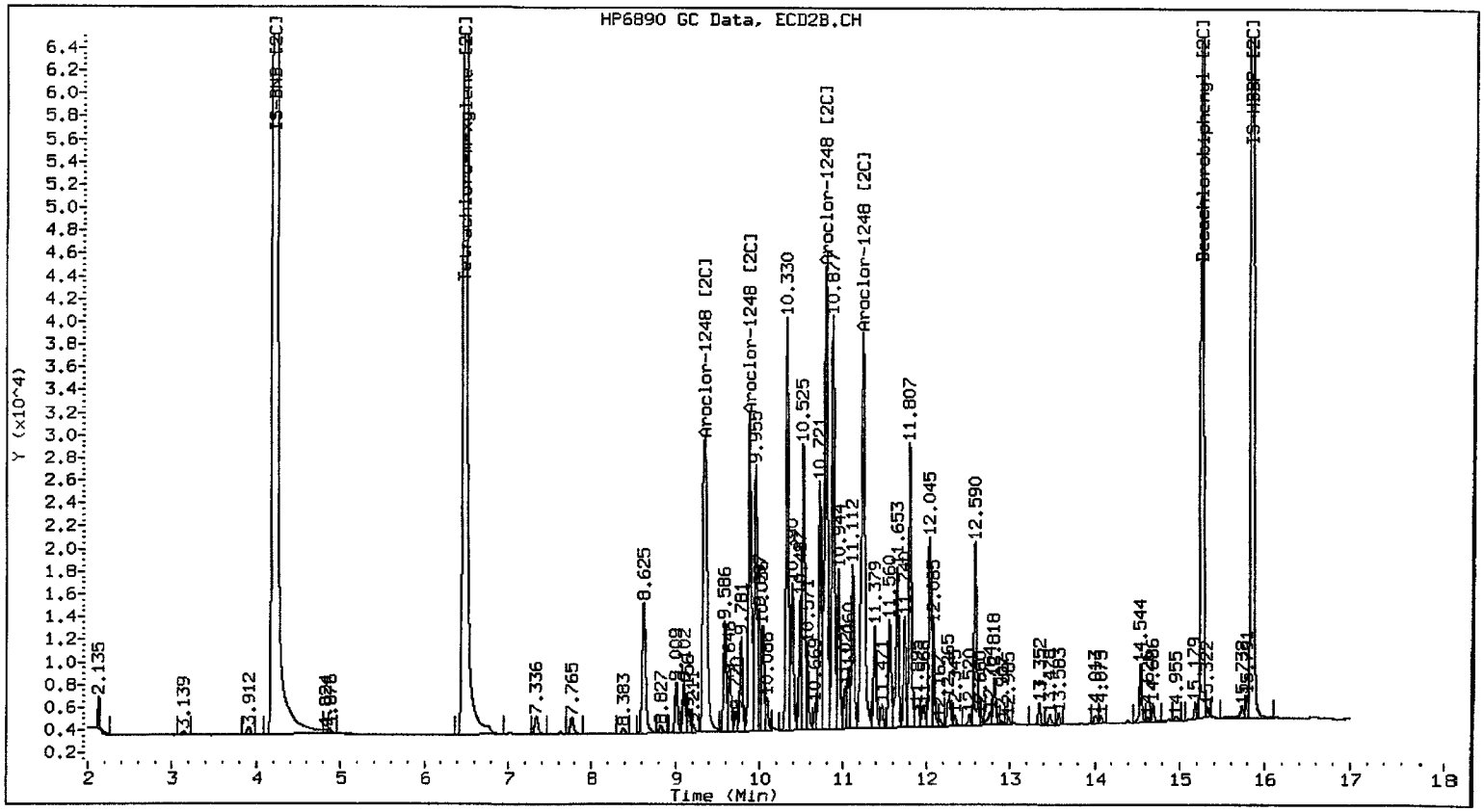
ECD7-ZB35 AR1248 19-FEB-2016 19:31, 2ul



ECD7-ZB5 AR1248 19-FEB-2016 19:31, 2ul



ECD7-ZB35 AR1248 19-FEB-2016 19:31, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191631.D
Data file 2: /20160219b.b/20160219.b/02191631.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 19-FEB-2016 19:53
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.026	0.001	2295175	6.484	0.001	7507970	40.7	41.5	2.0	Tetrachloro-m-xyle
14.743	0.000	6923681	15.261	-0.000	5812385	40.9	37.5	8.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	101.7	103.8
Decachlorobiphenyl	102.2	93.8

JC 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10412067	1.2
Hexabromobiphenyl	12470452	12687497	1.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15601559	-1.3
Hexabromobiphenyl	11807823	12105453	2.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	10.464	0.000	576185	250.0	1	11.112	0.000	1961040	250.0
Aroclor-1254	2	10.545	0.000	192071	250.0	2	11.211	0.000	918783	250.0
Aroclor-1254	3	10.850	0.000	471076	250.0	3	11.654	0.000	1471980	250.0
Aroclor-1254	4	10.990	0.000	924391	250.0	4	11.807	0.000	3357537	250.0
Aroclor-1254	5	11.345	0.000	905062	250.0	5	12.817	0.000	2474123	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0

Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

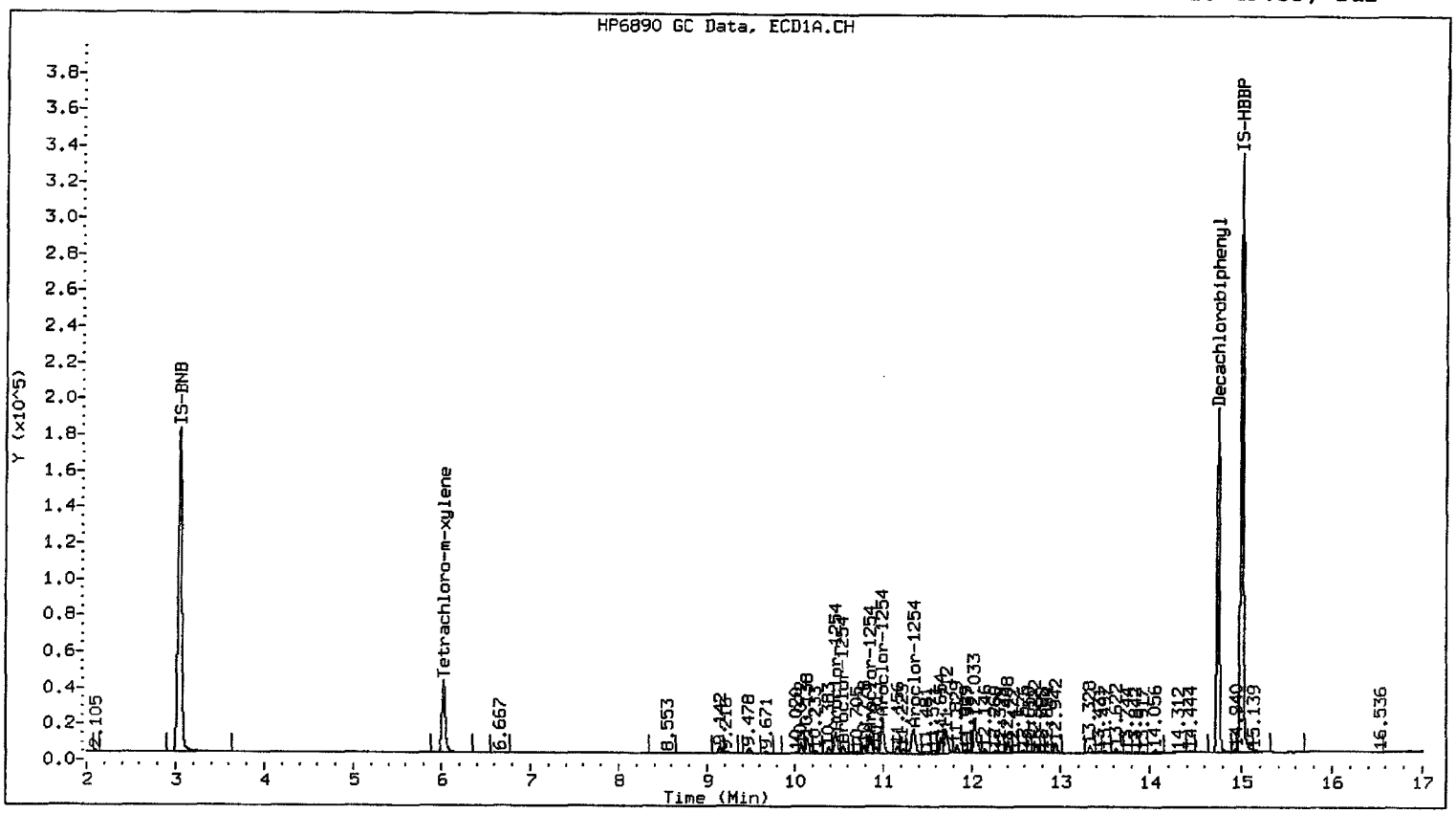
Total PCB Area Col1 (6.125 - 14.643) = 9323931 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 38585458 Col2 Total PCB = 0.3 ppm*

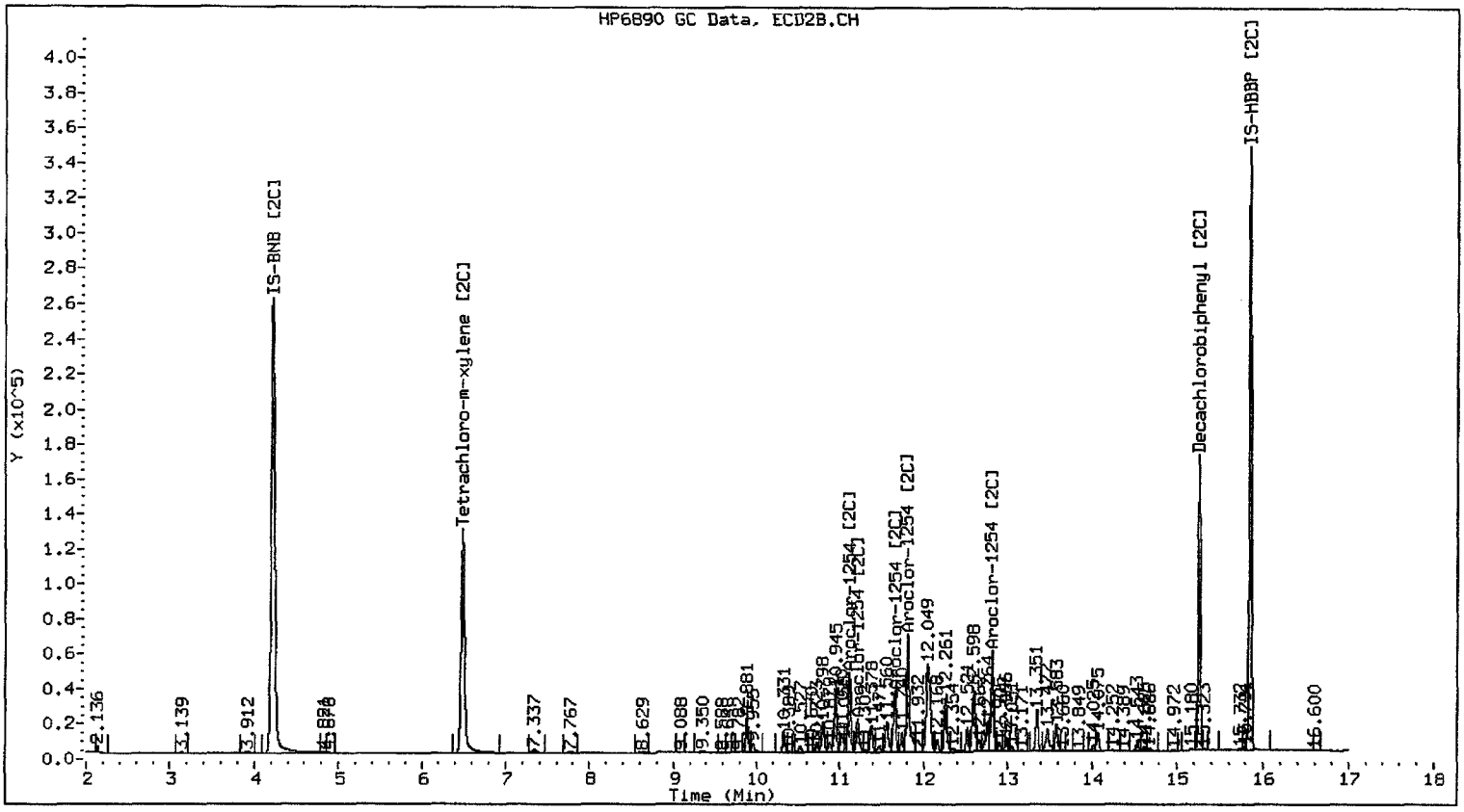
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

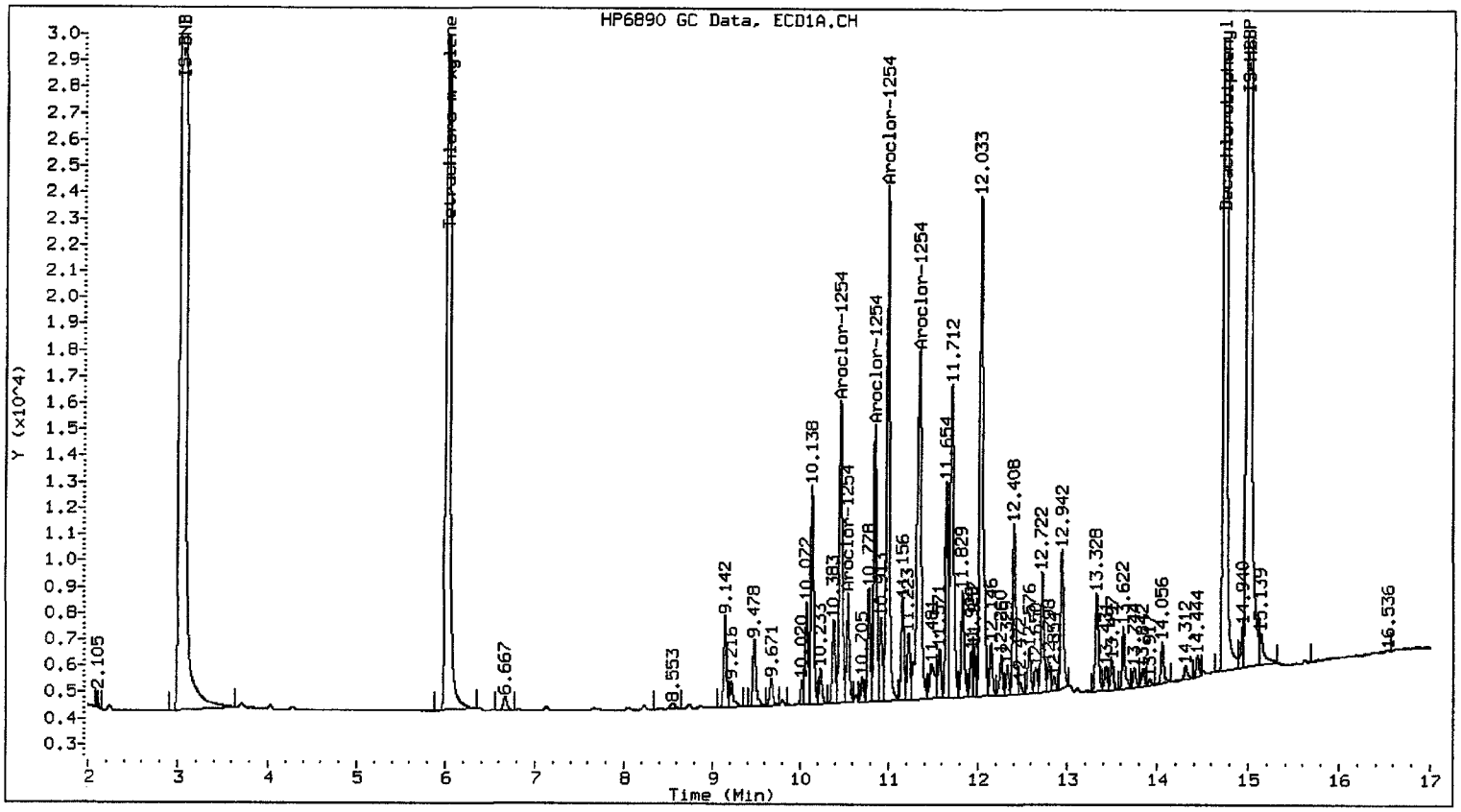
ECD7-ZB5 AR1254 19-FEB-2016 19:53, 2ul



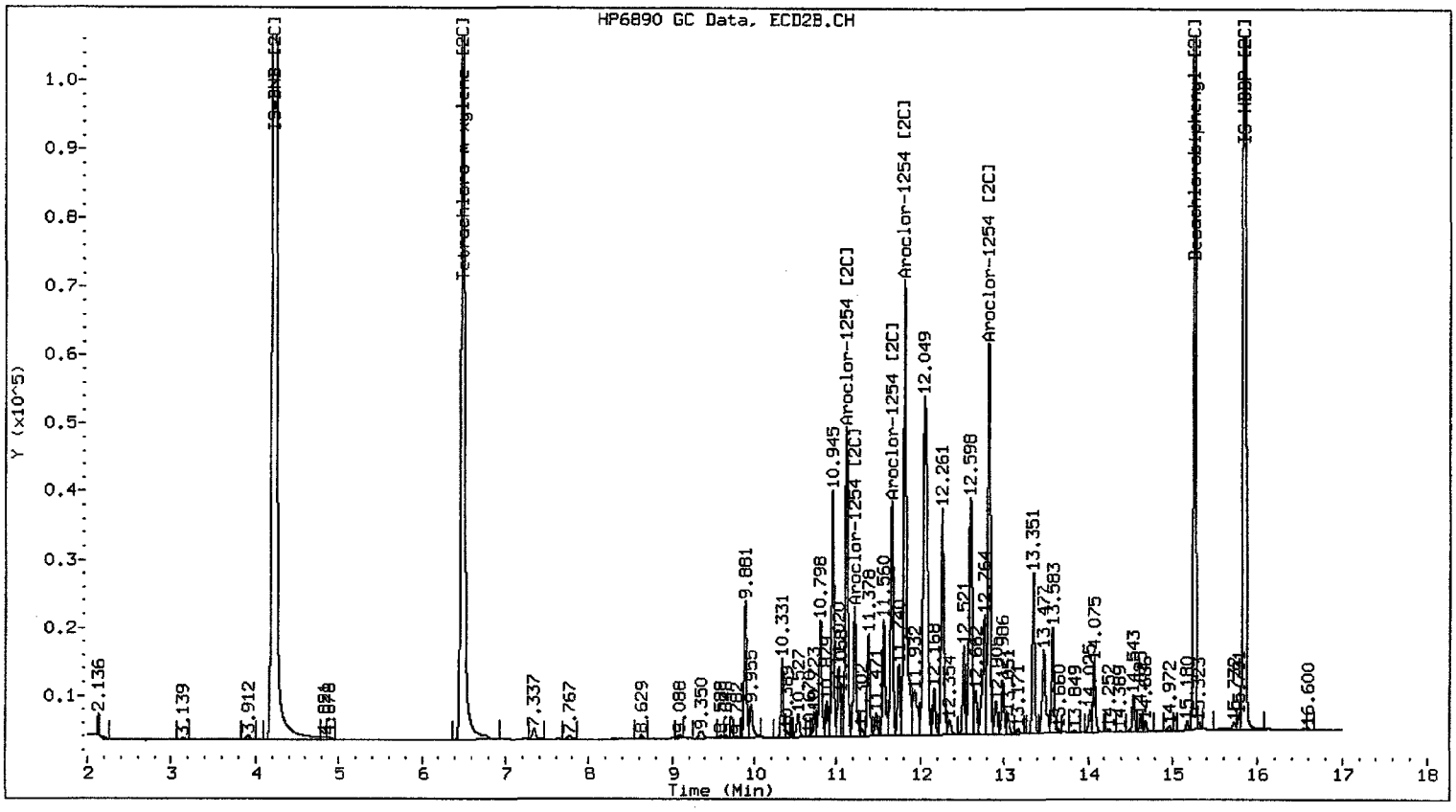
ECD7-ZB35 AR1254 19-FEB-2016 19:53, 2ul



ECD7-ZB5 AR1254 19-FEB-2016 19:53, 2ul



ECD7-ZB35 AR1254 19-FEB-2016 19:53, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191632.D
Data file 2: /20160219b.b/20160219.b/02191632.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 19-FEB-2016 20:15
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.025	-0.000	2361576	6.482	-0.001	7495312	41.3	41.5	0.5	Tetrachloro-m-xyle
14.743	-0.001	7235647	15.260	-0.001	6071578	41.8	38.3	8.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

k 02/23/16

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	103.2	103.6
Decachlorobiphenyl	104.5	95.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10564168	2.7
Hexabromobiphenyl	12470452	12962486	3.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15598166	-1.3
Hexabromobiphenyl	11807823	12406205	5.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.714	0.000	83535	250.0	1	5.585	0.000	363105	250.0
Aroclor-1221	2	6.690	0.000	134278	250.0	2	7.623	0.000	338291	250.0
Aroclor-1221	3	6.815	0.000	401058	250.0	3	7.763	0.000	1070305	250.0
Aroclor-1221	NS	---			----	4	8.643	0.000	354744	250.0
Total Col1Ave (3 peaks):				250.0		Total Col2Ave (4 peaks):			250.0	RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			250.0	
Aroclor-1262	1	12.260	0.000	1048643	250.0	1	12.905	0.000	3153820	250.0
Aroclor-1262	2	12.940	0.000	3074656	250.0	2	13.349	0.000	2914740	250.0
Aroclor-1262	3	13.330	0.000	974283	250.0	3	13.581	0.000	5947812	250.0
Aroclor-1262	4	13.430	0.000	1468394	250.0	4	14.075	0.000	3869520	250.0
Aroclor-1262	5	14.055	0.000	1649528	250.0	5	14.625	0.000	1983421	250.0
Total Col1Ave (5 peaks):				250.0		Total Col2Ave (5 peaks):			250.0	RPD = 0
Corrected Ave (4 peaks):				250.0		Corrected Ave (4 peaks):			250.0	RPD = 0

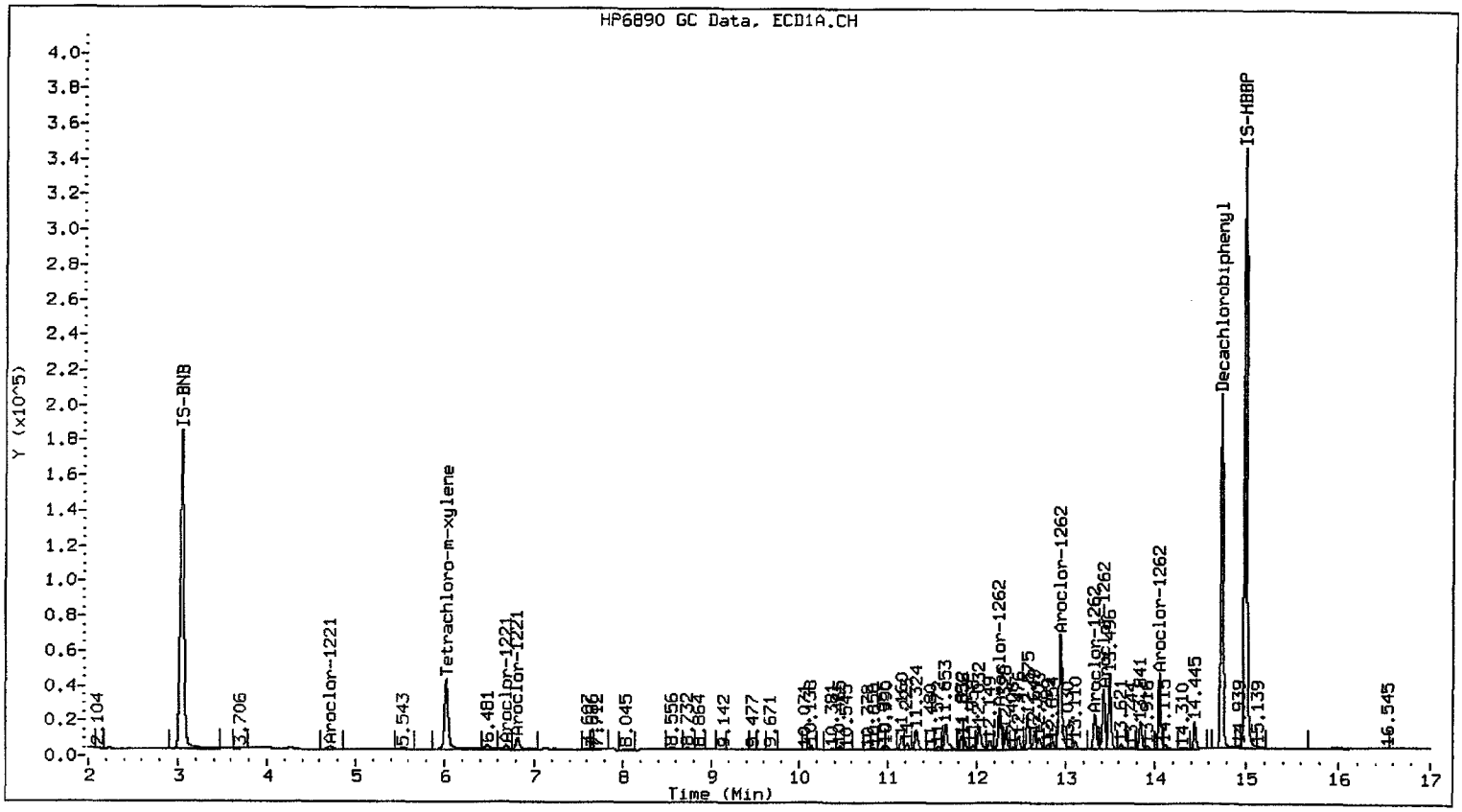
Total PCB Area Col1 (6.125 - 14.643) = 19297372 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 51912208 Col2 Total PCB = 0.4 ppm*

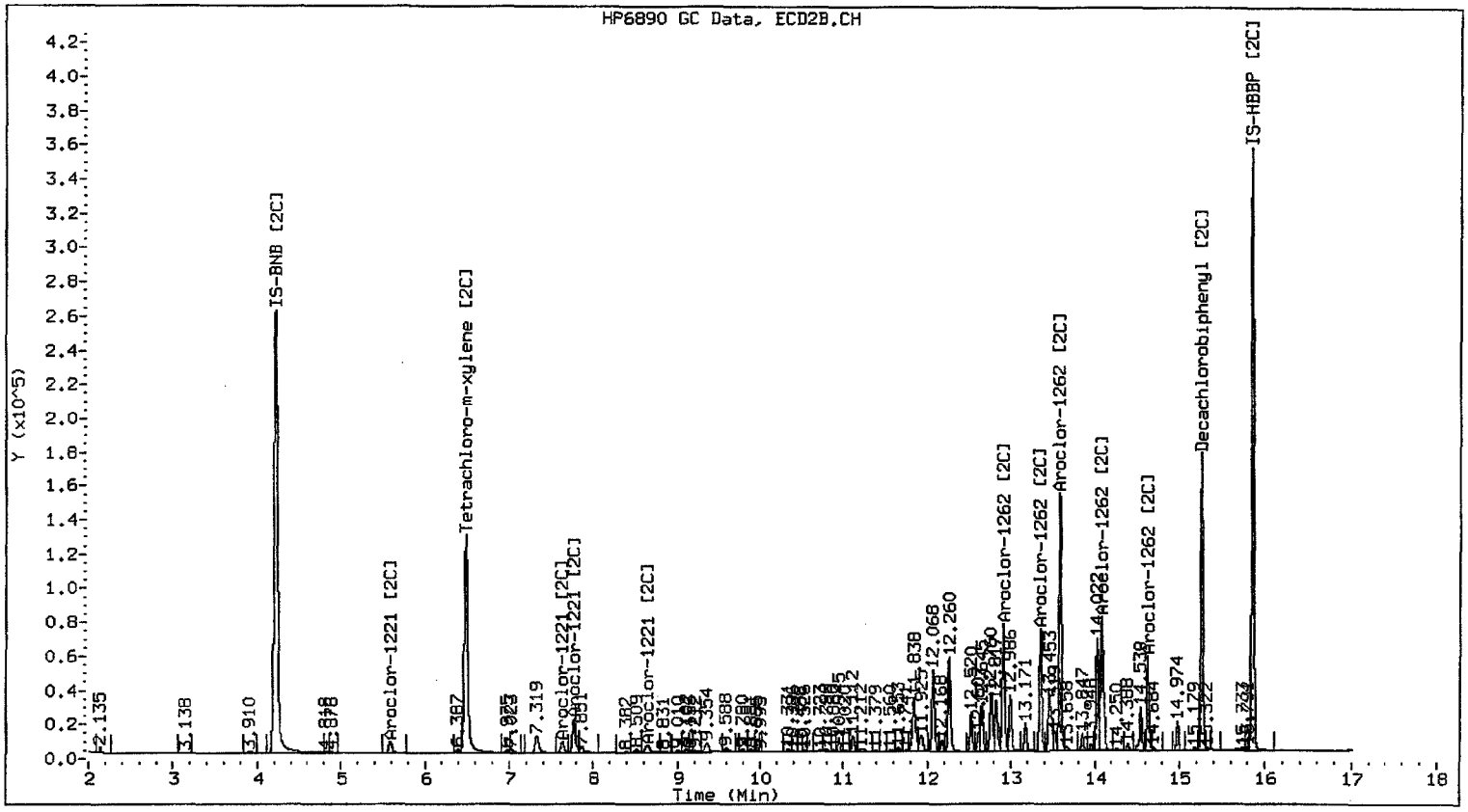
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

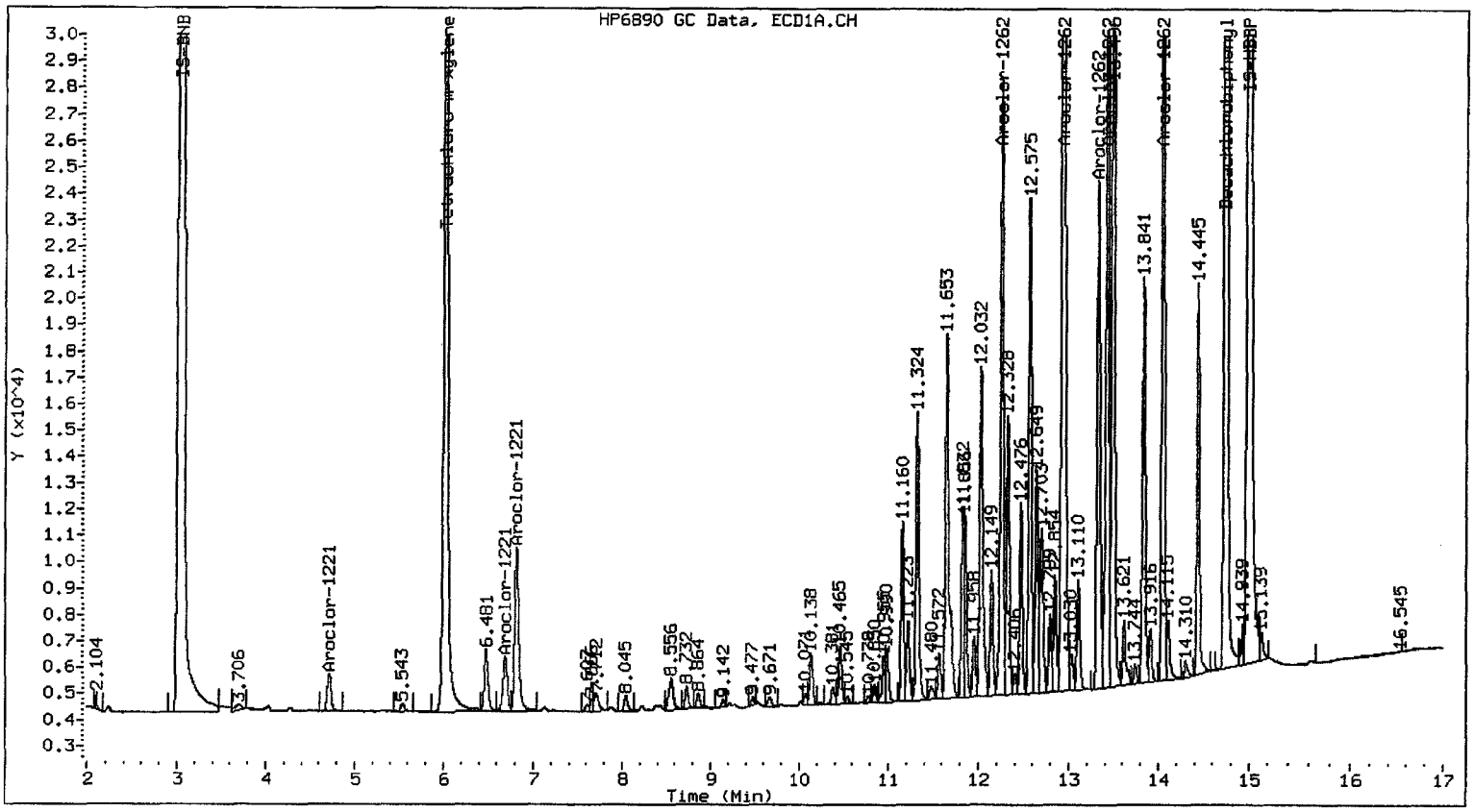
ECD7-ZB5 AR2162 19-FEB-2016 20:15, 2ul



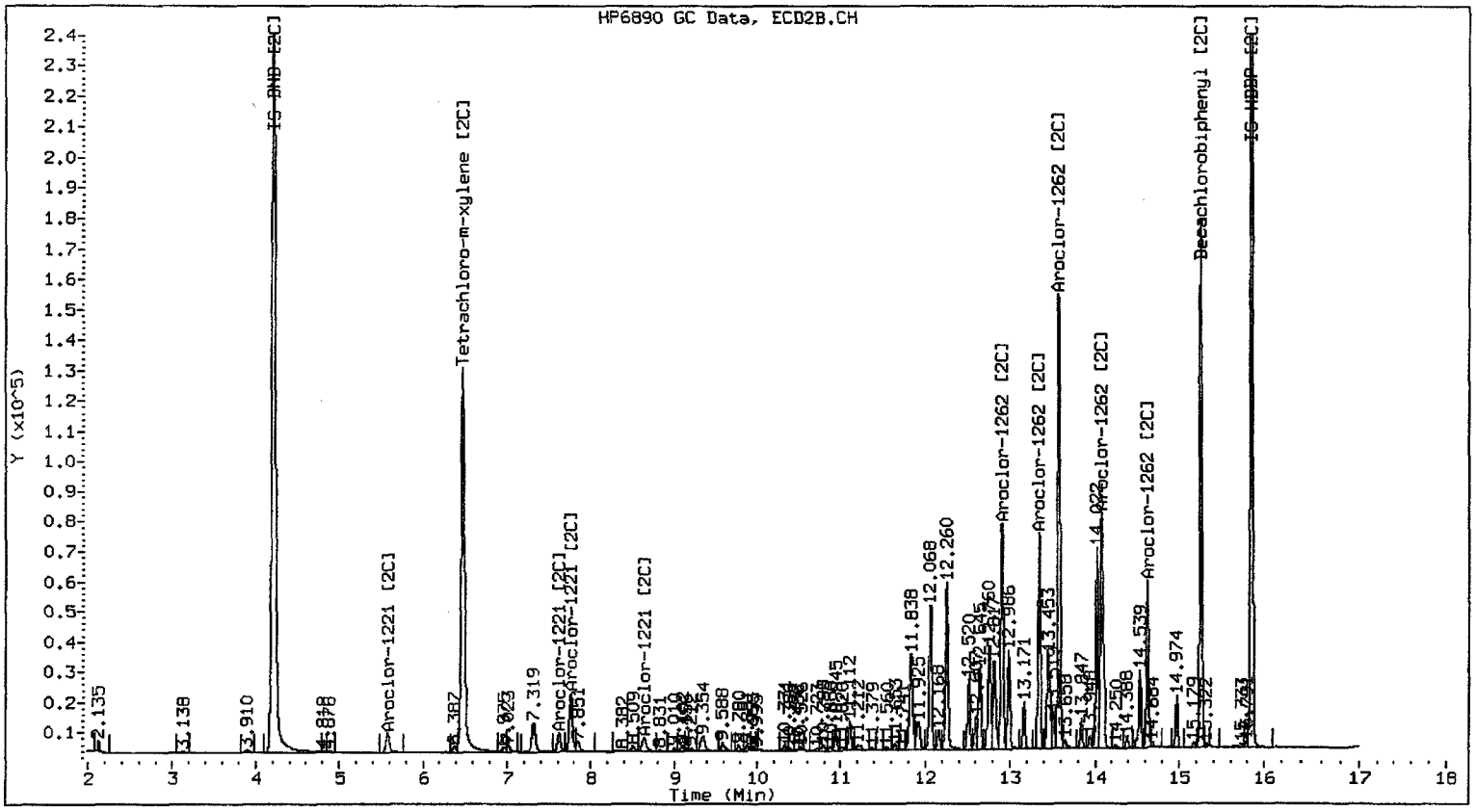
ECD7-ZB35 AR2162 19-FEB-2016 20:15, 2ul



ECD7-ZB5 AR2162 19-FEB-2016 20:15, 2ul



ECD7-ZB35 AR2162 19-FEB-2016 20:15, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191633.D
Data file 2: /20160219b.b/20160219.b/02191633.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 19-FEB-2016 20:37
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.024	-0.001	2317164	6.482	-0.001	7368079	39.9	40.7	2.0	Tetrachloro-m-xyle
14.743	0.000	10263210	15.260	-0.001	8359639	59.5	52.8	12.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	99.8	101.8
Decachlorobiphenyl	148.8	131.9

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10714563	4.1
Hexabromobiphenyl	12470452	12920228	3.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15611734	-1.2
Hexabromobiphenyl	11807823	12383383	4.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1232	1	4.715	0.000	48053	250.0	1	5.586	0.000	219240	250.0
Aroclor-1232	2	6.690	0.000	91513	250.0	2	7.623	0.000	206439	250.0
Aroclor-1232	3	6.815	0.000	269723	250.0	3	7.852	0.000	116443	250.0
Aroclor-1232	4	8.554	0.000	440950	250.0	4	8.628	0.000	905083	250.0
Total Col1Ave (4 peaks):				250.0		Total Col2Ave (4 peaks):			250.0	RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):			250.0	RPD = 0
Aroclor-1268	1	13.431	0.000	4258728	250.0	1	14.021	0.000	6173057	250.0
Aroclor-1268	2	13.495	0.000	5280897	250.0	2	14.076	0.000	5771965	250.0
Aroclor-1268	3	13.827	0.000	4778388	250.0	3	14.388	0.000	4645388	250.0
Aroclor-1268	4	14.446	0.000	17299628	250.0	4	14.973	0.000	13255966	250.0
Total Col1Ave (4 peaks):				250.0		Total Col2Ave (4 peaks):			250.0	RPD = 0
Corrected Ave (3 peaks):				250.0		Corrected Ave (3 peaks):			250.0	RPD = 0

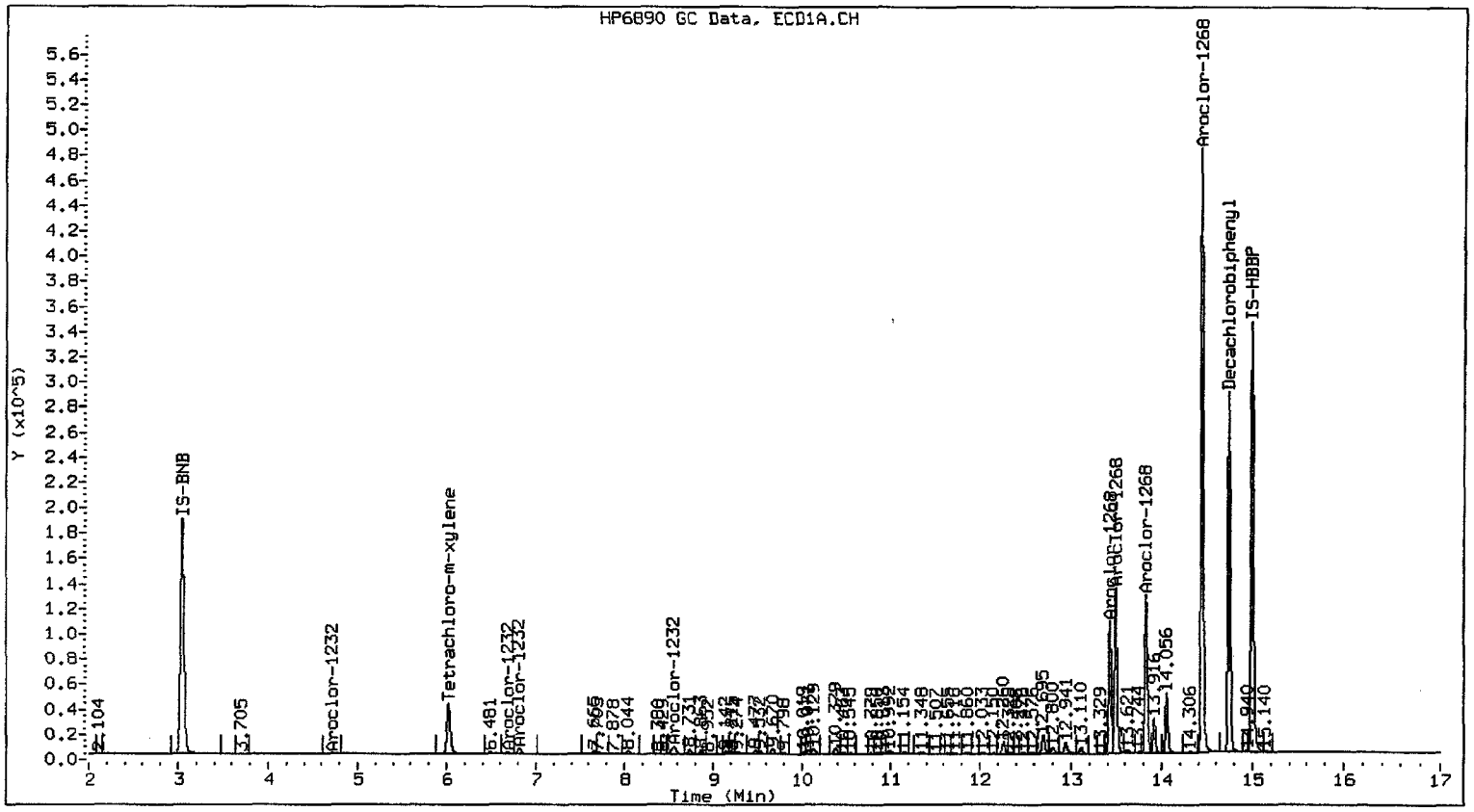
Total PCB Area Col1 (6.125 - 14.643) = 40572946 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 46642978 Col2 Total PCB = 0.4 ppm*

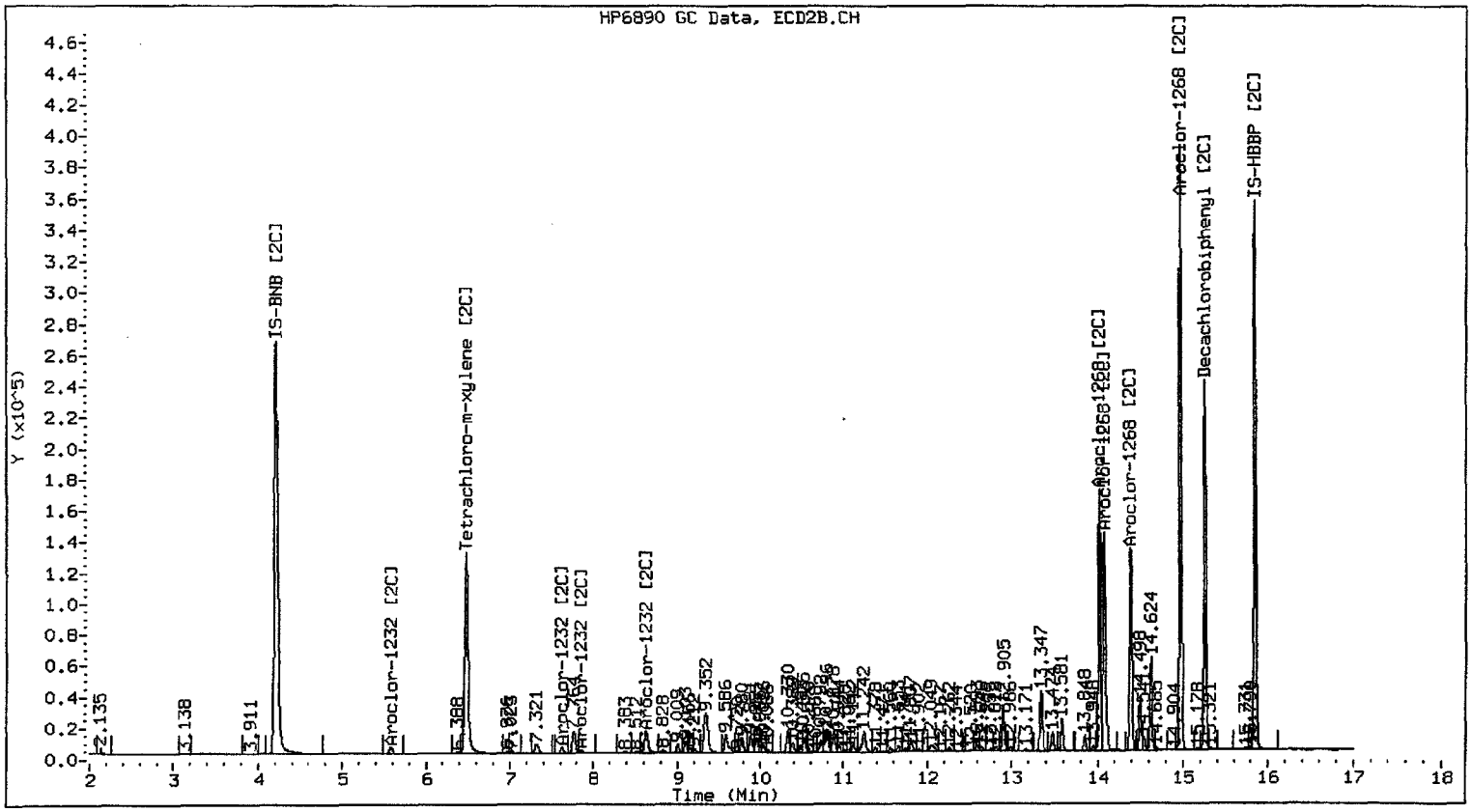
* Quantitated against AR1660 0.25ppm in Ical

AXS8:00160

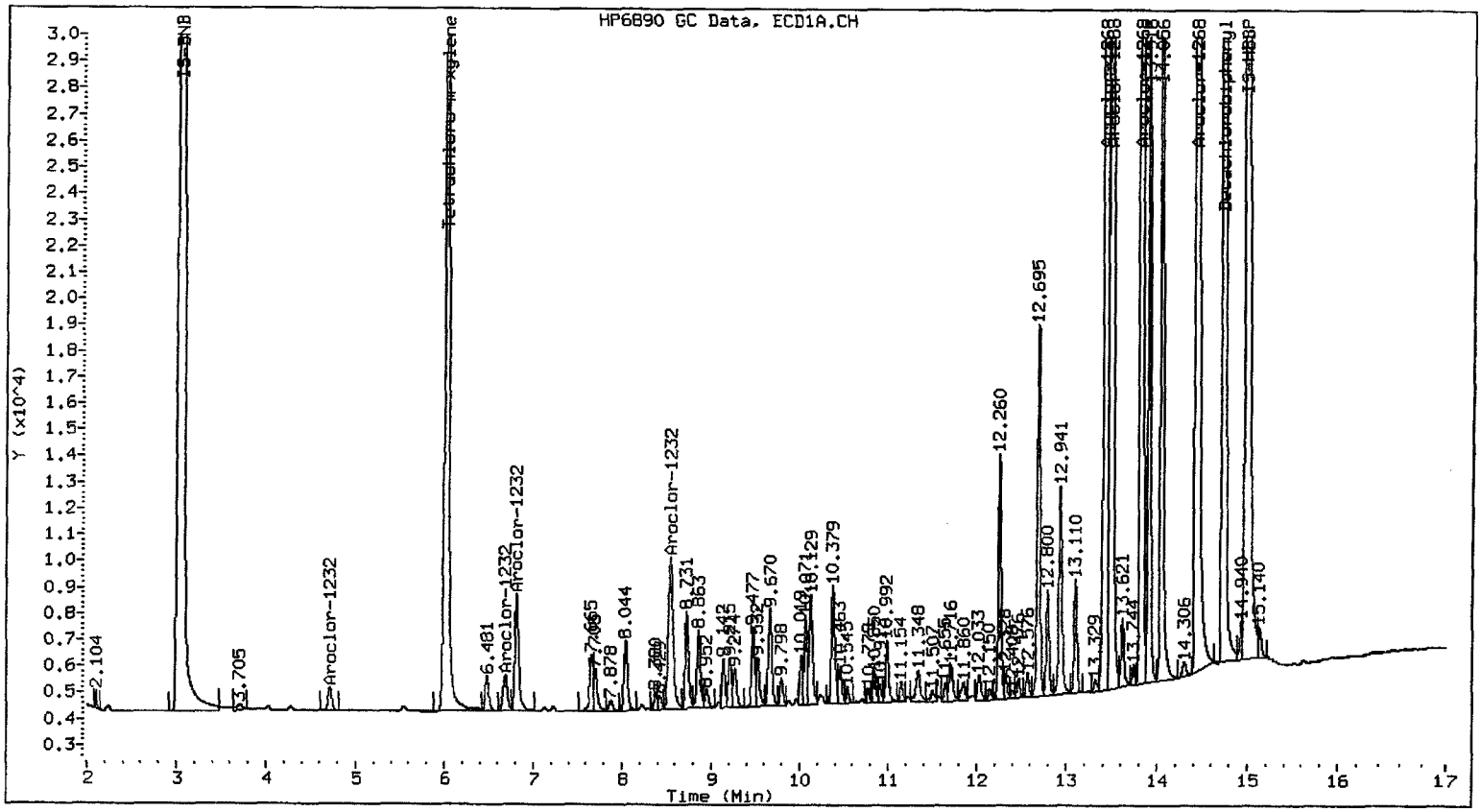
ECD7-ZB5 AR3268 19-FEB-2016 20:37, 2ul



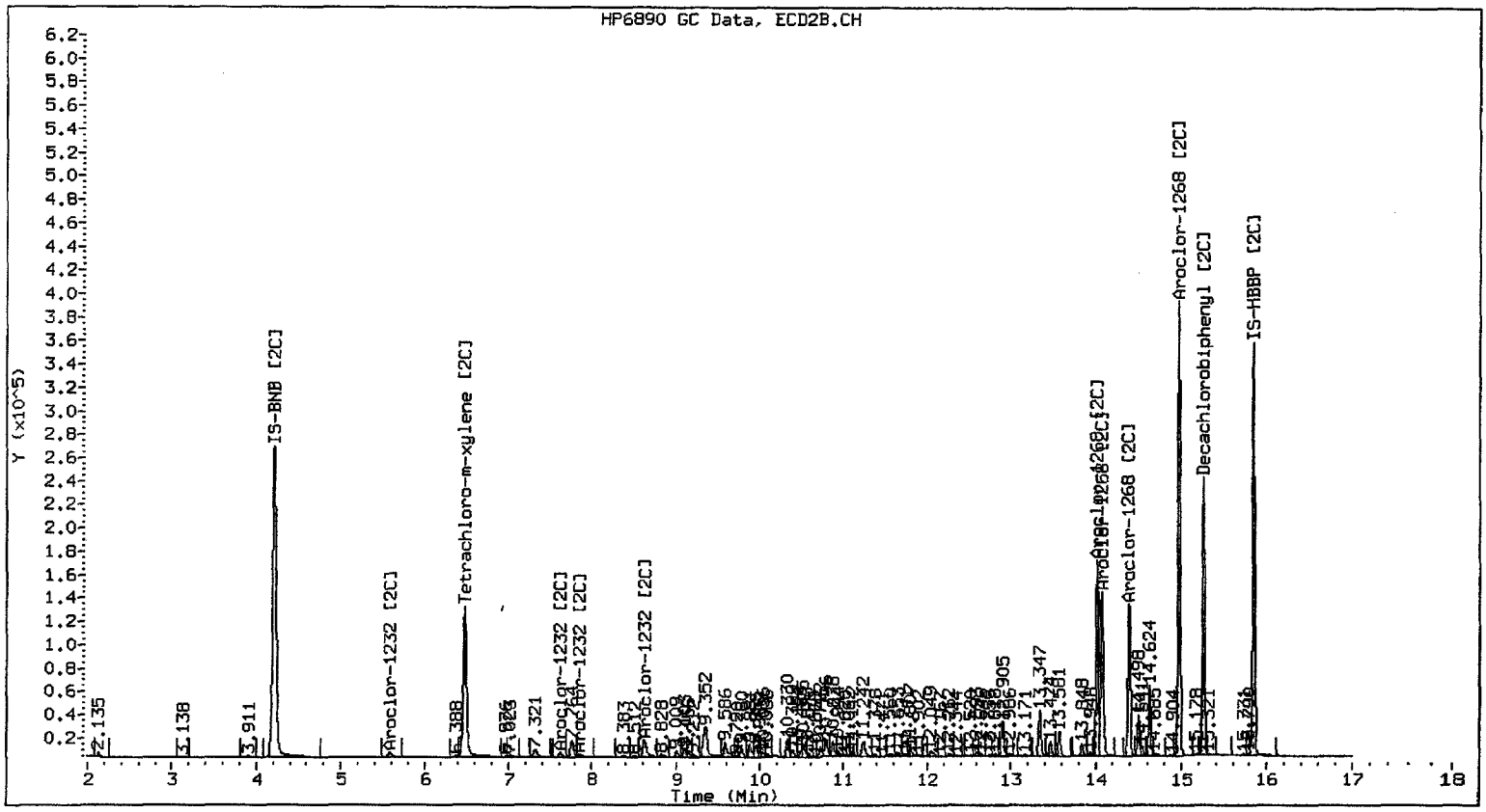
ECD7-ZB35 AR3268 19-FEB-2016 20:37, 2ul



ECD7-ZB5 AR3268 19-FEB-2016 20:37, 2ul



ECD7-ZB35 AR3268 19-FEB-2016 20:37, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191634.D
Data file 2: /20160219b.b/20160219.b/02191634.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV
Client ID:
Injection Date: 19-FEB-2016 20:59
Report Date: 02/23/2016 07:04
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.025	0.000	2531596	6.483	0.000	8050926	44.3	43.9	1.0	Tetrachloro-m-xyle
14.743	-0.000	6421455	15.261	0.000	5417571	36.7	33.8	8.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	110.8	109.7
Decachlorobiphenyl	91.8	84.5

M 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10549054	2.5
Hexabromobiphenyl	12470452	13095374	5.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15836921	0.2
Hexabromobiphenyl	11807823	12530415	6.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.046	-0.002	380066	281.5	1	8.629	-0.001	2178143	276.0
Aroclor-1016	2	8.556	-0.001	1155062	277.4	2	9.353	0.001	4476238	275.5
Aroclor-1016	3	8.864	-0.000	421566	296.6	3	9.586	-0.001	1844419	284.4
Aroclor-1016	4	9.671	-0.000	509784	321.6	4	10.526	0.000	963448	319.9
Total Col1Ave (4 peaks):				294.3		Total Col2Ave (4 peaks):			288.9	RPD = 2
Corrected Ave (3 peaks):				285.2		Corrected Ave (3 peaks):			278.6	RPD = 2
Aroclor-1221	1	---			0.0	1	5.587	0.002	12344	8.4
Aroclor-1221	2	6.691	0.001	94725	176.6	2	7.624	0.001	206113	150.0
Aroclor-1221	3	6.816	0.001	325914	203.4	3	7.765	0.002	952960	219.2
Aroclor-1221	NS	---			----	4	8.629	-0.015	2178143	1511.9
Col1Ave: <3 Quant Peaks						Col2Ave: 472.4				
Aroclor-1232	1	---			0.0	1	5.587	0.001	12344	13.9
Aroclor-1232	2	6.691	0.001	94725	262.8	2	7.624	0.001	206113	246.1
Aroclor-1232	3	6.816	0.001	325914	306.8	3	7.851	-0.001	93866	198.7
Aroclor-1232	4	8.556	0.002	1155062	665.1	4	8.629	0.001	2178143	593.1
Total Col1Ave (3 peaks):				411.6		Total Col2Ave (4 peaks):			262.9	RPD = 44*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			152.9	
Aroclor-1242	1	8.556	0.001	1155062	356.2	1	8.629	0.000	2178143	355.2
Aroclor-1242	2	8.864	0.001	421566	354.1	2	9.353	-0.001	4476238	352.6
Aroclor-1242	3	9.671	0.000	509784	338.7	3	9.781	-0.001	1152009	351.5
Aroclor-1242	4	10.072	0.001	69039	63.5	4	10.878	-0.001	196284	44.5
Total Col1Ave (4 peaks):				278.1		Total Col2Ave (4 peaks):			275.9	RPD = 1
Corrected Ave (3 peaks):				252.1		Corrected Ave (3 peaks):			249.5	RPD = 1
Aroclor-1248	1	8.556	0.004	1155062	607.1	1	9.353	0.005	4476238	590.9
Aroclor-1248	2	9.478	0.001	320853	226.5	2	9.882	0.001	1279216	229.1
Aroclor-1248	3	9.671	0.001	509784	239.7	3	10.765	-0.031	630169	73.9
Aroclor-1248	4	10.072	0.002	69039	39.0	4	11.240	-0.001	64586	7.6
Total Col1Ave (4 peaks):				278.1		Total Col2Ave (4 peaks):			225.4	RPD = 21
Corrected Ave (3 peaks):				168.4		Corrected Ave (3 peaks):			103.5	RPD = 48*
Aroclor-1254	1	10.467	0.002	235327	100.8	1	11.113	0.001	902565	113.4
Aroclor-1254	2	---			0.0	2	11.212	0.001	44782	12.0
Aroclor-1254	3	10.850	0.001	42997	22.5	3	11.654	0.000	131361	22.0
Aroclor-1254	4	10.990	0.000	175562	46.9	4	11.838	0.032	2326628	170.7
Aroclor-1254	5	11.325	-0.021	744415	203.0	5	12.817	0.000	3038351	302.5
Total Col1Ave (4 peaks):				93.3		Total Col2Ave (5 peaks):			124.1	RPD = 28
Corrected Ave (3 peaks):				56.7		Corrected Ave (4 peaks):			79.5	RPD = 33
Aroclor-1260	1	12.260	0.000	908666	285.7	1	12.817	0.001	3038351	263.0
Aroclor-1260	2	12.941	0.000	3397623	280.7	2	13.581	0.000	6468199	288.7
Aroclor-1260	3	13.329	0.001	1591143	306.1	3	14.075	0.000	4200298	283.9
Aroclor-1260	4	13.431	-0.000	898329	278.2	4	14.626	0.001	1581573	278.8
Aroclor-1260	5	13.843	0.001	551127	292.2	NS	---			----
Total Col1Ave (5 peaks):				288.6		Total Col2Ave (4 peaks):			278.6	RPD = 4
Corrected Ave (4 peaks):				284.2		Corrected Ave (3 peaks):			275.2	RPD = 3
Aroclor-1262	1	12.260	0.001	908666	214.4	1	12.905	0.001	2672899	209.8
Aroclor-1262	2	12.941	0.001	3397623	273.5	2	13.349	0.001	3056302	259.5
Aroclor-1262	3	13.329	-0.001	1591143	404.1	3	13.581	0.001	6468199	269.2
Aroclor-1262	4	13.431	0.000	898329	151.4	4	14.075	-0.000	4200298	268.7
Aroclor-1262	5	14.056	0.000	1288871	193.4	5	14.626	0.000	1581573	197.4
Total Col1Ave (5 peaks):				247.4		Total Col2Ave (5 peaks):			240.9	RPD = 3
Corrected Ave (4 peaks):				208.2		Corrected Ave (4 peaks):			233.8	RPD = 12
Aroclor-1268	1	13.431	0.000	898329	52.0	1	14.024	0.003	1839291	73.6
Aroclor-1268	2	13.496	0.002	1216948	56.8	2	14.075	-0.001	4200298	179.8
Aroclor-1268	3	13.843	0.016	551127	28.4	3	14.389	0.001	59991	3.2
Aroclor-1268	4	14.444	-0.002	299100	4.3	4	14.973	-0.000	300298	5.6

Total Col1Ave (4 peaks):	35.4	Total Col2Ave (4 peaks):	65.5	RPD = 60*
Corrected Ave (3 peaks):	28.2	Corrected Ave (3 peaks):	27.5	RPD = 3

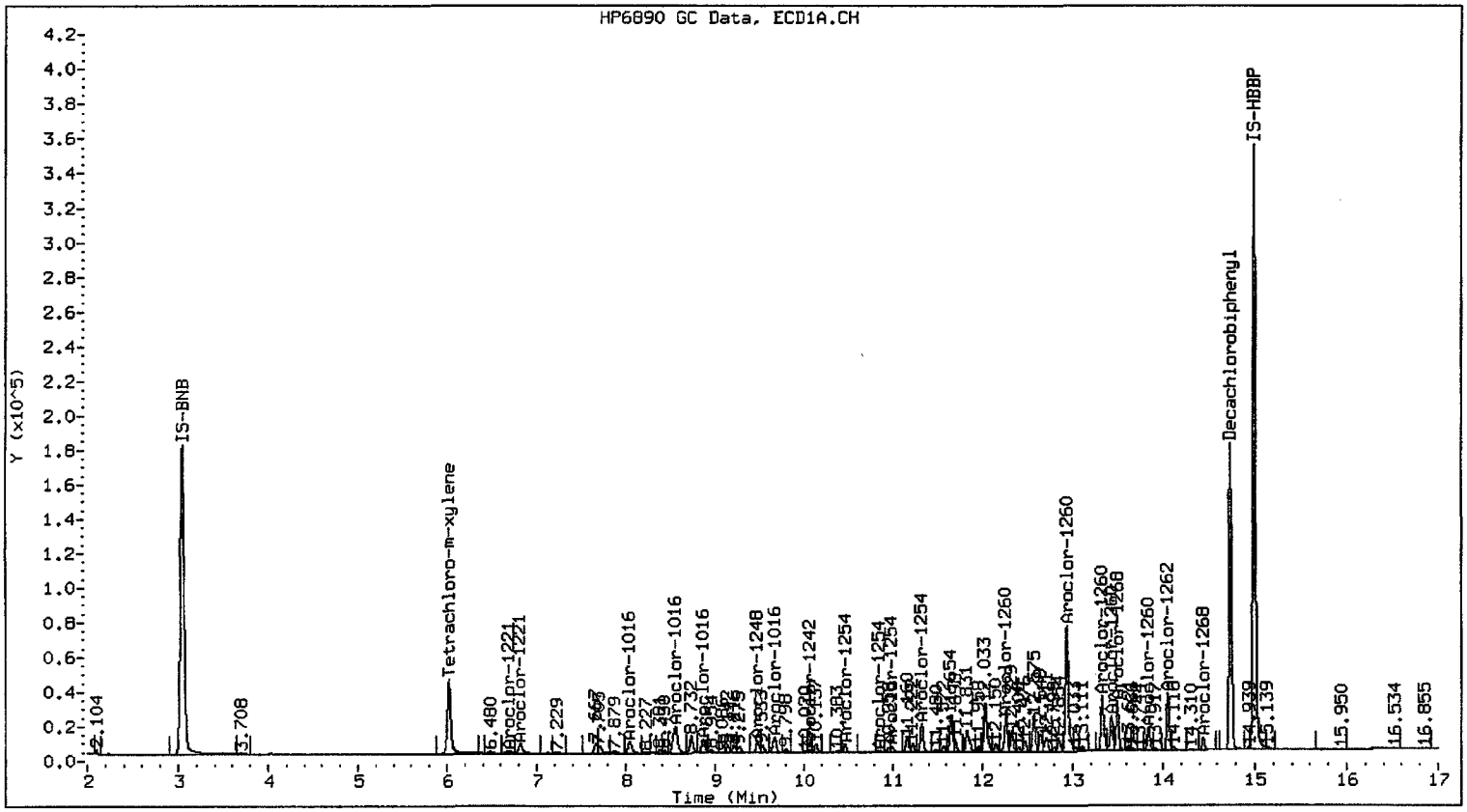
Total PCB Area Col1 (6.125 - 14.643) = 25675615 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 78403934 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AR1660ICV 19-FEB-2016 20:59, 2ul



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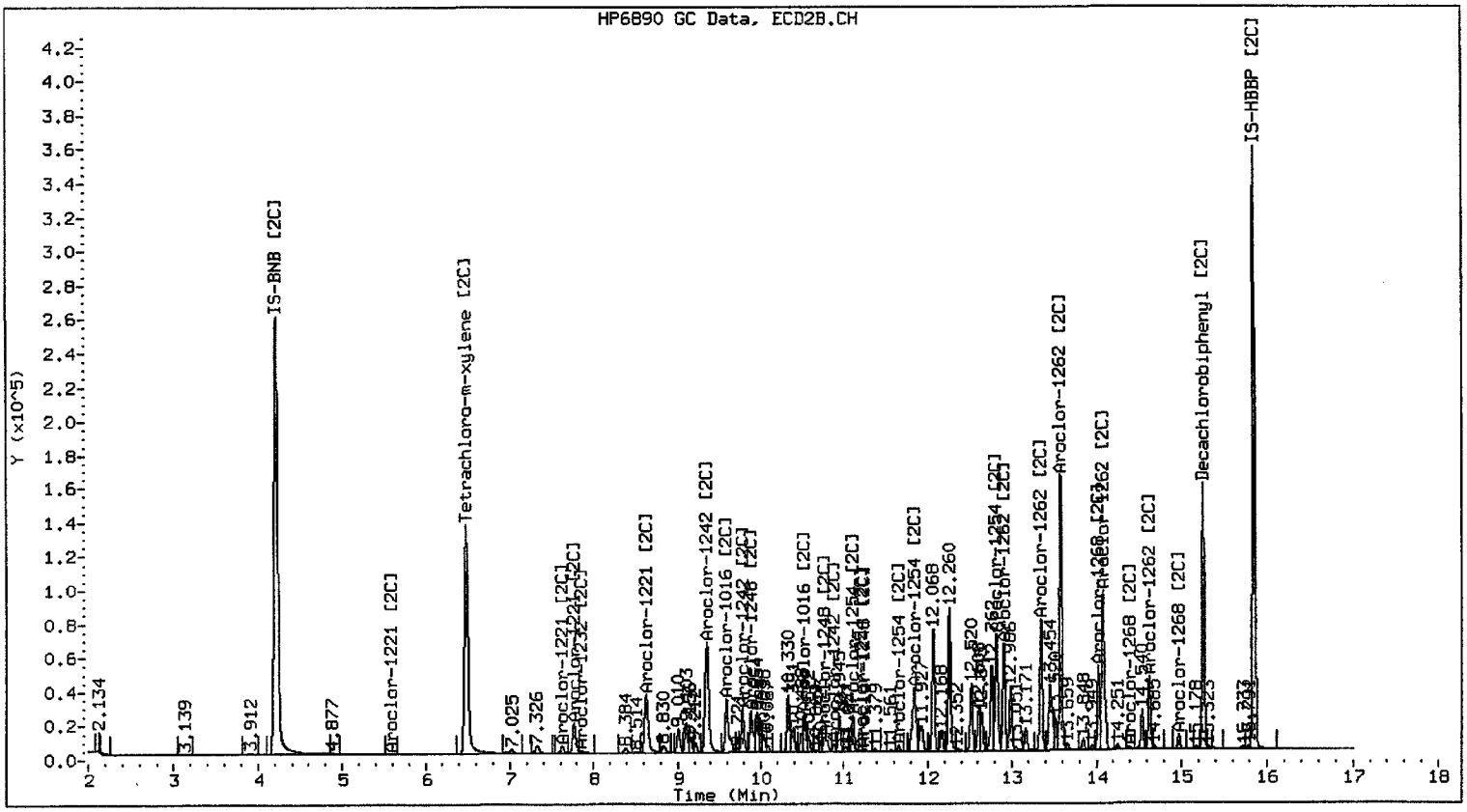

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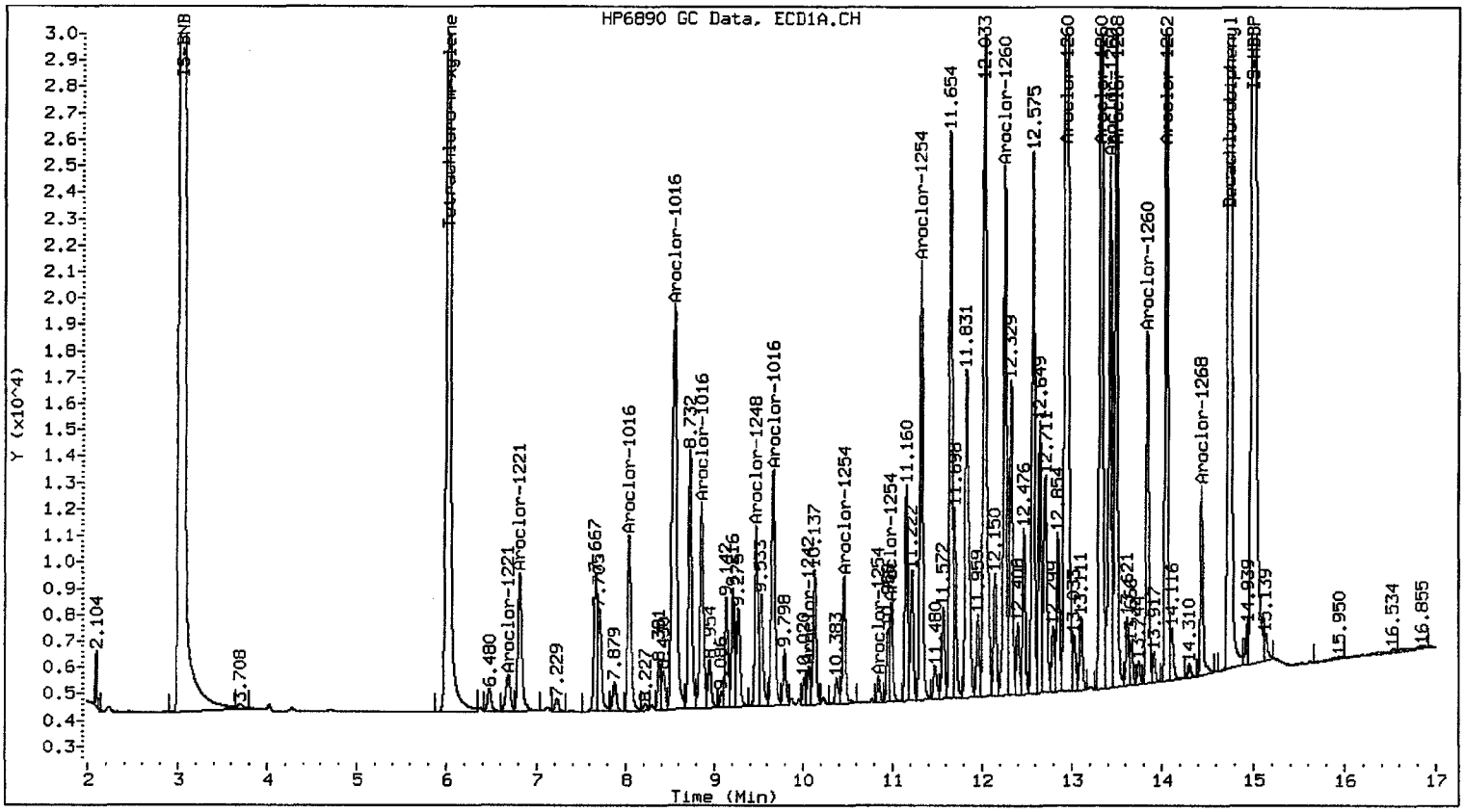

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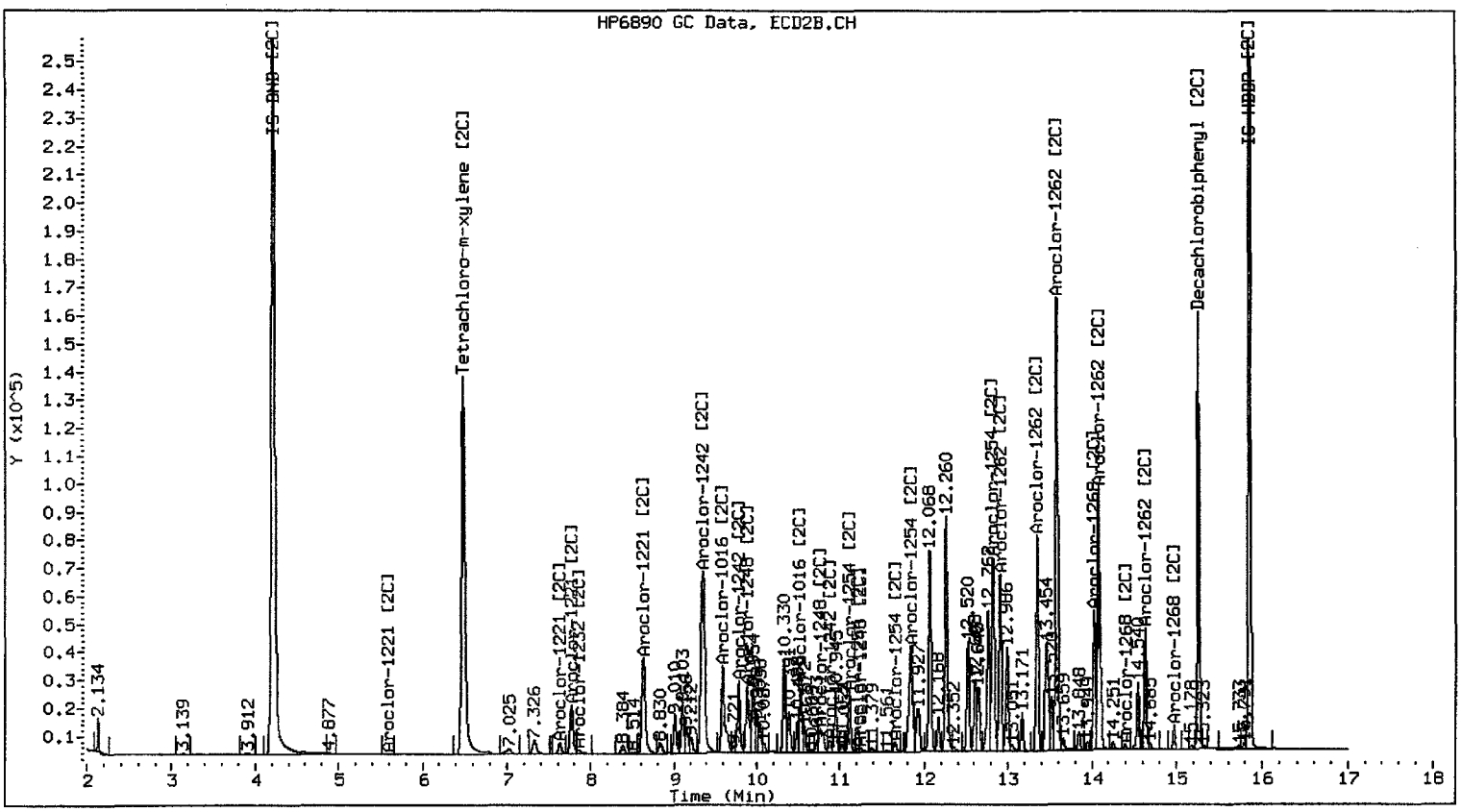


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191635.D
Data file 2: /20160219b.b/20160219.b/02191635.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242ICV
Client ID:
Injection Date: 19-FEB-2016 21:21
Report Date: 02/23/2016 07:05
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.024	-0.000	2459567	6.482	-0.001	7811472	44.2	43.8	0.9	Tetrachloro-m-xyle
14.743	0.000	6250744	15.261	-0.000	5339848	36.9	34.0	8.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	110.5	109.5
Decachlorobiphenyl	92.2	84.9

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10275020	-0.1
Hexabromobiphenyl	12470452	12703587	1.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15382250	-2.7
Hexabromobiphenyl	11807823	12283948	4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.045	-0.003	274743	208.9	1	8.627	-0.002	1588058	207.2
Aroclor-1016	2	8.555	-0.003	827918	204.2	2	9.352	-0.000	3224591	204.3
Aroclor-1016	3	8.863	-0.001	300457	217.0	3	9.586	-0.001	1329919	211.1
Aroclor-1016	4	9.670	-0.001	387256	250.8	4	10.526	-0.000	760457	259.9
Total Col1Ave (4 peaks):				220.2		Total Col2Ave (4 peaks):			220.6	RPD = 0
Corrected Ave (3 peaks):				210.0		Corrected Ave (3 peaks):			207.6	RPD = 1
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.687	-0.003	75588	144.7	2	7.623	-0.000	147762	110.7
Aroclor-1221	3	6.814	-0.001	231358	148.3	3	7.764	0.001	684093	162.0
Aroclor-1221	NS	---			----	4	8.627	-0.016	1588058	1134.9
Col1Ave: <3 Quant Peaks						Col2Ave: 469.2				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.687	-0.003	75588	215.3	2	7.623	0.000	147762	181.6
Aroclor-1232	3	6.814	-0.001	231358	223.6	3	7.849	-0.003	67202	146.4
Aroclor-1232	4	8.555	0.000	827918	489.5	4	8.627	-0.000	1588058	445.2
Total Col1Ave (3 peaks):				309.5		Total Col2Ave (3 peaks):			257.7	RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.555	-0.001	827918	262.1	1	8.627	-0.001	1588058	266.6
Aroclor-1242	2	8.863	-0.000	300457	259.1	2	9.352	-0.002	3224591	261.5
Aroclor-1242	3	9.670	-0.000	387256	264.1	3	9.780	-0.001	823182	258.6
Aroclor-1242	4	10.071	-0.000	268064	253.0	4	10.878	-0.001	1055595	246.2
Total Col1Ave (4 peaks):				259.6		Total Col2Ave (4 peaks):			258.2	RPD = 1
Corrected Ave (3 peaks):				258.1		Corrected Ave (3 peaks):			255.4	RPD = 1
Aroclor-1248	1	8.555	0.002	827918	446.8	1	9.352	0.004	3224591	438.2
Aroclor-1248	2	9.477	-0.000	239670	173.7	2	9.881	0.000	963652	177.7
Aroclor-1248	3	9.670	0.000	387256	187.0	3	10.796	0.001	1335893	161.2
Aroclor-1248	4	10.071	0.001	268064	155.6	4	11.243	0.002	1344792	162.5
Total Col1Ave (4 peaks):				240.8		Total Col2Ave (4 peaks):			234.9	RPD = 2
Corrected Ave (3 peaks):				172.1		Corrected Ave (3 peaks):			167.1	RPD = 3
Aroclor-1254	1	10.462	-0.002	151728	66.7	1	11.112	0.001	392720	50.8
Aroclor-1254	2	10.545	-0.000	64076	84.5	2	11.243	0.032	1344792	371.1
Aroclor-1254	3	10.850	0.001	116522	62.7	3	11.654	0.000	345185	59.5
Aroclor-1254	4	10.991	0.001	211259	57.9	4	11.807	0.001	610624	46.1
Aroclor-1254	5	11.349	0.004	154646	43.3	5	12.818	0.001	219112	22.5
Total Col1Ave (5 peaks):				63.0		Total Col2Ave (5 peaks):			110.0	RPD = 54*
Corrected Ave (4 peaks):				57.6		Corrected Ave (4 peaks):			44.7	RPD = 25
Aroclor-1260	1	---			0.0	1	12.818	0.002	219112	19.3
Aroclor-1260	2	---			0.0	2	13.584	0.003	37744	1.7
Aroclor-1260	3	13.329	0.001	11010	2.2	3	14.075	-0.000	29916	2.1
Aroclor-1260	4	---			0.0	4	14.626	0.001	10533	1.9
Aroclor-1260	5	13.831	-0.011	12344	6.7	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 6.3				
Aroclor-1262	1	---			0.0	1	12.987	0.082	29957	2.4
Aroclor-1262	2	---			0.0	2	13.352	0.003	80458	7.0
Aroclor-1262	3	13.329	-0.001	11010	2.9	3	13.584	0.003	37744	1.6
Aroclor-1262	4	---			0.0	4	14.075	-0.001	29916	2.0
Aroclor-1262	5	14.055	0.000	21485	3.3	5	14.626	0.000	10533	1.3
Col1Ave: <3 Quant Peaks						Col2Ave: 2.9				
Aroclor-1268	1	---			0.0	1	14.006	-0.015	40311	1.6
Aroclor-1268	2	---			0.0	2	14.075	-0.001	29916	1.3
Aroclor-1268	3	13.831	0.004	12344	0.7	3	14.390	0.001	8237	0.4
Aroclor-1268	4	14.443	-0.003	26705	0.4	4	14.954	-0.019	20331	0.4
Col1Ave: <3 Quant Peaks						Col2Ave: 0.9				

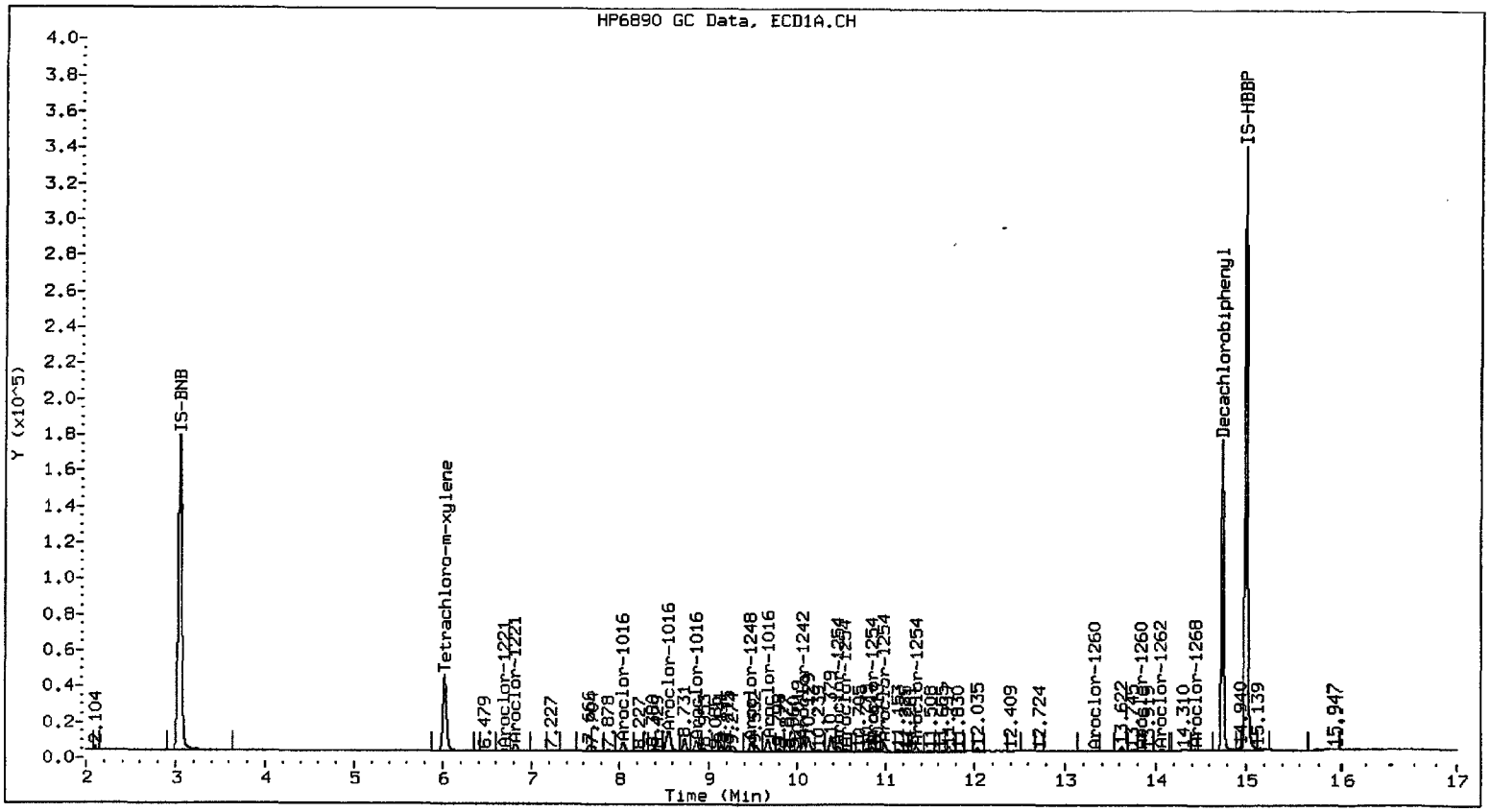
Total PCB Area Col1 (6.125 - 14.643) = 6994538 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 32682215 Col2 Total PCB = 0.3 ppm*

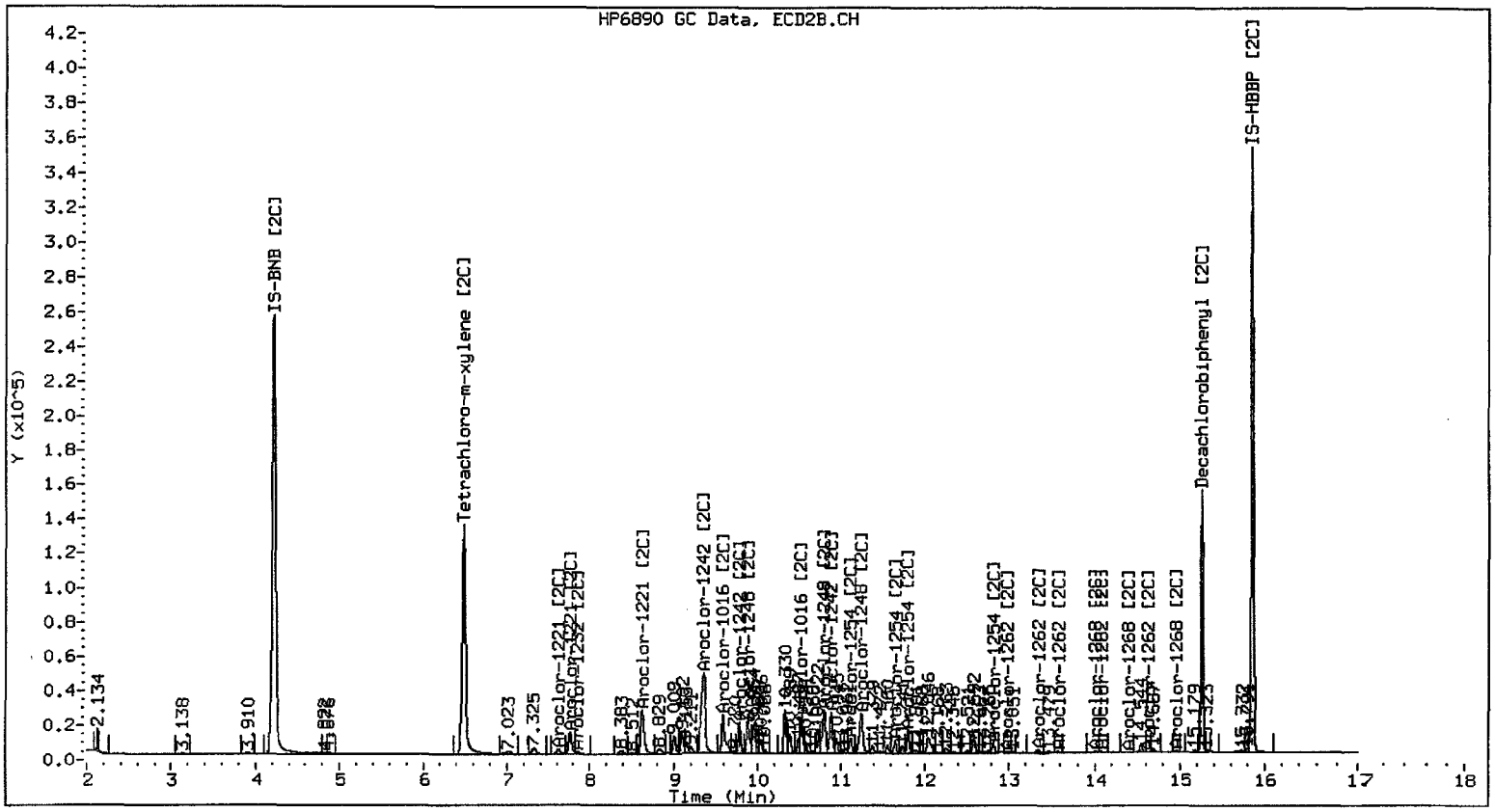
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

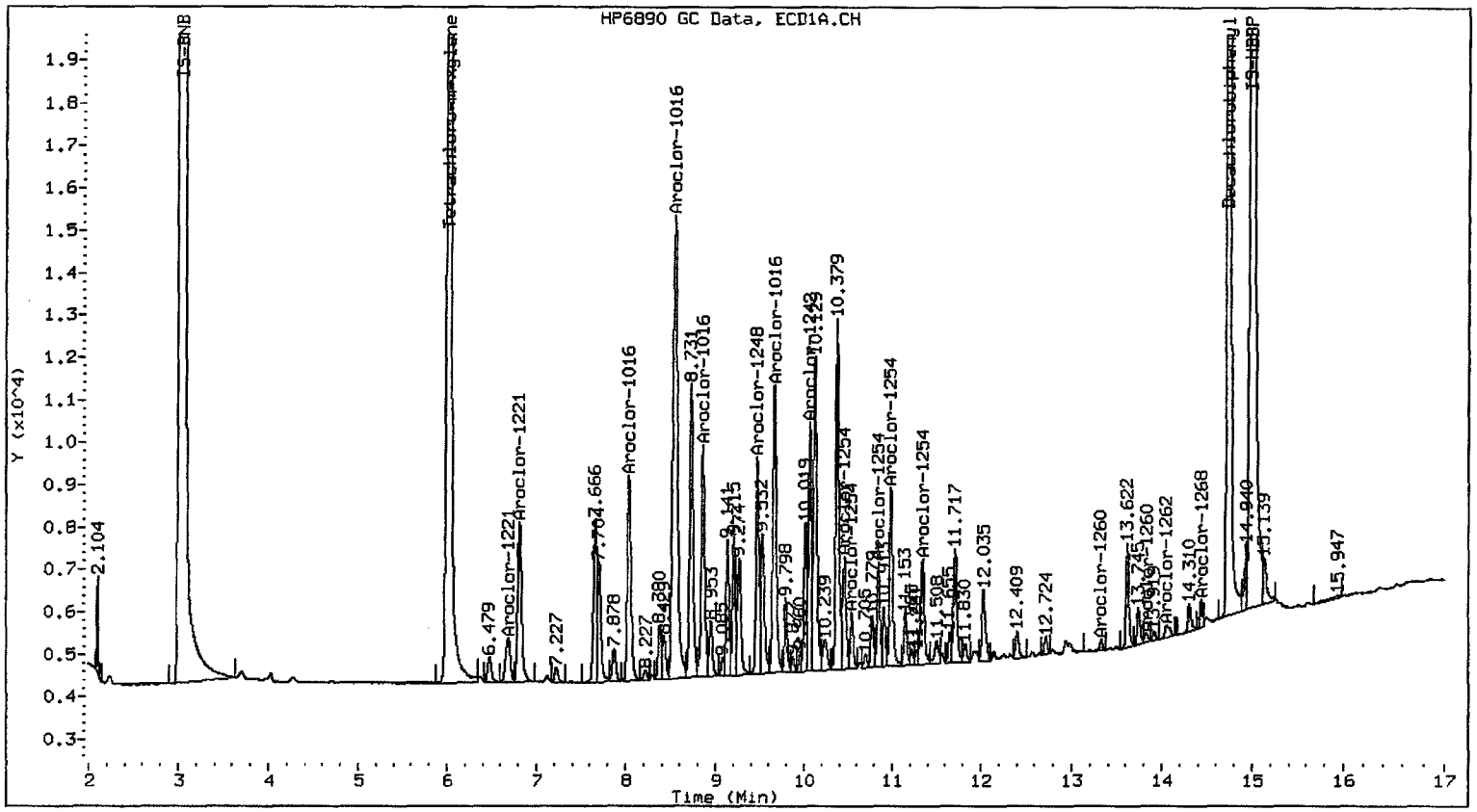
ECD7-ZB5 AR1242ICV 19-FEB-2016 21:21, 2ul



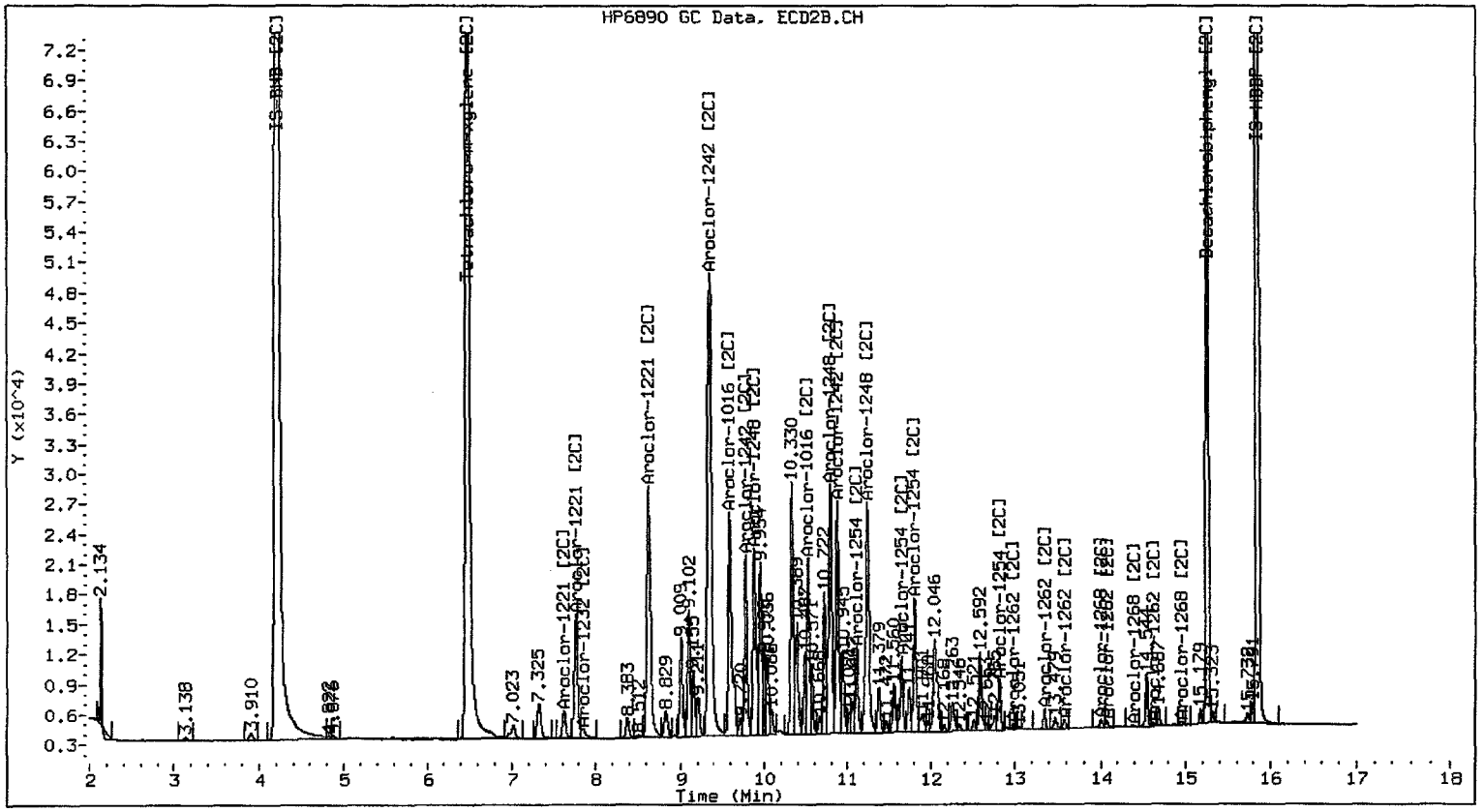
ECD7-ZB35 AR1242ICV 19-FEB-2016 21:21, 2ul



ECD7-ZB5 AR1242ICV 19-FEB-2016 21:21, 2ul



ECD7-ZB35 AR1242ICV 19-FEB-2016 21:21, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191636.D
Data file 2: /20160219b.b/20160219.b/02191636.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248ICV
Client ID:
Injection Date: 19-FEB-2016 21:43
Report Date: 02/23/2016 07:05
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.026	0.001	2428847	6.484	0.001	7820516	42.5	43.2	1.5	Tetrachloro-m-xyle
14.744	0.000	6186834	15.260	-0.001	5303571	35.7	33.0	8.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	106.3	108.0
Decachlorobiphenyl	89.4	82.4

M 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10543721	2.5
Hexabromobiphenyl	12470452	12966998	4.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15624847	-1.1
Hexabromobiphenyl	11807823	12579889	6.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.046	-0.001	138874	102.9	1	8.626	-0.003	850160	109.2
Aroclor-1016	2	8.554	-0.003	557791	134.1	2	9.349	-0.003	2206508	137.7
Aroclor-1016	3	8.864	-0.001	179490	126.3	3	9.586	-0.000	552205	86.3
Aroclor-1016	4	9.670	-0.001	573998	362.3	4	10.526	0.000	1196628	402.7
Total Col1Ave (4 peaks):					181.4	Total Col2Ave (4 peaks):				184.0 RPD = 1
Corrected Ave (3 peaks):					121.1	Corrected Ave (3 peaks):				111.0 RPD = 9
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.669	-0.021	37515	70.0	2	7.625	0.002	26717	19.7
Aroclor-1221	3	6.816	0.001	47613	29.7	3	7.766	0.003	169556	39.5
Aroclor-1221	NS	---			----	4	8.626	-0.017	850160	598.1
Col1Ave: <3 Quant Peaks						Col2Ave: 219.1				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.669	-0.021	37515	104.1	2	7.625	0.002	26717	32.3
Aroclor-1232	3	6.816	0.001	47613	44.8	3	7.766	-0.085	169556	363.7
Aroclor-1232	4	8.554	-0.000	557791	321.4	4	8.626	-0.002	850160	234.6
Total Col1Ave (3 peaks):					156.8	Total Col2Ave (3 peaks):				210.2 RPD = 29
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.554	-0.001	557791	172.1	1	8.626	-0.002	850160	140.5
Aroclor-1242	2	8.864	0.000	179490	150.8	2	9.349	-0.005	2206508	176.2
Aroclor-1242	3	9.670	-0.000	573998	381.5	3	9.781	-0.000	465908	144.1
Aroclor-1242	4	10.071	-0.000	477259	439.0	4	10.878	-0.001	1729515	397.1
Total Col1Ave (4 peaks):					285.9	Total Col2Ave (4 peaks):				214.5 RPD = 29
Corrected Ave (3 peaks):					234.8	Corrected Ave (3 peaks):				153.6 RPD = 42*
Aroclor-1248	1	8.554	0.001	557791	293.3	1	9.349	0.002	2206508	295.2
Aroclor-1248	2	9.478	0.000	392254	277.0	2	9.882	0.001	1531998	278.1
Aroclor-1248	3	9.670	0.000	573998	270.0	3	10.797	0.001	2291483	272.3
Aroclor-1248	4	10.071	0.001	477259	270.0	4	11.242	0.001	2255471	268.3
Total Col1Ave (4 peaks):					277.6	Total Col2Ave (4 peaks):				278.5 RPD = 0
Corrected Ave (3 peaks):					272.4	Corrected Ave (3 peaks):				272.9 RPD = 0
Aroclor-1254	1	10.463	-0.002	290678	124.5	1	11.112	0.000	728283	92.7
Aroclor-1254	2	10.545	-0.000	132903	170.8	2	11.242	0.031	2255471	612.8
Aroclor-1254	3	10.850	0.001	235726	123.5	3	11.653	-0.000	711713	120.7
Aroclor-1254	4	10.991	0.001	399929	106.8	4	11.806	-0.001	1215906	90.4
Aroclor-1254	5	11.349	0.003	277360	75.7	5	12.818	0.001	205058	20.7
Total Col1Ave (5 peaks):					120.3	Total Col2Ave (5 peaks):				187.5 RPD = 44*
Corrected Ave (4 peaks):					107.6	Corrected Ave (4 peaks):				81.1 RPD = 28
Aroclor-1260	1	12.260	0.001	13185	4.2	1	12.818	0.002	205058	17.7
Aroclor-1260	2	12.942	0.001	41250	3.4	2	13.583	0.002	77403	3.4
Aroclor-1260	3	13.330	0.002	14728	2.9	3	14.076	0.001	54018	3.6
Aroclor-1260	4	13.431	0.001	15186	4.7	4	14.626	0.001	30381	5.3
Aroclor-1260	5	13.838	-0.005	19058	10.2	NS	---			----
Total Col1Ave (5 peaks):					5.1	Total Col2Ave (4 peaks):				7.5 RPD = 39
Corrected Ave (4 peaks):					3.8	Corrected Ave (3 peaks):				4.1 RPD = 8
Aroclor-1262	1	12.260	0.001	13185	3.1	1	12.907	0.002	35430	2.8
Aroclor-1262	2	12.942	0.001	41250	3.4	2	13.351	0.003	101490	8.6
Aroclor-1262	3	13.330	0.000	14728	3.8	3	13.583	0.003	77403	3.2
Aroclor-1262	4	13.431	0.001	15186	2.6	4	14.076	0.000	54018	3.4
Aroclor-1262	5	14.056	0.000	28463	4.3	5	14.626	0.001	30381	3.8
Total Col1Ave (5 peaks):					3.4	Total Col2Ave (5 peaks):				4.4 RPD = 24
Corrected Ave (4 peaks):					3.2	Corrected Ave (4 peaks):				3.3 RPD = 3
Aroclor-1268	1	13.431	0.001	15186	0.9	1	14.020	-0.001	53222	2.1
Aroclor-1268	2	13.496	0.002	18303	0.9	2	14.076	-0.000	54018	2.3
Aroclor-1268	3	13.838	0.010	19058	1.0	3	14.389	0.001	8690	0.5
Aroclor-1268	4	14.444	-0.002	34405	0.5	4	14.971	-0.002	25005	0.5

Total Col1Ave (4 peaks):	0.8	Total Col2Ave (4 peaks):	1.3	RPD = 49*
Corrected Ave (3 peaks):	0.7	Corrected Ave (3 peaks):	1.0	RPD = 30

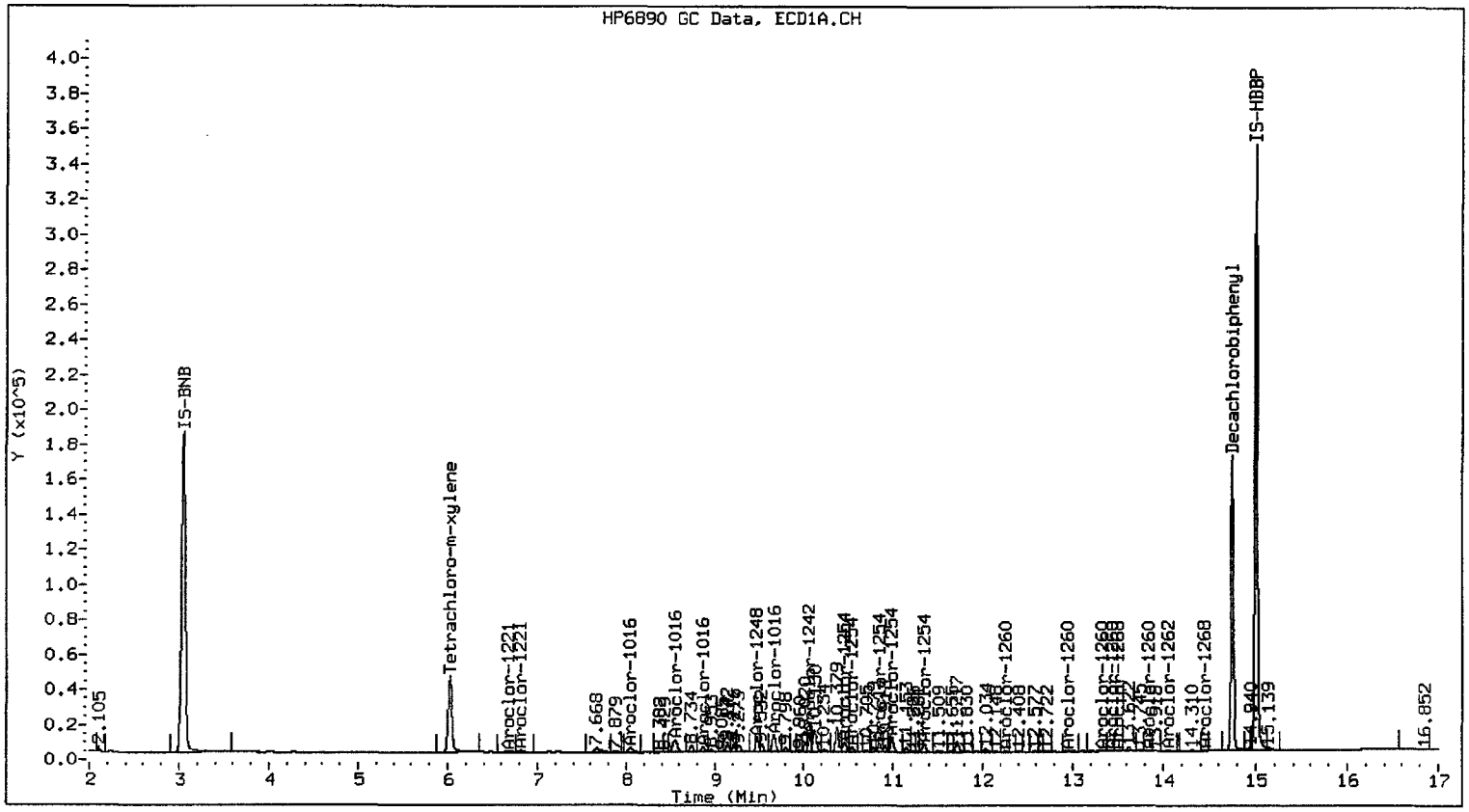
Total PCB Area Col1 (6.125 - 14.643) = 8452706 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 37564394 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AR1248ICV 19-FEB-2016 21:43, 2ul



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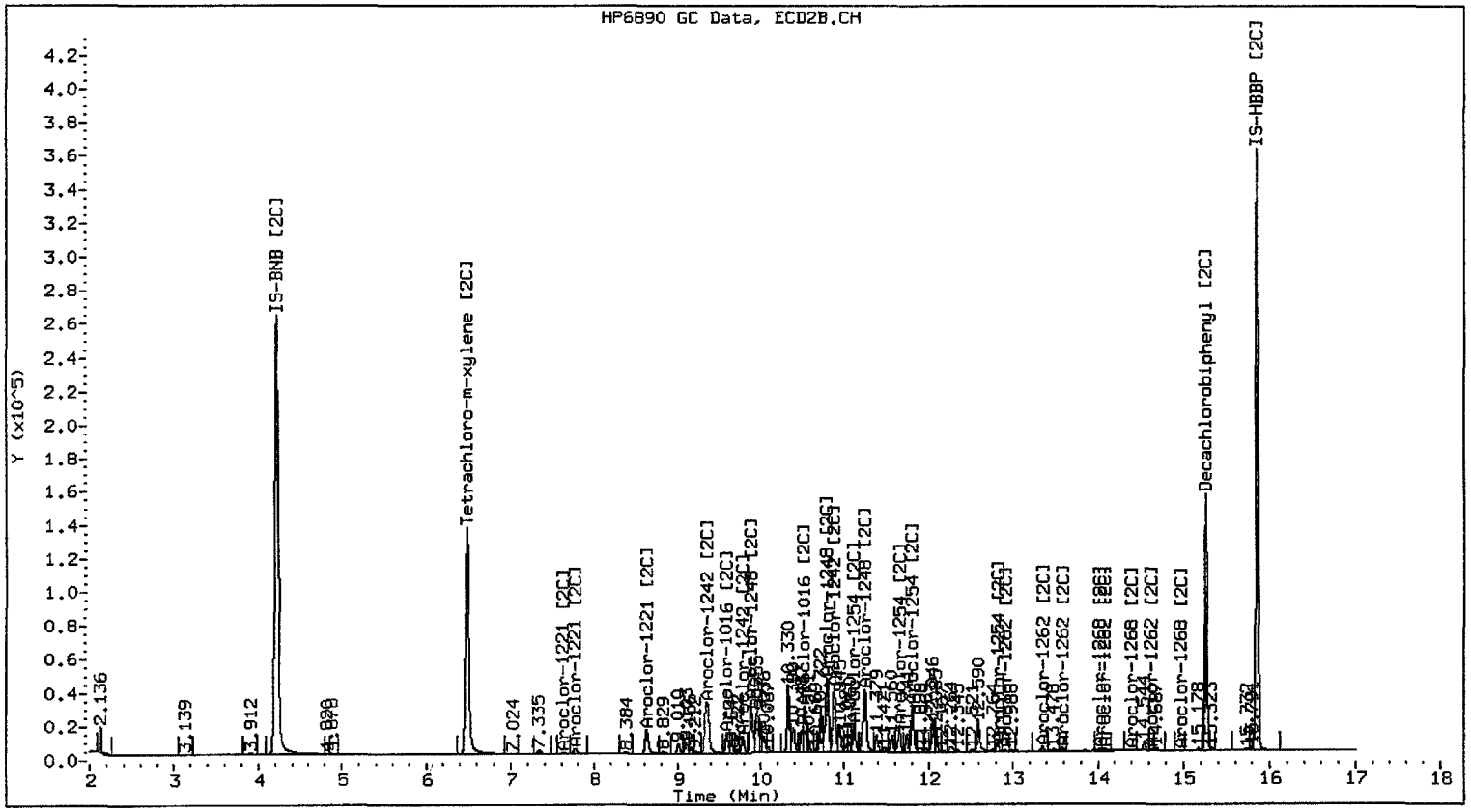

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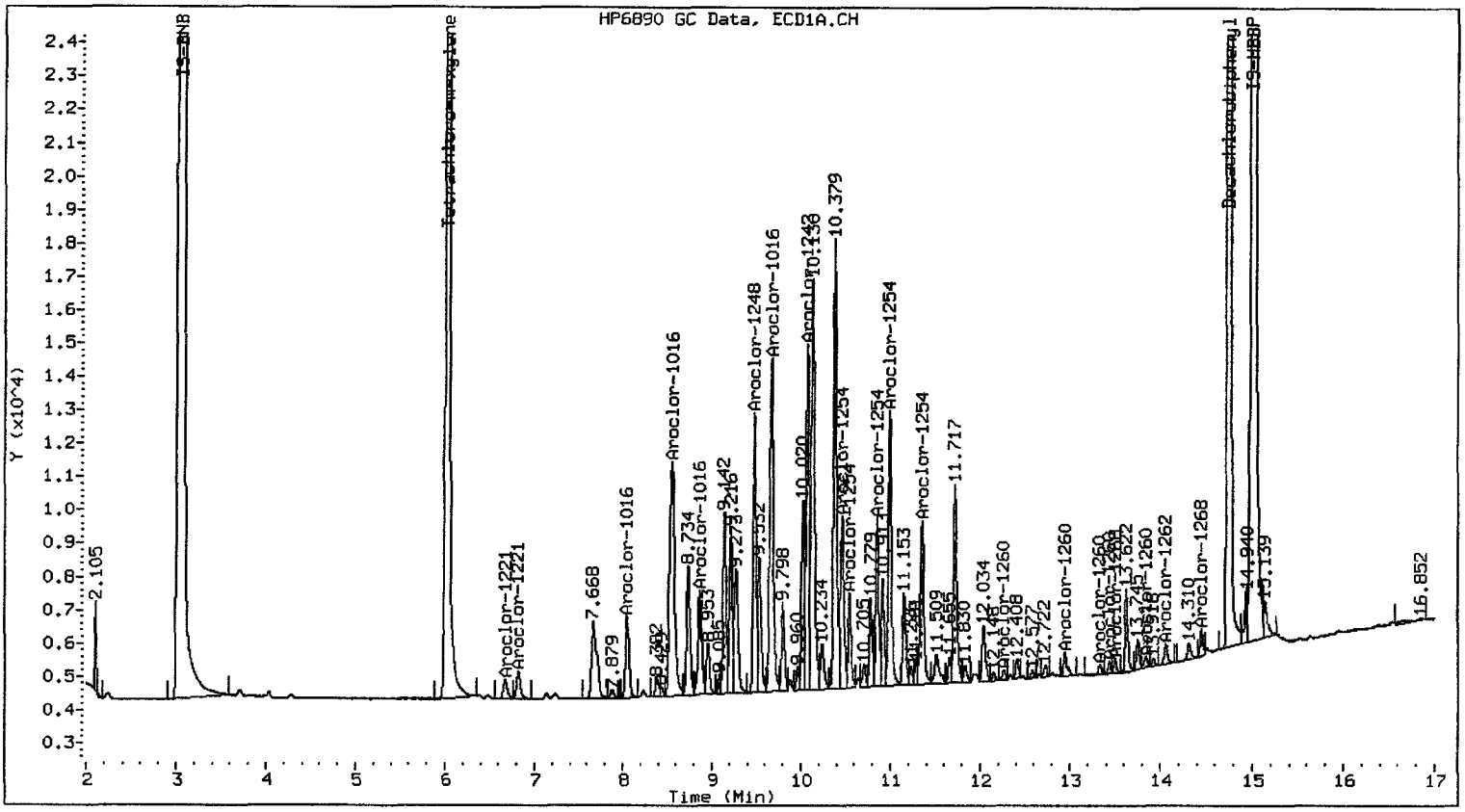

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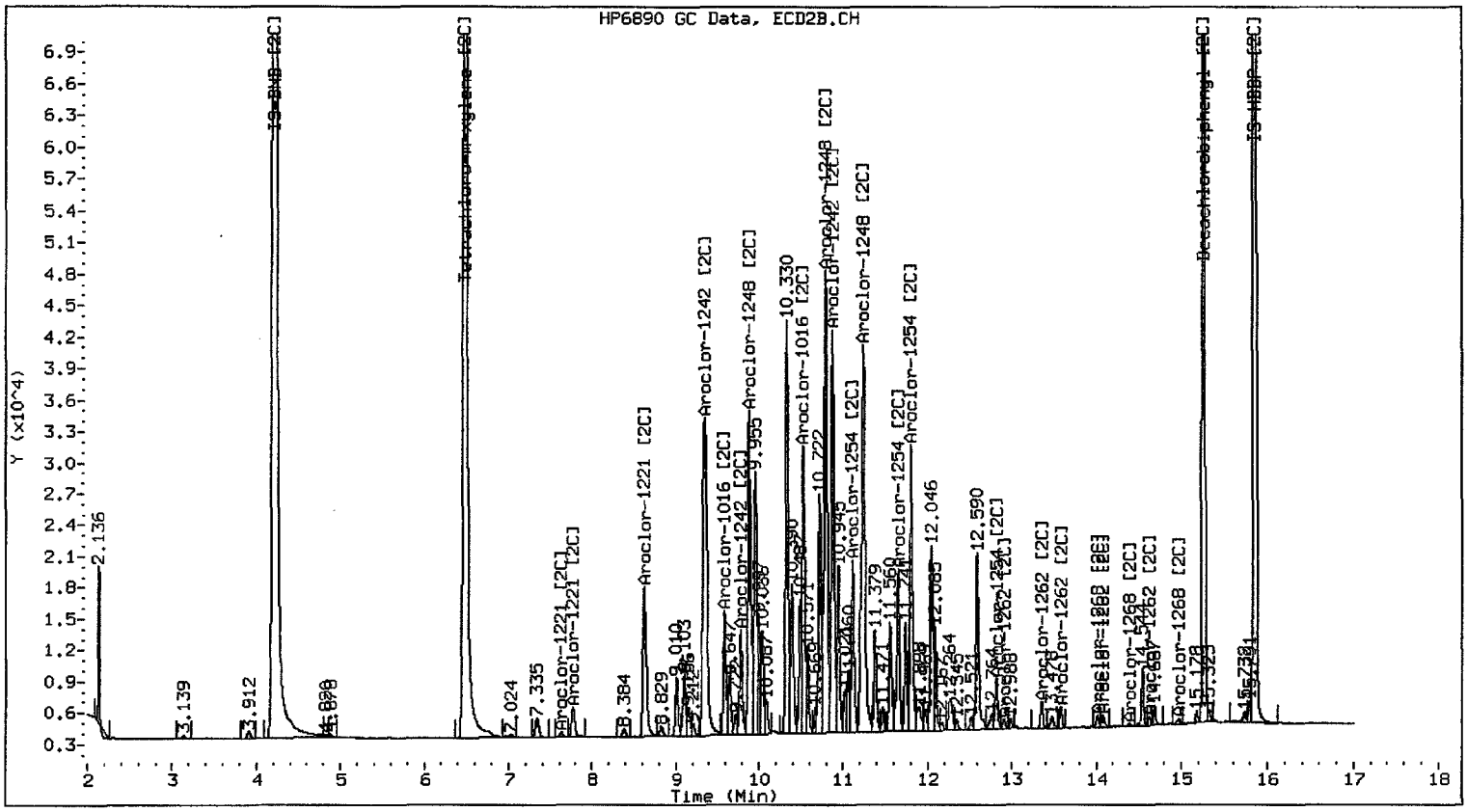


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191637.D
Data file 2: /20160219b.b/20160219.b/02191637.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV
Client ID:
Injection Date: 19-FEB-2016 22:05
Report Date: 02/23/2016 07:05
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.024	-0.001	2204246	6.483	-0.000	7141115	38.3	39.0	2.0	Tetrachloro-m-xyle
14.743	-0.000	5660549	15.260	-0.000	4890307	32.4	30.2	7.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.6	97.6
Decachlorobiphenyl	81.1	75.4

A 02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10636230	3.4
Hexabromobiphenyl	12470452	13075443	4.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15787121	-0.1
Hexabromobiphenyl	11807823	12674307	7.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	---			0.0	1	8.627	-0.002	22089	2.8
Aroclor-1016	2	8.548	-0.009	16151	3.8	2	9.343	-0.009	62146	3.8
Aroclor-1016	3	---			0.0	3	9.588	0.001	11329	1.8
Aroclor-1016	4	9.671	-0.000	76608	47.9	4	10.526	0.000	258779	86.2
		Col1Ave: <3 Quant Peaks					Col2Ave:		23.6	
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	7.765	0.002	21467	5.0
Aroclor-1221	NS	---			----	4	8.627	-0.016	22089	15.4
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.665	-0.025	27308	75.2	2	---			0.0
Aroclor-1232	3	---			0.0	3	7.765	-0.087	21467	45.6
Aroclor-1232	4	8.548	-0.006	16151	9.2	4	8.627	-0.001	22089	6.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	8.548	-0.007	16151	4.9	1	8.627	-0.001	22089	3.6
Aroclor-1242	2	---			0.0	2	9.343	-0.010	62146	4.9
Aroclor-1242	3	9.671	0.000	76608	50.5	3	9.782	0.000	8196	2.5
Aroclor-1242	4	10.072	0.000	217135	198.0	4	10.878	-0.001	296674	67.4
		Total Col1Ave (3 peaks):		84.5			Total Col2Ave (4 peaks):		19.6	RPD = 125*
		Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):		3.7	
Aroclor-1248	1	8.548	-0.004	16151	8.4	1	9.343	-0.004	62146	8.2
Aroclor-1248	2	9.477	-0.000	147703	103.4	2	9.881	-0.000	939017	168.7
Aroclor-1248	3	9.671	0.001	76608	35.7	3	10.797	0.002	901145	106.0
Aroclor-1248	4	10.072	0.001	217135	121.8	4	11.211	-0.031	1140502	134.3
		Total Col1Ave (4 peaks):		67.3			Total Col2Ave (4 peaks):		104.3	RPD = 43*
		Corrected Ave (3 peaks):		49.2			Corrected Ave (3 peaks):		82.8	RPD = 51*
Aroclor-1254	1	10.464	-0.001	652954	277.3	1	11.112	0.000	2177941	274.4
Aroclor-1254	2	10.545	-0.001	239562	305.2	2	11.211	-0.000	1140502	306.7
Aroclor-1254	3	10.850	0.001	550258	285.9	3	11.653	-0.001	1663428	279.2
Aroclor-1254	4	10.990	0.000	1032676	273.4	4	11.807	0.000	3681572	270.9
Aroclor-1254	5	11.346	0.001	981043	265.3	5	12.817	-0.000	2750768	274.7
		Total Col1Ave (5 peaks):		281.4			Total Col2Ave (5 peaks):		281.2	RPD = 0
		Corrected Ave (4 peaks):		275.5			Corrected Ave (4 peaks):		274.8	RPD = 0
Aroclor-1260	1	12.258	-0.002	60773	19.1	1	12.817	0.001	2750768	235.4
Aroclor-1260	2	12.942	0.001	192845	16.0	2	13.583	0.002	523077	23.1
Aroclor-1260	3	13.328	0.001	182687	35.2	3	14.074	-0.001	358002	23.9
Aroclor-1260	4	13.498	0.067	12224	3.8	4	14.626	0.001	24594	4.3
Aroclor-1260	5	13.839	-0.003	17702	9.4	NS	---			----
		Total Col1Ave (5 peaks):		16.7			Total Col2Ave (4 peaks):		71.7	RPD = 124*
		Corrected Ave (4 peaks):		12.1			Corrected Ave (3 peaks):		17.1	RPD = 34
Aroclor-1262	1	12.258	-0.002	60773	14.4	1	12.905	0.000	156791	12.2
Aroclor-1262	2	12.942	0.002	192845	15.5	2	13.352	0.003	988120	83.0
Aroclor-1262	3	13.328	-0.001	182687	46.5	3	13.583	0.003	523077	21.5
Aroclor-1262	4	13.498	0.068	12224	2.1	4	14.074	-0.001	358002	22.6
Aroclor-1262	5	14.054	-0.001	26461	4.0	5	14.626	0.001	24594	3.0
		Total Col1Ave (5 peaks):		16.5			Total Col2Ave (5 peaks):		28.5	RPD = 53*
		Corrected Ave (4 peaks):		9.0			Corrected Ave (4 peaks):		14.8	RPD = 49*
Aroclor-1268	1	13.498	0.067	12224	0.7	1	14.026	0.005	109703	4.3
Aroclor-1268	2	---			0.0	2	14.074	-0.001	358002	15.2
Aroclor-1268	3	13.839	0.012	17702	0.9	3	---			0.0
Aroclor-1268	4	14.443	-0.003	27194	0.4	4	14.952	-0.021	20937	0.4
		Total Col1Ave (3 peaks):		0.7			Total Col2Ave (3 peaks):		6.6	RPD = 163*
		Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks			

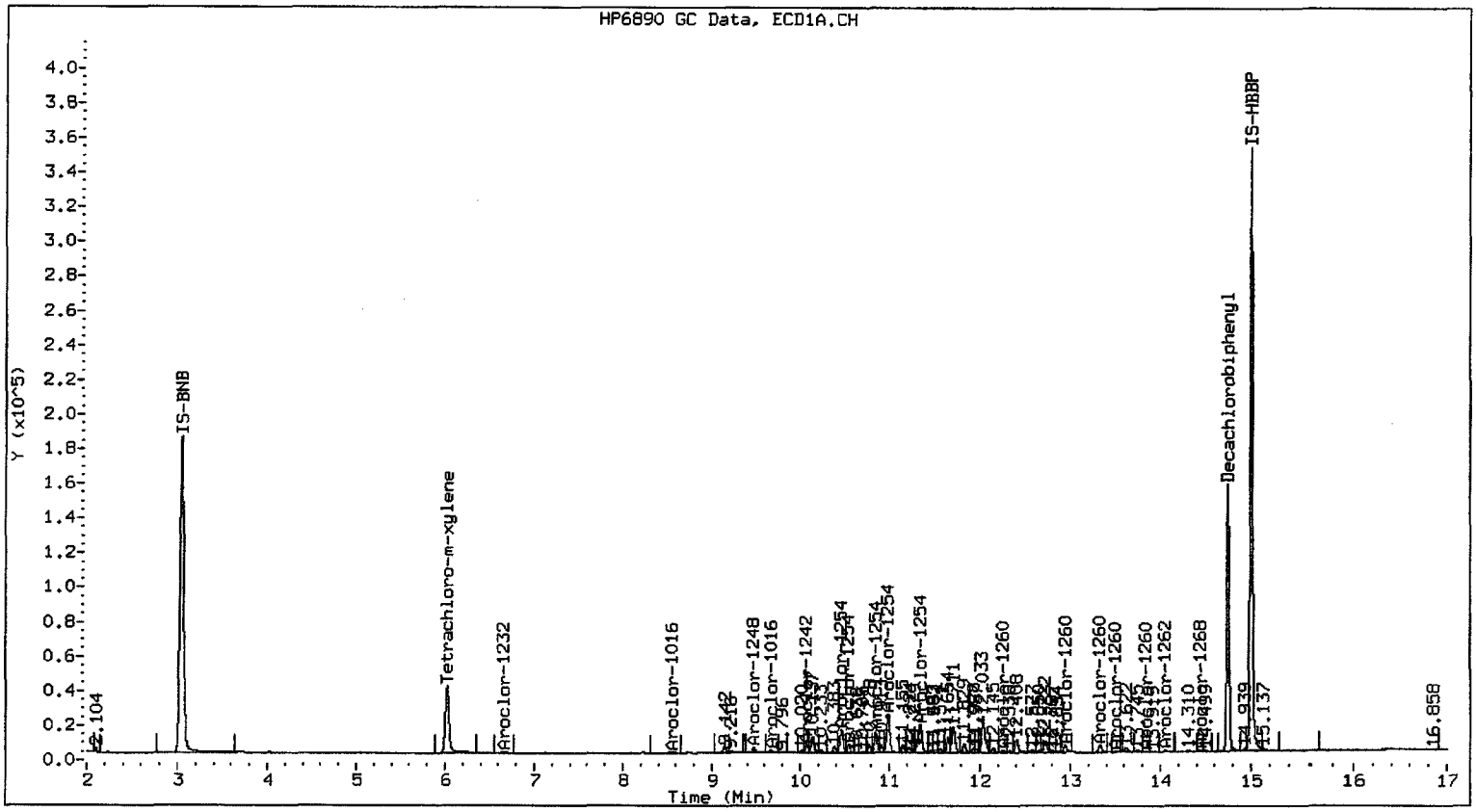
Total PCB Area Col1 (6.125 - 14.643) = 10494964 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 41761990 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AR1254ICV 19-FEB-2016 22:05, 2ul



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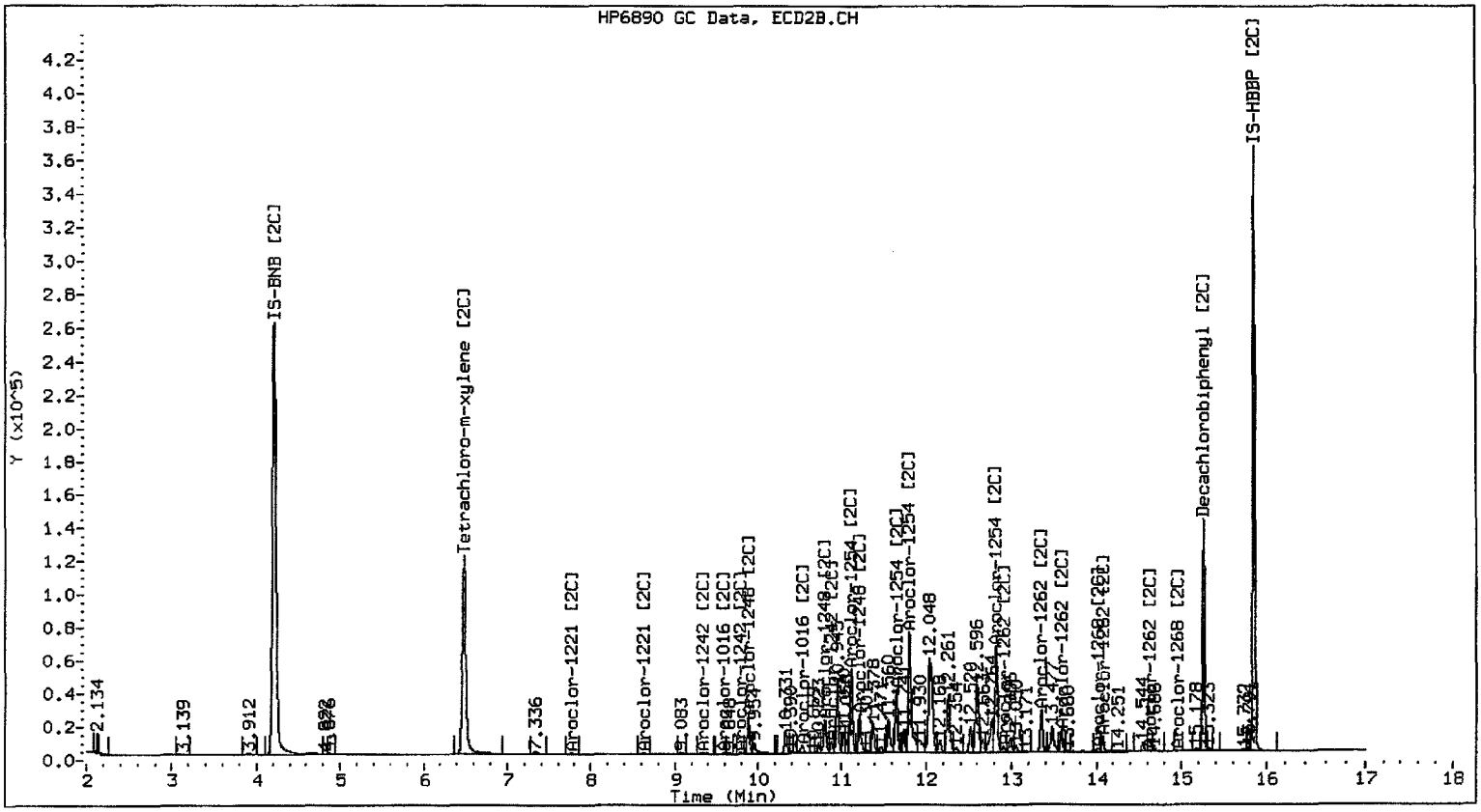

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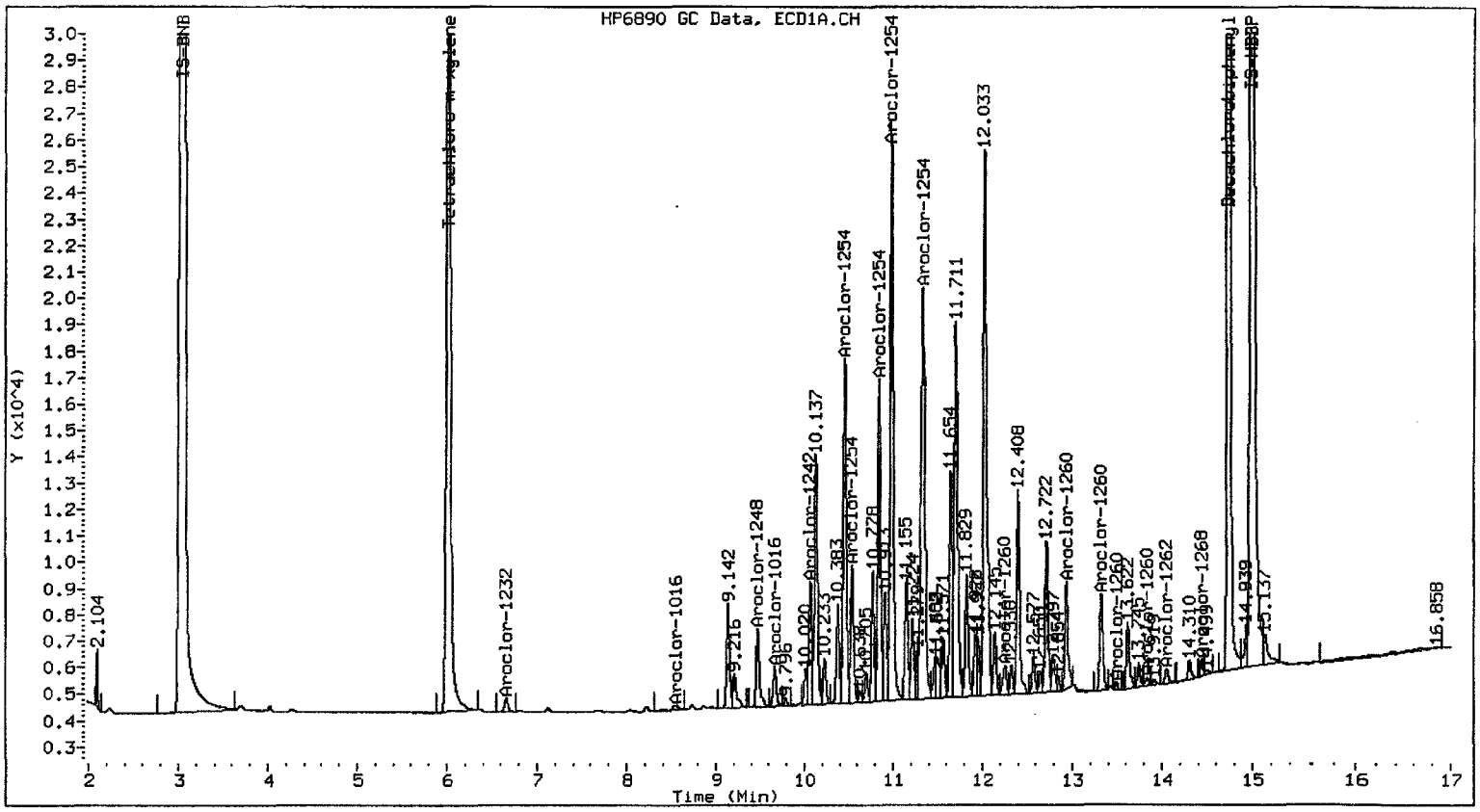

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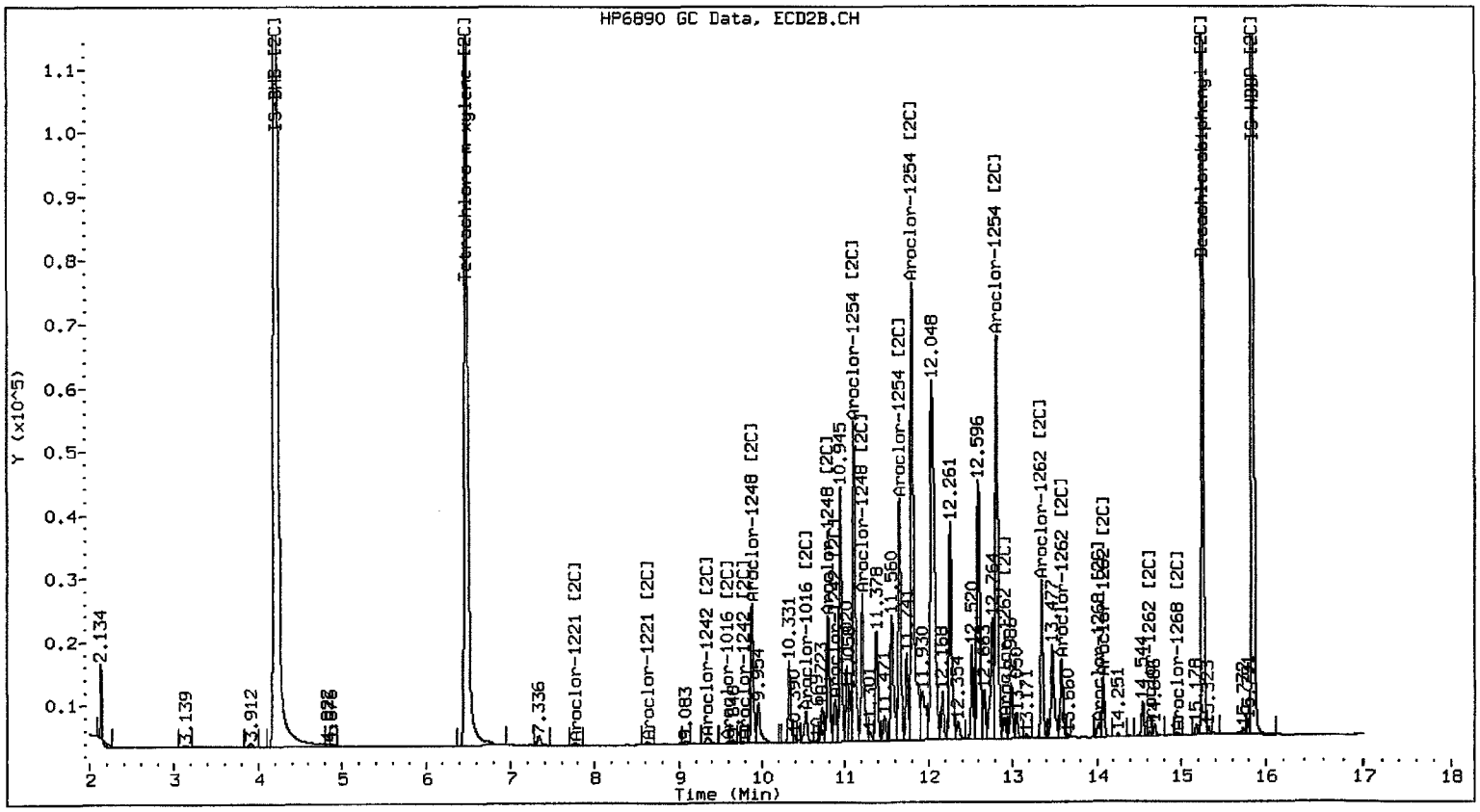


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191638.D
Data file 2: /20160219b.b/20160219.b/02191638.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162ICV
Client ID:
Injection Date: 19-FEB-2016 22:27
Report Date: 02/23/2016 07:05
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.025	0.000	2524206	6.483	0.000	7926657	43.9	44.0	0.2	Tetrachloro-m-xyle
14.743	-0.000	6355972	15.261	-0.000	5449734	36.4	33.5	8.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	109.8	110.1
Decachlorobiphenyl	91.0	83.7

02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10606807	3.1
Hexabromobiphenyl	12470452	13078185	4.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15534505	-1.7
Hexabromobiphenyl	11807823	12718711	7.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.046	-0.001	34021	25.1	1	8.644	0.014	378463	48.9
Aroclor-1016	2	8.558	0.001	94261	22.5	2	9.355	0.003	371867	23.3
Aroclor-1016	3	8.865	0.001	31569	22.1	3	9.588	0.002	166805	26.2
Aroclor-1016	4	9.671	0.000	20375	12.8	4	10.527	0.001	48777	16.5
Total Col1Ave (4 peaks):				20.6		Total Col2Ave (4 peaks):			28.7	RPD = 33
Corrected Ave (3 peaks):				19.1		Corrected Ave (3 peaks):			22.0	RPD = 14
Aroclor-1221	1	4.715	0.001	87340	260.3	1	5.587	0.002	375072	259.3
Aroclor-1221	2	6.692	0.002	140906	261.3	2	7.625	0.001	351132	260.6
Aroclor-1221	3	6.816	0.001	419082	260.2	3	7.764	0.001	1110487	260.4
Aroclor-1221	NS	---			----	4	8.644	0.000	378463	267.8
Total Col1Ave (3 peaks):				260.6		Total Col2Ave (4 peaks):			262.0	RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			260.1	
Aroclor-1232	1	4.715	0.001	87340	459.0	1	5.587	0.001	375072	429.8
Aroclor-1232	2	6.692	0.002	140906	388.8	2	7.625	0.002	351132	427.3
Aroclor-1232	3	6.816	0.002	419082	392.4	3	7.853	0.001	226434	488.6
Aroclor-1232	4	8.558	0.004	94261	54.0	4	8.644	0.016	378463	105.1
Total Col1Ave (4 peaks):				323.6		Total Col2Ave (4 peaks):			362.7	RPD = 11
Corrected Ave (3 peaks):				278.4		Corrected Ave (3 peaks):			320.7	RPD = 14
Aroclor-1242	1	8.558	0.003	94261	28.9	1	8.644	0.016	378463	62.9
Aroclor-1242	2	8.865	0.002	31569	26.4	2	9.355	0.001	371867	29.9
Aroclor-1242	3	9.671	0.001	20375	13.5	3	9.782	0.000	94251	29.3
Aroclor-1242	4	10.072	0.001	23021	21.0	4	10.881	0.002	68708	15.9
Total Col1Ave (4 peaks):				22.4		Total Col2Ave (4 peaks):			34.5	RPD = 42*
Corrected Ave (3 peaks):				20.3		Corrected Ave (3 peaks):			25.0	RPD = 21
Aroclor-1248	1	8.558	0.005	94261	49.3	1	9.355	0.007	371867	50.0
Aroclor-1248	2	9.478	0.001	17756	12.5	2	9.881	0.000	96316	17.6
Aroclor-1248	3	9.671	0.002	20375	9.5	3	10.799	0.003	116343	13.9
Aroclor-1248	4	10.072	0.002	23021	12.9	4	11.212	-0.029	156958	18.8
Total Col1Ave (4 peaks):				21.1		Total Col2Ave (4 peaks):			25.1	RPD = 17
Corrected Ave (3 peaks):				11.6		Corrected Ave (3 peaks):			16.8	RPD = 36
Aroclor-1254	1	10.466	0.002	134637	57.3	1	11.112	0.001	479819	61.4
Aroclor-1254	2	10.545	0.000	14953	19.1	2	11.212	0.001	156958	42.9
Aroclor-1254	3	10.850	0.001	35955	18.7	3	11.654	0.000	115241	19.7
Aroclor-1254	4	10.990	-0.000	111583	29.6	4	11.838	0.032	2093179	156.5
Aroclor-1254	5	11.324	-0.021	621669	168.6	5	12.817	0.000	1591053	161.5
Total Col1Ave (5 peaks):				58.7		Total Col2Ave (5 peaks):			88.4	RPD = 40*
Corrected Ave (4 peaks):				31.2		Corrected Ave (4 peaks):			70.1	RPD = 77*
Aroclor-1260	1	12.260	-0.000	1310738	412.6	1	12.817	0.001	1591053	135.7
Aroclor-1260	2	12.941	-0.000	4167473	344.8	2	13.581	0.000	7187242	316.0
Aroclor-1260	3	13.329	0.002	1212245	233.6	3	14.075	0.000	4866543	324.0
Aroclor-1260	4	13.431	-0.000	1940784	601.8	4	14.625	-0.000	2492099	432.7
Aroclor-1260	5	13.842	-0.001	897195	476.3	NS	---			----
Total Col1Ave (5 peaks):				413.8		Total Col2Ave (4 peaks):			302.1	RPD = 31
Corrected Ave (4 peaks):				366.8		Corrected Ave (3 peaks):			258.6	RPD = 35
Aroclor-1262	1	12.260	0.000	1310738	309.7	1	12.906	0.001	3865087	298.9
Aroclor-1262	2	12.941	0.001	4167473	335.9	2	13.349	0.000	3721427	311.3
Aroclor-1262	3	13.329	-0.000	1212245	308.3	3	13.581	0.000	7187242	294.7
Aroclor-1262	4	13.431	0.000	1940784	327.5	4	14.075	-0.000	4866543	306.7
Aroclor-1262	5	14.056	0.000	2191930	329.3	5	14.625	-0.000	2492099	306.4
Total Col1Ave (5 peaks):				322.1		Total Col2Ave (5 peaks):			303.6	RPD = 6
Corrected Ave (4 peaks):				318.7		Corrected Ave (4 peaks):			301.7	RPD = 5
Aroclor-1268	1	13.431	0.000	1940784	112.6	1	14.022	0.001	3754721	148.1
Aroclor-1268	2	13.496	0.002	2312907	108.2	2	14.075	-0.001	4866543	205.2
Aroclor-1268	3	13.842	0.015	897195	46.4	3	14.388	0.000	198142	10.4

Aroclor-1268	4	14.445	-0.001	801745	11.4	4	14.973	-0.000	974242	17.9

Total Col1Ave (4 peaks): 69.6 Total Col2Ave (4 peaks): 95.4 RPD = 31

Corrected Ave (3 peaks): 55.3 Corrected Ave (3 peaks): 58.8 RPD = 6

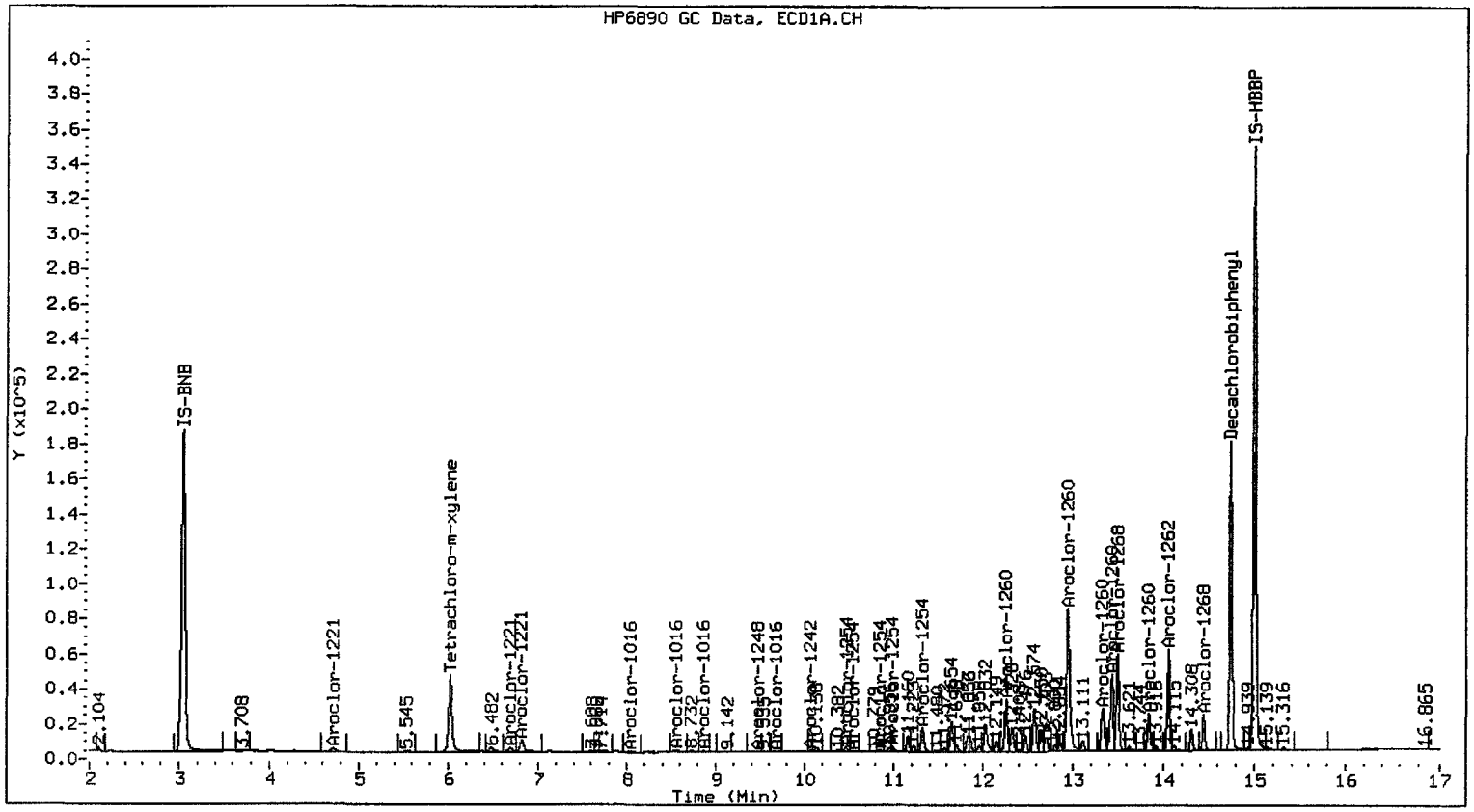
Total PCB Area Col1 (6.125 - 14.643) = 25117746 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 62587219 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AR2162ICV 19-FEB-2016 22:27, 2ul



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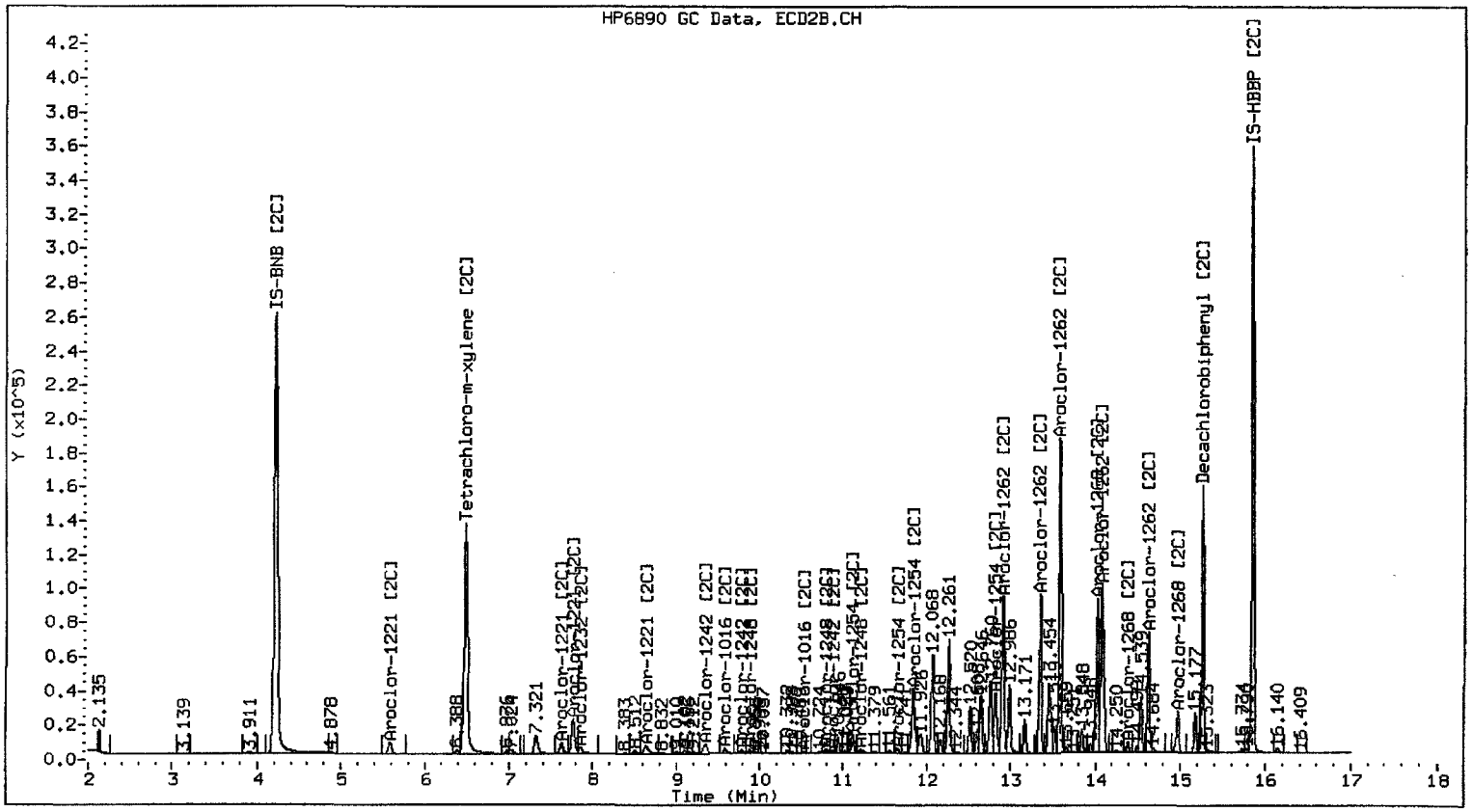
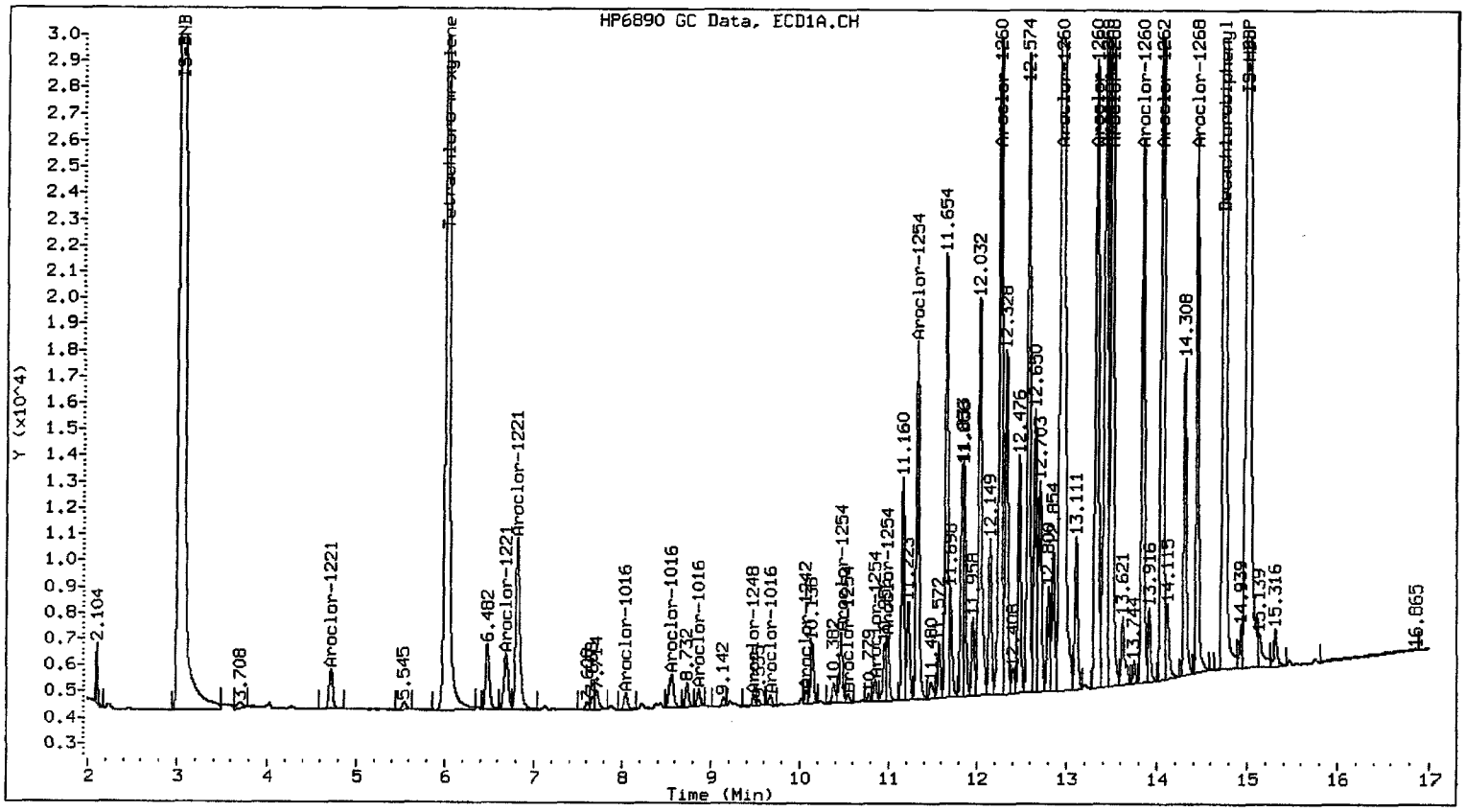


ECD7-ZB5 AR2162ICV 19-FEB-2016 22:27, 2ul



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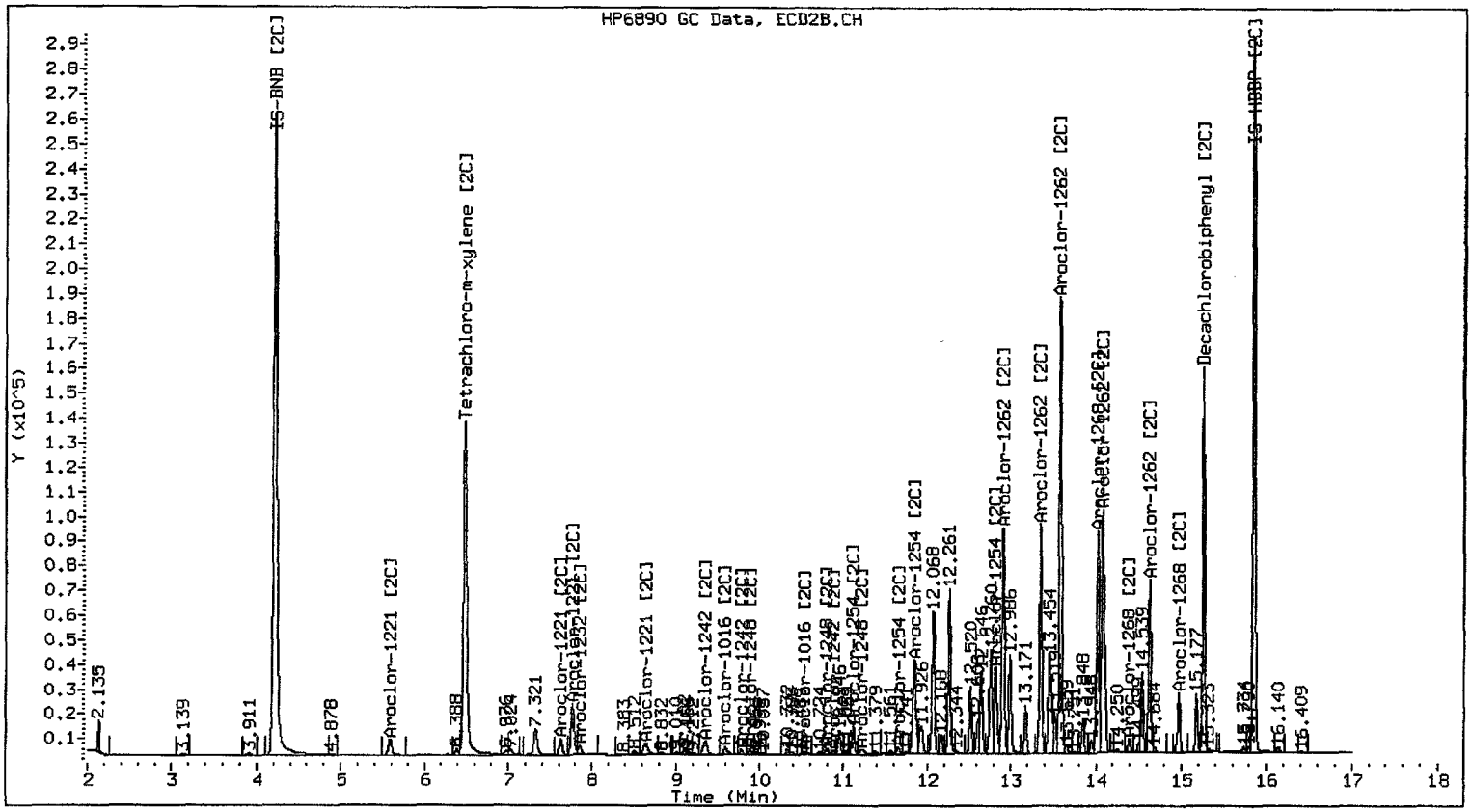


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160219b.b/02191639.D
Data file 2: /20160219b.b/20160219.b/02191639.D
Method: \\target\share\chem4\ecd7.i\20160219b.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268ICV
Client ID:
Injection Date: 19-FEB-2016 22:48
Report Date: 02/23/2016 07:05
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.024	-0.001	2446477	6.482	-0.001	7736679	43.7	43.4	0.6	Tetrachloro-m-xyle
14.743	-0.000	8853670	15.260	-0.001	7448106	52.1	46.7	10.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	109.1	108.5
Decachlorobiphenyl	130.2	116.8

02/23/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10344269	0.5
Hexabromobiphenyl	12470452	12738843	2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15382140	-2.7
Hexabromobiphenyl	11807823	12461313	5.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.045	-0.002	163792	123.7	1	8.628	-0.001	1007089	131.4
Aroclor-1016	2	8.555	-0.002	484966	118.8	2	9.353	0.001	1895753	120.1
Aroclor-1016	3	8.864	-0.000	177425	127.3	3	9.587	0.000	774771	123.0
Aroclor-1016	4	9.671	0.000	203187	130.7	4	10.526	0.000	388219	132.7
Total Col1Ave (4 peaks):				125.1		Total Col2Ave (4 peaks):			126.8	RPD = 1
Corrected Ave (3 peaks):				123.3		Corrected Ave (3 peaks):			124.8	RPD = 1
Aroclor-1221	1	4.714	-0.000	47171	144.2	1	5.586	0.000	221815	154.9
Aroclor-1221	2	6.690	0.000	103670	197.1	2	7.624	0.000	238293	178.6
Aroclor-1221	3	6.816	0.000	324143	206.4	3	7.764	0.001	900498	213.3
Aroclor-1221	NS	---			----	4	8.628	-0.015	1007089	719.7
Total Col1Ave (3 peaks):				182.5		Total Col2Ave (4 peaks):			316.6	RPD = 54*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			182.2	
Aroclor-1232	1	4.714	-0.001	47171	254.2	1	5.586	-0.000	221815	256.7
Aroclor-1232	2	6.690	-0.000	103670	293.3	2	7.624	0.001	238293	292.9
Aroclor-1232	3	6.816	0.001	324143	311.2	3	7.852	0.001	142079	309.6
Aroclor-1232	4	8.555	0.001	484966	284.8	4	8.628	0.001	1007089	282.3
Total Col1Ave (4 peaks):				285.9		Total Col2Ave (4 peaks):			285.4	RPD = 0
Corrected Ave (3 peaks):				277.4		Corrected Ave (3 peaks):			277.3	RPD = 0
Aroclor-1242	1	8.555	-0.000	484966	152.5	1	8.628	0.000	1007089	169.1
Aroclor-1242	2	8.864	0.001	177425	152.0	2	9.353	-0.001	1895753	153.7
Aroclor-1242	3	9.671	0.001	203187	137.7	3	9.781	-0.000	486717	152.9
Aroclor-1242	4	10.072	0.001	143926	134.9	4	10.879	0.000	571451	133.3
Total Col1Ave (4 peaks):				144.3		Total Col2Ave (4 peaks):			152.2	RPD = 5
Corrected Ave (3 peaks):				141.5		Corrected Ave (3 peaks):			146.6	RPD = 4
Aroclor-1248	1	8.555	0.003	484966	260.0	1	9.353	0.005	1895753	257.6
Aroclor-1248	2	9.478	0.000	131069	94.3	2	9.882	0.001	493924	91.1
Aroclor-1248	3	9.671	0.002	203187	97.4	3	10.798	0.002	719013	86.8
Aroclor-1248	4	10.072	0.002	143926	83.0	4	11.244	0.002	679193	82.1
Total Col1Ave (4 peaks):				133.7		Total Col2Ave (4 peaks):			129.4	RPD = 3
Corrected Ave (3 peaks):				91.6		Corrected Ave (3 peaks):			86.6	RPD = 6
Aroclor-1254	1	10.462	-0.002	56396	24.6	1	11.112	0.001	137502	17.8
Aroclor-1254	2	10.546	0.000	20644	27.0	2	11.244	0.033	679193	187.4
Aroclor-1254	3	10.851	0.002	36044	19.3	3	11.654	0.000	104050	17.9
Aroclor-1254	4	10.993	0.003	78442	21.4	4	11.808	0.001	239429	18.1
Aroclor-1254	5	11.348	0.003	58469	16.3	5	12.818	0.001	60739	6.2
Total Col1Ave (5 peaks):				21.7		Total Col2Ave (5 peaks):			49.5	RPD = 78*
Corrected Ave (4 peaks):				20.4		Corrected Ave (4 peaks):			15.0	RPD = 30
Aroclor-1260	1	12.261	0.001	617450	199.6	1	12.818	0.002	60739	5.3
Aroclor-1260	2	12.941	-0.000	584689	49.7	2	13.580	-0.001	1168967	52.5
Aroclor-1260	3	13.332	0.004	18593	3.7	3	14.075	0.000	7559405	513.7
Aroclor-1260	4	13.431	-0.000	5095452	1622.0	4	14.625	-0.000	2467485	437.3
Aroclor-1260	5	13.827	-0.015	5048875	2751.8	NS	---			----
Total Col1Ave (5 peaks):				925.3		Total Col2Ave (4 peaks):			252.2	RPD = 114*
Corrected Ave (4 peaks):				468.7		Corrected Ave (3 peaks):			165.0	RPD = 96*
Aroclor-1262	1	12.261	0.001	617450	149.8	1	12.906	0.001	1808460	142.7
Aroclor-1262	2	12.941	0.001	584689	48.4	2	13.347	-0.002	2031377	173.5
Aroclor-1262	3	13.332	0.002	18593	4.9	3	13.580	-0.000	1168967	48.9
Aroclor-1262	4	13.431	0.001	5095452	882.8	4	14.075	0.000	7559405	486.2
Aroclor-1262	5	14.055	-0.000	2206518	340.3	5	14.625	-0.000	2467485	309.6
Total Col1Ave (5 peaks):				285.2		Total Col2Ave (5 peaks):			232.2	RPD = 20
Corrected Ave (4 peaks):				135.8		Corrected Ave (4 peaks):			168.7	RPD = 22
Aroclor-1268	1	13.431	0.000	5095452	303.4	1	14.021	-0.000	7283844	293.1
Aroclor-1268	2	13.494	-0.000	7036742	337.9	2	14.075	-0.000	7559405	325.4
Aroclor-1268	3	13.827	0.000	5048875	267.9	3	14.388	0.000	4906414	262.4

```
Aroclor-1268 4  14.445  -0.001  16959093   248.6      4   14.974   0.000 13268075   248.7
      Total Col1Ave (4 peaks):   289.4       Total Col2Ave (4 peaks):   282.4   RPD = 2
      Corrected Ave (3 peaks):   273.3       Corrected Ave (3 peaks):   268.1   RPD = 2
```

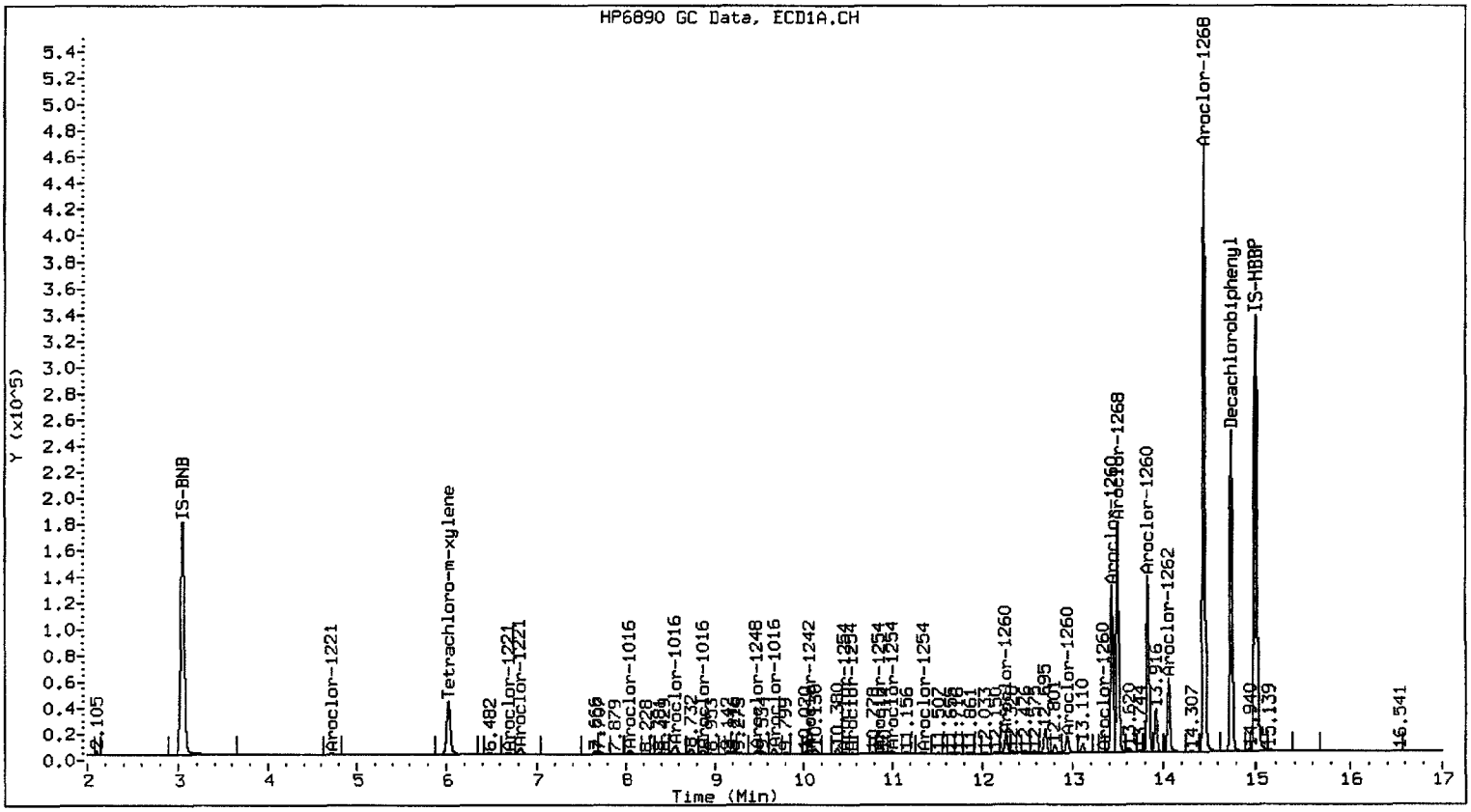
Total PCB Area Col1 (6.125 - 14.643) = 44493394 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.125 - 14.643) = 52701741 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AR3268ICV 19-FEB-2016 22:48, 2ul



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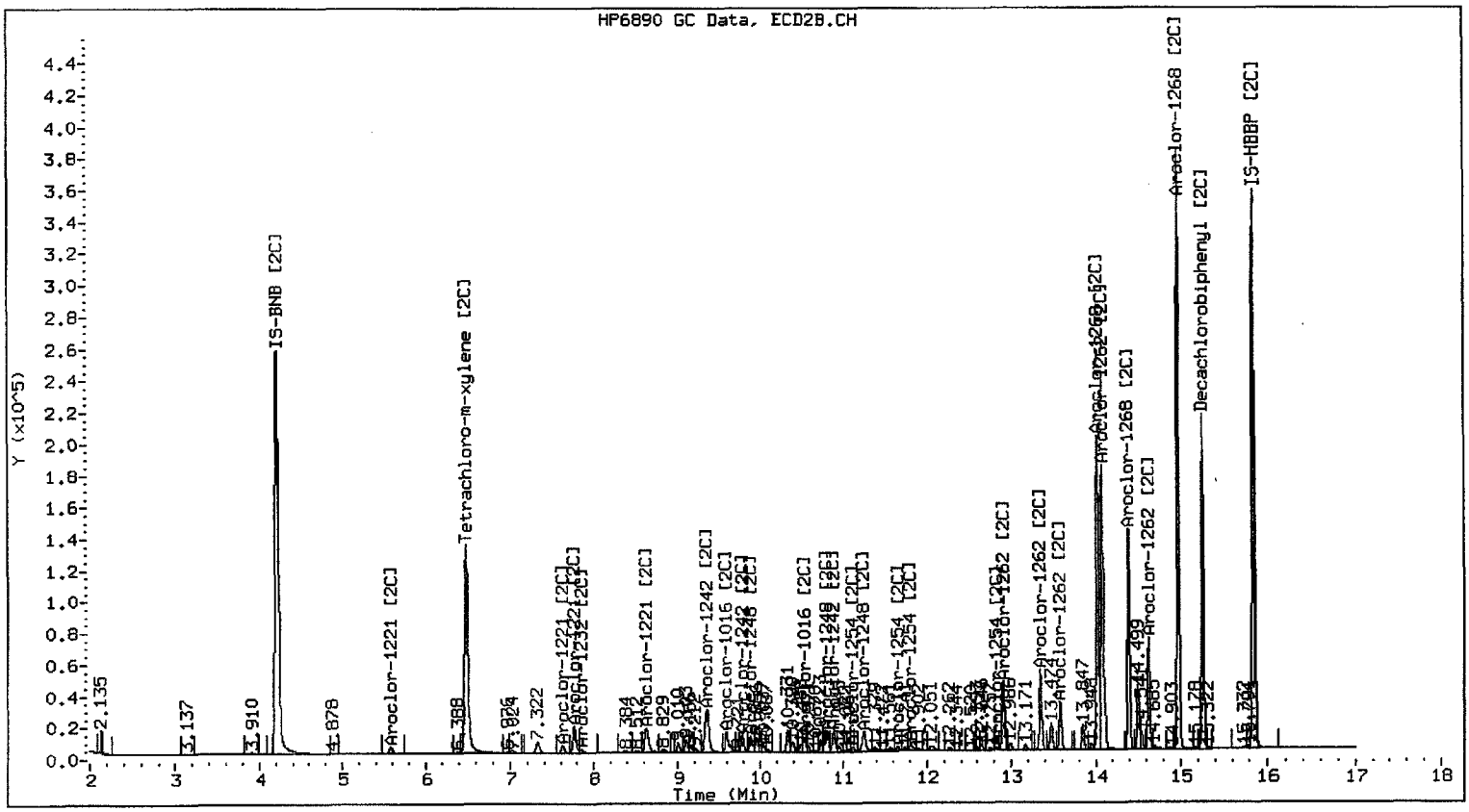

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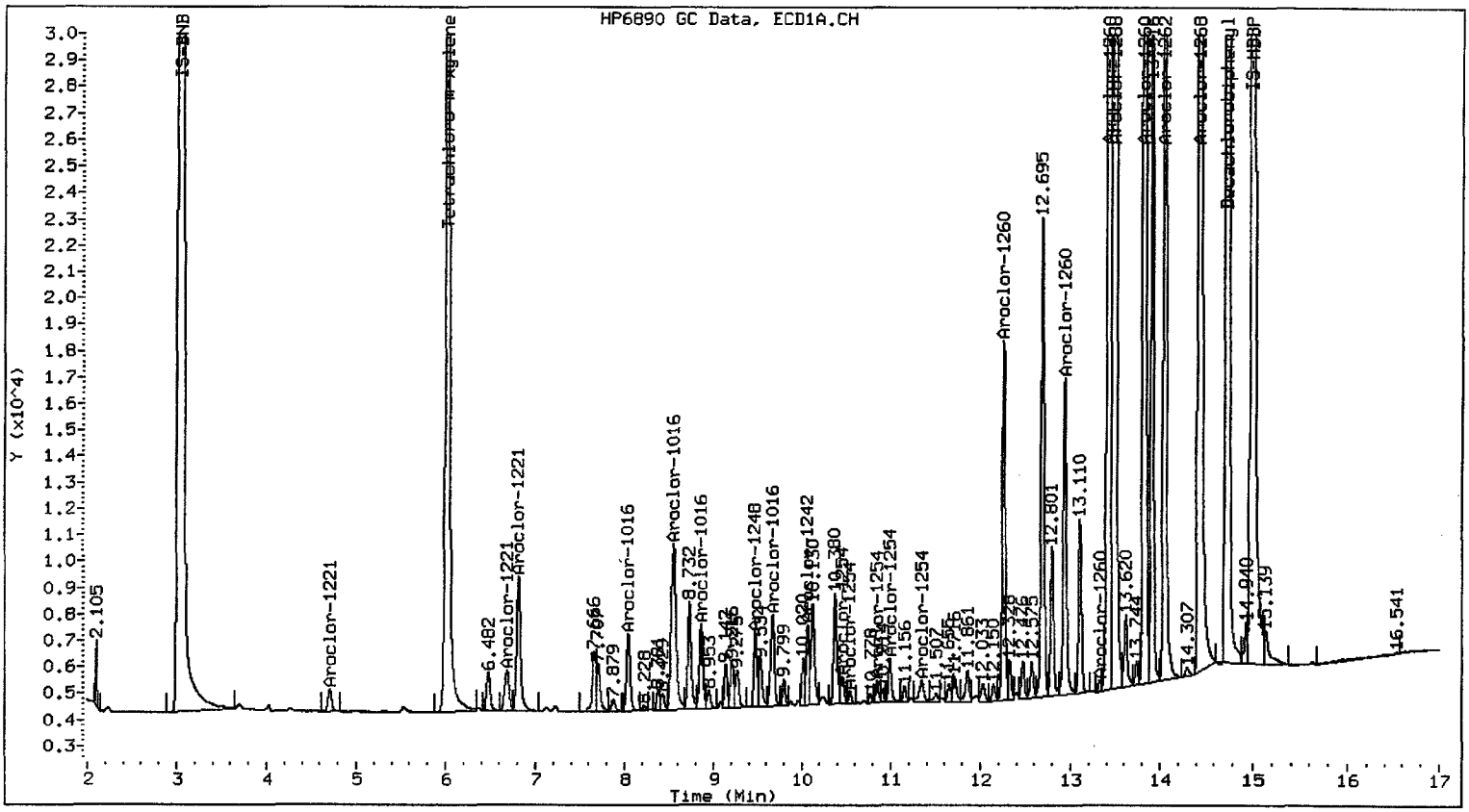

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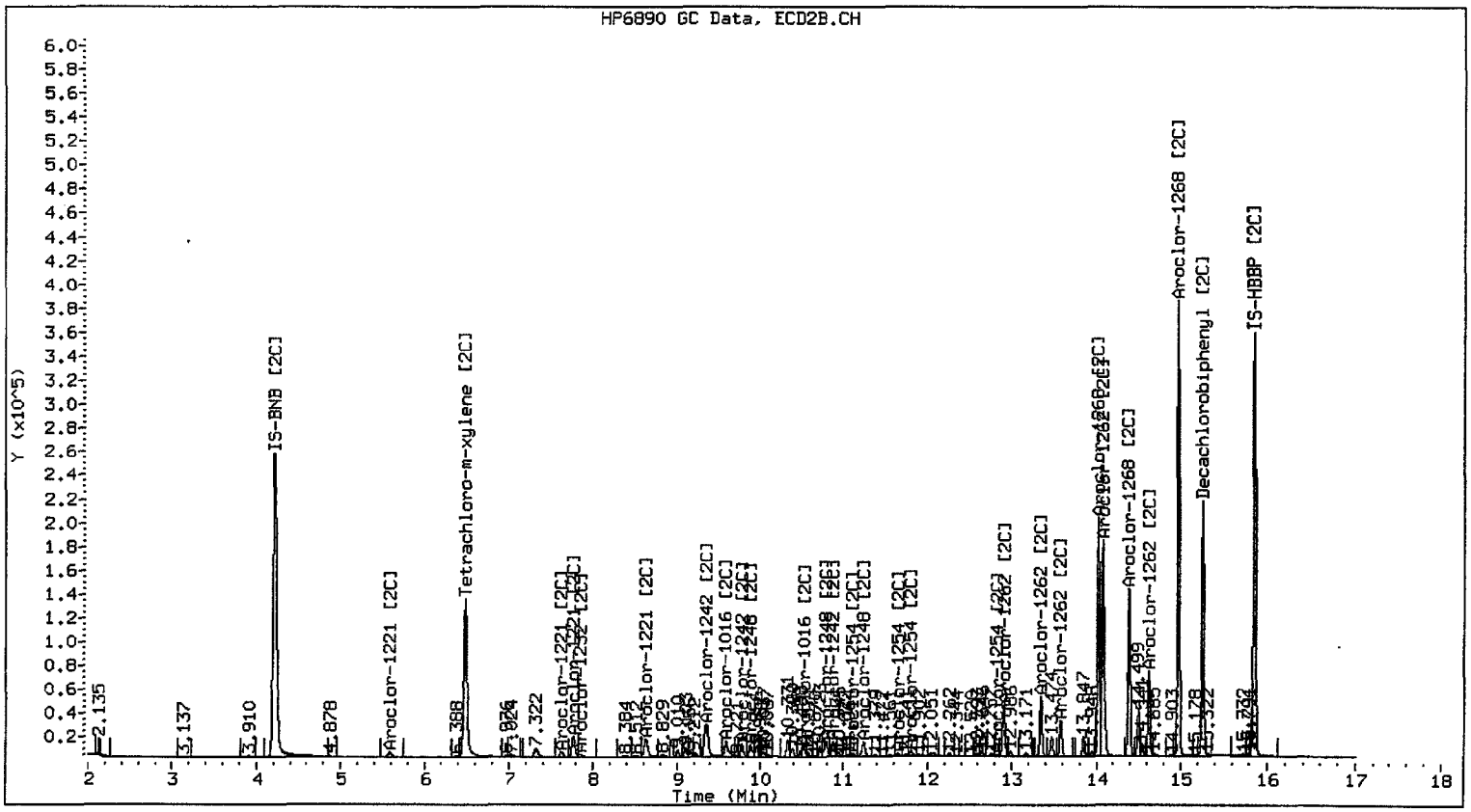


PCB Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AXS8

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AXS 8 Client: Anchor

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(Congeners) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8 ECD-9

Calibration Code: ZB00017 Analysis Start Date: 03/26/16

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	NA / Y / N / ✓	Method Blank in Control?	Y / N / ✓
Retention times within Windows?	Y / N / ✓	BS/BSD Recovery in Control?	Y / N / ✓
ICV/CCV met %D Criteria?	Y / N / ✓ (see note)	MS / MSD Recovery in Control?	Y / N / ✓
Surrogate Recovery in Control?	Y / N / ✓	Samples Diluted?	Y / N / ✓
Internal STD. within 50-200%?	NA / Y / N / ✓	Special Analysis Request?	Y / N / ✓
Manual Integrations?	Y / N / ✓	VDP Completed?	NA / Y / N / ✓
Integration Summary?	Y / N / ✓	Technical Review?	✓

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

ment w/ best fit, y-flag's are for ranges. misc. peaks throughout. AR1260 ccal fails high ~5.2% on column1, column2 is w/in qc. Sample C could be weathered mix of 42/48

? which limits for SRM

(Review 1) Analyst: JR **Date:** 03/29/16

(Review 2) Peer: — **Date:** —

(Final Review) Reviewer: [signature] **Date:** 3/29/16

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 03/26/16 Analysis: PCB Analyst: [illegible]

Column 1 Serial No.: 311350 Column Type: ZB5

Column 2 Serial No.: 330557 Column Type: ZB35

GC Method: PCB ICal Date: 02/19/16 Injection Volume: 2µl

IS	Ical/Ccal	ICV
	D3916	
D4740	D3917-D3921	
	D3925	

Document All Maintenance Tasks In Element

	Inject Date/Time	Filename	DF	LabID	
1	26-MAR-2016 11:54	03261601.D	1	RINSE	
2	26-MAR-2016 12:16	03261602.D	1	RINSE	
3	26-MAR-2016 12:38	03261603.D	1	RINSE	
4	26-MAR-2016 13:00	03261604.D	1	SEC0056-ICV1	
5	26-MAR-2016 13:22	03261605.D	1	SEC0056-ICV2	
6	26-MAR-2016 13:44	03261606.D	1	AXT4MBS1	
7	26-MAR-2016 14:06	03261607.D	1	AXT4LCSS1	
8	26-MAR-2016 14:28	03261608.D	1	AXT4A	
9	26-MAR-2016 14:50	03261609.D	1	BEC0046-BLK1	
10	26-MAR-2016 15:12	03261610.D	1	BEC0046-BS1	
11	26-MAR-2016 15:34	03261611.D	1	16C0026-01	
12	26-MAR-2016 15:55	03261612.D	1	16C0026-02	
13	26-MAR-2016 16:17	03261613.D	1	SEC0056-CCV1	
14	26-MAR-2016 16:39	03261614.D	1	SEC0056-CCV2	
15	26-MAR-2016 17:01	03261615.D	1	AXS8MBS1	
16	26-MAR-2016 17:23	03261616.D	1	AXS8LCSS1	
17	26-MAR-2016 17:45	03261617.D	1	AXS8SRM1	
18	26-MAR-2016 18:07	03261618.D	1	AXS8A	
19	26-MAR-2016 18:29	03261619.D	1	AXS8B	
20	26-MAR-2016 18:51	03261620.D	1	AXS8BMS	
21	26-MAR-2016 19:13	03261621.D	1	AXS8BMSD	
22	26-MAR-2016 19:35	03261622.D	1	AXS8C	
23	26-MAR-2016 19:57	03261623.D	1	AR1242C	
24	26-MAR-2016 20:19	03261624.D	1	AR1660C	
25	26-MAR-2016 20:41	03261625.D	1	AXW4MBS1	AX
26	26-MAR-2016 21:03	03261626.D	1	AXW4LCSS1	AX
27	26-MAR-2016 21:25	03261627.D	1	AXW4LCSDS1	AX
28	26-MAR-2016 21:47	03261628.D	5	AXW4A	NB
29	26-MAR-2016 22:09	03261629.D	5	AXW4B	NB
30	26-MAR-2016 22:31	03261630.D	5	AXW4C	NB
31	26-MAR-2016 22:53	03261631.D	5	AXW4D	NB
32	26-MAR-2016 23:15	03261632.D	5	AXW4E	NB
33	26-MAR-2016 23:37	03261633.D	1	AR1254B	
34	26-MAR-2016 23:59	03261634.D	1	AR1660D	
35	27-MAR-2016 00:20	03261635.D	5	AXW4F	NB
36	27-MAR-2016 00:42	03261636.D	5	AXW4G	NB
37	27-MAR-2016 01:04	03261637.D	5	AXW4H	NB
38	27-MAR-2016 01:26	03261638.D	5	AXW4I	NB
39	27-MAR-2016 01:48	03261639.D	5	AXW4J	NB
40	27-MAR-2016 02:10	03261640.D	5	AXW4K	NB
41	27-MAR-2016 02:32	03261641.D	1	AR1248B	
42	27-MAR-2016 02:54	03261642.D	1	AR1660E	

[illegible] 03/28/16

[illegible]ke all entries legible.

E[illegible]

Start a new 00900ch QC period. Document All Maintenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160326.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 26-MAR-2016

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1154	03261601.D	RINSE		1	NO MANUAL INTEGRATION
1216	03261602.D	RINSE		1	NO MANUAL INTEGRATION
1238	03261603.D	RINSE		1	NO MANUAL INTEGRATION
1300	03261604.D	SEC0056-ICV1		1	NO MANUAL INTEGRATION
1322	03261605.D	SEC0056-ICV2		1	NO MANUAL INTEGRATION
1344	03261606.D	AXT4MBS1		1	NO MANUAL INTEGRATION
1406	03261607.D	AXT4LCSS1		1	NO MANUAL INTEGRATION
1428	03261608.D	AXT4A		1	NO MANUAL INTEGRATION
1450	03261609.D	BEC0046-BLK1		1	NO MANUAL INTEGRATION
1512	03261610.D	BEC0046-BS1		1	NO MANUAL INTEGRATION
1534	03261611.D	16C0026-01		1	Aroclor-1232, Aroclor-1254, IS-BNB, Tetrachloro-m-xylene,
1555	03261612.D	16C0026-02		1	NO MANUAL INTEGRATION
1617	03261613.D	SEC0056-CCV1		1	NO MANUAL INTEGRATION
1639	03261614.D	SEC0056-CCV2		1	NO MANUAL INTEGRATION
1701	03261615.D	AXS8MBS1		1	NO MANUAL INTEGRATION
1723	03261616.D	AXS8LCSS1		1	NO MANUAL INTEGRATION
1745	03261617.D	AXS8SRM1		1	NO MANUAL INTEGRATION

AXS8 : 00195

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160326.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1807	03261618.D	AXS8A		1	NO MANUAL INTEGRATION
1829	03261619.D	AXS8B		1	NO MANUAL INTEGRATION
1851	03261620.D	AXS8BMS		1	NO MANUAL INTEGRATION
1913	03261621.D	AXS8BMSD		1	NO MANUAL INTEGRATION
1935	03261622.D	AXS8C		1	NO MANUAL INTEGRATION
1957	03261623.D	AR1242C		1	NO MANUAL INTEGRATION
2019	03261624.D	AR1660C		1	NO MANUAL INTEGRATION
2041	03261625.D	AXW4MBS1	AXW4MBS1	1	NO MANUAL INTEGRATION
2103	03261626.D	AXW4LCSS1	AXW4LCSS1	1	NO MANUAL INTEGRATION
2125	03261627.D	AXW4LCSDS1	AXW4LCSDS1	1	NO MANUAL INTEGRATION
2147	03261628.D	AXW4A	NBF Stall-	5	NO MANUAL INTEGRATION
2209	03261629.D	AXW4B	NBF Stall-	5	NO MANUAL INTEGRATION
2231	03261630.D	AXW4C	NBF Stall-	5	NO MANUAL INTEGRATION
2253	03261631.D	AXW4D	NBF Stall-	5	NO MANUAL INTEGRATION
2315	03261632.D	AXW4E	NBF Stall-	5	NO MANUAL INTEGRATION
2337	03261633.D	AR1254B		1	NO MANUAL INTEGRATION
2359	03261634.D	AR1660D		1	NO MANUAL INTEGRATION
0020	03261635.D	AXW4F	NBF Stall-	5	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160326.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0042	03261636.D	AXW4G	NBF Stall-	5	NO MANUAL INTEGRATION
0104	03261637.D	AXW4H	NBF Stall-	5	NO MANUAL INTEGRATION
0126	03261638.D	AXW4I	NBF Stall-	5	NO MANUAL INTEGRATION
0148	03261639.D	AXW4J	NBF Stall-	5	NO MANUAL INTEGRATION
0210	03261640.D	AXW4K	NBF Stall-	5	NO MANUAL INTEGRATION
0232	03261641.D	AR1248B		1	NO MANUAL INTEGRATION
0254	03261642.D	AR1660E		1	NO MANUAL INTEGRATION
1154	03261601.D	RINSE		1	NO MANUAL INTEGRATION
1216	03261602.D	RINSE		1	NO MANUAL INTEGRATION
1238	03261603.D	RINSE		1	NO MANUAL INTEGRATION
1300	03261604.D	SEC0056-ICV1		1	NO MANUAL INTEGRATION
1322	03261605.D	SEC0056-ICV2		1	NO MANUAL INTEGRATION
1344	03261606.D	AXT4MBS1		1	NO MANUAL INTEGRATION
1406	03261607.D	AXT4LCSS1		1	NO MANUAL INTEGRATION
1428	03261608.D	AXT4A		1	NO MANUAL INTEGRATION
1450	03261609.D	BEC0046-BLK1		1	NO MANUAL INTEGRATION
1512	03261610.D	BEC0046-BS1		1	NO MANUAL INTEGRATION
1534	03261611.D	16C0026-01		1	Aroclor-1232 [2C], Aroclor-1254 [2C], IS-BNB [2C], Tetrachloro-m-xylene [2C],

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160326.b\20160326.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1555	03261612.D	16C0026-02		1	Decachlorobiphenyl [2C],
1617	03261613.D	SEC0056-CCV1		1	NO MANUAL INTEGRATION
1639	03261614.D	SEC0056-CCV2		1	NO MANUAL INTEGRATION
1701	03261615.D	AXS8MBS1		1	NO MANUAL INTEGRATION
1723	03261616.D	AXS8LCSS1		1	NO MANUAL INTEGRATION
1745	03261617.D	AXS8SRM1		1	NO MANUAL INTEGRATION
1807	03261618.D	AXS8A		1	NO MANUAL INTEGRATION
1829	03261619.D	AXS8B		1	NO MANUAL INTEGRATION
1851	03261620.D	AXS8BMS		1	NO MANUAL INTEGRATION
1913	03261621.D	AXS8BMSD		1	NO MANUAL INTEGRATION
1935	03261622.D	AXS8C		1	NO MANUAL INTEGRATION
1957	03261623.D	AR1242C		1	NO MANUAL INTEGRATION
2019	03261624.D	AR1660C		1	NO MANUAL INTEGRATION
2041	03261625.D	AXW4MBS1	AXW4MBS1	1	NO MANUAL INTEGRATION
2103	03261626.D	AXW4LCSS1	AXW4LCSS1	1	NO MANUAL INTEGRATION
2125	03261627.D	AXW4LCSDS1	AXW4LCSDS1	1	NO MANUAL INTEGRATION
2147	03261628.D	AXW4A	NBF Stall-	5	NO MANUAL INTEGRATION
2209	03261629.D	AXW4B	NBF Stall-	5	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20160326.b\20160326.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2231	03261630.D	AXW4C	NBF Stall-	5	NO MANUAL INTEGRATION
2253	03261631.D	AXW4D	NBF Stall-	5	NO MANUAL INTEGRATION
2315	03261632.D	AXW4E	NBF Stall-	5	NO MANUAL INTEGRATION
2337	03261633.D	AR1254B		1	NO MANUAL INTEGRATION
2359	03261634.D	AR1660D		1	NO MANUAL INTEGRATION
0020	03261635.D	AXW4F	NBF Stall-	5	NO MANUAL INTEGRATION
0042	03261636.D	AXW4G	NBF Stall-	5	NO MANUAL INTEGRATION
0104	03261637.D	AXW4H	NBF Stall-	5	NO MANUAL INTEGRATION
0126	03261638.D	AXW4I	NBF Stall-	5	NO MANUAL INTEGRATION
0148	03261639.D	AXW4J	NBF Stall-	5	NO MANUAL INTEGRATION
0210	03261640.D	AXW4K	NBF Stall-	5	NO MANUAL INTEGRATION
0232	03261641.D	AR1248B		1	NO MANUAL INTEGRATION
0254	03261642.D	AR1660E		1	NO MANUAL INTEGRATION

AXS8:00200

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261613.D
Data file 2: /20160326.b/20160326.b/03261613.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEC0056-CCV1
Client ID:
Injection Date: 26-MAR-2016 16:17
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.029	0.001	2190589	6.487	0.001	6783585	43.6	44.3	1.6	Tetrachloro-m-xyl
14.742	0.000	5075672	15.260	0.001	4270436	45.9	36.7	22.4	Decachlorobipheny

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	109.0	110.8
Decachlorobiphenyl	114.7	91.6

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	9274209	-9.9
Hexabromobiphenyl	12470452	8289011	-33.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	13204587	-16.5
Hexabromobiphenyl	11807823	9106898	-22.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	8.556	0.000	462281	276.4	1	9.353	0.002	1520603	240.7
Aroclor-1248	2	9.479	0.000	353909	284.1	2	9.882	0.000	1188953	255.4
Aroclor-1248	3	9.671	0.000	531126	284.1	3	10.796	0.000	1533817	215.7
Aroclor-1248	4	10.072	0.000	425499	273.7	4	11.242	0.000	1707873	240.4

Total Col1Ave (4 peaks): 279.6 Total Col2Ave (4 peaks): 238.1 RPD = 16

Corrected Ave (3 peaks): 278.0 Corrected Ave (3 peaks): 232.3 RPD = 18

CalAmt %D: 11.8 CalAmt %D: -4.8

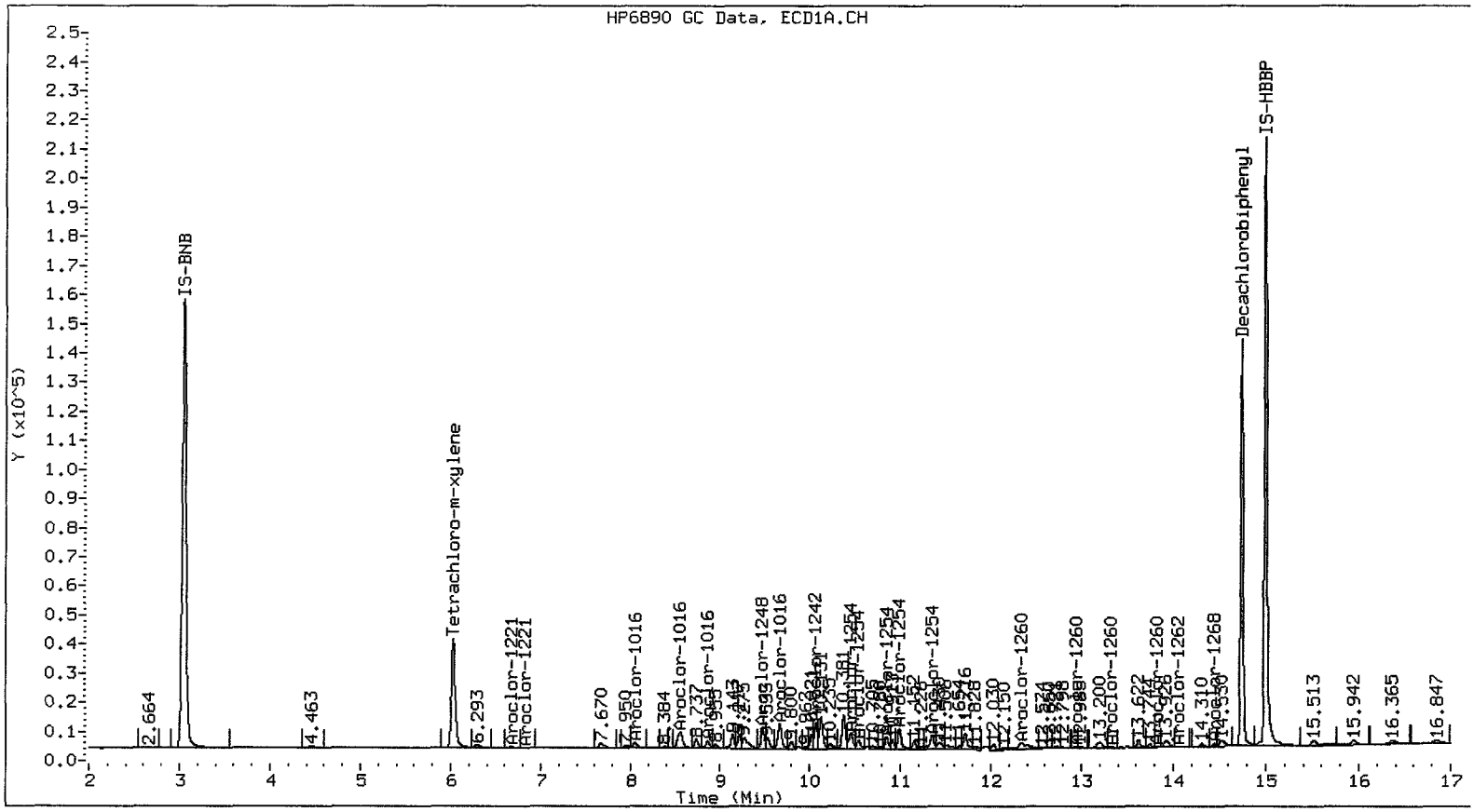
Total PCB Area Col1 (6.128 - 14.642) = 9707178 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 28009440 Col2 Total PCB = 0.3 ppm*

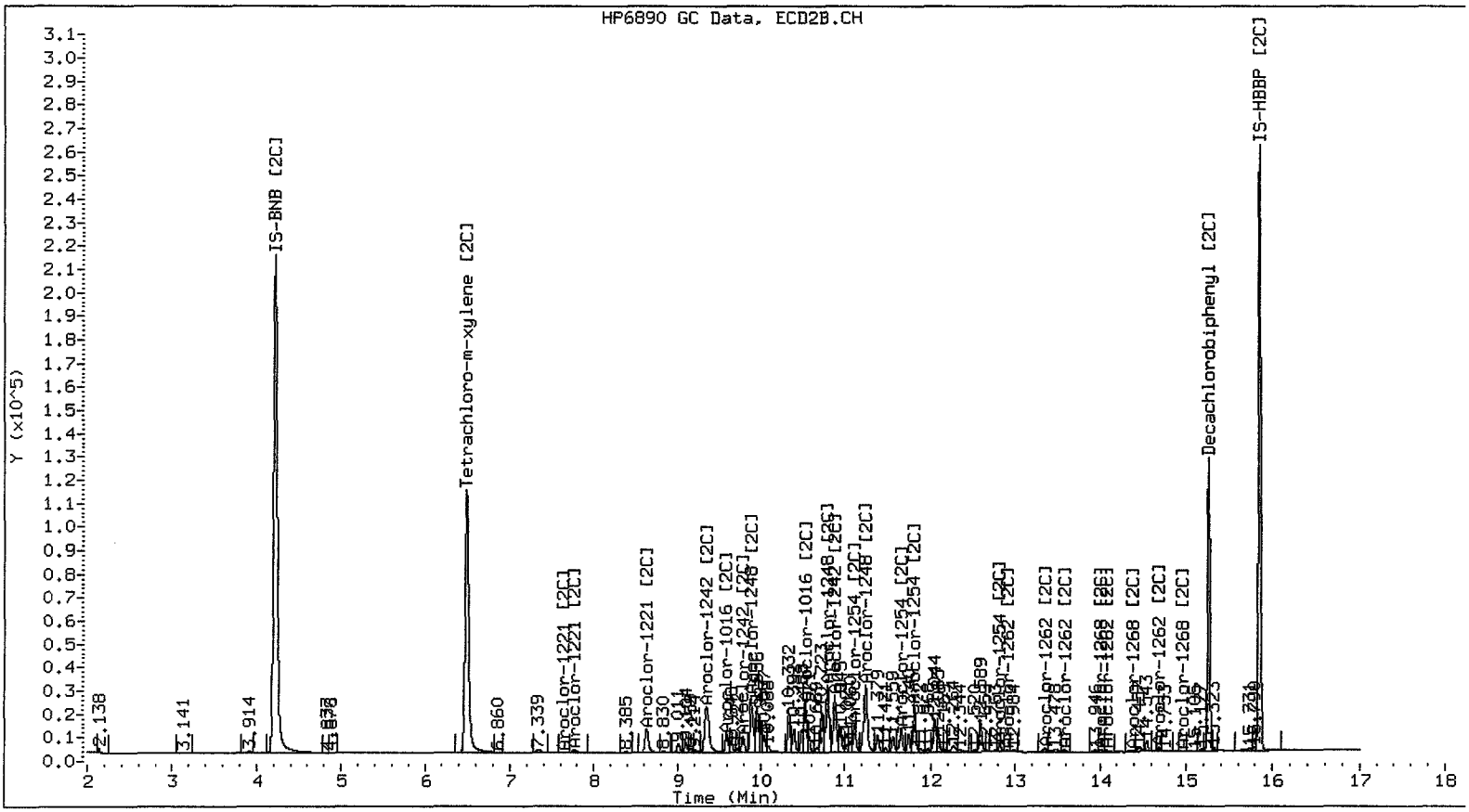
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

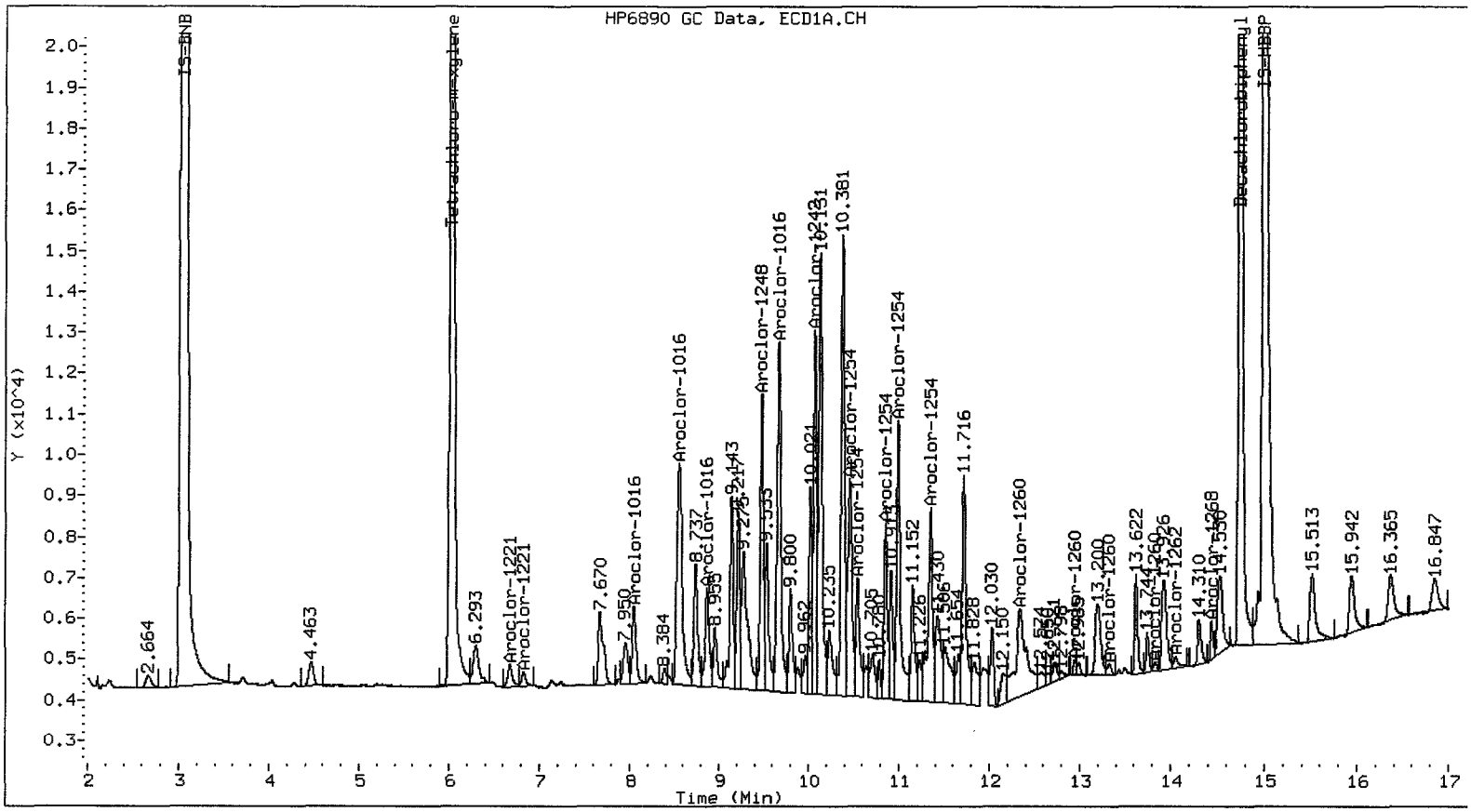
ECD7-ZB5 SEC0056-CCV1 26-MAR-2016 16:17, 2ul



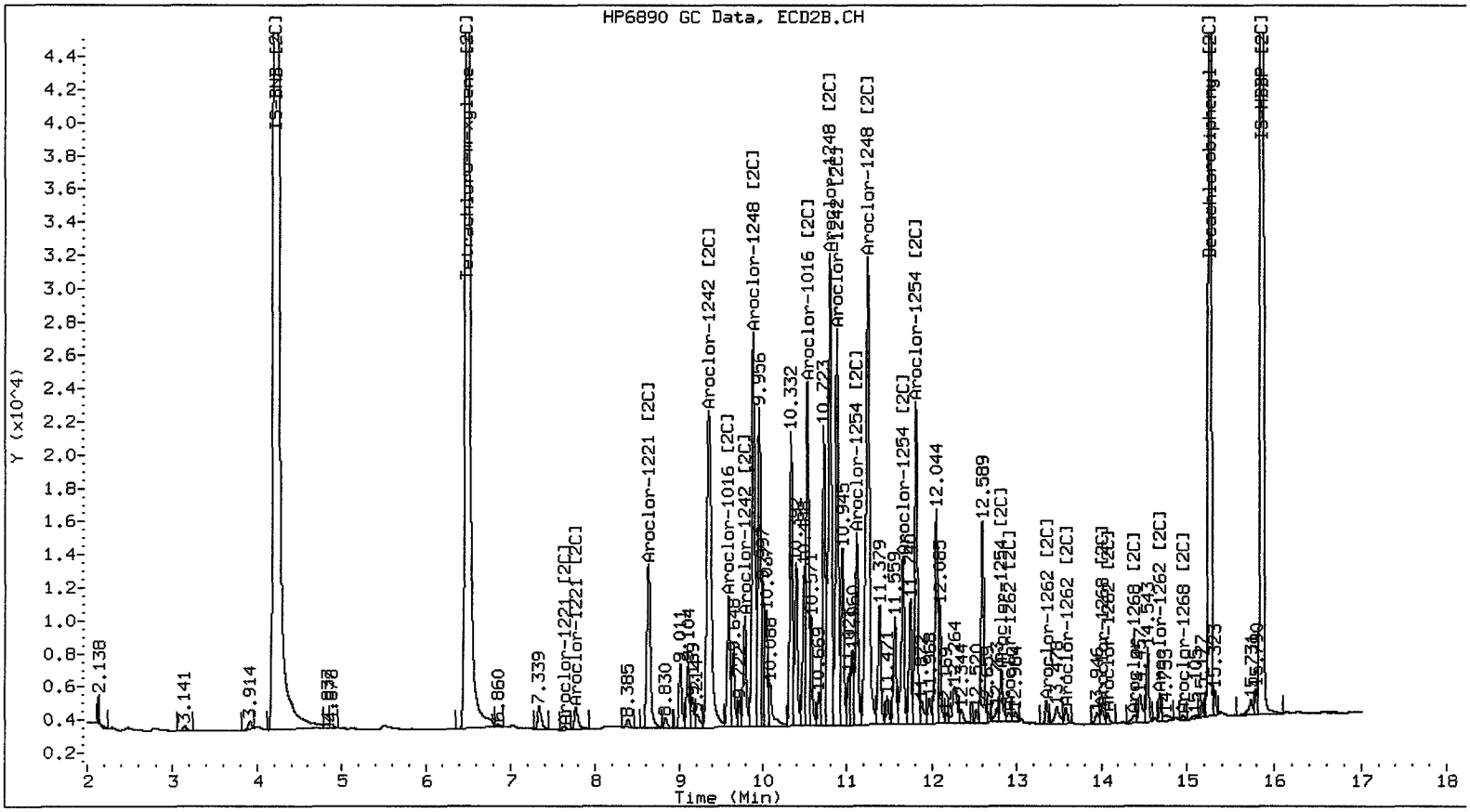
ECD7-ZB35 SEC0056-CCV1 26-MAR-2016 16:17, 2ul



ECD7-ZB5 SEC0056-CCV1 26-MAR-2016 16:17, 2ul



ECD7-ZB35 SEC0056-CCV1 26-MAR-2016 16:17, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261614.D
Data file 2: /20160326.b/20160326.b/03261614.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEC0056-CCV2
Client ID:
Injection Date: 26-MAR-2016 16:39
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	0.000	2618588	6.487	0.002	8108693	42.5	43.2	1.7	Tetrachloro-m-xyle
14.742	0.000	7270764	15.259	0.001	5791584	49.1	38.9	23.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	106.3	108.1
Decachlorobiphenyl	122.8	97.2

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	11372263	10.5
Hexabromobiphenyl	12470452	11092942	-11.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	16184257	2.4
Hexabromobiphenyl	11807823	11645595	-1.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.048	0.000	382321	262.6	1	8.630	0.001	2111442	261.8
Aroclor-1016	2	8.559	0.000	1165934	259.8	2	9.356	0.001	4073482	245.3
Aroclor-1016	3	8.866	0.000	422282	275.6	3	9.589	0.001	1809064	273.0
Aroclor-1016	4	9.671	0.000	452668	264.9	4	10.527	0.002	809422	263.0

Total Col1Ave (4 peaks): 265.7 Total Col2Ave (4 peaks): 260.8 RPD = 2
Corrected Ave (3 peaks): 262.4 Corrected Ave (3 peaks): 256.7 RPD = 2

CalAmt %D: 6.3 CalAmt %D: 4.3

Aroclor-1260	1	12.259	0.000	894212	331.9	1	12.815	0.001	2298671	214.1
Aroclor-1260	2	12.941	0.000	3068442	299.3	2	13.580	0.001	4777013	229.4
Aroclor-1260	3	13.327	0.000	1400690	318.2	3	14.074	0.000	3198496	232.6
Aroclor-1260	4	13.429	0.000	861007	314.7	4	14.624	0.000	1297365	246.0
Aroclor-1260	5	13.841	0.000	480383	300.7	NS	---			----

Total Col1Ave (5 peaks): 312.9 Total Col2Ave (4 peaks): 230.5 RPD = 30
Corrected Ave (4 peaks): 308.2 Corrected Ave (3 peaks): 225.4 RPD = 31

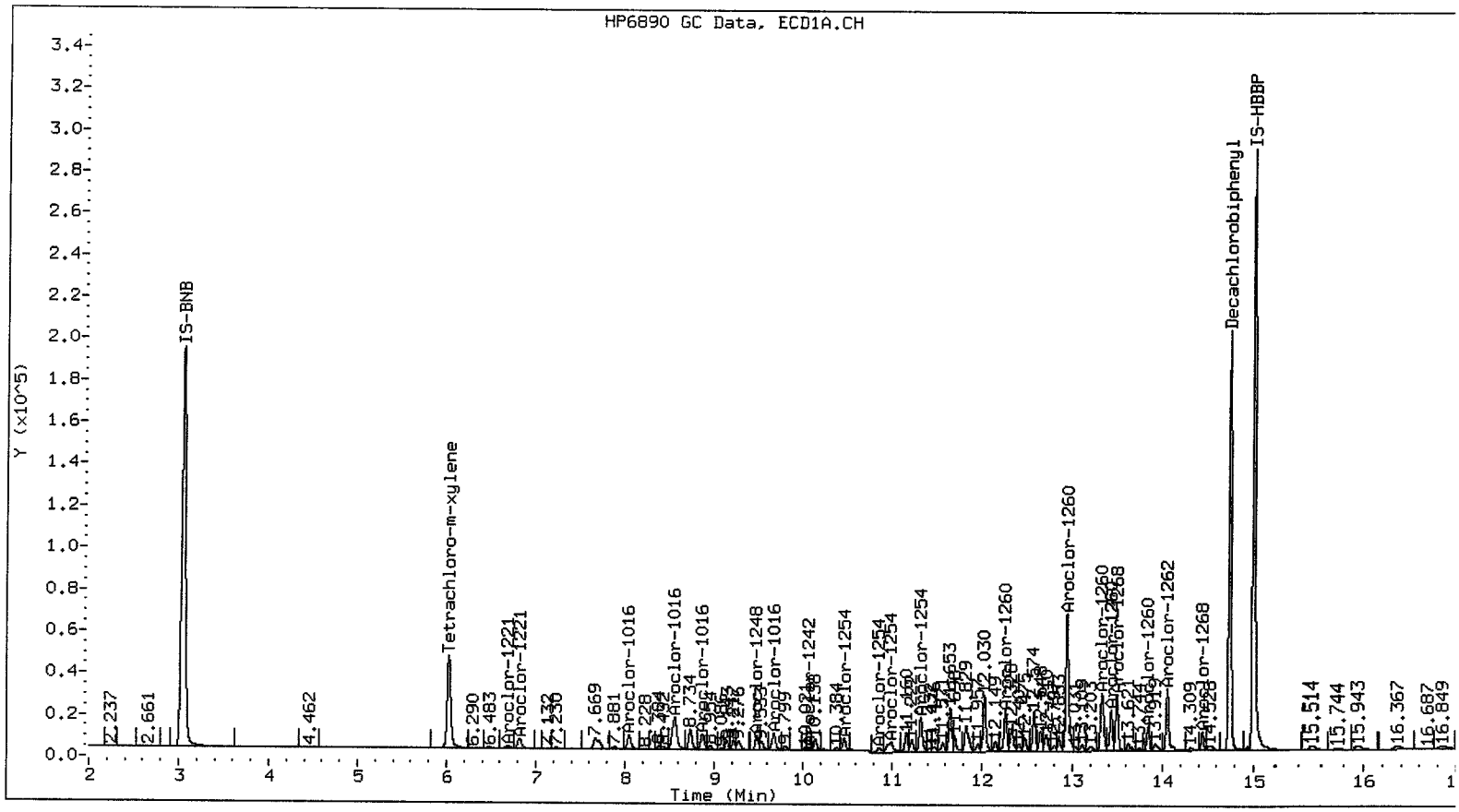
CalAmt %D: 25.2 CalAmt %D: -7.8

Total PCB Area Col1 (6.128 - 14.642) = 26393531 Col1 Total PCB = 0.6 ppm*

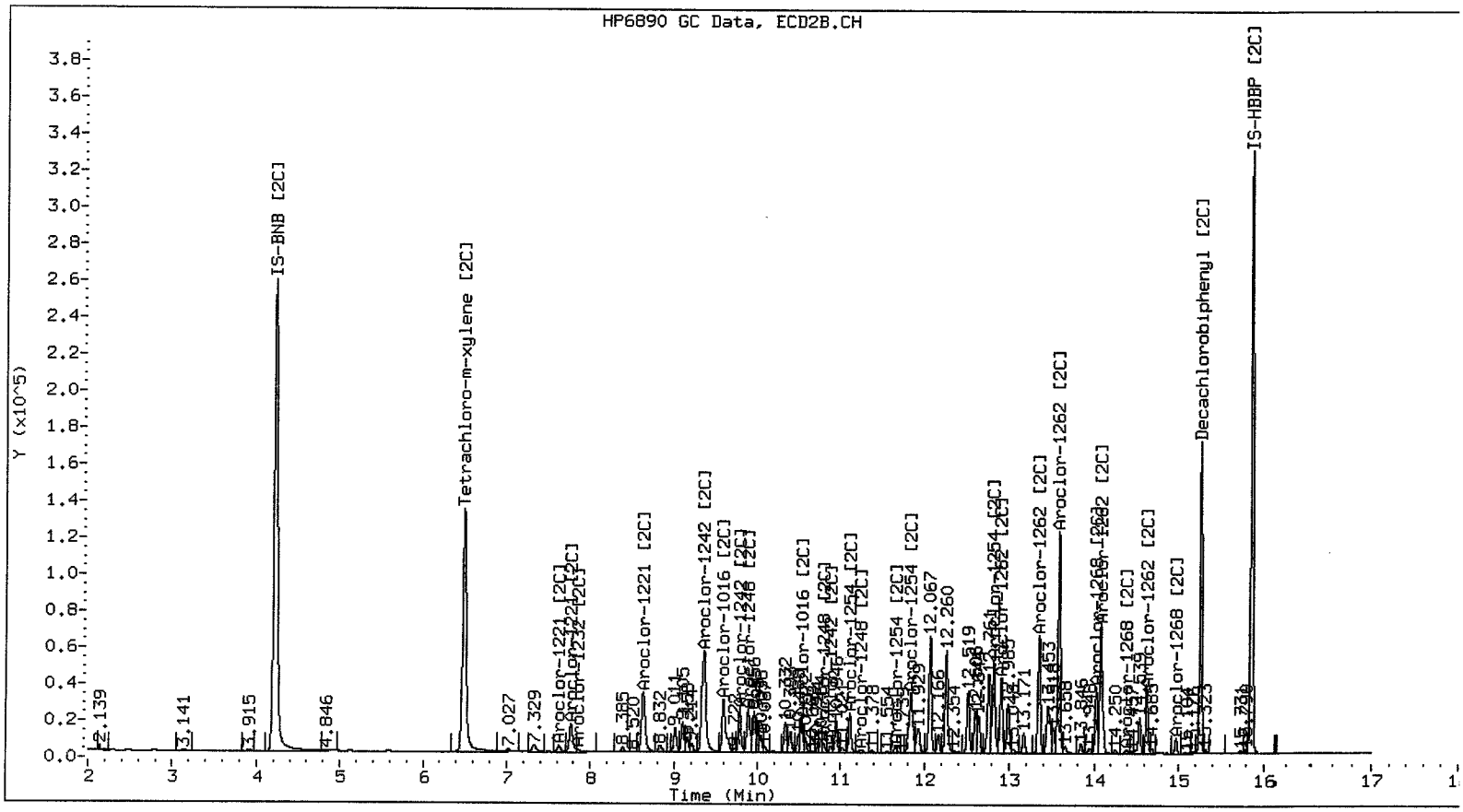
Total PCB Area Col2 (6.128 - 14.642) = 67442522 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

ECD7-ZB5 SEC0056-CCV2 26-MAR-2016 16:39, 2ul

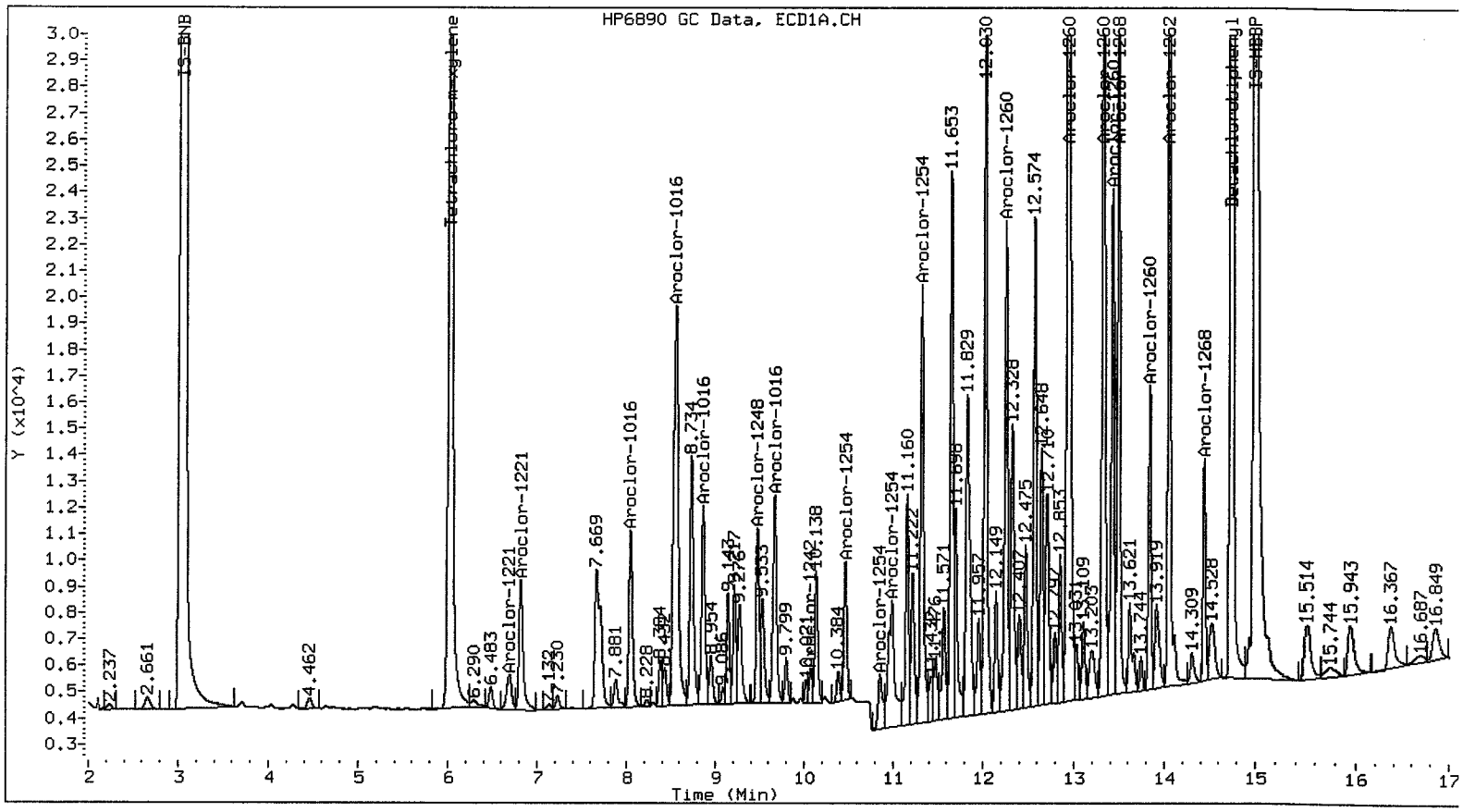


ECD7-ZB35 SEC0056-CCV2 26-MAR-2016 16:39, 2

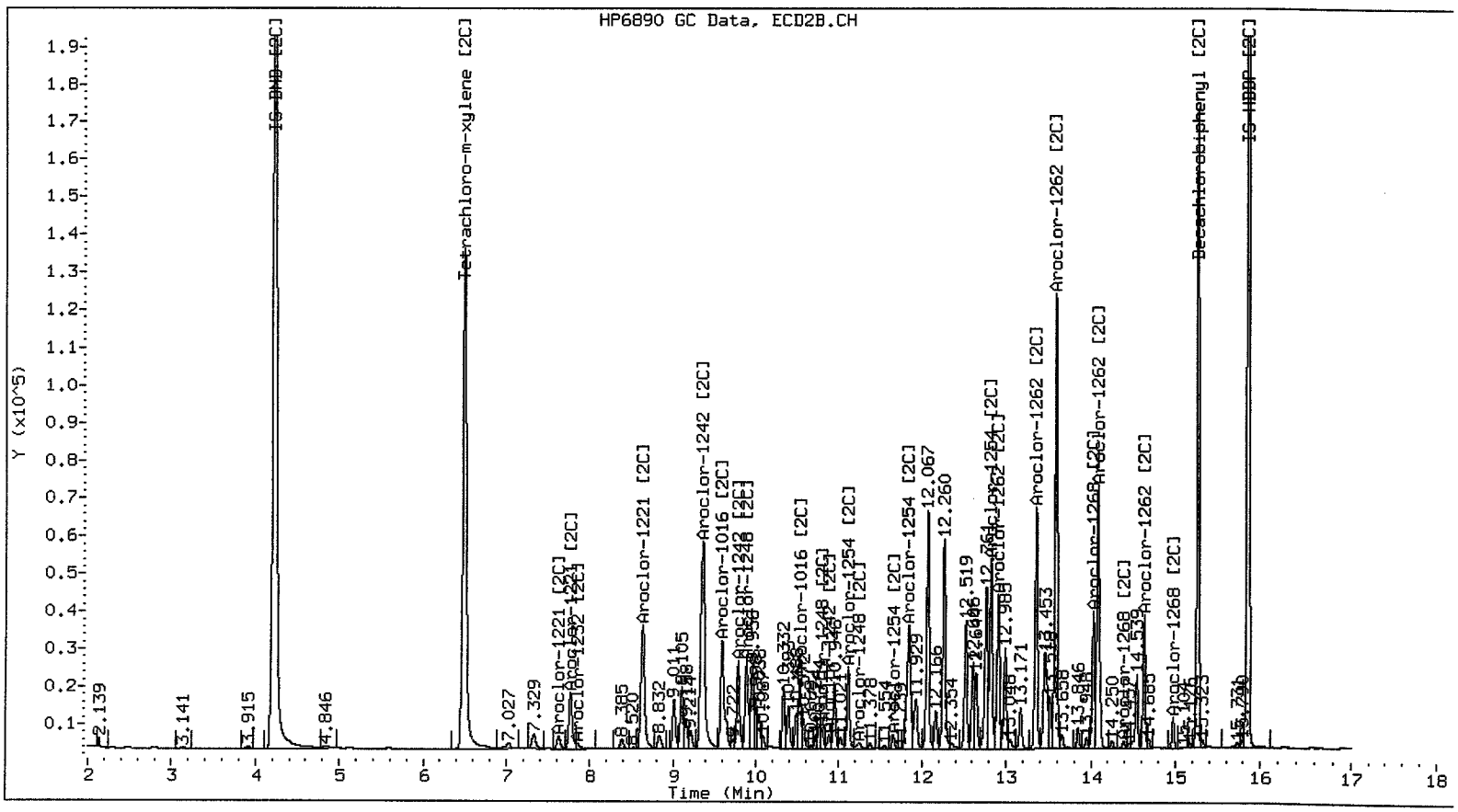


AXS8:00207

ECD7-ZB5 SEC0056-CCV2 26-MAR-2016 16:39, 2ul



ECD7-ZB35 SEC0056-CCV2 26-MAR-2016 16:39, 2u



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261615.D
Data file 2: /20160326.b/20160326.b/03261615.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8MBS1
Client ID:
Injection Date: 26-MAR-2016 17:01
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	-0.000	1718752	6.486	0.000	5603758	29.7	31.4	5.4	Tetrachloro-m-xyl
14.742	0.000	6233393	15.260	0.001	5053590	41.5	36.1	14.0	Decachlorobipheny

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	74.3	78.4
Decachlorobiphenyl	103.8	90.3

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10673931	3.7
Hexabromobiphenyl	12470452	11241908	-9.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15414823	-2.5
Hexabromobiphenyl	11807823	10941043	-7.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	5.550	-0.035	137528	95.8
Aroclor-1221	2	---			0.0	2	7.651	0.027	64860	48.5
Aroclor-1221	3	---			0.0	3	7.774	0.011	19759	4.7
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 49.7				
Aroclor-1232	1	---			0.0	1	5.550	-0.036	137528	158.8
Aroclor-1232	2	---			0.0	2	7.651	0.028	64860	79.5
Aroclor-1232	3	---			0.0	3	7.774	-0.078	19759	43.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 93.8				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	12.818	0.004	9621	1.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	14.005	-0.069	8997	0.7
Aroclor-1260	4	---			0.0	4	14.686	0.062	15867	3.2
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.6				
Aroclor-1262	1	---			0.0	1	12.818	-0.087	9621	0.9
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	14.005	-0.070	8997	0.7
Aroclor-1262	5	---			0.0	5	14.686	0.061	15867	2.3
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.3				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	13.743	-0.084	14048	0.8	3	---			0.0
Aroclor-1268	4	14.441	-0.005	11072	0.2	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

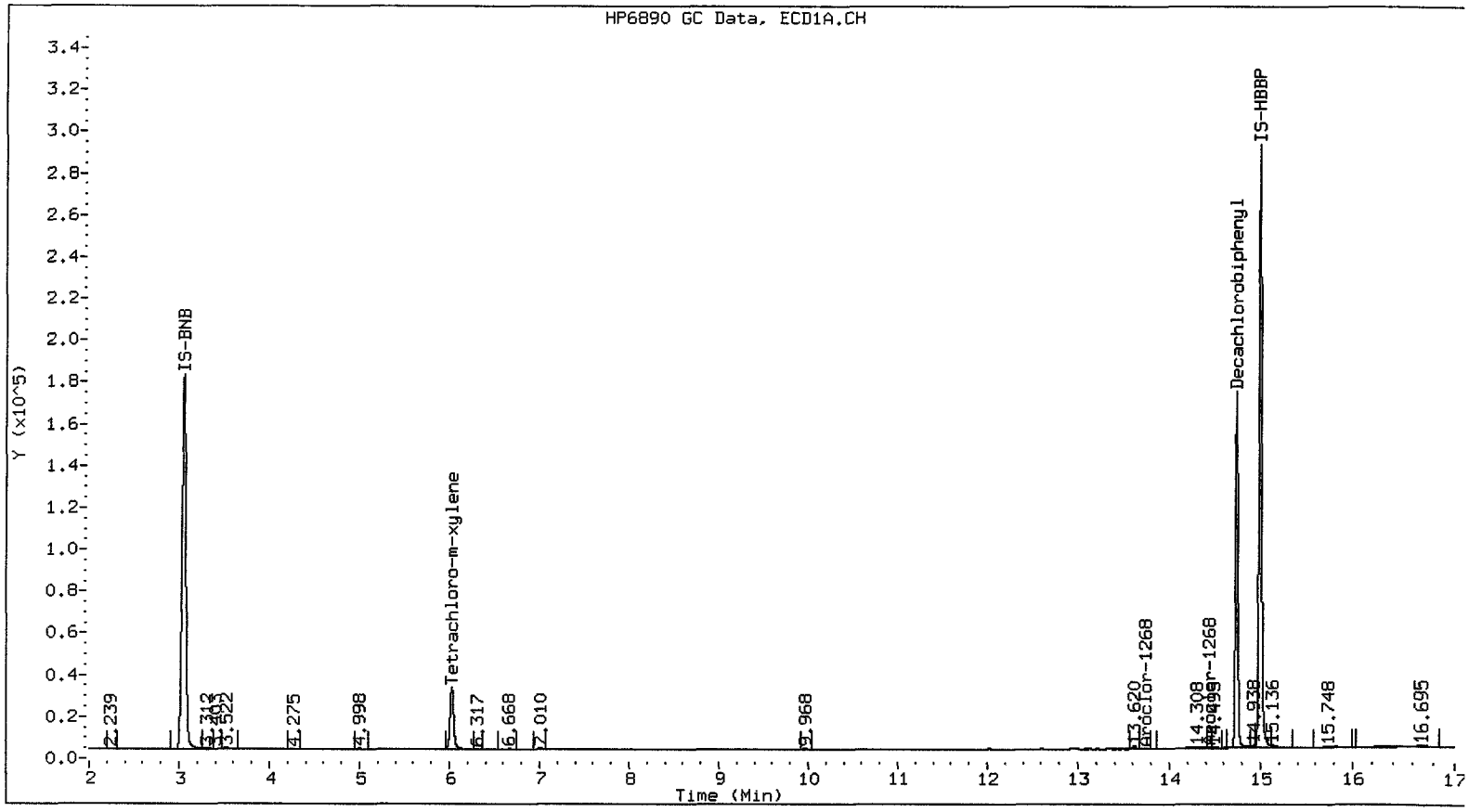
Total PCB Area Col1 (6.128 - 14.642) = 347707 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 5927951 Col2 Total PCB = 0.0 ppm*

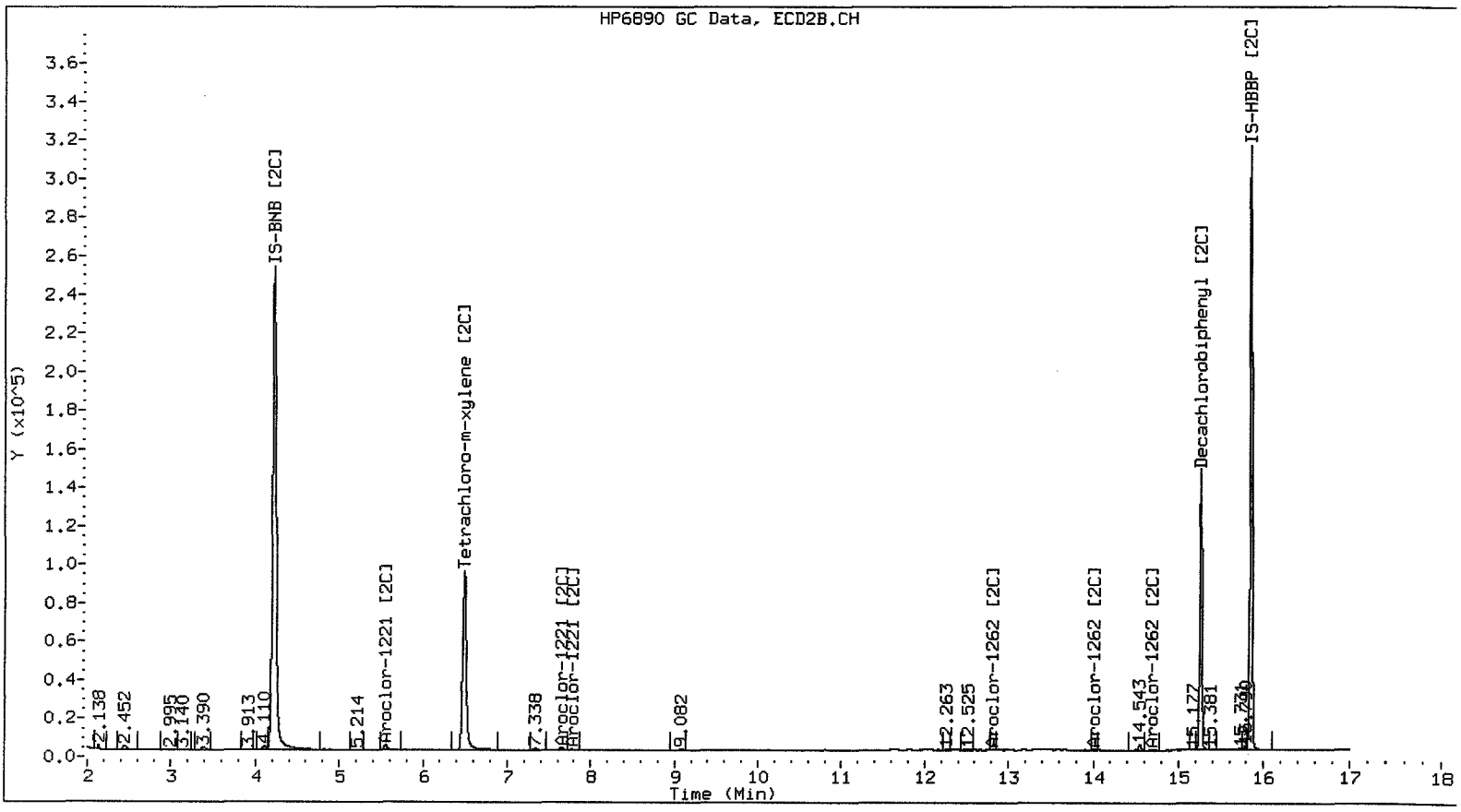
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

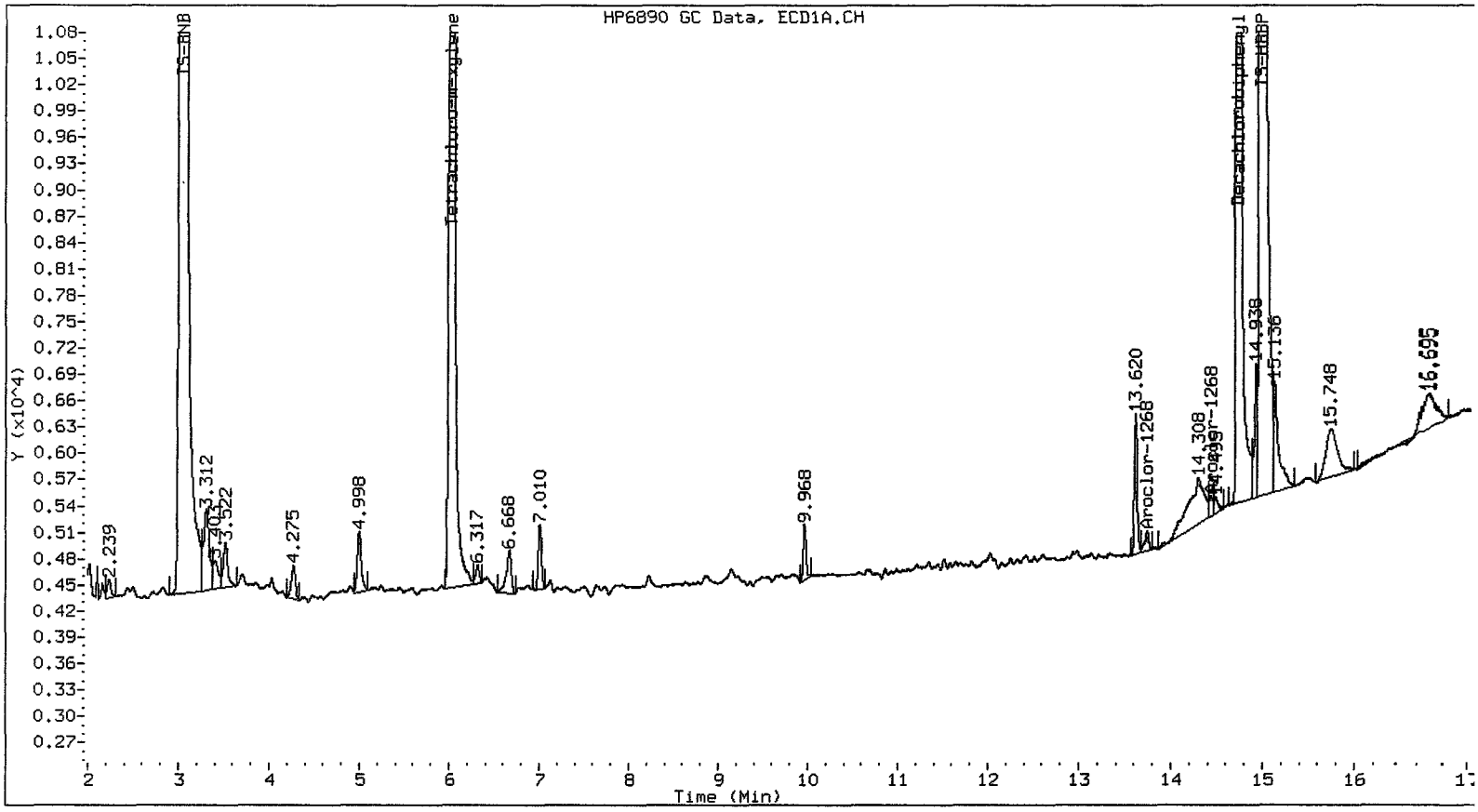
ECD7-ZB5 AXS8MBS1 26-MAR-2016 17:01, 2ul



ECD7-ZB35 AXS8MBS1 26-MAR-2016 17:01, 2ul



ECD7-ZB5 AXS8MBS1 26-MAR-2016 17:01, 2ul



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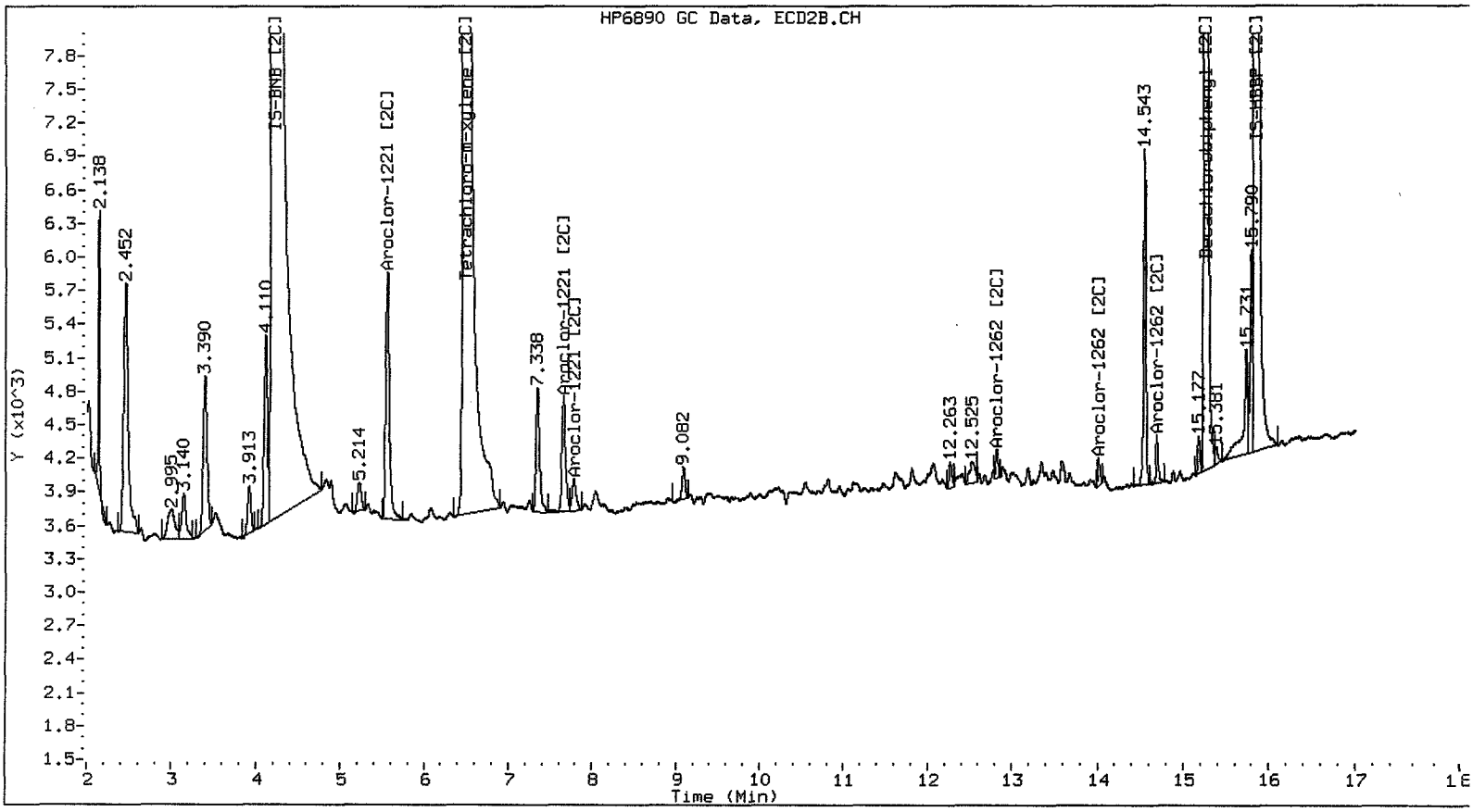


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261616.D
Data file 2: /20160326.b/20160326.b/03261616.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8LCSS1
Client ID:
Injection Date: 26-MAR-2016 17:23
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.027	-0.001	1850365	6.487	0.001	5751455	31.6	31.6	0.0	Tetrachloro-m-xyl
14.741	-0.001	6561090	15.260	0.001	5247223	41.5	36.6	12.4	Decachlorobipheny

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	79.1	79.1
Decachlorobiphenyl	103.8	91.6

K 03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10799577	5.0
Hexabromobiphenyl	12470452	11843586	-5.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15687044	-0.7
Hexabromobiphenyl	11807823	11193184	-5.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.047	-0.001	598937	433.3	1	8.629	-0.000	3110527	397.9
Aroclor-1016	2	8.557	-0.002	1824410	428.1	2	9.354	-0.001	6899385	428.7
Aroclor-1016	3	8.865	-0.001	674410	463.5	3	9.587	-0.001	2822254	439.4
Aroclor-1016	4	9.670	-0.001	738017	454.8	4	10.525	-0.000	1331996	446.4
Total Col1Ave (4 peaks):				444.9		Total Col2Ave (4 peaks):			428.1	RPD = 4
Corrected Ave (3 peaks):				438.7		Corrected Ave (3 peaks):			422.0	RPD = 4
Aroclor-1221	1	4.665	-0.049	50588	148.1	1	5.552	-0.033	45265	31.0
Aroclor-1221	2	6.694	0.003	120771	220.0	2	7.627	0.003	294287	216.2
Aroclor-1221	3	6.817	0.002	451031	275.0	3	7.766	0.003	1276257	296.4
Aroclor-1221	NS	---			----	4	8.629	-0.014	3110527	2179.7
Total Col1Ave (3 peaks):				214.4		Total Col2Ave (4 peaks):			680.8	RPD = 104*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			181.2	
Aroclor-1232	1	4.665	-0.049	50588	261.1	1	5.552	-0.034	45265	51.4
Aroclor-1232	2	6.694	0.003	120771	327.3	2	7.627	0.004	294287	354.7
Aroclor-1232	3	6.817	0.002	451031	414.8	3	7.851	-0.001	115048	245.8
Aroclor-1232	4	8.557	0.002	1824410	1026.2	4	8.629	0.001	3110527	855.1
Total Col1Ave (4 peaks):				507.4		Total Col2Ave (4 peaks):			376.7	RPD = 30
Corrected Ave (3 peaks):				334.4		Corrected Ave (3 peaks):			217.3	RPD = 42*
Aroclor-1242	1	8.557	-0.003	1824410	549.5	1	8.629	-0.002	3110527	512.1
Aroclor-1242	2	8.865	-0.002	674410	553.3	2	9.354	-0.003	6899385	548.6
Aroclor-1242	3	9.670	-0.002	738017	478.9	3	9.781	-0.002	1780955	548.6
Aroclor-1242	4	10.072	-0.001	97426	87.5	4	10.879	-0.002	295115	67.5
Total Col1Ave (4 peaks):				417.3		Total Col2Ave (4 peaks):			419.2	RPD = 0
Corrected Ave (3 peaks):				372.0		Corrected Ave (3 peaks):			376.1	RPD = 1
Aroclor-1248	1	8.557	0.001	1824410	936.7	1	9.354	0.002	6899385	919.5
Aroclor-1248	2	9.479	-0.000	496558	342.4	2	9.882	-0.000	1982086	358.4
Aroclor-1248	3	9.670	-0.001	738017	339.0	3	10.795	-0.001	380201	45.0
Aroclor-1248	4	10.072	-0.000	97426	53.8	4	11.243	0.001	174056	20.6
Total Col1Ave (4 peaks):				418.0		Total Col2Ave (4 peaks):			335.9	RPD = 22
Corrected Ave (3 peaks):				245.1		Corrected Ave (3 peaks):			141.3	RPD = 54*
Aroclor-1254	1	10.465	0.001	386363	161.6	1	11.112	0.001	1544238	195.8
Aroclor-1254	2	---			0.0	2	11.243	0.033	174056	47.1
Aroclor-1254	3	10.850	-0.000	89046	45.6	3	11.652	-0.000	314011	53.0
Aroclor-1254	4	10.987	-0.002	434764	113.4	4	11.838	0.032	3721199	275.6
Aroclor-1254	5	11.323	-0.022	1185495	315.7	5	12.816	0.001	4792695	481.6
Total Col1Ave (4 peaks):				159.1		Total Col2Ave (5 peaks):			210.6	RPD = 28
Corrected Ave (3 peaks):				106.8		Corrected Ave (4 peaks):			142.9	RPD = 29
Aroclor-1260	1	12.258	-0.000	1405645	488.6	1	12.816	0.002	4792695	464.4
Aroclor-1260	2	12.939	-0.001	5296823	483.9	2	13.580	0.001	9551280	477.2
Aroclor-1260	3	13.327	-0.001	2431184	517.2	3	14.074	0.000	6165244	466.4
Aroclor-1260	4	13.428	-0.001	1480307	506.8	4	14.625	0.001	2392025	472.0
Aroclor-1260	5	13.841	-0.001	851498	499.2	NS	---			----
Total Col1Ave (5 peaks):				499.1		Total Col2Ave (4 peaks):			470.0	RPD = 6
Corrected Ave (4 peaks):				494.6		Corrected Ave (3 peaks):			467.6	RPD = 6
Aroclor-1262	1	12.258	-0.001	1405645	366.8	1	12.904	-0.001	4017656	353.0
Aroclor-1262	2	12.939	-0.001	5296823	471.4	2	13.348	-0.001	4557630	433.3
Aroclor-1262	3	13.327	-0.003	2431184	682.8	3	13.580	-0.001	9551280	445.0
Aroclor-1262	4	13.428	-0.002	1480307	275.8	4	14.074	-0.001	6165244	441.5
Aroclor-1262	5	14.054	-0.002	2236218	370.9	5	14.625	-0.000	2392025	334.2
Total Col1Ave (5 peaks):				433.5		Total Col2Ave (5 peaks):			401.4	RPD = 8
Corrected Ave (4 peaks):				371.2		Corrected Ave (4 peaks):			390.5	RPD = 5
Aroclor-1268	1	13.428	-0.002	1480307	94.8	1	14.023	0.001	2739281	122.7
Aroclor-1268	2	13.494	-0.000	2012728	103.9	2	14.074	-0.002	6165244	295.4
Aroclor-1268	3	13.841	0.013	851498	48.6	3	14.388	-0.001	104734	6.2

470.0

Aroclor-1268	4	14.443	-0.003	531627	8.4	4	14.973	-0.001	504136	10.5

Total Col1Ave (4 peaks): 63.9 Total Col2Ave (4 peaks): 108.7 RPD = 52*

Corrected Ave (3 peaks): 50.6 Corrected Ave (3 peaks): 46.5 RPD = 8

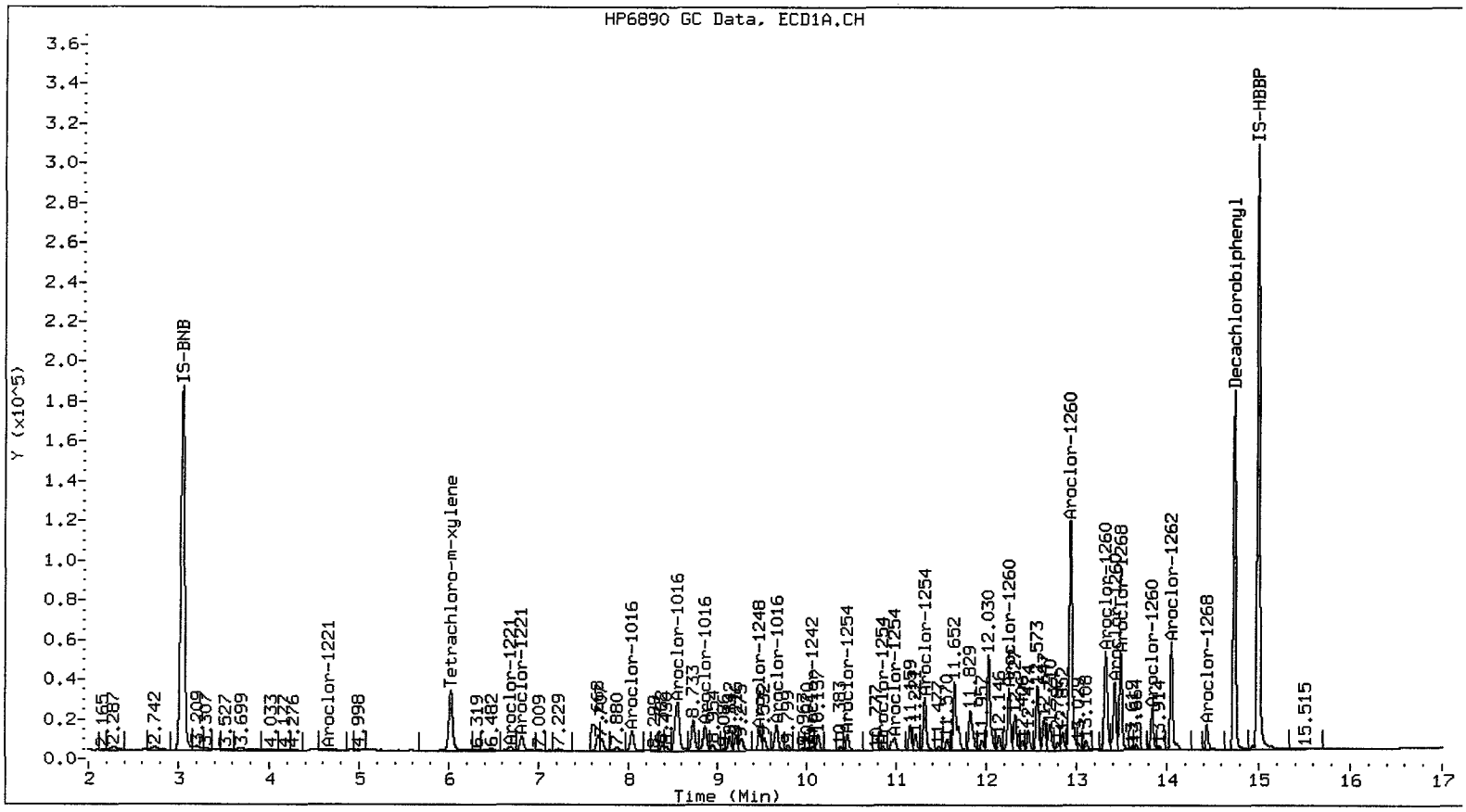
Total PCB Area Col1 (6.128 - 14.642) = 40407836 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 112120202 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8LCSS1 26-MAR-2016 17:23, 2ul



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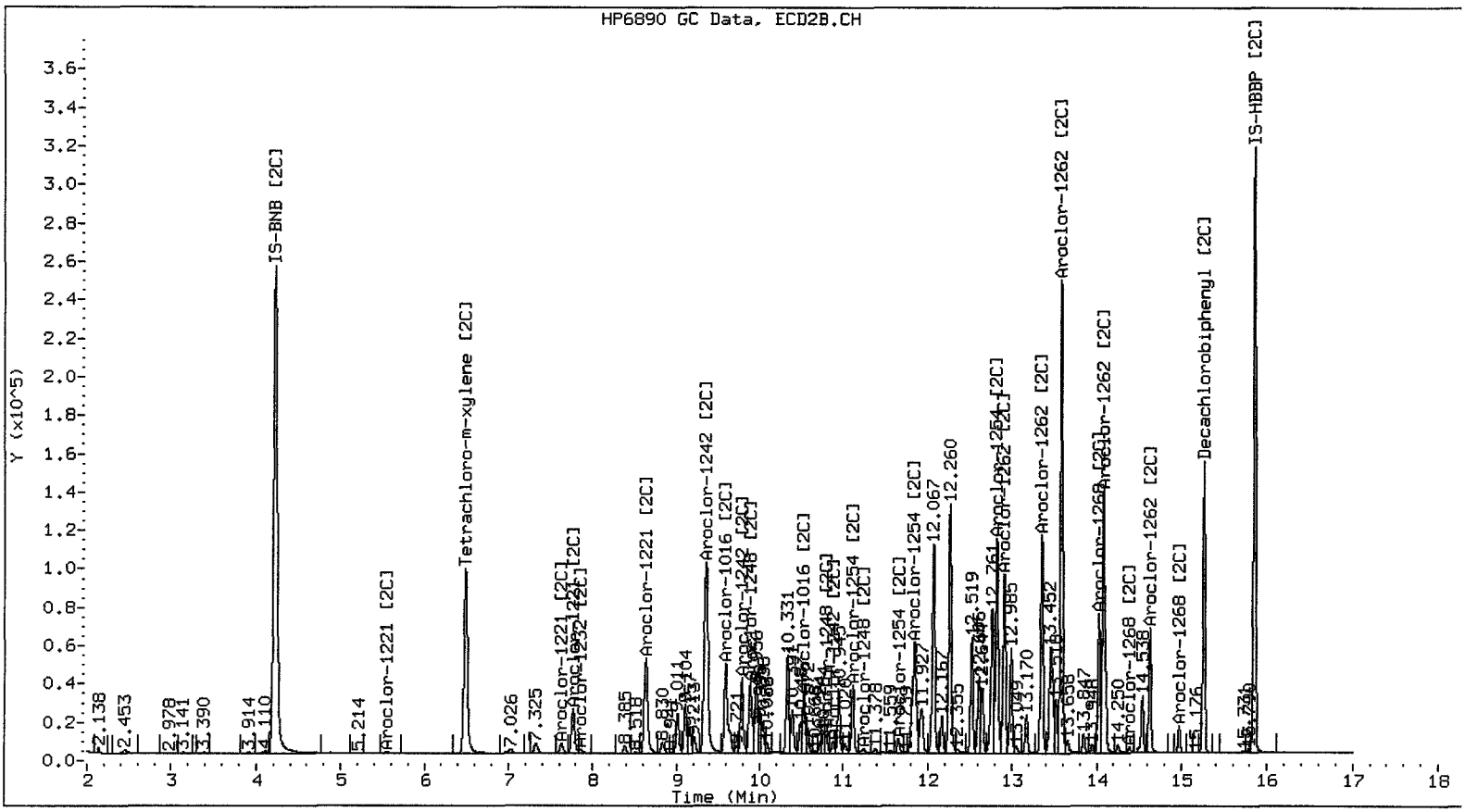

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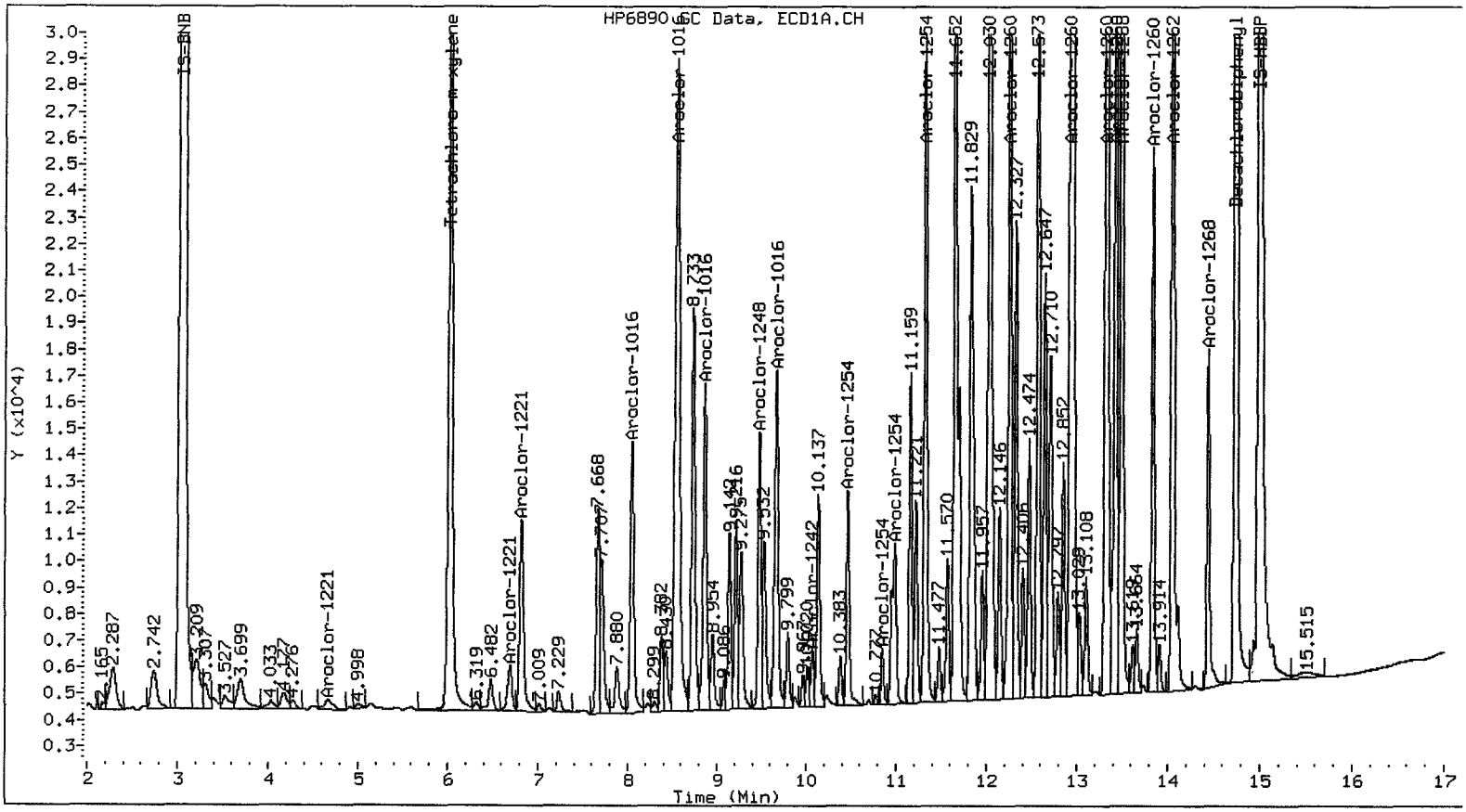

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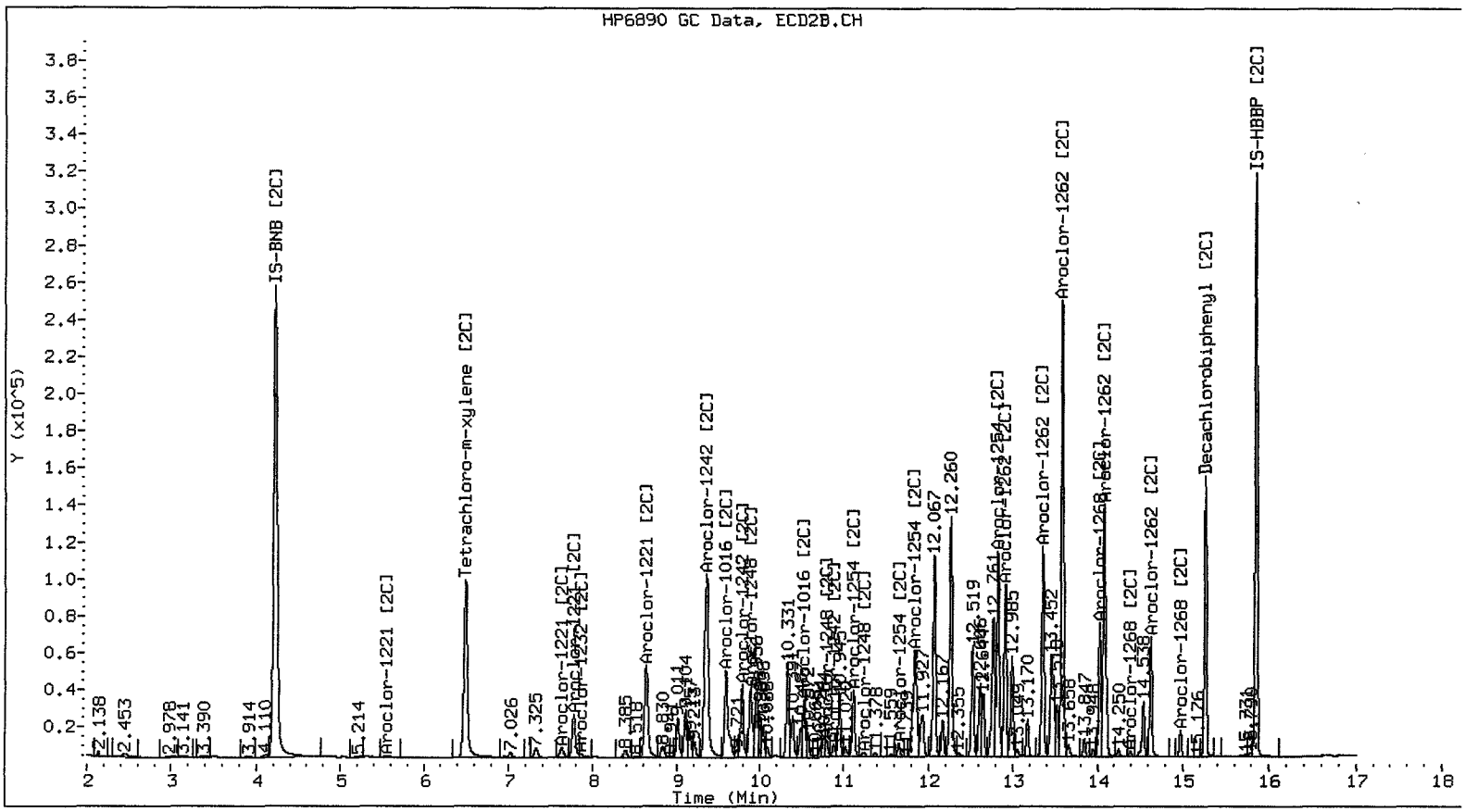


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261617.D
Data file 2: /20160326.b/20160326.b/03261617.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8SRM1
Client ID:
Injection Date: 26-MAR-2016 17:45
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.027	-0.001	1282560	6.485	-0.000	4094090	22.2	23.1	4.1	Tetrachloro-m-xyle
14.741	-0.001	5283176	15.259	0.000	4698532	37.7	32.3	15.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	55.5	57.8
Decachlorobiphenyl	94.3	80.8

03/28/18

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10661708	3.6
Hexabromobiphenyl	12470452	10495240	-15.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15271769	-3.4
Hexabromobiphenyl	11807823	11366465	-3.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.045	-0.002	22739	16.7	1	8.628	-0.001	146905	19.3
Aroclor-1016	2	8.558	-0.001	103060	24.5	2	9.354	-0.001	375703	24.0
Aroclor-1016	3	8.863	-0.003	58058	40.4	3	9.587	-0.000	120203	19.2
Aroclor-1016	4	9.669	-0.002	97953	61.1	4	10.525	-0.001	207119	71.3
Total Col1Ave (4 peaks):				35.7		Total Col2Ave (4 peaks):			33.5	RPD = 6
Corrected Ave (3 peaks):				27.2		Corrected Ave (3 peaks):			20.8	RPD = 26
Aroclor-1221	1	---			0.0	1	5.549	-0.037	44902	31.6
Aroclor-1221	2	6.669	-0.021	47881	88.3	2	7.648	0.024	161987	122.3
Aroclor-1221	3	6.820	0.005	13756	8.5	3	7.773	0.010	80812	19.3
Aroclor-1221	NS	---			----	4	8.628	-0.015	146905	105.7
Col1Ave: <3 Quant Peaks						Col2Ave:			69.7	
Aroclor-1232	1	---			0.0	1	5.549	-0.037	44902	52.3
Aroclor-1232	2	6.669	-0.021	47881	131.5	2	7.648	0.025	161987	200.5
Aroclor-1232	3	6.820	0.005	13756	12.8	3	7.773	-0.079	80812	177.4
Aroclor-1232	4	8.558	0.003	103060	58.7	4	8.628	0.001	146905	41.5
Total Col1Ave (3 peaks):				67.7		Total Col2Ave (4 peaks):			117.9	RPD = 54*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			90.4	
Aroclor-1242	1	8.558	-0.002	103060	31.4	1	8.628	-0.003	146905	24.8
Aroclor-1242	2	8.863	-0.004	58058	48.3	2	9.354	-0.003	375703	30.7
Aroclor-1242	3	9.669	-0.003	97953	64.4	3	9.779	-0.004	91564	29.0
Aroclor-1242	4	10.072	-0.002	92789	84.4	4	10.877	-0.004	282680	66.4
Total Col1Ave (4 peaks):				57.1		Total Col2Ave (4 peaks):			37.7	RPD = 41*
Corrected Ave (3 peaks):				48.0		Corrected Ave (3 peaks):			28.2	RPD = 52*
Aroclor-1248	1	8.558	0.002	103060	53.6	1	9.354	0.002	375703	51.4
Aroclor-1248	2	9.479	-0.000	86583	60.5	2	9.880	-0.002	430434	79.9
Aroclor-1248	3	9.669	-0.001	97953	45.6	3	10.796	-0.000	394565	48.0
Aroclor-1248	4	10.072	-0.001	92789	51.9	4	11.209	-0.033	660181	80.3
Total Col1Ave (4 peaks):				52.9		Total Col2Ave (4 peaks):			64.9	RPD = 20
Corrected Ave (3 peaks):				50.4		Corrected Ave (3 peaks):			59.8	RPD = 17
Aroclor-1254	1	10.464	-0.000	319524	135.4	1	11.110	-0.001	1143540	148.9
Aroclor-1254	2	10.544	-0.001	101543	129.1	2	11.209	-0.001	660181	183.5
Aroclor-1254	3	10.857	0.007	275161	142.6	3	11.651	-0.002	473194	82.1
Aroclor-1254	4	10.988	-0.001	502484	132.7	4	11.805	-0.000	1203762	91.6
Aroclor-1254	5	11.324	-0.021	771483	208.1	5	12.814	-0.001	2735228	282.4
Total Col1Ave (5 peaks):				149.6		Total Col2Ave (5 peaks):			157.7	RPD = 5
Corrected Ave (4 peaks):				134.9		Corrected Ave (4 peaks):			126.5	RPD = 6
Aroclor-1260	1	12.257	-0.001	637016	249.9	1	12.814	0.000	2735228	261.0
Aroclor-1260	2	12.938	-0.002	2431957	250.7	2	13.579	-0.001	4383354	215.7
Aroclor-1260	3	13.325	-0.002	1097815	263.6	3	14.072	-0.002	2770091	206.4
Aroclor-1260	4	13.428	-0.001	601093	232.2	4	14.623	-0.001	1033818	200.9
Aroclor-1260	5	13.840	-0.002	342576	226.6	NS	---			----
Total Col1Ave (5 peaks):				244.6		Total Col2Ave (4 peaks):			221.0	RPD = 10
Corrected Ave (4 peaks):				239.9		Corrected Ave (3 peaks):			207.6	RPD = 14
Aroclor-1262	1	12.257	-0.002	637016	187.6	1	12.903	-0.002	1787597	154.7
Aroclor-1262	2	12.938	-0.002	2431957	244.2	2	13.348	-0.001	2171954	203.3
Aroclor-1262	3	13.325	-0.004	1097815	347.9	3	13.579	-0.002	4383354	201.1
Aroclor-1262	4	13.428	-0.002	601093	126.4	4	14.072	-0.003	2770091	195.3
Aroclor-1262	5	14.053	-0.002	844258	158.0	5	14.623	-0.002	1033818	142.2
Total Col1Ave (5 peaks):				212.8		Total Col2Ave (5 peaks):			179.3	RPD = 17
Corrected Ave (4 peaks):				179.1		Corrected Ave (4 peaks):			173.3	RPD = 3
Aroclor-1268	1	13.428	-0.003	601093	43.4	1	14.021	-0.000	1246881	55.0
Aroclor-1268	2	13.493	-0.001	810802	47.3	2	14.072	-0.003	2770091	130.7
Aroclor-1268	3	13.840	0.012	342576	22.1	3	14.387	-0.001	48489	2.8
Aroclor-1268	4	14.441	-0.005	244822	4.4	4	14.971	-0.002	241030	5.0

Total Col1Ave (4 peaks):	29.3	Total Col2Ave (4 peaks):	48.4	RPD = 49*
Corrected Ave (3 peaks):	23.3	Corrected Ave (3 peaks):	20.9	RPD = 11

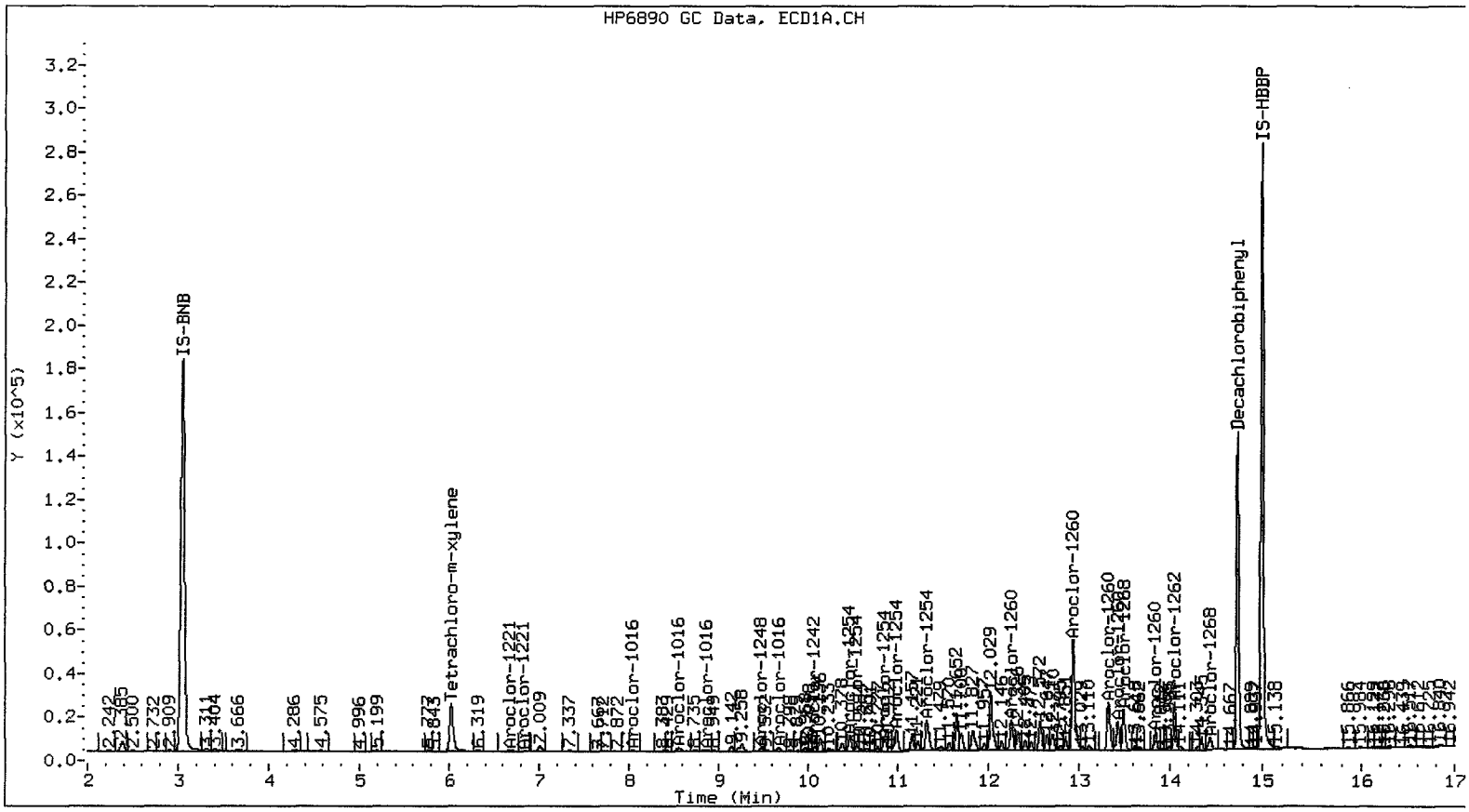
Total PCB Area Col1 (6.128 - 14.642) = 18164537 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 47716765 Col2 Total PCB = 0.4 ppm*

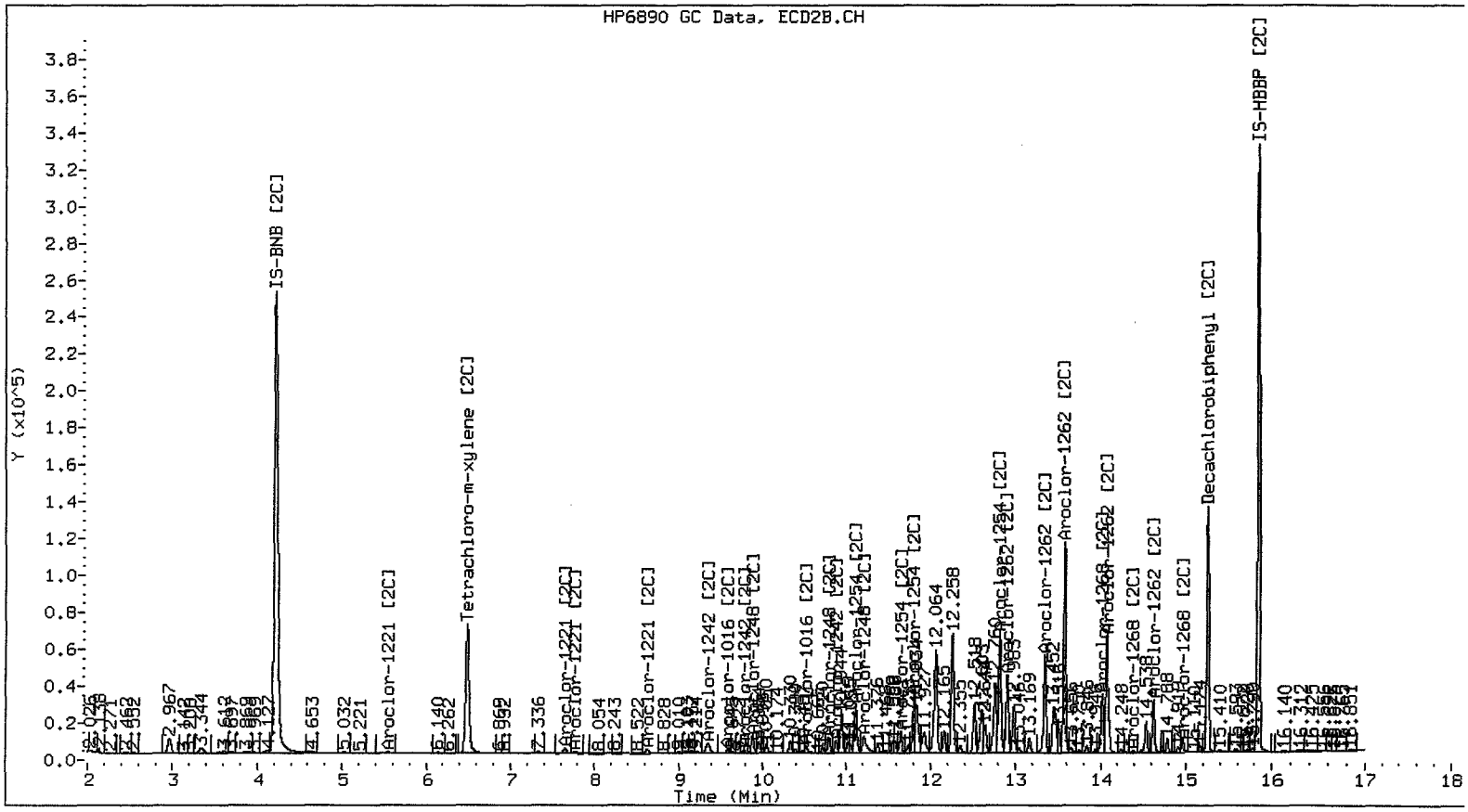
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8SRM1 26-MAR-2016 17:45, 2ul



ECD7-ZB35 AXS8SRM1 26-MAR-2016 17:45, 2ul



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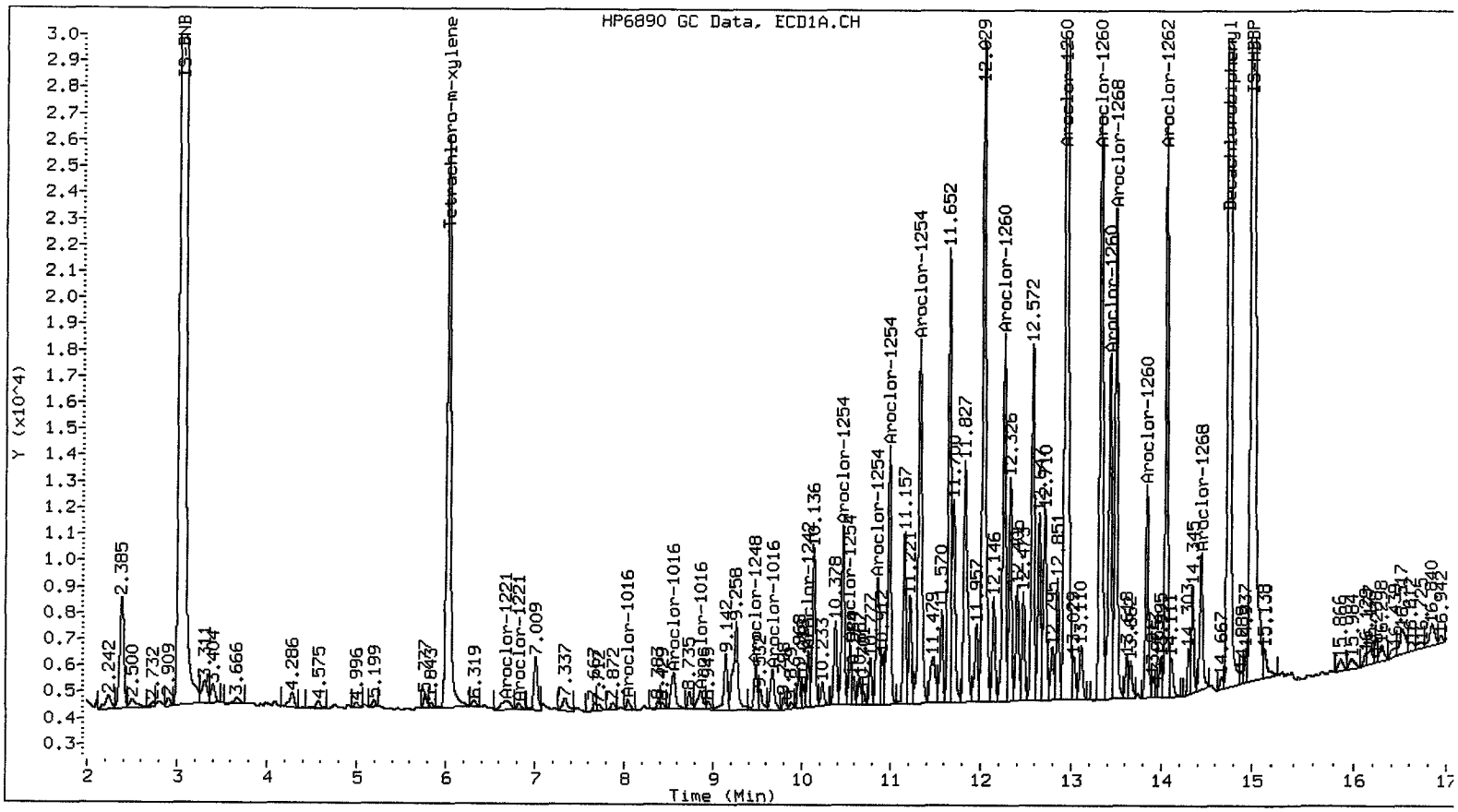

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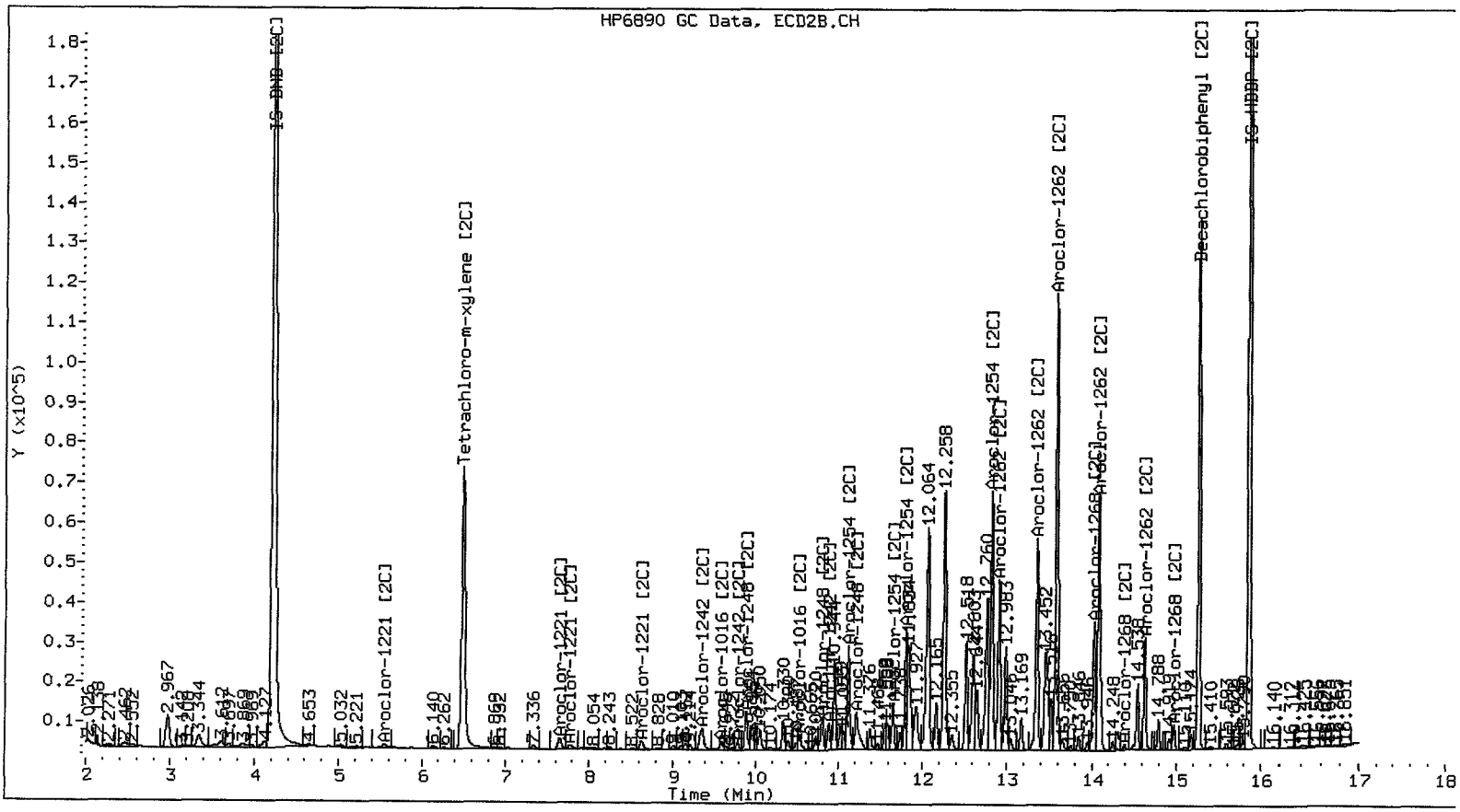

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

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Data file 2: /20160326.b/20160326.b/03261618.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8A
Client ID:
Injection Date: 26-MAR-2016 18:07
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	0.000	1732940	6.486	0.001	5604929	29.3	31.4	7.2	Tetrachloro-m-xy
14.742	-0.000	5997146	15.260	0.001	5002097	38.1	32.2	16.6	Decachlorobiphen

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	73.2	78.6
Decachlorobiphenyl	95.2	80.6

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10930646	6.2
Hexabromobiphenyl	12470452	11799707	-5.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15380867	-2.7
Hexabromobiphenyl	11807823	12123900	2.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.017	-0.030	33437	23.9	1	8.655	0.026	25368	3.3
Aroclor-1016	2	8.458	-0.101	22083	5.1	2	9.350	-0.005	26610	1.7
Aroclor-1016	3	8.879	0.014	10742	7.3	3	---			0.0
Aroclor-1016	4	---			0.0	4	10.557	0.032	13816	4.7
Total Col1Ave (3 peaks):		12.1				Total Col2Ave (3 peaks):			3.2	RPD = 116*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	7.648	0.025	56845	42.6
Aroclor-1221	3	---			0.0	3	7.773	0.009	35102	8.3
Aroclor-1221	NS	---			----	4	8.655	0.012	25368	18.1
Col1Ave: <3 Quant Peaks						Col2Ave:		23.0		
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.666	-0.024	44744	119.8	2	7.648	0.025	56845	69.9
Aroclor-1232	3	---			0.0	3	7.773	-0.079	35102	76.5
Aroclor-1232	4	8.458	-0.097	22083	12.3	4	8.655	0.027	25368	7.1
Col1Ave: <3 Quant Peaks						Col2Ave:		51.2		
Aroclor-1242	1	---			0.0	1	8.655	0.024	25368	4.3
Aroclor-1242	2	---			0.0	2	9.350	-0.007	26610	2.2
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	10.946	0.065	21549	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:		3.8		
Aroclor-1248	1	---			0.0	1	9.350	-0.002	26610	3.6
Aroclor-1248	2	---			0.0	2	9.882	-0.000	19469	3.6
Aroclor-1248	3	---			0.0	3	10.798	0.002	13219	1.6
Aroclor-1248	4	---			0.0	4	11.211	-0.031	13190	1.6
Col1Ave: <3 Quant Peaks						Col2Ave:		2.6		
Aroclor-1254	1	---			0.0	1	11.113	0.002	26201	3.4
Aroclor-1254	2	---			0.0	2	11.211	0.001	13190	3.6
Aroclor-1254	3	---			0.0	3	11.653	-0.000	17461	3.0
Aroclor-1254	4	10.990	0.001	35088	9.0	4	11.806	0.000	39739	3.0
Aroclor-1254	5	11.338	-0.006	79710	21.0	5	12.817	0.002	46990	4.8
Col1Ave: <3 Quant Peaks						Col2Ave:		3.6		
Aroclor-1260	1	---			0.0	1	12.817	0.003	46990	4.2
Aroclor-1260	2	12.940	-0.000	23401	2.1	2	13.581	0.001	33890	1.6
Aroclor-1260	3	---			0.0	3	14.075	0.001	62091	4.3
Aroclor-1260	4	13.495	0.065	12231	4.2	4	14.623	-0.001	43828	8.0
Aroclor-1260	5	13.911	0.070	406157	239.0	NS	---			----
Total Col1Ave (3 peaks):		81.8				Total Col2Ave (4 peaks):			4.5	RPD = 179*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			3.4	
Aroclor-1262	1	---			0.0	1	12.905	-0.000	12710	1.0
Aroclor-1262	2	12.940	0.000	23401	2.1	2	13.349	0.001	52118	4.6
Aroclor-1262	3	---			0.0	3	13.581	0.000	33890	1.5
Aroclor-1262	4	13.495	0.065	12231	2.3	4	14.075	-0.000	62091	4.1
Aroclor-1262	5	---			0.0	5	14.623	-0.002	43828	5.7
Col1Ave: <3 Quant Peaks						Col2Ave:		3.4		
Aroclor-1268	1	13.495	0.064	12231	0.8	1	14.021	0.000	40857	1.7
Aroclor-1268	2	---			0.0	2	14.075	-0.001	62091	2.7
Aroclor-1268	3	13.911	0.084	406157	23.3	3	14.388	0.000	44039	2.4
Aroclor-1268	4	---			0.0	4	14.975	0.001	91090	1.8
Col1Ave: <3 Quant Peaks						Col2Ave:		2.2		

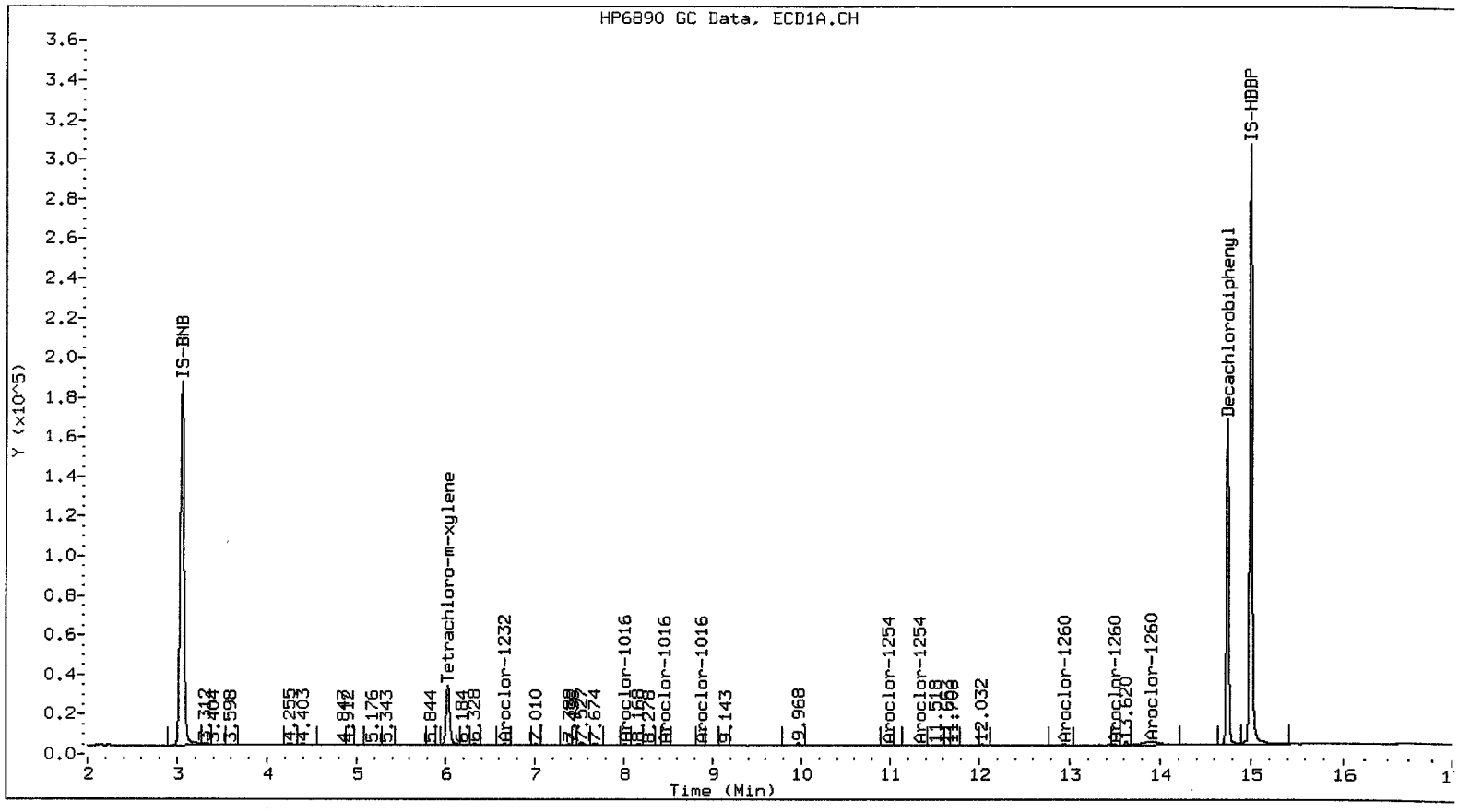
Total PCB Area Col1 (6.128 - 14.642) = 1322429 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 7326305 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8A 26-MAR-2016 18:07, 2ul



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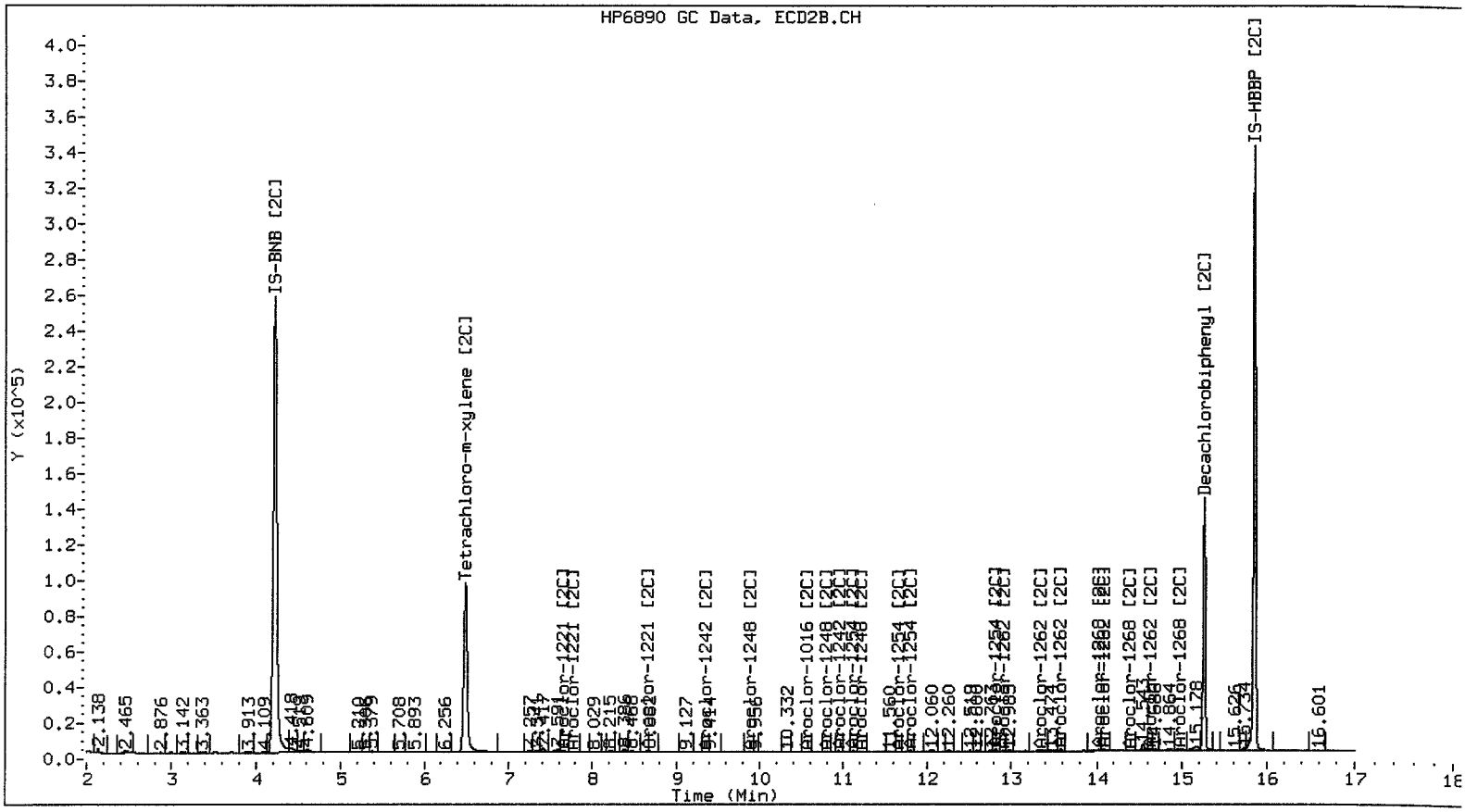

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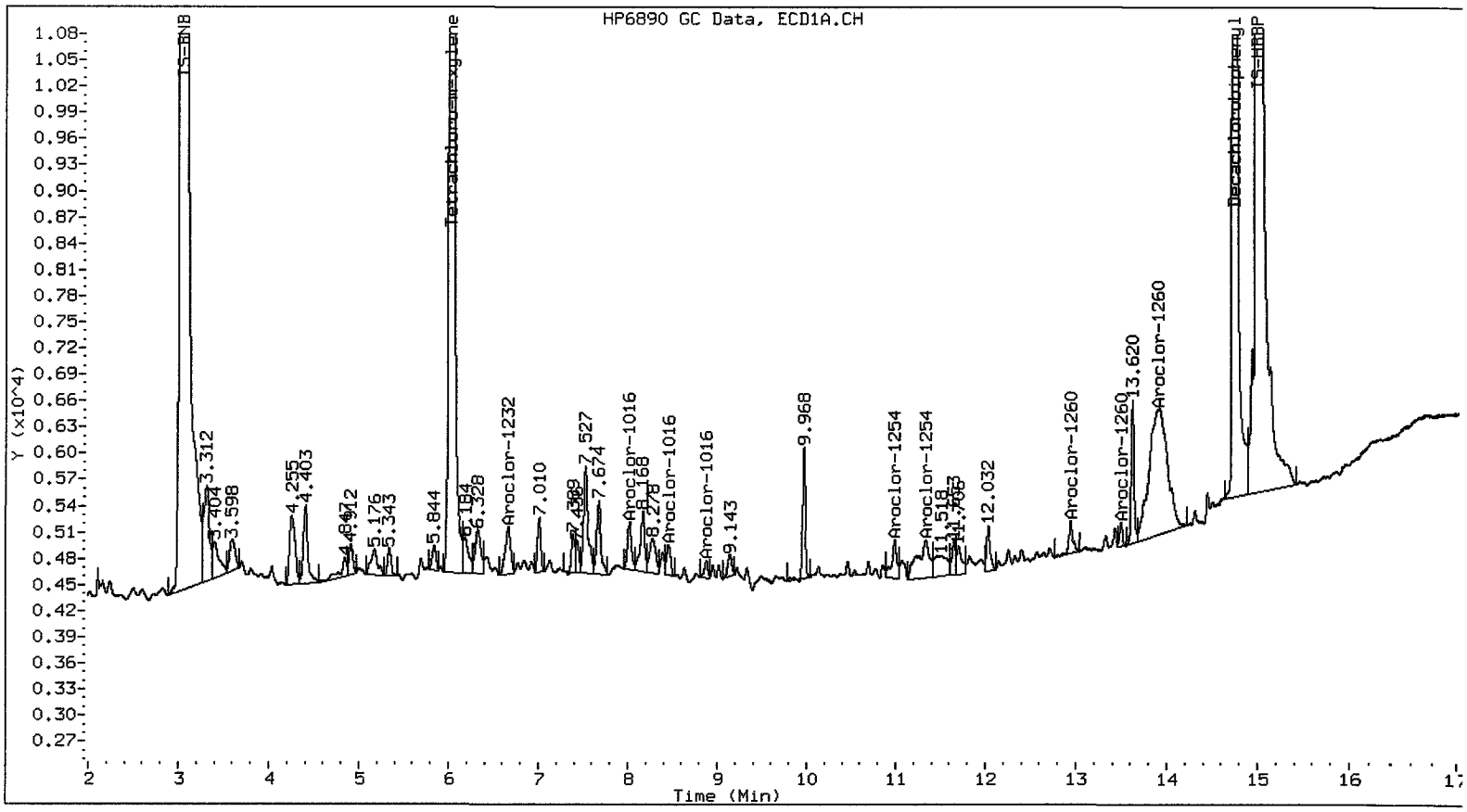

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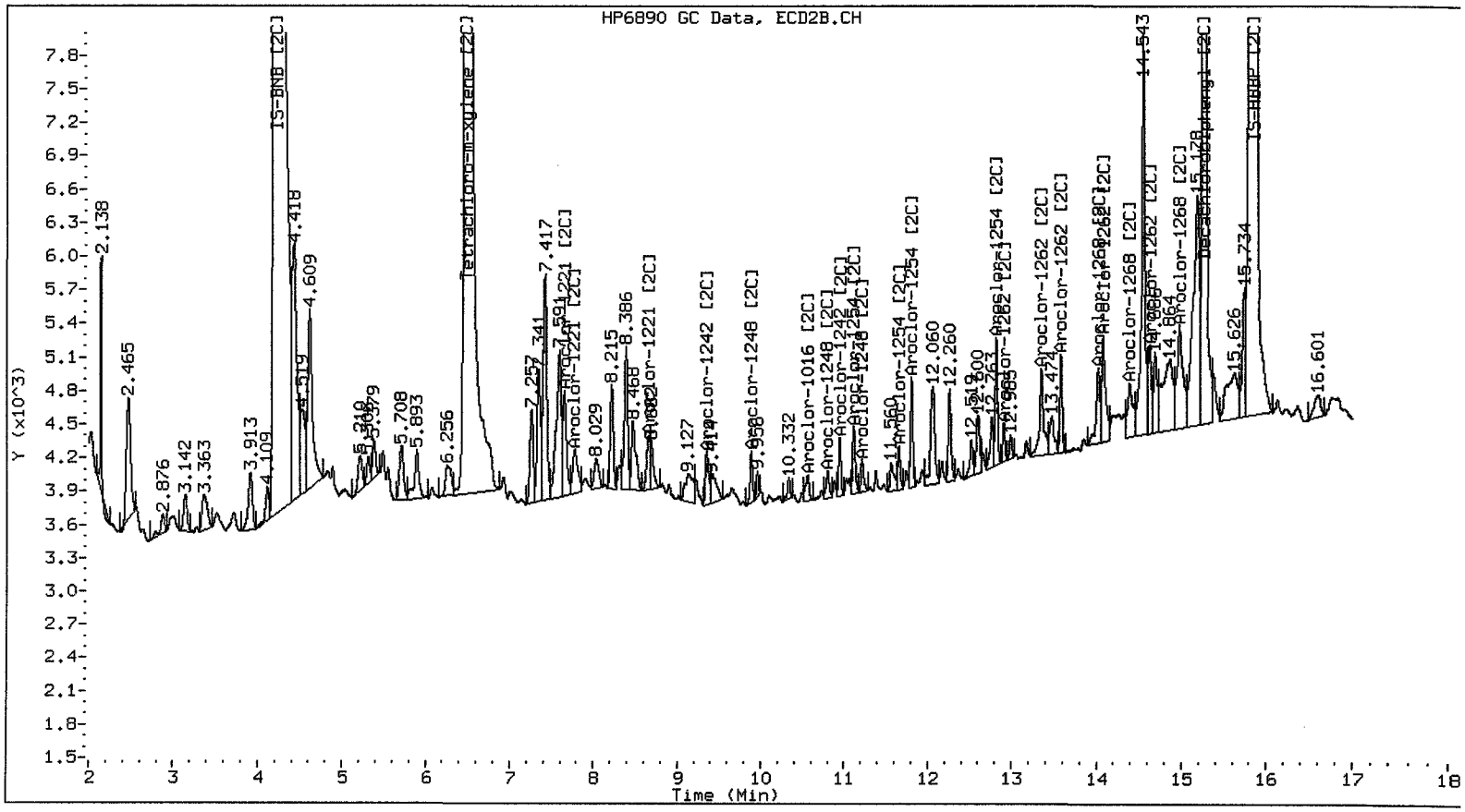


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261619.D
Data file 2: /20160326.b/20160326.b/03261619.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8B
Client ID:
Injection Date: 26-MAR-2016 18:29
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.027	-0.001	1743662	6.485	0.000	5436991	29.1	31.2	6.9	Tetrachloro-m-xy
14.742	-0.000	5912203	15.259	0.001	4991942	40.5	33.7	18.3	Decachlorobiphen

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	72.7	77.9
Decachlorobiphenyl	101.3	84.3

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	11074201	7.6
Hexabromobiphenyl	12470452	10935051	-12.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15058053	-4.7
Hexabromobiphenyl	11807823	11574028	-2.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.016	-0.032	222822	157.2	1	8.654	0.025	594414	79.2
Aroclor-1016	2	8.638	0.079	50066	11.5	2	9.348	-0.006	72028	4.7
Aroclor-1016	3	8.883	0.017	47908	32.1	3	9.682	0.094	41804	6.8
Aroclor-1016	4	9.735	0.064	22103	13.3	4	10.525	-0.001	19323	6.7
Total Col1Ave (4 peaks):				53.5		Total Col2Ave (4 peaks):			24.4	RPD = 75*
Corrected Ave (3 peaks):				18.9		Corrected Ave (3 peaks):			6.1	RPD = 103*
Aroclor-1221	1	4.651	-0.063	30136	86.0	1	---			0.0
Aroclor-1221	2	6.674	-0.017	82215	146.0	2	7.588	-0.035	1686784	1291.3
Aroclor-1221	3	6.764	-0.051	66954	39.8	3	7.810	0.047	381379	92.3
Aroclor-1221	NS	---			----	4	8.654	0.011	594414	433.9
Total Col1Ave (3 peaks):				90.6		Total Col2Ave (3 peaks):			605.8	RPD = 148*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.651	-0.063	30136	151.7	1	---			0.0
Aroclor-1232	2	6.674	-0.017	82215	217.3	2	7.588	-0.035	1686784	2117.8
Aroclor-1232	3	6.764	-0.051	66954	60.0	3	7.810	-0.041	381379	848.9
Aroclor-1232	4	8.638	0.083	50066	27.5	4	8.654	0.026	594414	170.2
Total Col1Ave (4 peaks):				114.1		Total Col2Ave (3 peaks):			1045.7	RPD = 161*
Corrected Ave (3 peaks):				79.7		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.638	0.078	50066	14.7	1	8.654	0.023	594414	101.9
Aroclor-1242	2	8.883	0.016	47908	38.3	2	9.348	-0.008	72028	6.0
Aroclor-1242	3	9.735	0.063	22103	14.0	3	9.682	-0.102	41804	13.4
Aroclor-1242	4	10.097	0.023	33335	29.2	4	---			0.0
Total Col1Ave (4 peaks):				24.1		Total Col2Ave (3 peaks):			40.4	RPD = 51*
Corrected Ave (3 peaks):				19.3		Corrected Ave: < 3 Peaks				
Aroclor-1248	1	8.638	0.082	50066	25.1	1	9.348	-0.003	72028	10.0
Aroclor-1248	2	9.500	0.021	39563	26.6	2	---			0.0
Aroclor-1248	3	9.735	0.065	22103	9.9	3	---			0.0
Aroclor-1248	4	10.097	0.025	33335	18.0	4	11.208	0.033	15062	1.9
Total Col1Ave (4 peaks):				19.9		Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	10.433	-0.032	37270	15.2	1	11.113	0.002	9354	1.2
Aroclor-1254	2	---			0.0	2	11.208	-0.002	15062	4.2
Aroclor-1254	3	10.874	0.025	6731	3.4	3	11.590	-0.063	14590	2.6
Aroclor-1254	4	10.988	-0.001	28865	7.3	4	11.804	-0.002	26572	2.0
Aroclor-1254	5	---			0.0	5	12.816	0.001	22893	2.4
Total Col1Ave (3 peaks):				8.6		Total Col2Ave (5 peaks):			2.5	RPD = 110*
Corrected Ave: < 3 Peaks						Corrected Ave (4 peaks):			2.1	
Aroclor-1260	1	---			0.0	1	12.816	0.002	22893	2.1
Aroclor-1260	2	12.982	0.042	165778	16.4	2	13.581	0.001	11600	0.6
Aroclor-1260	3	---			0.0	3	14.003	-0.071	12188	0.9
Aroclor-1260	4	---			0.0	4	14.685	0.061	21826	4.2
Aroclor-1260	5	13.744	-0.098	30046	19.1	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:			1.9	
Aroclor-1262	1	---			0.0	1	12.816	-0.089	22893	1.9
Aroclor-1262	2	12.982	0.042	165778	16.0	2	13.349	0.000	16287	1.5
Aroclor-1262	3	---			0.0	3	13.581	0.000	11600	0.5
Aroclor-1262	4	---			0.0	4	14.003	-0.072	12188	0.8
Aroclor-1262	5	14.084	-0.028	51012	9.2	5	14.685	-0.060	21826	2.9
Col1Ave: <3 Quant Peaks						Col2Ave:			1.6	
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	13.744	-0.084	30046	1.9	3	---			0.0
Aroclor-1268	4	14.497	0.051	18902	0.3	4	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				

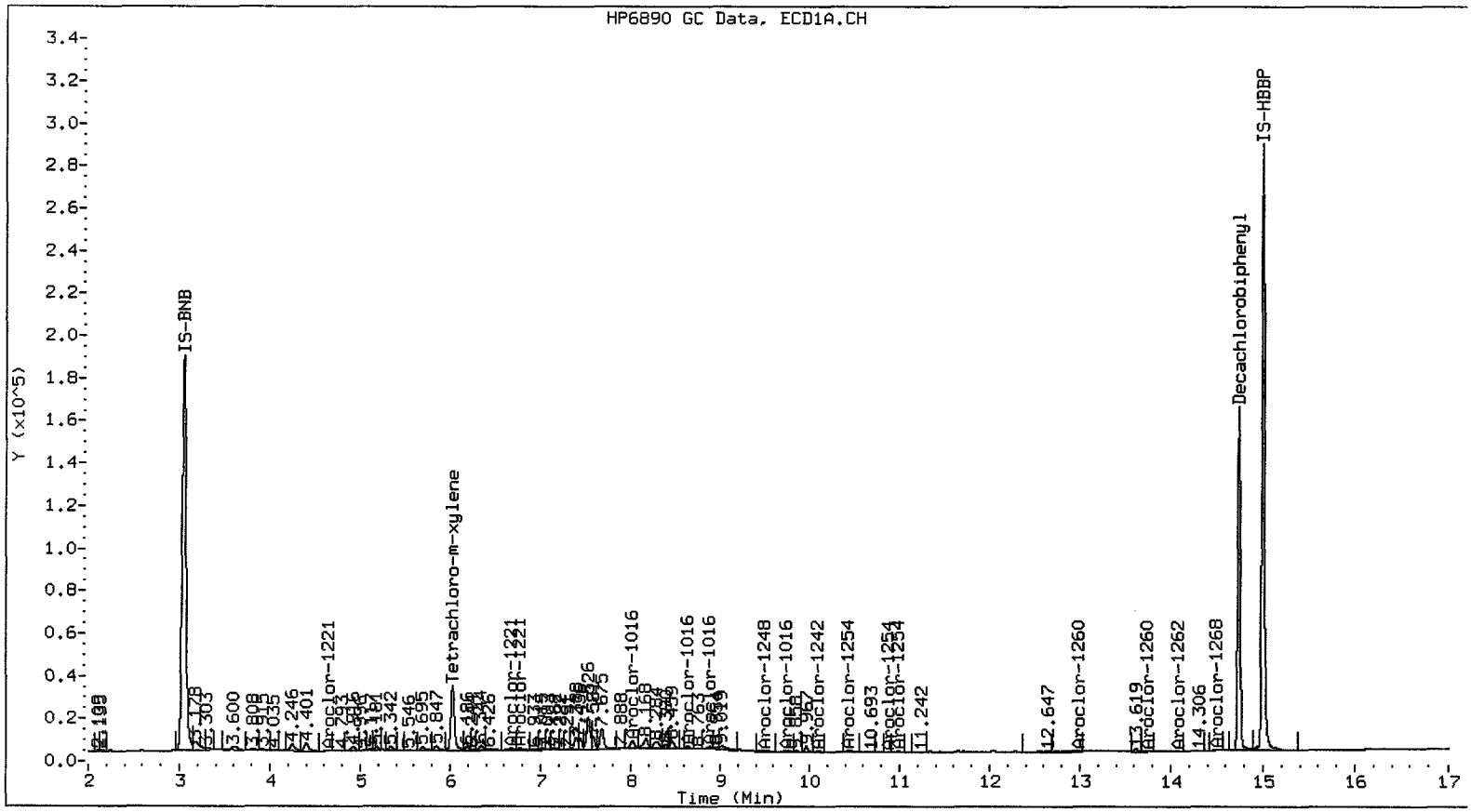
Total PCB Area Col1 (6.128 - 14.642) = 5423423 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 14066319 Col2 Total PCB = 0.1 ppm*

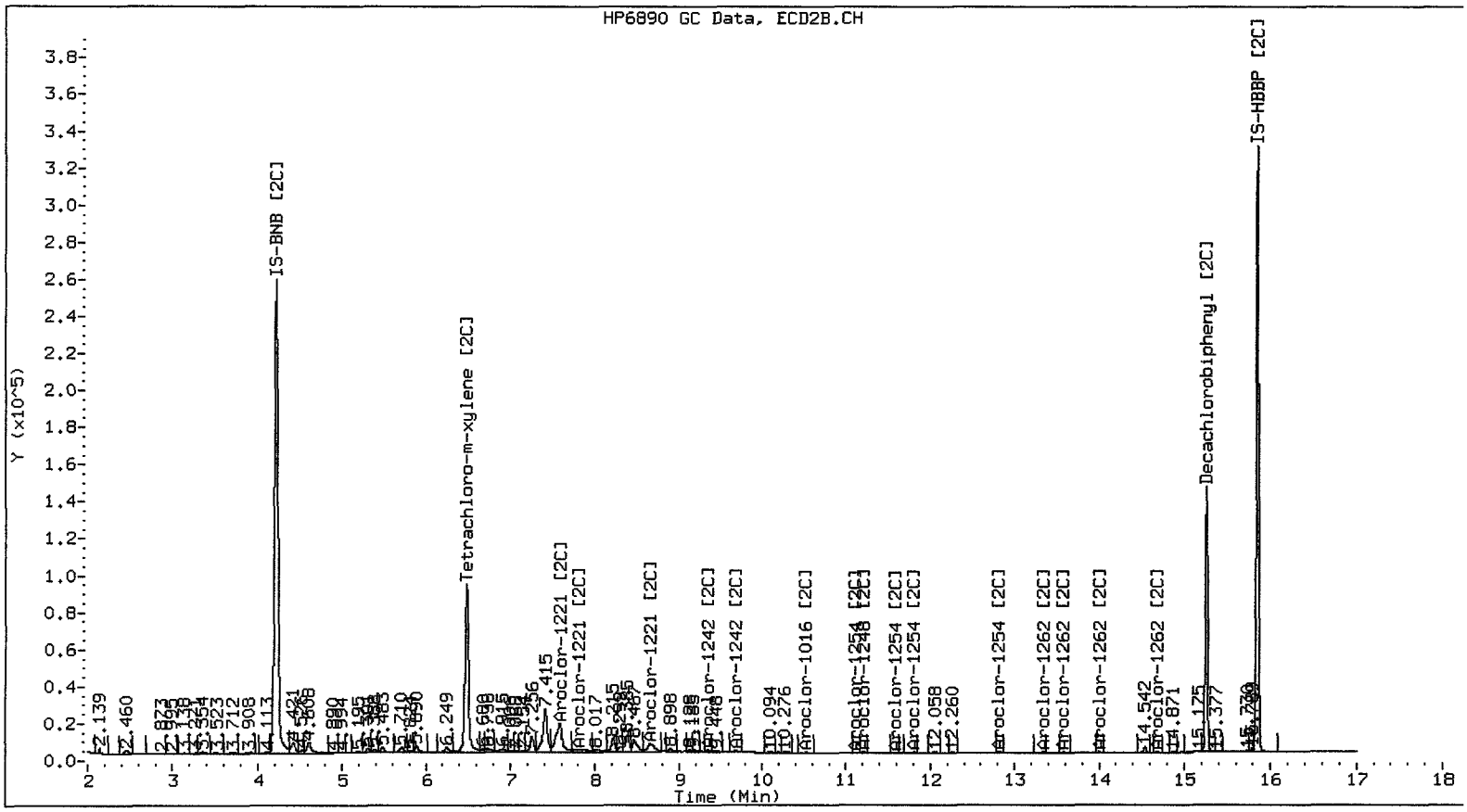
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8B 26-MAR-2016 18:29, 2ul



ECD7-ZB35 AXS8B 26-MAR-2016 18:29, 2ul



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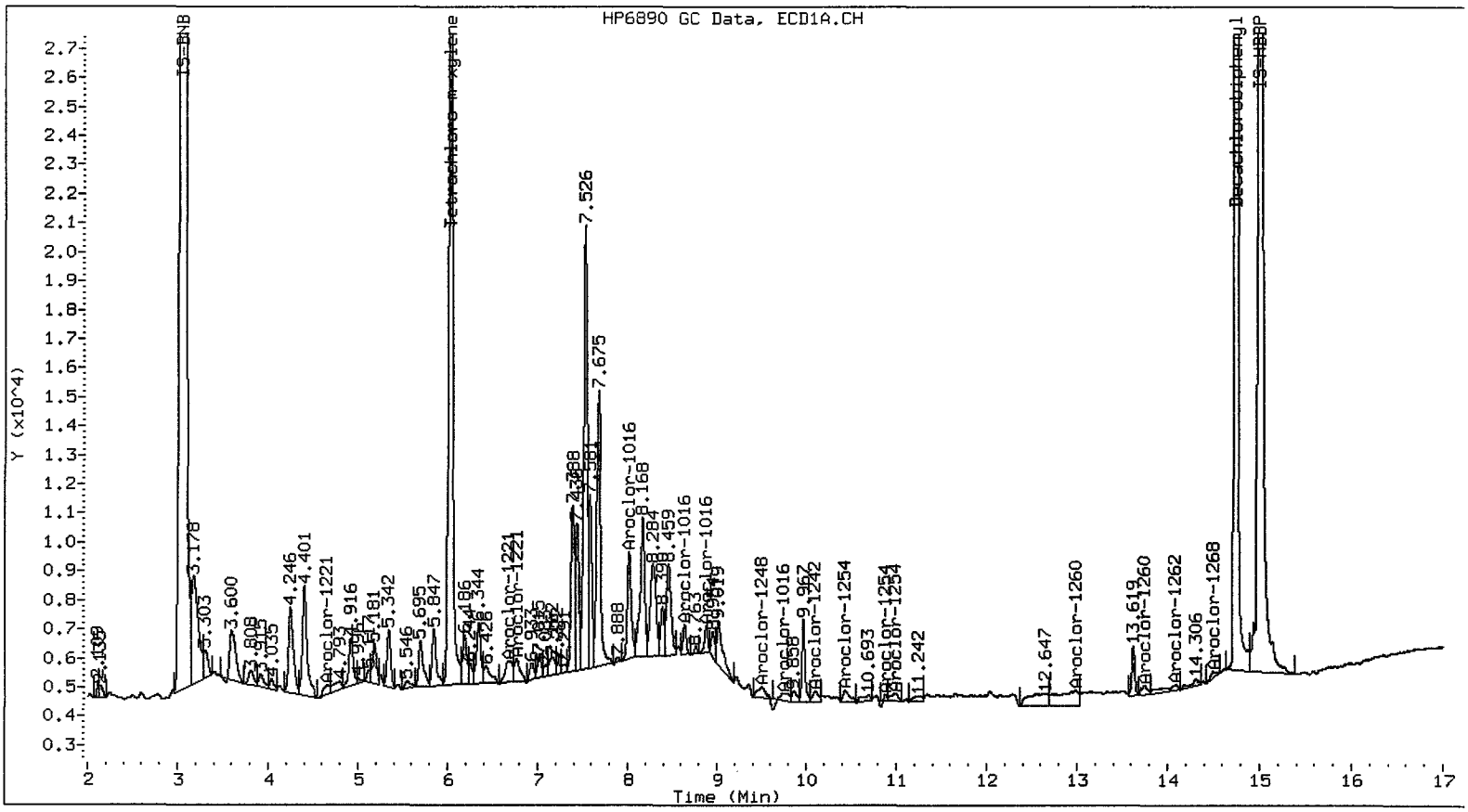

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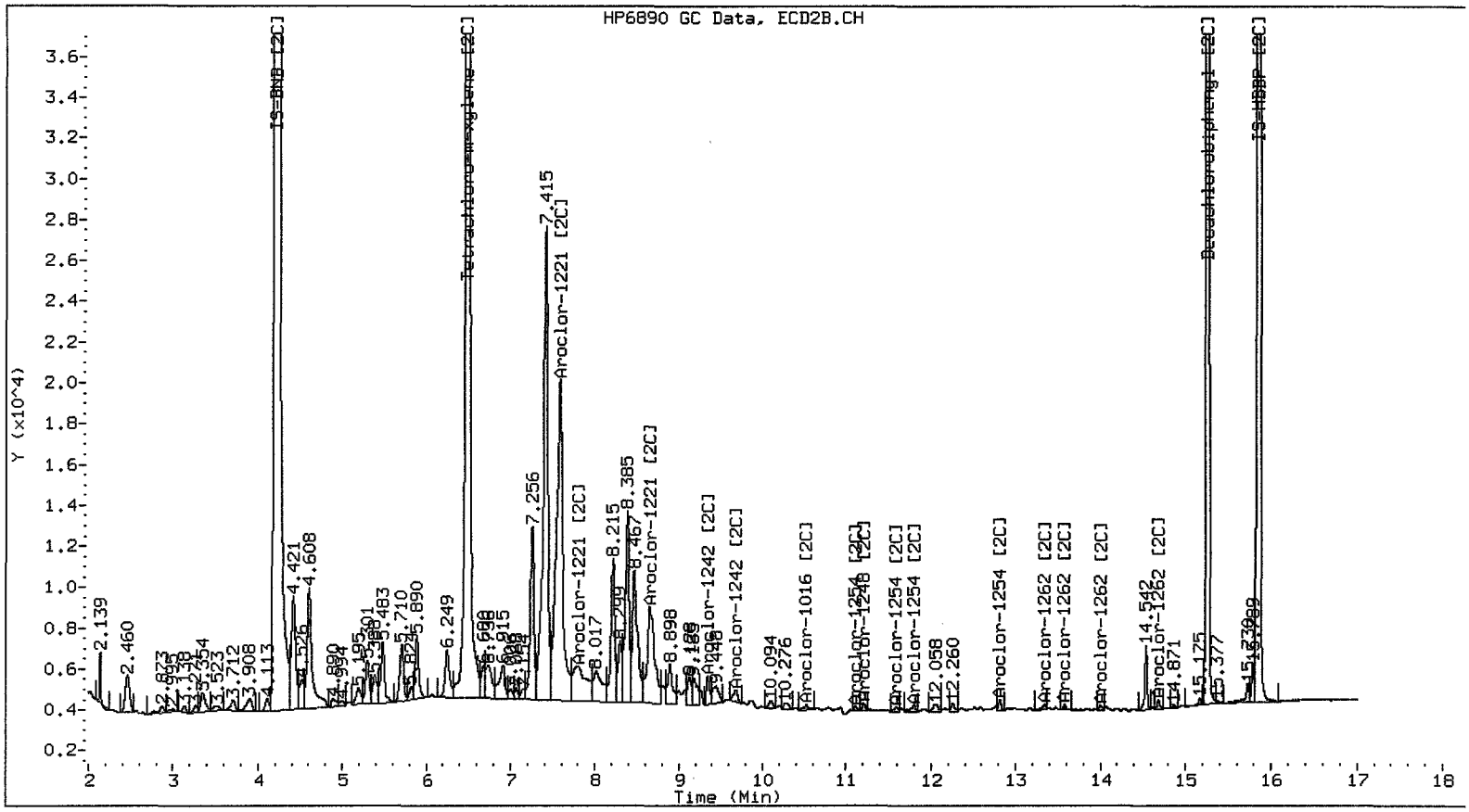

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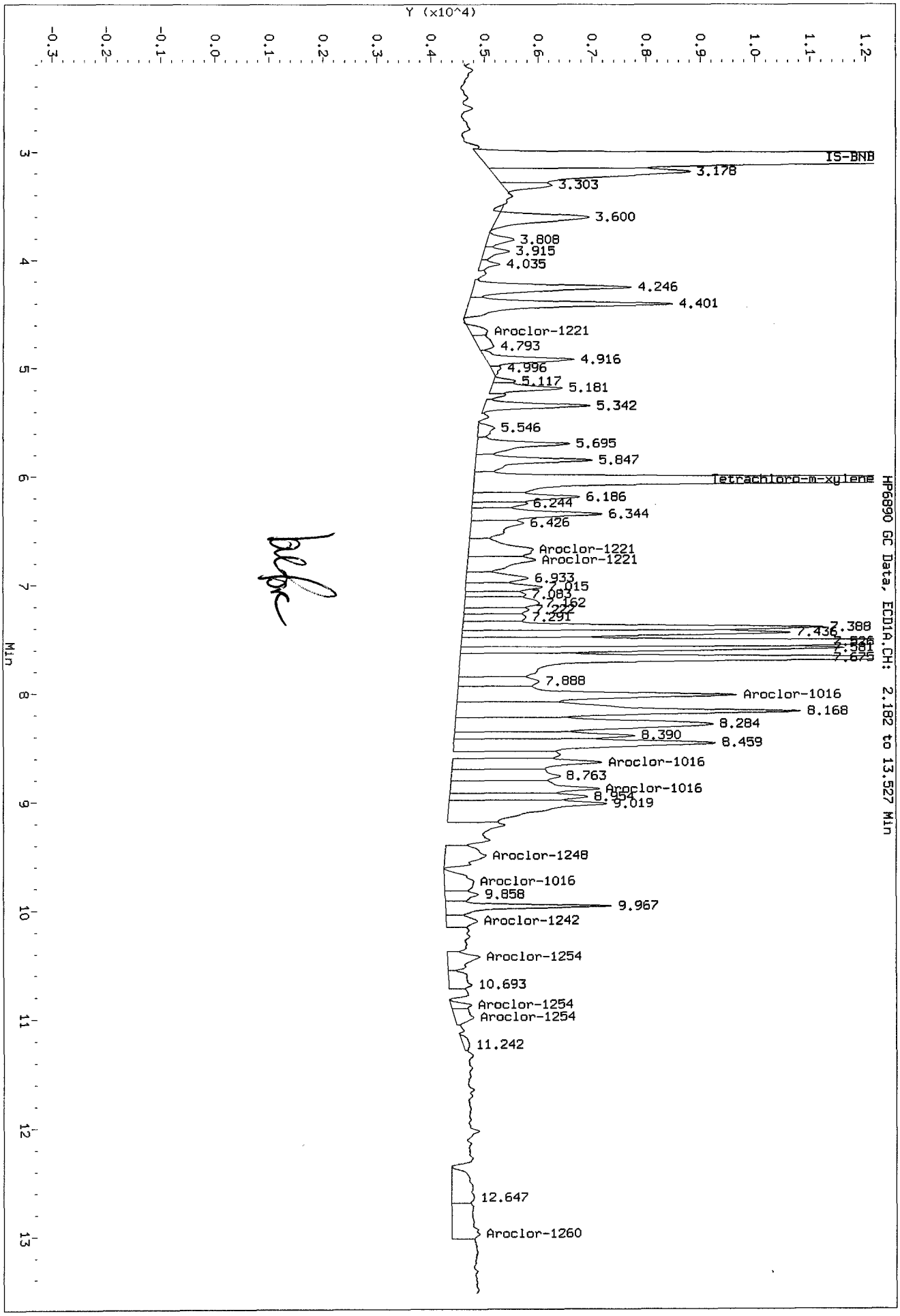
Injection Date: 26-MAR-2016 18:29
Instrument: ecd7.i
Client Sample ID:



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261620.D
Data file 2: /20160326.b/20160326.b/03261620.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8BMS
Client ID:
Injection Date: 26-MAR-2016 18:51
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	0.000	1787997	6.486	0.001	6258191	28.9	34.9	18.9	Tetrachloro-m-xyle
14.741	-0.000	6168635	15.259	0.000	5113554	39.6	33.9	15.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	72.1	87.2
Decachlorobiphenyl	99.0	84.8

A 03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	11437365	11.2
Hexabromobiphenyl	12470452	11675820	-6.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15477185	-2.1
Hexabromobiphenyl	11807823	11780098	-0.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.047	-0.001	600646	410.3	1	8.630	0.001	3615739	468.8
Aroclor-1016	2	8.558	-0.000	2008750	445.0	2	9.354	-0.001	6700078	422.0
Aroclor-1016	3	8.865	-0.001	700146	454.3	3	9.587	-0.001	2757348	435.1
Aroclor-1016	4	9.670	-0.001	705838	410.7	4	10.526	-0.000	1256461	430.2
Total Col1Ave (4 peaks):				430.1		Total Col2Ave (4 peaks):			439.0	RPD = 2
Corrected Ave (3 peaks):				422.0		Corrected Ave (3 peaks):			429.1	RPD = 2
Aroclor-1221	1	4.659	-0.055	47826	132.2	1	5.546	-0.039	155738	108.1
Aroclor-1221	2	6.696	0.006	187946	323.2	2	7.592	-0.032	2581714	1922.8
Aroclor-1221	3	6.818	0.002	490923	282.7	3	7.766	0.003	1883040	443.3
Aroclor-1221	NS	---			----	4	8.630	-0.013	3615739	2568.1
Total Col1Ave (3 peaks):				246.0		Total Col2Ave (4 peaks):			1260.6	RPD = 135*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			824.7	
Aroclor-1232	1	4.659	-0.055	47826	233.1	1	5.546	-0.040	155738	179.1
Aroclor-1232	2	6.696	0.005	187946	481.0	2	7.592	-0.031	2581714	3153.7
Aroclor-1232	3	6.818	0.003	490923	426.3	3	7.766	-0.085	1883040	4078.0
Aroclor-1232	4	8.558	0.004	2008750	1066.9	4	8.630	0.002	3615739	1007.4
Total Col1Ave (4 peaks):				551.8		Total Col2Ave (4 peaks):			2104.5	RPD = 117*
Corrected Ave (3 peaks):				380.1		Corrected Ave (3 peaks):			1446.7	RPD = 117*
Aroclor-1242	1	8.558	-0.001	2008750	571.3	1	8.630	-0.001	3615739	603.3
Aroclor-1242	2	8.865	-0.002	700146	542.4	2	9.354	-0.003	6700078	540.0
Aroclor-1242	3	9.670	-0.002	705838	432.5	3	9.781	-0.003	1718525	536.5
Aroclor-1242	4	10.072	-0.002	106613	90.4	4	10.878	-0.003	295043	68.4
Total Col1Ave (4 peaks):				409.2		Total Col2Ave (4 peaks):			437.1	RPD = 7
Corrected Ave (3 peaks):				355.1		Corrected Ave (3 peaks):			381.6	RPD = 7
Aroclor-1248	1	8.558	0.003	2008750	973.9	1	9.354	0.002	6700078	905.0
Aroclor-1248	2	9.478	-0.002	486239	316.6	2	9.882	0.000	1933229	354.3
Aroclor-1248	3	9.670	-0.001	705838	206.1	3	10.794	-0.002	347021	41.6
Aroclor-1248	4	10.072	-0.001	106613	55.6	4	11.241	-0.001	161437	19.4
Total Col1Ave (4 peaks):				413.0		Total Col2Ave (4 peaks):			330.1	RPD = 22
Corrected Ave (3 peaks):				226.1		Corrected Ave (3 peaks):			138.4	RPD = 48*
Aroclor-1254	1	10.466	0.001	377064	148.9	1	11.112	0.001	1452808	186.7
Aroclor-1254	2	---			0.0	2	11.241	0.031	161437	44.3
Aroclor-1254	3	10.851	0.001	87028	42.0	3	11.653	0.000	291157	49.8
Aroclor-1254	4	10.988	-0.001	431830	106.3	4	11.837	0.031	3391404	254.6
Aroclor-1254	5	11.324	-0.021	1122788	282.3	5	12.816	0.001	4550539	463.5
Total Col1Ave (4 peaks):				144.9		Total Col2Ave (5 peaks):			199.8	RPD = 32
Corrected Ave (3 peaks):				99.1		Corrected Ave (4 peaks):			133.8	RPD = 30
Aroclor-1260	1	12.259	0.000	1308736	461.5	1	12.816	0.002	4550539	418.9
Aroclor-1260	2	12.940	-0.001	4948155	458.5	2	13.580	0.000	9124394	433.2
Aroclor-1260	3	13.327	-0.000	2277987	491.6	3	14.074	-0.000	5858578	421.2
Aroclor-1260	4	13.429	-0.000	1401045	486.6	4	14.624	0.000	2342796	439.2
Aroclor-1260	5	13.841	-0.001	805674	479.1	NS	---			----
Total Col1Ave (5 peaks):				475.5		Total Col2Ave (4 peaks):			428.1	RPD = 10
Corrected Ave (4 peaks):				471.4		Corrected Ave (3 peaks):			424.4	RPD = 10
Aroclor-1262	1	12.259	-0.001	1308736	346.4	1	12.904	-0.001	3819741	318.9
Aroclor-1262	2	12.940	-0.001	4948155	446.7	2	13.348	-0.001	4381081	395.7
Aroclor-1262	3	13.327	-0.003	2277987	648.9	3	13.580	-0.001	9124394	403.9
Aroclor-1262	4	13.429	-0.001	1401045	264.8	4	14.074	-0.002	5858578	398.6
Aroclor-1262	5	14.054	-0.001	2093539	352.3	5	14.624	-0.001	2342796	311.0
Total Col1Ave (5 peaks):				411.8		Total Col2Ave (5 peaks):			365.6	RPD = 12
Corrected Ave (4 peaks):				352.5		Corrected Ave (4 peaks):			356.1	RPD = 1
Aroclor-1268	1	13.429	-0.001	1401045	91.0	1	14.023	0.001	2613158	111.2
Aroclor-1268	2	13.494	-0.000	1895893	99.3	2	14.074	-0.002	5858578	266.7
Aroclor-1268	3	13.841	0.013	805674	46.6	3	14.387	-0.001	95353	5.4

428.1

Aroclor-1268	4	14.443	-0.003	477775	7.6	4	14.972	-0.001	494981	9.8

Total Col1Ave (4 peaks): 61.2 Total Col2Ave (4 peaks): 98.3 RPD = 47*

Corrected Ave (3 peaks): 48.4 Corrected Ave (3 peaks): 42.2 RPD = 14

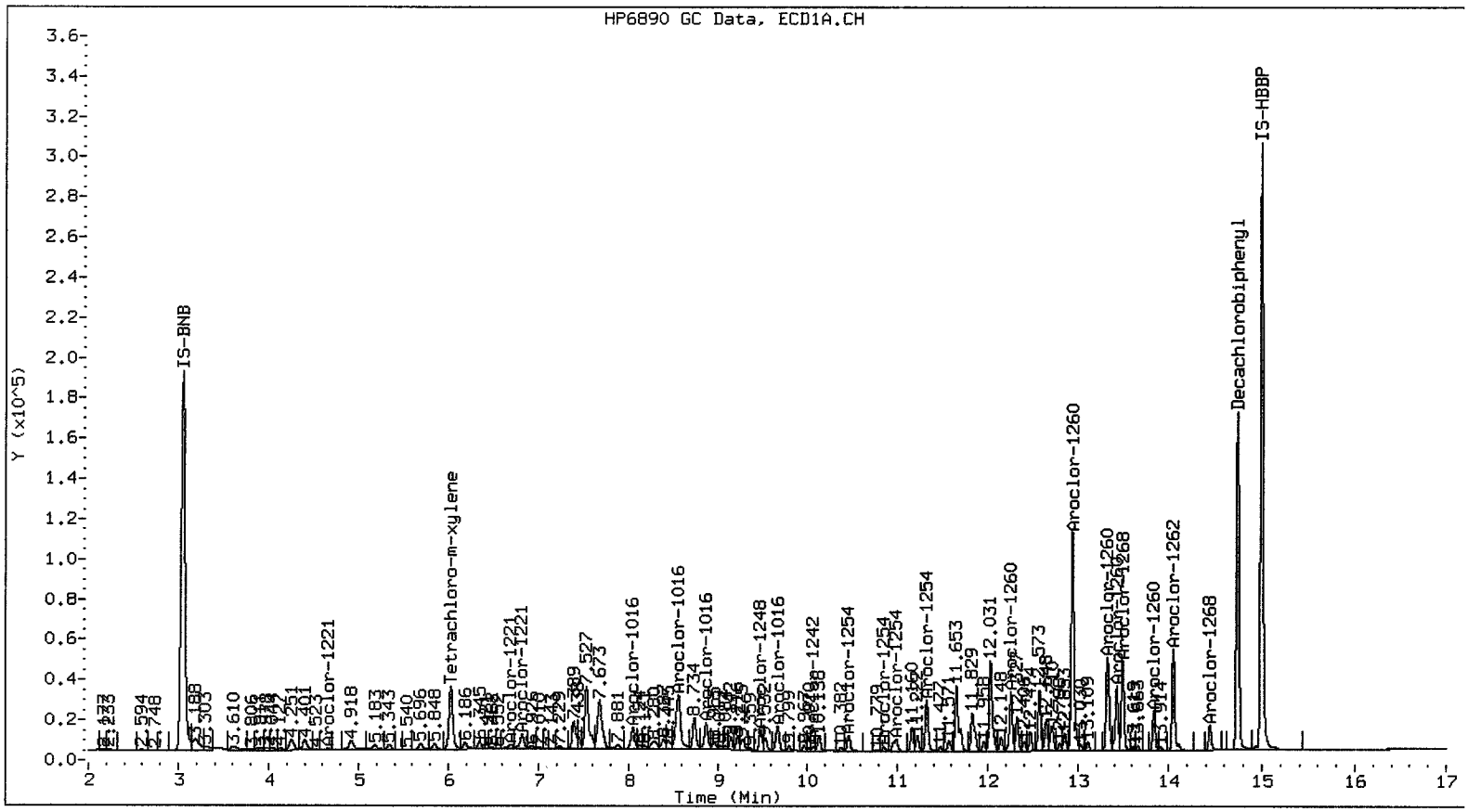
Total PCB Area Col1 (6.128 - 14.642) = 44247451 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 119789678 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8BMS 26-MAR-2016 18:51, 2ul



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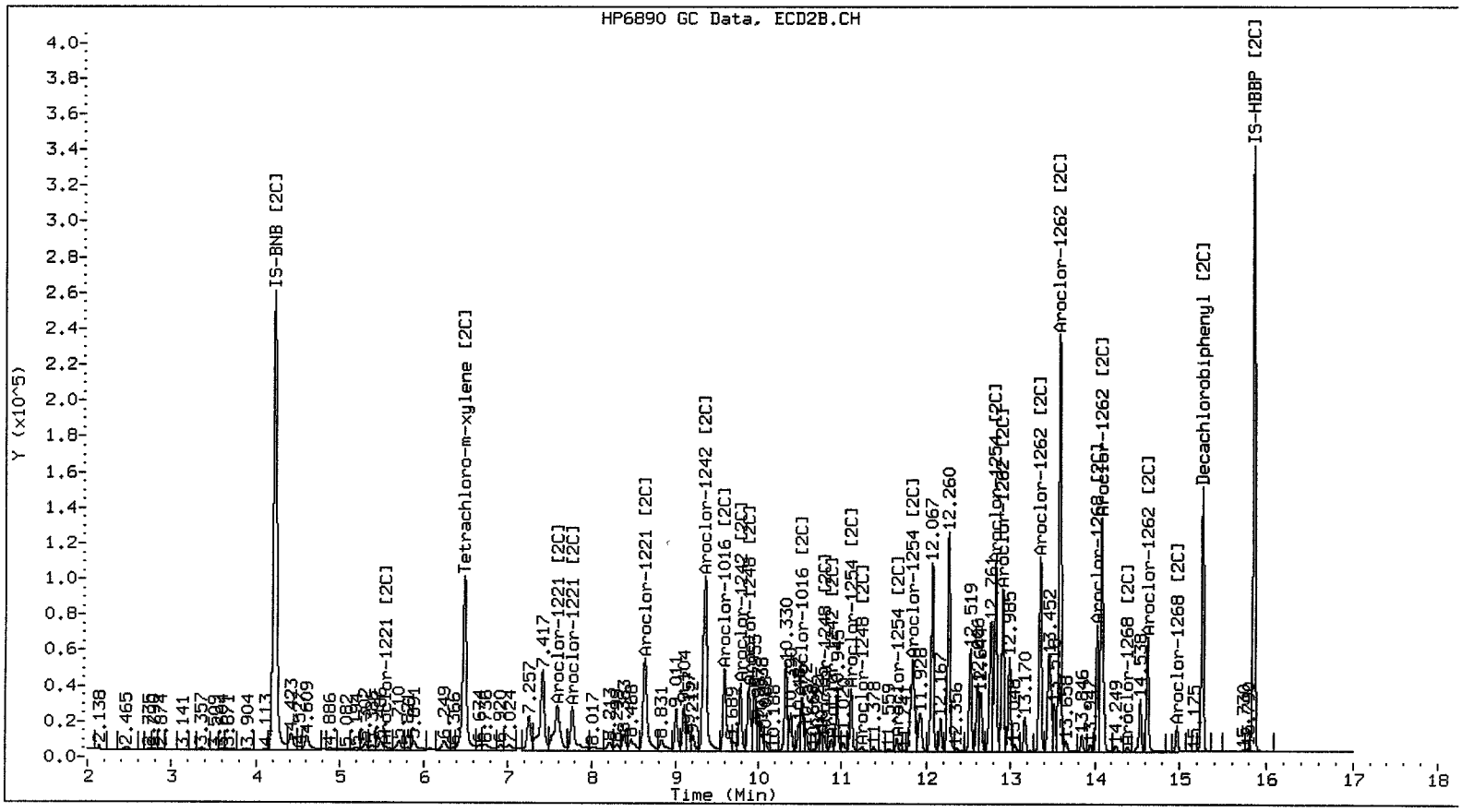

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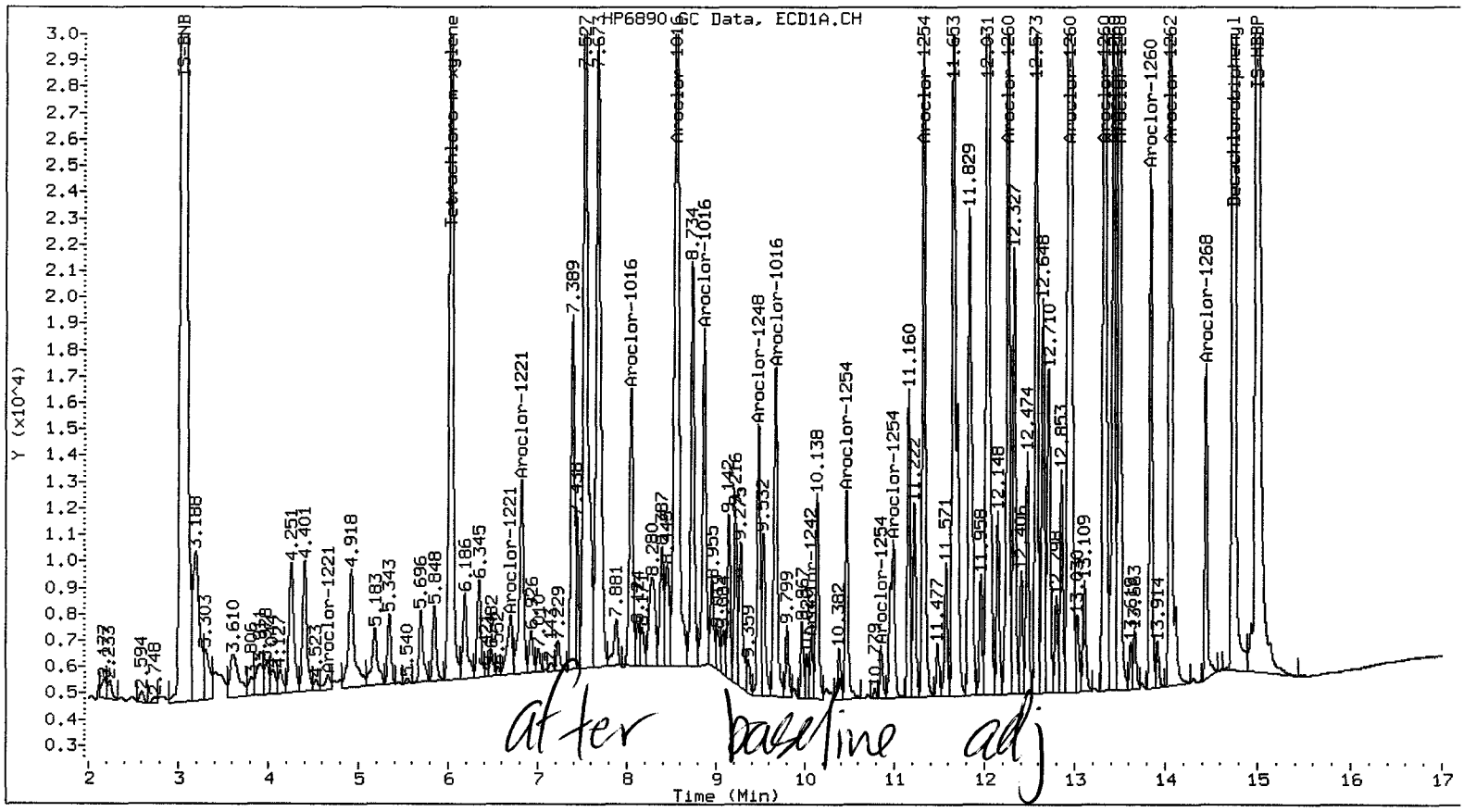

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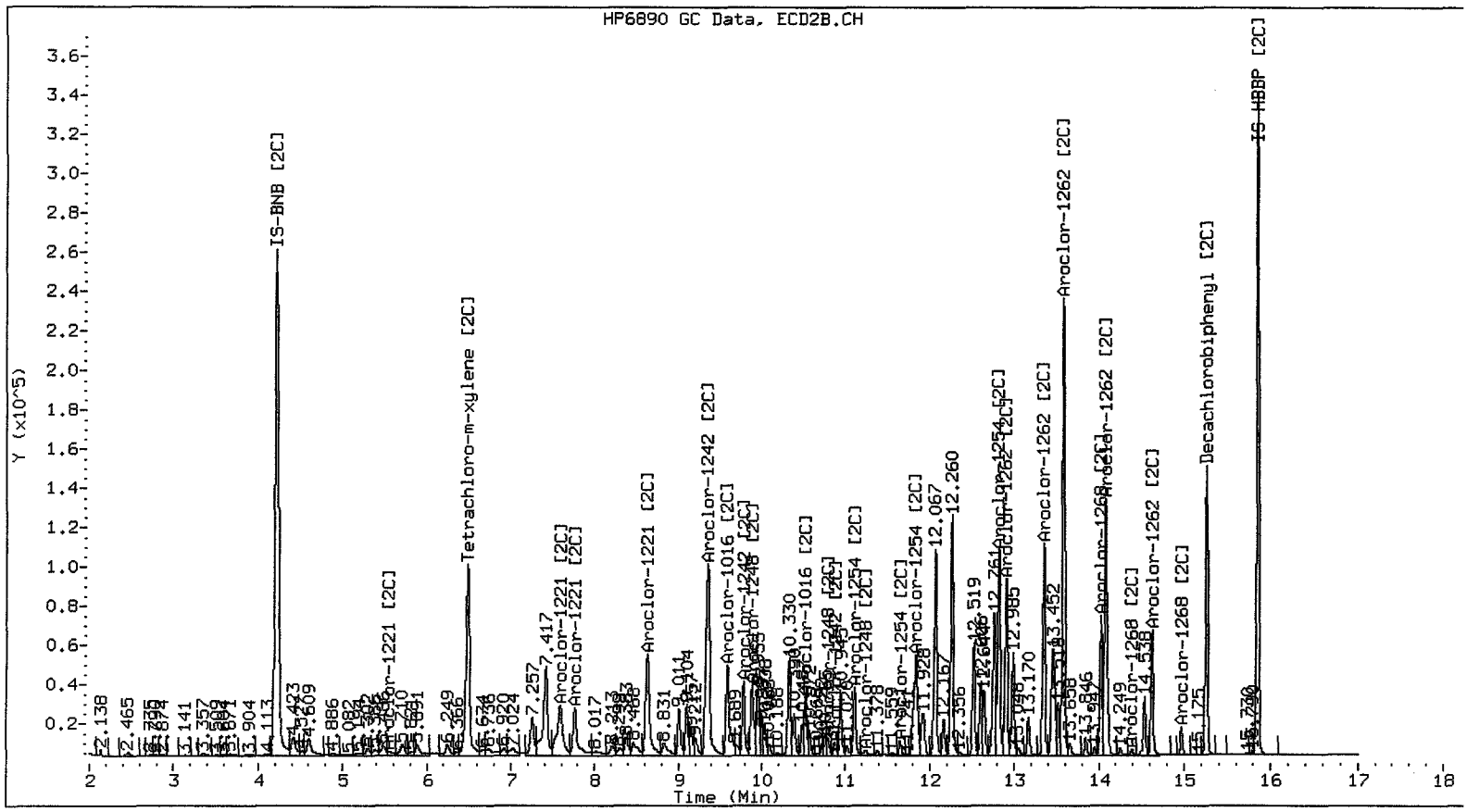

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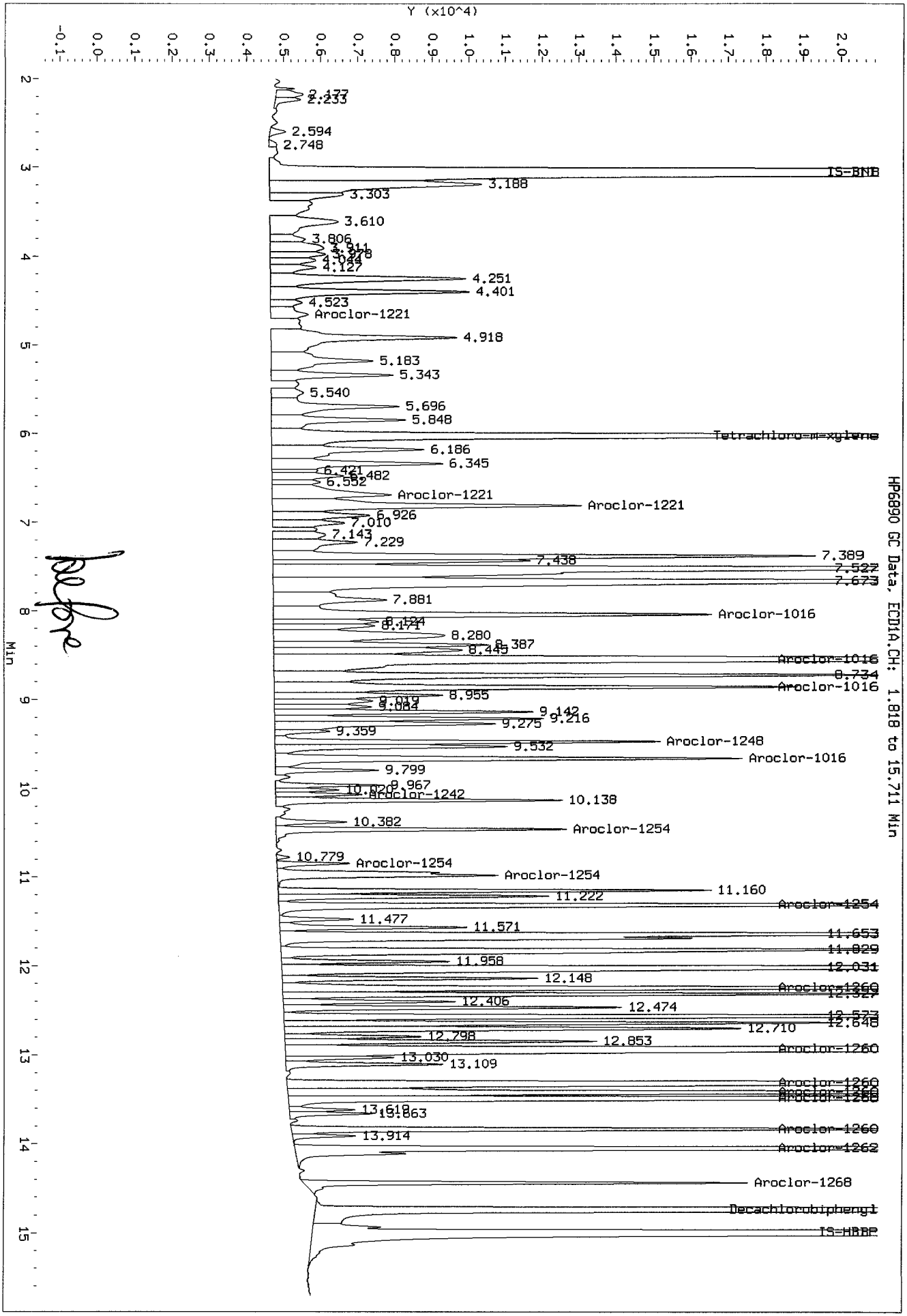
Instrument: ecd7.i
Client Sample ID:



before

AXS8 : 00240

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

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Data file 2: /20160326.b/20160326.b/03261621.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8BMSD
Client ID:
Injection Date: 26-MAR-2016 19:13
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	-0.000	1900805	6.486	0.000	6386806	32.2	37.0	13.8	Tetrachloro-m-xyle
14.742	-0.000	6227810	15.259	0.000	5237102	42.5	35.2	18.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	80.4	92.4
Decachlorobiphenyl	106.4	88.1

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10905791	6.0
Hexabromobiphenyl	12470452	10966646	-12.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	14908595	-5.7
Hexabromobiphenyl	11807823	11619654	-1.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.042	-0.006	968232	693.6	1	8.630	0.001	4142721	557.6
Aroclor-1016	2	8.557	-0.002	1872969	435.2	2	9.353	-0.002	6876879	449.6
Aroclor-1016	3	8.865	-0.000	697381	474.6	3	9.586	-0.002	2851471	467.1
Aroclor-1016	4	9.671	0.000	686071	418.7	4	10.525	-0.001	1273453	449.1
Total Col1Ave (4 peaks):				505.5		Total Col2Ave (4 peaks):			480.9	RPD = 5
Corrected Ave (3 peaks):				442.8		Corrected Ave (3 peaks):			455.3	RPD = 3
Aroclor-1221	1	4.725	0.010	22215	64.4	1	5.551	-0.035	203496	146.6
Aroclor-1221	2	6.697	0.007	213981	385.9	2	7.588	-0.035	3837165	2966.9
Aroclor-1221	3	6.816	0.001	525177	317.1	3	7.766	0.003	2000092	488.8
Aroclor-1221	NS	---			----	4	8.630	-0.013	4142721	3054.6
Total Col1Ave (3 peaks):				255.8		Total Col2Ave (4 peaks):			1664.2	RPD = 147*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			1200.7	
Aroclor-1232	1	4.725	0.010	22215	113.5	1	5.551	-0.035	203496	243.0
Aroclor-1232	2	6.697	0.007	213981	574.3	2	7.588	-0.035	3837165	4866.0
Aroclor-1232	3	6.816	0.001	525177	478.2	3	7.766	-0.086	2000092	4496.7
Aroclor-1232	4	8.557	0.003	1872969	1043.3	4	8.630	0.003	4142721	1198.3
Total Col1Ave (4 peaks):				552.3		Total Col2Ave (4 peaks):			2701.0	RPD = 132*
Corrected Ave (3 peaks):				388.7		Corrected Ave (3 peaks):			1979.3	RPD = 134*
Aroclor-1242	1	8.557	-0.002	1872969	558.7	1	8.630	-0.001	4142721	717.6
Aroclor-1242	2	8.865	-0.002	697381	566.6	2	9.353	-0.004	6876879	575.4
Aroclor-1242	3	9.671	-0.001	686071	440.9	3	9.780	-0.004	1760975	570.8
Aroclor-1242	4	10.072	-0.001	97589	86.8	4	10.876	-0.004	284592	68.5
Total Col1Ave (4 peaks):				413.2		Total Col2Ave (4 peaks):			483.1	RPD = 16
Corrected Ave (3 peaks):				362.1		Corrected Ave (3 peaks):			404.9	RPD = 11
Aroclor-1248	1	8.557	0.001	1872969	952.3	1	9.353	0.001	6876879	964.3
Aroclor-1248	2	9.479	-0.000	504518	344.5	2	9.881	-0.001	1935140	368.2
Aroclor-1248	3	9.671	0.001	686071	312.1	3	10.793	-0.003	376111	46.8
Aroclor-1248	4	10.072	-0.000	97589	53.4	4	11.239	-0.002	171567	21.4
Total Col1Ave (4 peaks):				415.5		Total Col2Ave (4 peaks):			350.2	RPD = 17
Corrected Ave (3 peaks):				236.6		Corrected Ave (3 peaks):			145.5	RPD = 48*
Aroclor-1254	1	10.465	0.001	376093	155.8	1	11.111	-0.000	1424741	190.1
Aroclor-1254	2	---			0.0	2	11.239	0.029	171567	48.9
Aroclor-1254	3	10.851	0.001	98217	49.8	3	11.652	-0.001	295019	52.4
Aroclor-1254	4	10.987	-0.002	493825	127.5	4	11.837	0.031	3334187	259.8
Aroclor-1254	5	11.324	-0.021	1199795	316.4	5	12.816	0.000	4629846	489.6
Total Col1Ave (4 peaks):				162.4		Total Col2Ave (5 peaks):			208.1	RPD = 25
Corrected Ave (3 peaks):				111.0		Corrected Ave (4 peaks):			137.8	RPD = 22
Aroclor-1260	1	12.258	-0.001	1347719	506.0	1	12.816	0.002	4629846	432.1
Aroclor-1260	2	12.939	-0.002	5107526	503.9	2	13.579	-0.000	9320220	448.6
Aroclor-1260	3	13.327	-0.001	2339563	537.5	3	14.073	-0.001	6016998	438.5
Aroclor-1260	4	13.429	-0.000	1443501	533.8	4	14.623	-0.001	2371104	450.7
Aroclor-1260	5	13.841	-0.001	833836	527.9	NS	---			----
Total Col1Ave (5 peaks):				521.8		Total Col2Ave (4 peaks):			442.5	RPD = 16
Corrected Ave (4 peaks):				517.9		Corrected Ave (3 peaks):			439.7	RPD = 16
Aroclor-1262	1	12.258	-0.002	1347719	379.8	1	12.904	-0.001	3870037	327.5
Aroclor-1262	2	12.939	-0.001	5107526	490.9	2	13.347	-0.001	4461747	408.6
Aroclor-1262	3	13.327	-0.003	2339563	709.6	3	13.579	-0.001	9320220	418.3
Aroclor-1262	4	13.429	-0.001	1443501	290.5	4	14.073	-0.002	6016998	415.1
Aroclor-1262	5	14.054	-0.002	2147647	384.7	5	14.623	-0.002	2371104	319.1
Total Col1Ave (5 peaks):				451.1		Total Col2Ave (5 peaks):			377.7	RPD = 18
Corrected Ave (4 peaks):				386.5		Corrected Ave (4 peaks):			367.6	RPD = 5
Aroclor-1268	1	13.429	-0.002	1443501	99.8	1	14.022	0.001	2693442	116.3
Aroclor-1268	2	13.494	-0.001	1960487	109.3	2	14.073	-0.003	6016998	277.7
Aroclor-1268	3	13.841	0.013	833836	51.4	3	14.387	-0.001	100357	5.8

Aroclor-1268	4	14.444	-0.002	489033	8.3	4	14.972	-0.002	503304	10.1

Total Col1Ave (4 peaks): 67.2 Total Col2Ave (4 peaks): 102.5 RPD = 42*

Corrected Ave (3 peaks): 53.2 Corrected Ave (3 peaks): 44.0 RPD = 19

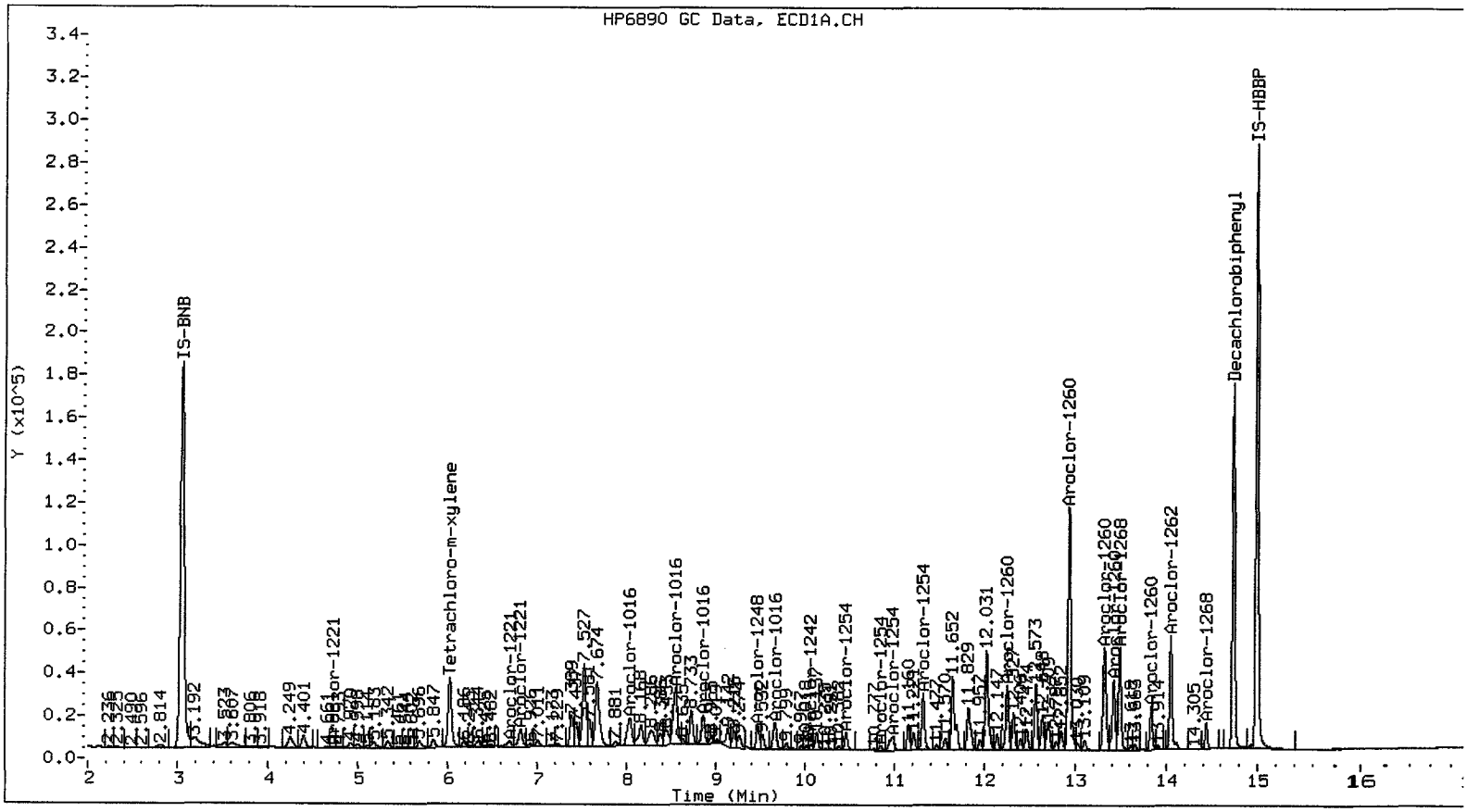
Total PCB Area Col1 (6.128 - 14.642) = 48644749 Col1 Total PCB = 1.1 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 126093760 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8BMSD 26-MAR-2016 19:13, 2ul



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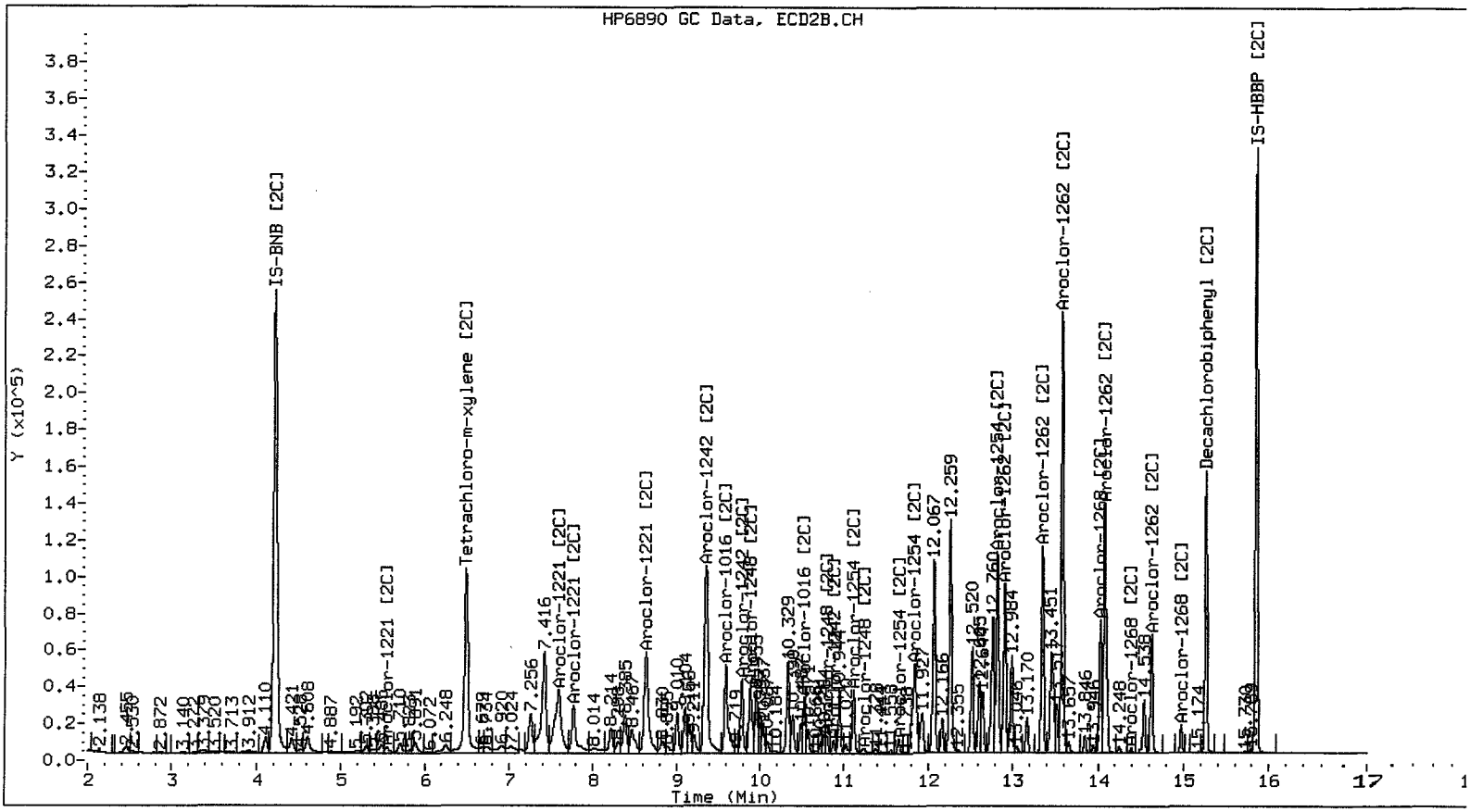

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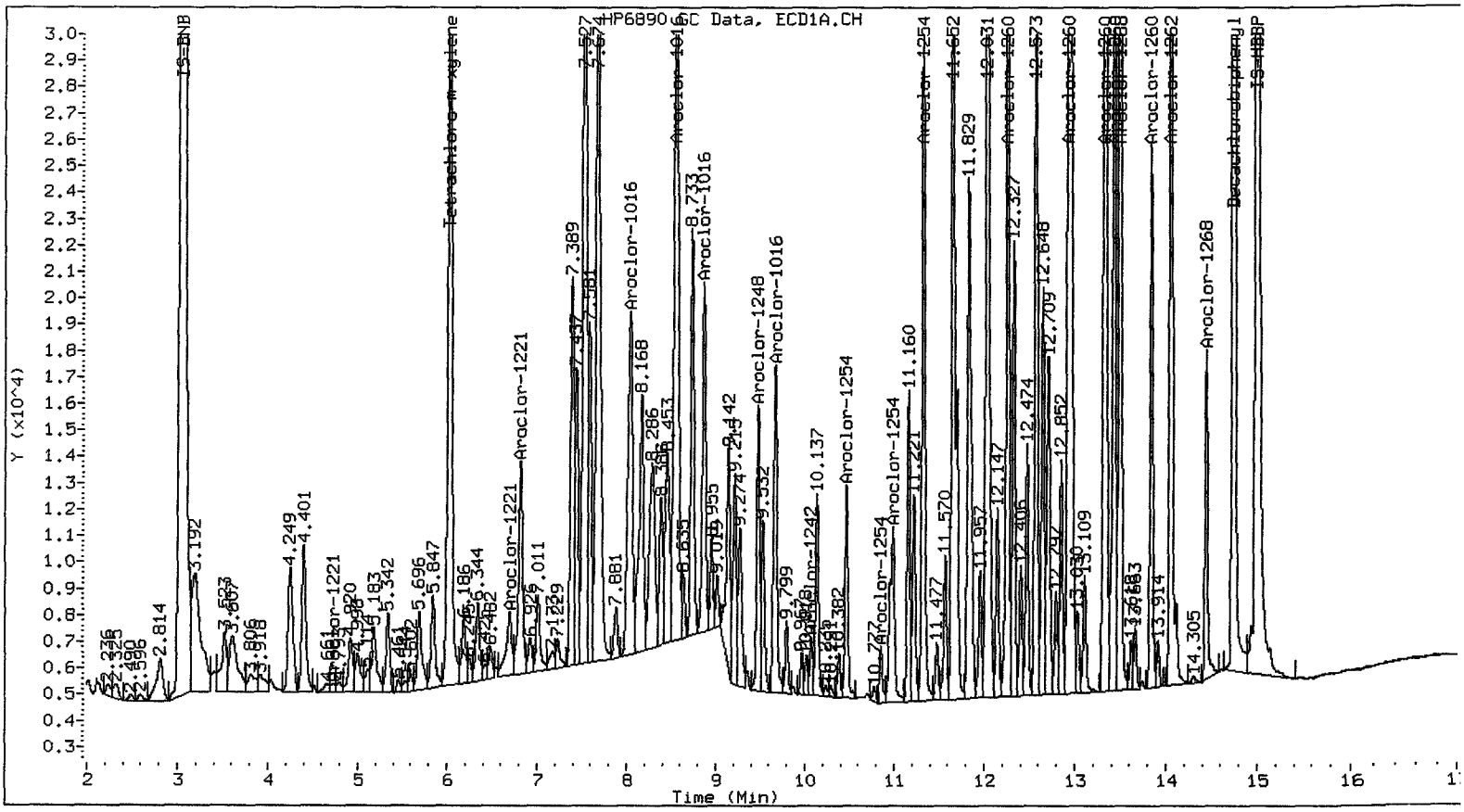

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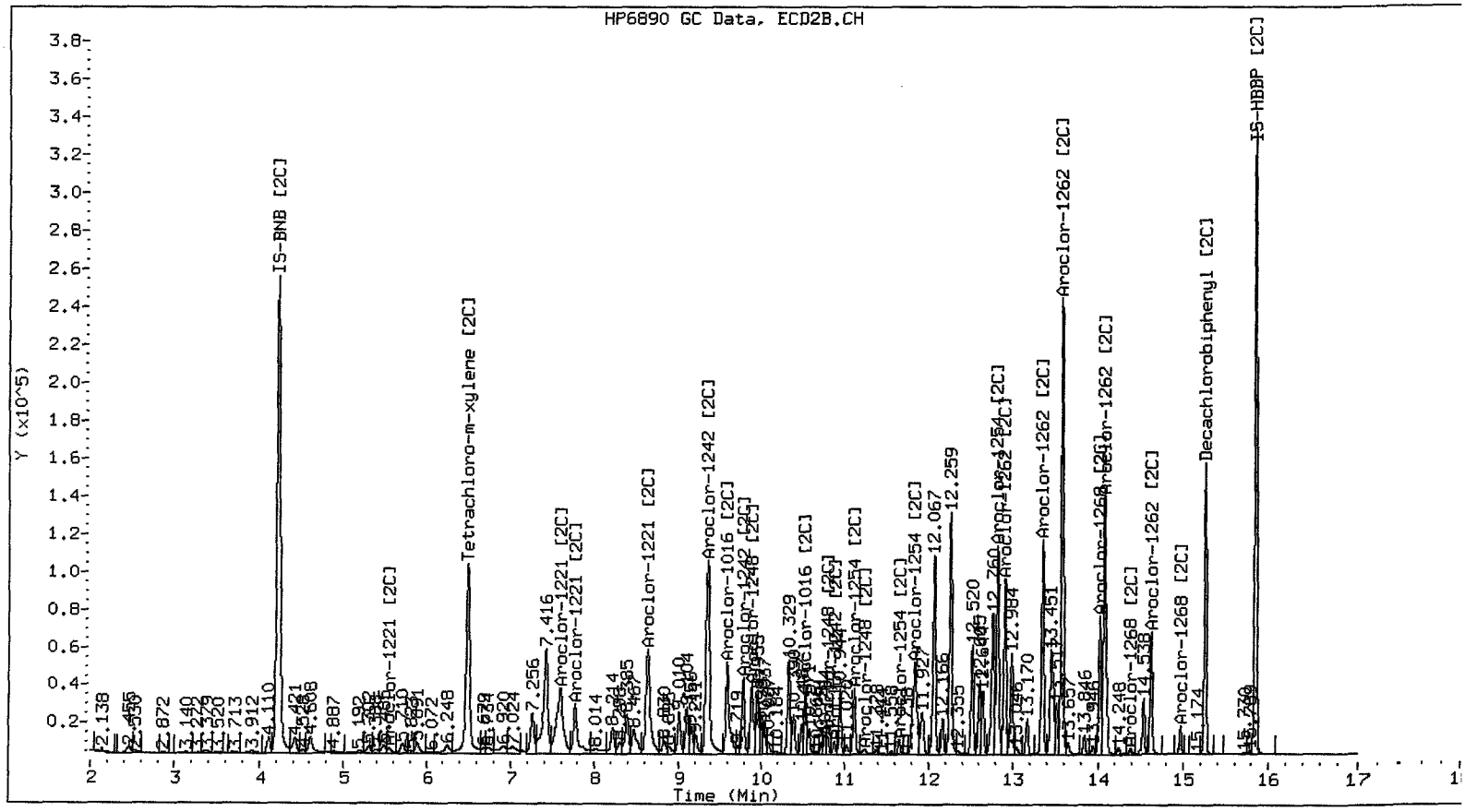

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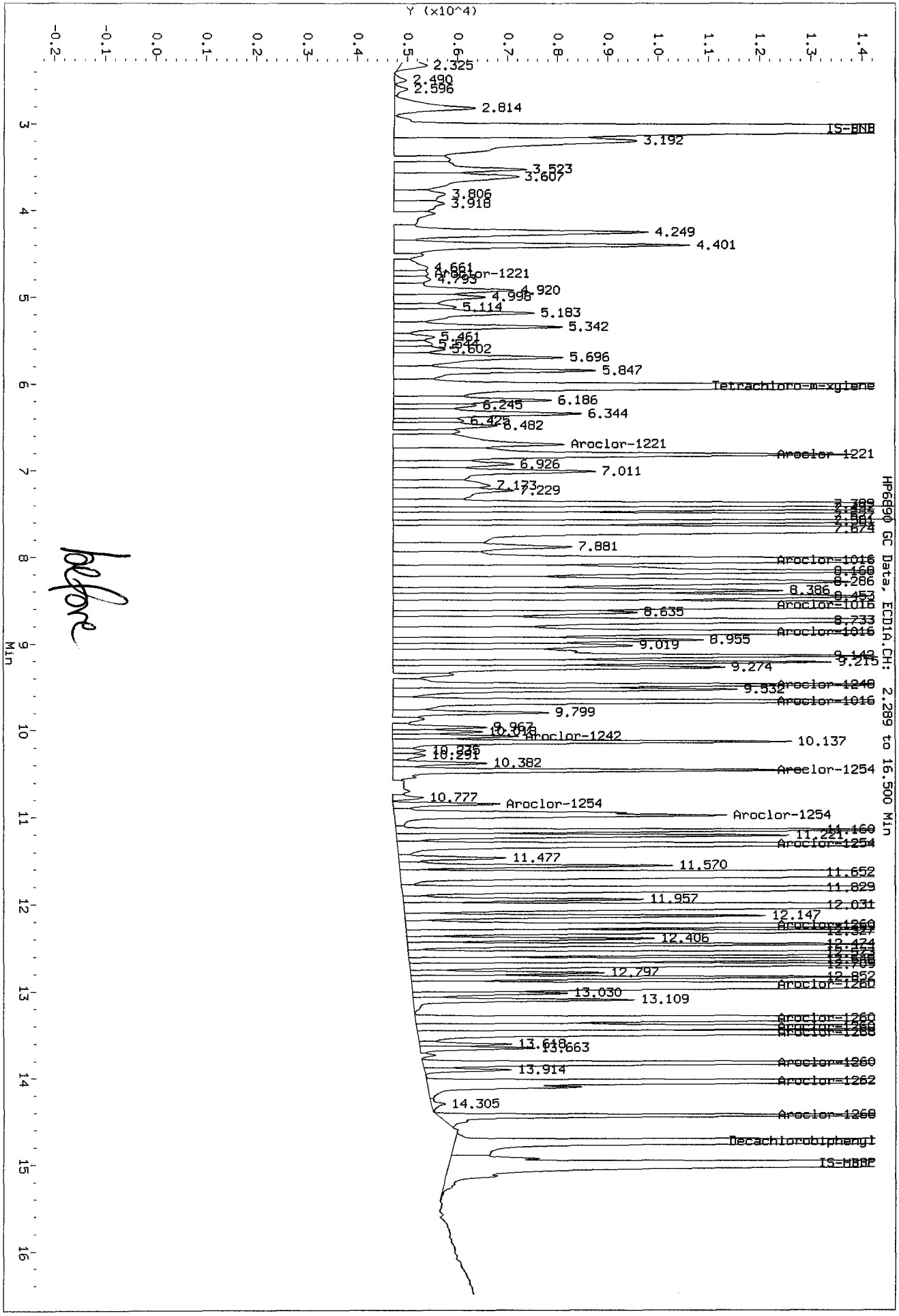
Instrument: ecd7.i
Client Sample ID:



before

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

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Data file 2: /20160326.b/20160326.b/03261622.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AXS8C
Client ID:
Injection Date: 26-MAR-2016 19:35
Report Date: 03/28/2016 13:50
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.027	-0.001	1750869	6.485	-0.000	5532187	30.3	30.9	2.0	Tetrachloro-m-xyle
14.741	-0.000	6535424	15.260	0.001	5469288	40.0	34.8	13.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	75.8	77.3
Decachlorobiphenyl	100.0	86.9

03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	10664010	3.7
Hexabromobiphenyl	12470452	12243877	-1.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	15437266	-2.3
Hexabromobiphenyl	11807823	12291386	4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.044	-0.004	249999	183.1	1	8.628	-0.001	1279144	166.3
Aroclor-1016	2	8.554	-0.005	393761	93.6	2	9.351	-0.004	1440204	90.9
Aroclor-1016	3	8.865	-0.000	113869	79.3	3	9.587	-0.001	185121	29.3
Aroclor-1016	4	9.664	-0.007	180430	112.6	4	10.525	-0.001	346321	118.0
Total Col1Ave (4 peaks):				117.1		Total Col2Ave (4 peaks):			101.1	RPD = 15
Corrected Ave (3 peaks):				95.1		Corrected Ave (3 peaks):			79.4	RPD = 18
Aroclor-1221	1	---			0.0	1	5.549	-0.036	44884	31.2
Aroclor-1221	2	6.694	0.004	123541	227.9	2	7.625	0.002	402838	300.8
Aroclor-1221	3	6.817	0.002	142642	88.1	3	7.766	0.003	386500	91.2
Aroclor-1221	NS	---			----	4	8.628	-0.015	1279144	910.9
Col1Ave: <3 Quant Peaks						Col2Ave:			333.5	
Aroclor-1232	1	---			0.0	1	5.549	-0.037	44884	51.8
Aroclor-1232	2	6.694	0.003	123541	339.1	2	7.625	0.002	402838	493.4
Aroclor-1232	3	6.817	0.002	142642	132.8	3	7.766	-0.086	386500	839.2
Aroclor-1232	4	8.554	-0.001	393761	224.3	4	8.628	0.000	1279144	357.3
Total Col1Ave (3 peaks):				232.1		Total Col2Ave (4 peaks):			435.4	RPD = 61*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			300.8	
Aroclor-1242	1	8.554	-0.006	393761	120.1	1	8.628	-0.003	1279144	214.0
Aroclor-1242	2	8.865	-0.001	113869	94.6	2	9.351	-0.006	1440204	116.4
Aroclor-1242	3	9.664	-0.008	180430	118.6	3	9.781	-0.003	212235	66.4
Aroclor-1242	4	10.071	-0.002	85970	78.2	4	10.877	-0.003	206483	48.0
Total Col1Ave (4 peaks):				102.9		Total Col2Ave (4 peaks):			111.2	RPD = 8
Corrected Ave (3 peaks):				97.1		Corrected Ave (3 peaks):			76.9	RPD = 23
Aroclor-1248	1	8.554	-0.002	393761	204.7	1	9.351	-0.001	1440204	195.0
Aroclor-1248	2	9.478	-0.001	224724	156.9	2	9.881	-0.001	1474901	271.0
Aroclor-1248	3	9.664	-0.006	180430	83.9	3	10.796	-0.000	422115	50.8
Aroclor-1248	4	10.071	-0.001	85970	48.1	4	11.211	-0.030	238948	28.8
Total Col1Ave (4 peaks):				123.4		Total Col2Ave (4 peaks):			136.4	RPD = 10
Corrected Ave (3 peaks):				96.3		Corrected Ave (3 peaks):			91.5	RPD = 5
Aroclor-1254	1	10.462	-0.003	129772	55.0	1	11.112	0.001	352354	45.4
Aroclor-1254	2	10.545	0.000	44671	56.8	2	11.211	0.001	238948	65.7
Aroclor-1254	3	10.849	-0.000	62400	32.3	3	11.652	-0.000	181025	31.1
Aroclor-1254	4	10.989	0.000	171792	45.4	4	11.805	-0.000	595164	44.8
Aroclor-1254	5	11.342	-0.002	147118	39.7	5	12.816	0.001	325347	33.2
Total Col1Ave (5 peaks):				45.8		Total Col2Ave (5 peaks):			44.0	RPD = 4
Corrected Ave (4 peaks):				43.1		Corrected Ave (4 peaks):			38.6	RPD = 11
Aroclor-1260	1	12.259	0.000	25705	8.6	1	12.816	0.002	325347	28.7
Aroclor-1260	2	12.939	-0.001	77316	6.8	2	13.581	0.001	143123	6.5
Aroclor-1260	3	13.326	-0.001	42329	8.7	3	14.074	-0.000	100880	7.0
Aroclor-1260	4	13.430	0.001	15643	5.2	4	14.623	-0.001	28796	5.2
Aroclor-1260	5	13.844	0.003	13120	7.4	NS	---			----
Total Col1Ave (5 peaks):				7.4		Total Col2Ave (4 peaks):			11.8	RPD = 47*
Corrected Ave (4 peaks):				7.0		Corrected Ave (3 peaks):			6.2	RPD = 12
Aroclor-1262	1	12.259	-0.001	25705	6.5	1	12.904	-0.000	68240	5.5
Aroclor-1262	2	12.939	-0.001	77316	6.7	2	13.349	0.001	158107	13.7
Aroclor-1262	3	13.326	-0.003	42329	11.5	3	13.581	0.000	143123	6.1
Aroclor-1262	4	13.430	-0.000	15643	2.8	4	14.074	-0.002	100880	6.6
Aroclor-1262	5	14.055	-0.000	30282	4.9	5	14.623	-0.002	28796	3.7
Total Col1Ave (5 peaks):				6.5		Total Col2Ave (5 peaks):			7.1	RPD = 9
Corrected Ave (4 peaks):				5.2		Corrected Ave (4 peaks):			5.4	RPD = 4
Aroclor-1268	1	13.430	-0.001	15643	1.0	1	14.021	-0.000	51874	2.1
Aroclor-1268	2	13.494	-0.000	19883	1.0	2	14.074	-0.002	100880	4.4
Aroclor-1268	3	13.844	0.017	13120	0.7	3	14.463	0.075	11836	0.6
Aroclor-1268	4	---			0.0	4	14.963	-0.010	25056	0.5

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Total Col1Ave (3 peaks): 0.9 Total Col2Ave (4 peaks): 1.9 RPD = 72*
Corrected Ave: < 3 Peaks Corrected Ave (3 peaks): 1.1

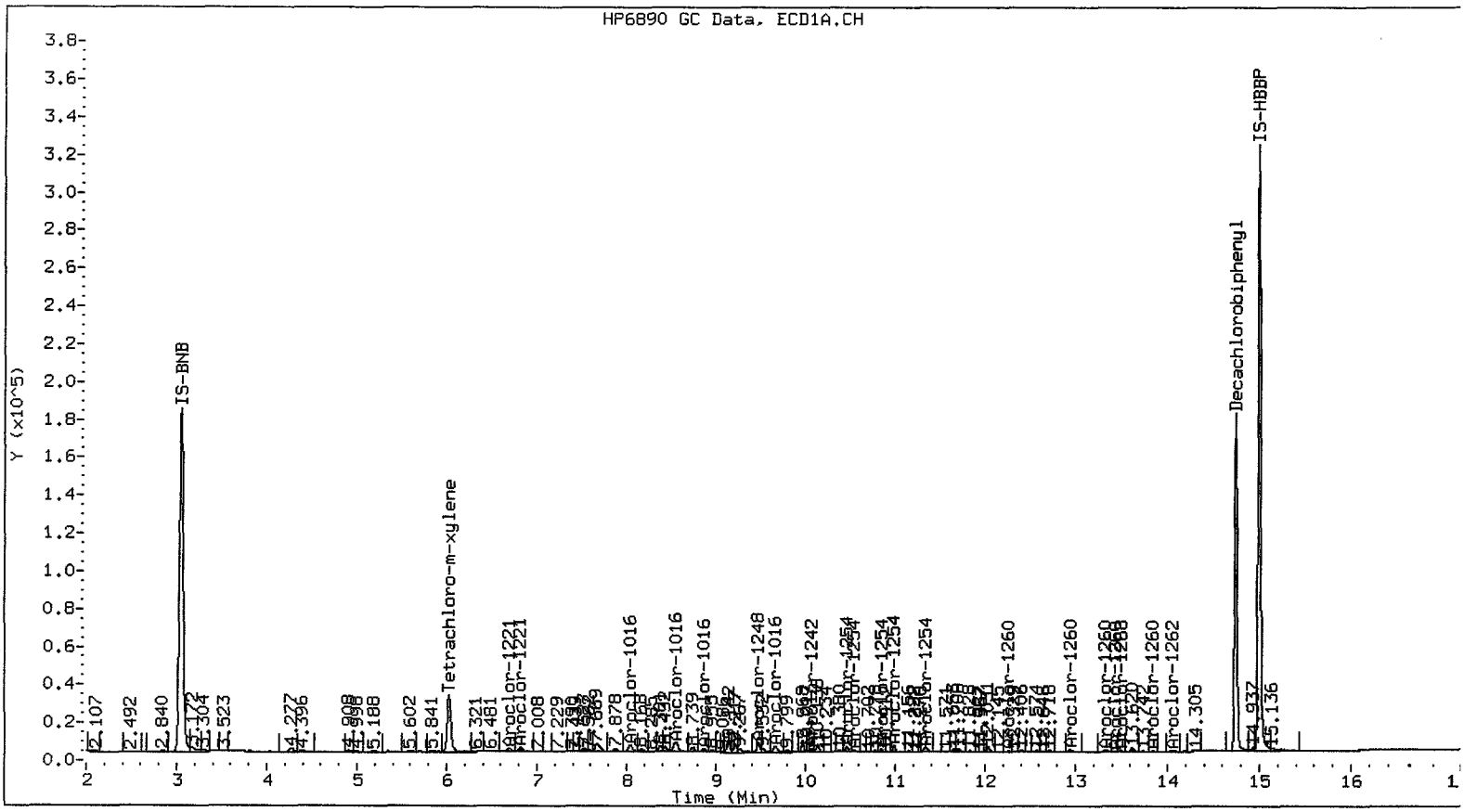
Total PCB Area Col1 (6.128 - 14.642) = 5693285 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 23086978 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AXS8C 26-MAR-2016 19:35, 2ul



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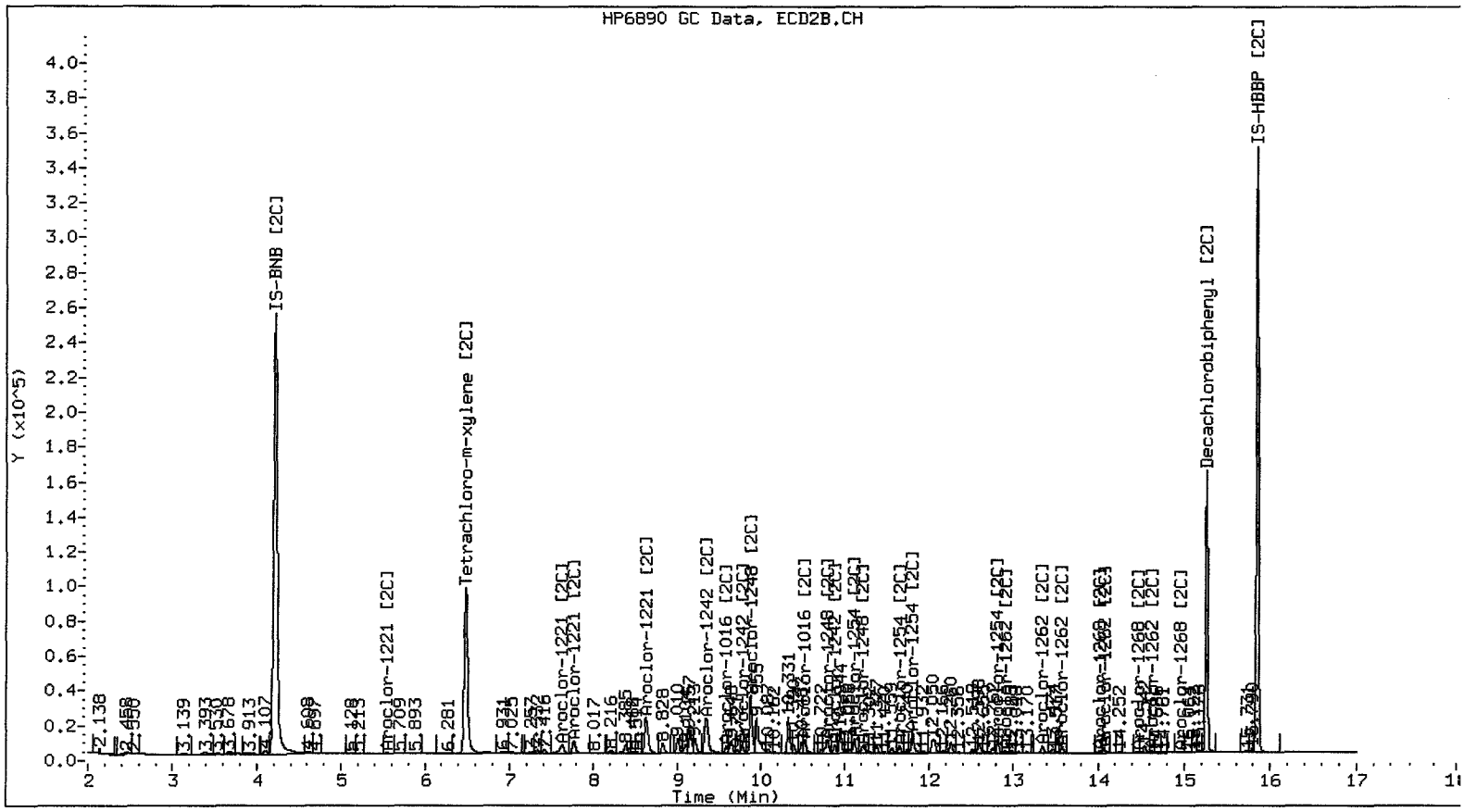
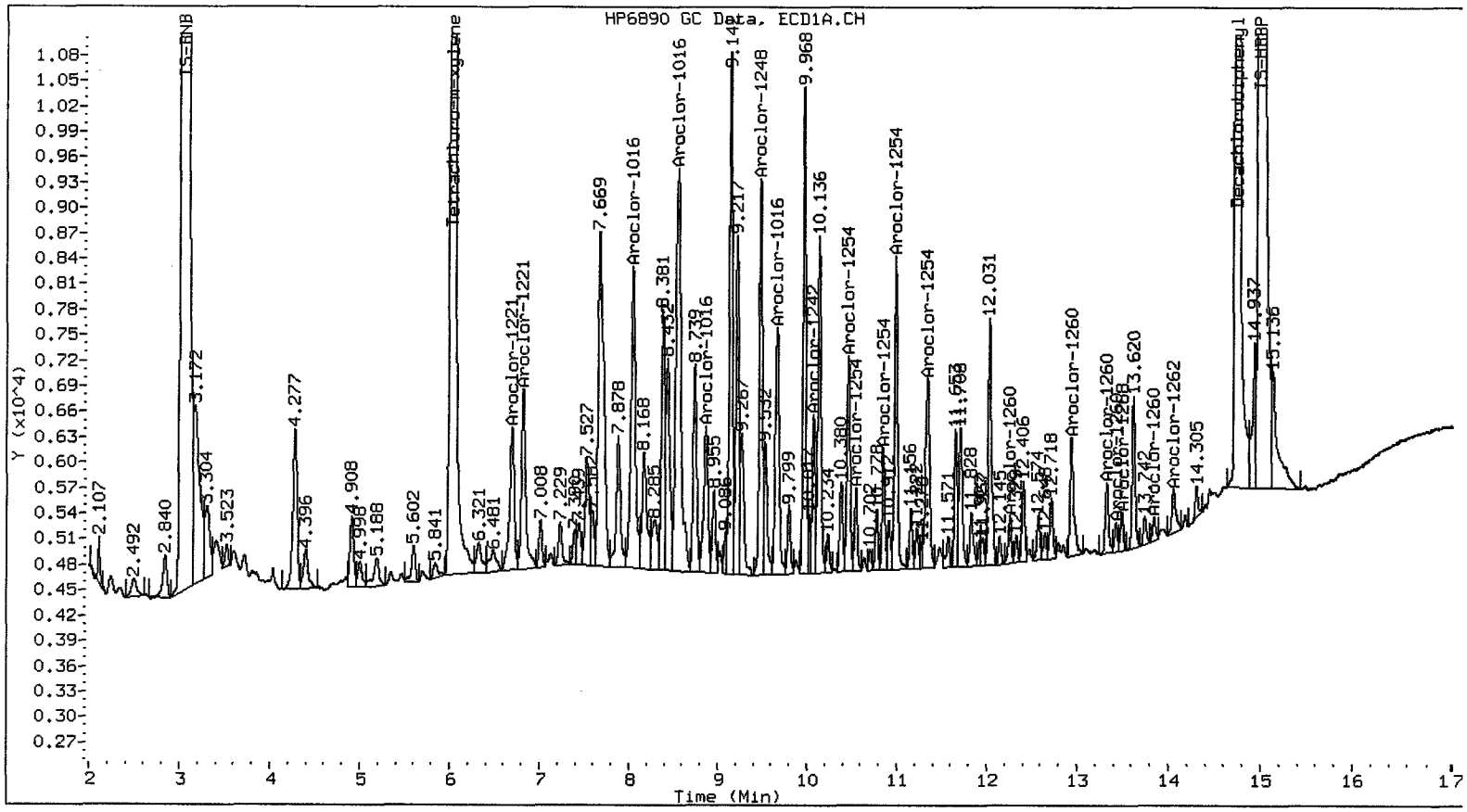


ECD7-ZB5 AXS8C 26-MAR-2016 19:35, 2ul



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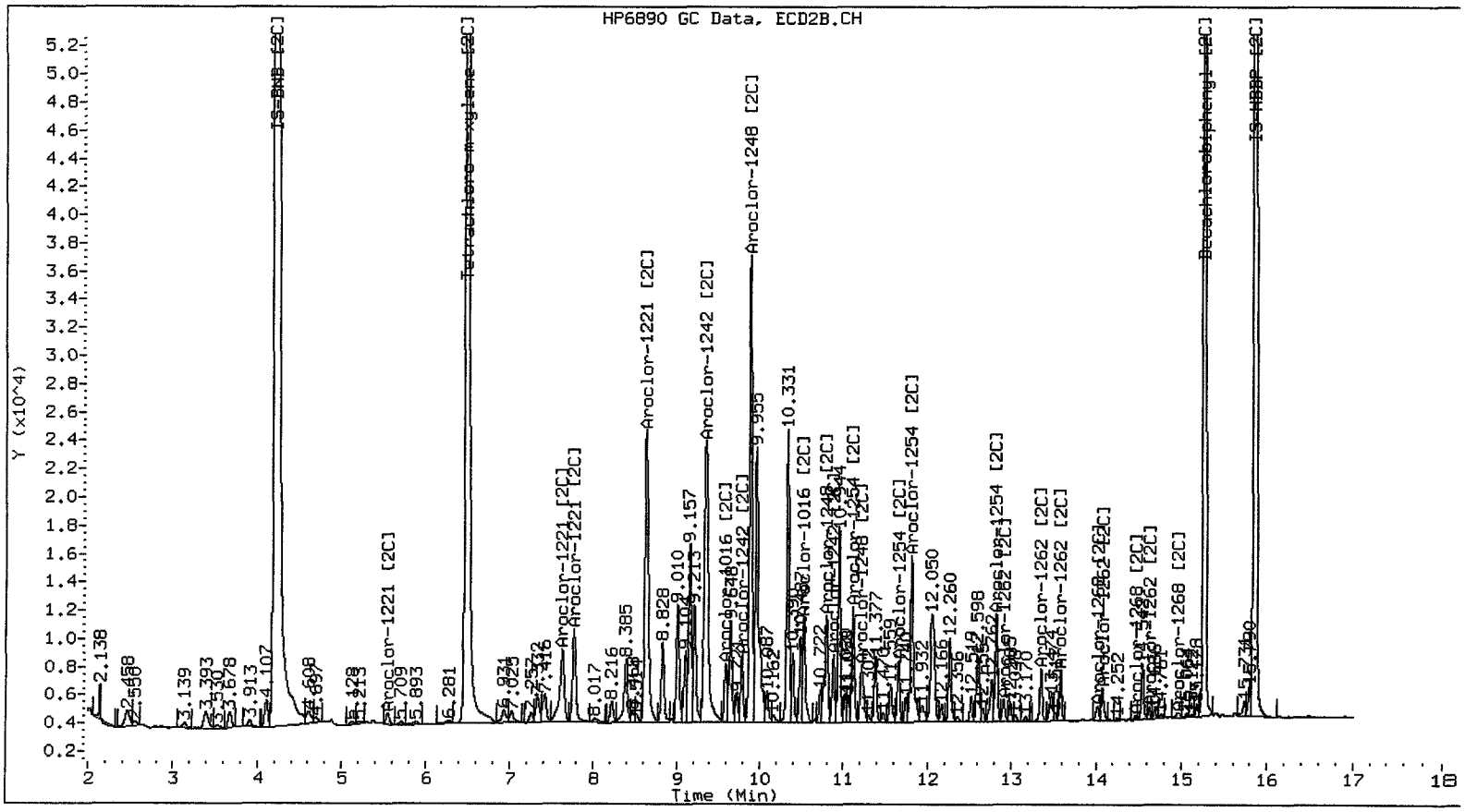


Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261623.D
Data file 2: /20160326.b/20160326.b/03261623.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242C
Client ID:
Injection Date: 26-MAR-2016 19:57
Report Date: 03/28/2016 13:51
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.028	-0.000	2201617	6.488	0.002	6959629	42.3	42.5	0.4	Tetrachloro-m-xyl
14.742	0.000	6532440	15.259	0.000	5325894	46.1	36.6	22.8	Decachlorobipheny

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	105.7	106.2
Decachlorobiphenyl	115.2	91.6

A 03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	9609209	-6.6
Hexabromobiphenyl	12470452	10624712	-14.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	14134010	-10.6
Hexabromobiphenyl	11807823	11360318	-3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	8.559	0.000	797247	269.9	1	8.631	0.000	1483796	271.1
Aroclor-1242	2	8.867	0.000	292602	269.8	2	9.357	0.000	2842785	250.9
Aroclor-1242	3	9.672	0.000	389678	284.2	3	9.784	0.000	796649	272.4
Aroclor-1242	4	10.073	0.000	292690	295.4	4	10.880	0.000	857793	217.7

Total Col1Ave (4 peaks): 279.8 Total Col2Ave (4 peaks): 253.0 RPD = 10

Corrected Ave (3 peaks): 274.6 Corrected Ave (3 peaks): 246.6 RPD = 11

CalAmt %D: 11.9 CalAmt %D: 1.2

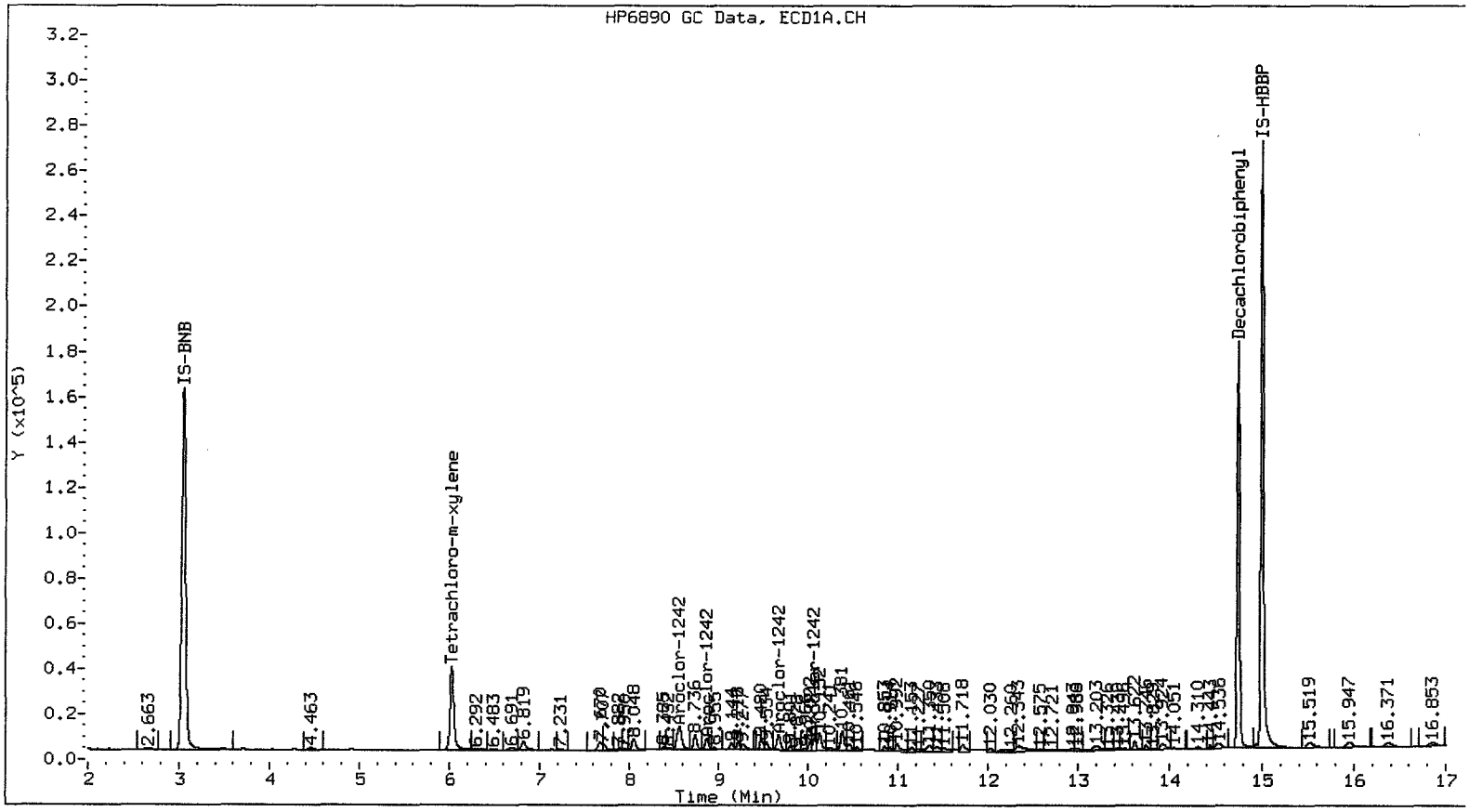
Total PCB Area Col1 (6.128 - 14.642) = 9752684 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 28350788 Col2 Total PCB = 0.2 ppm*

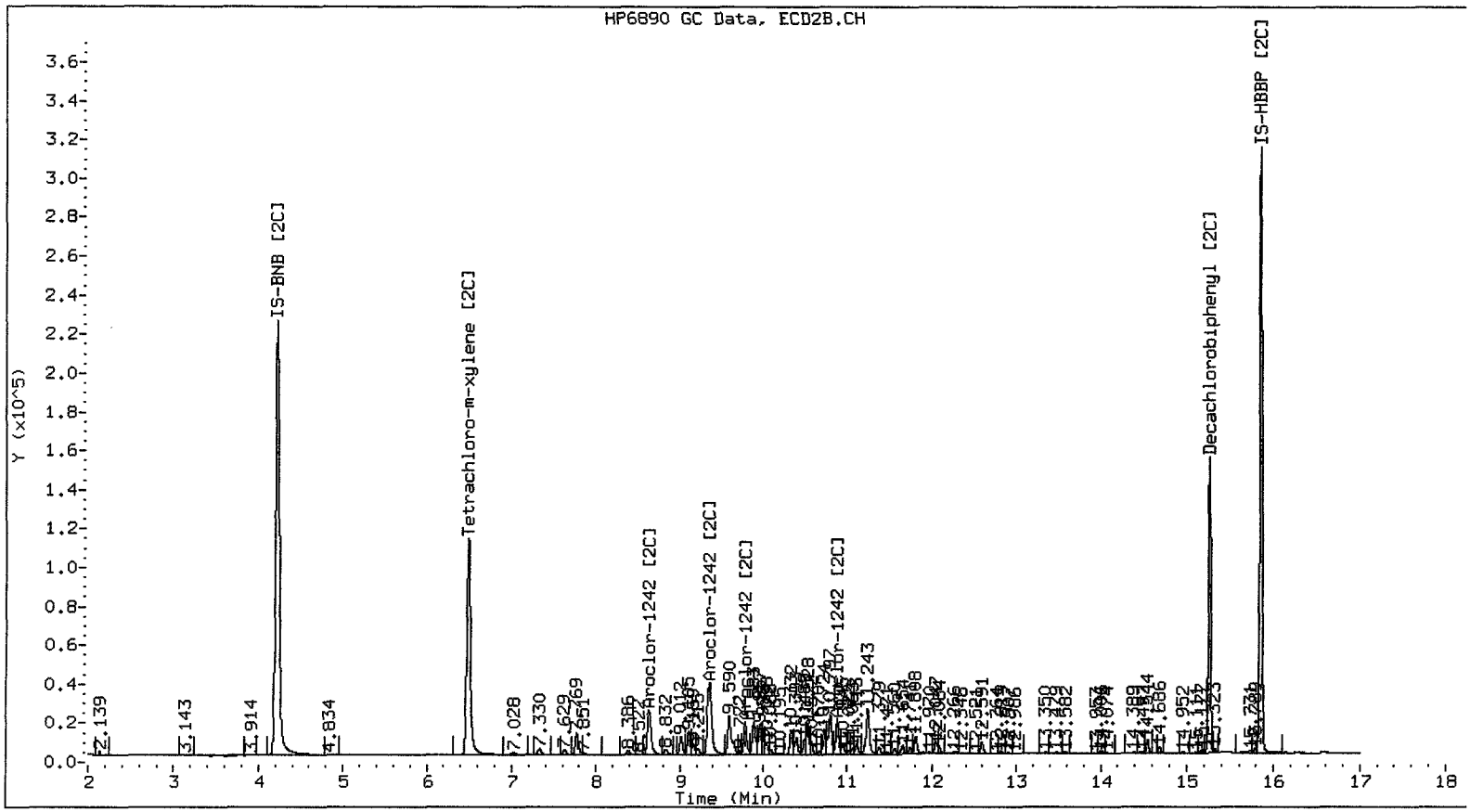
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

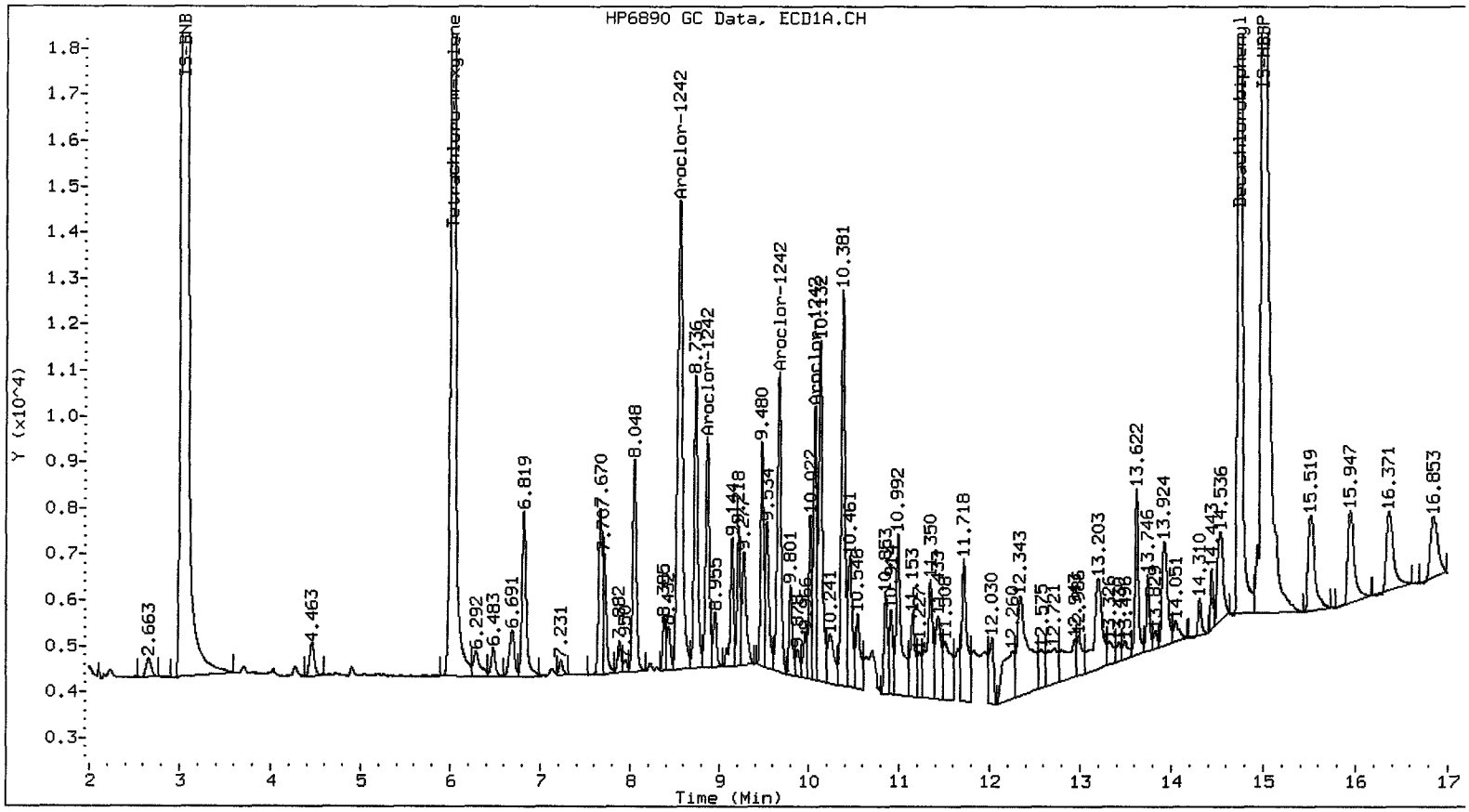
ECD7-ZB5 AR1242C 26-MAR-2016 19:57, 2ul



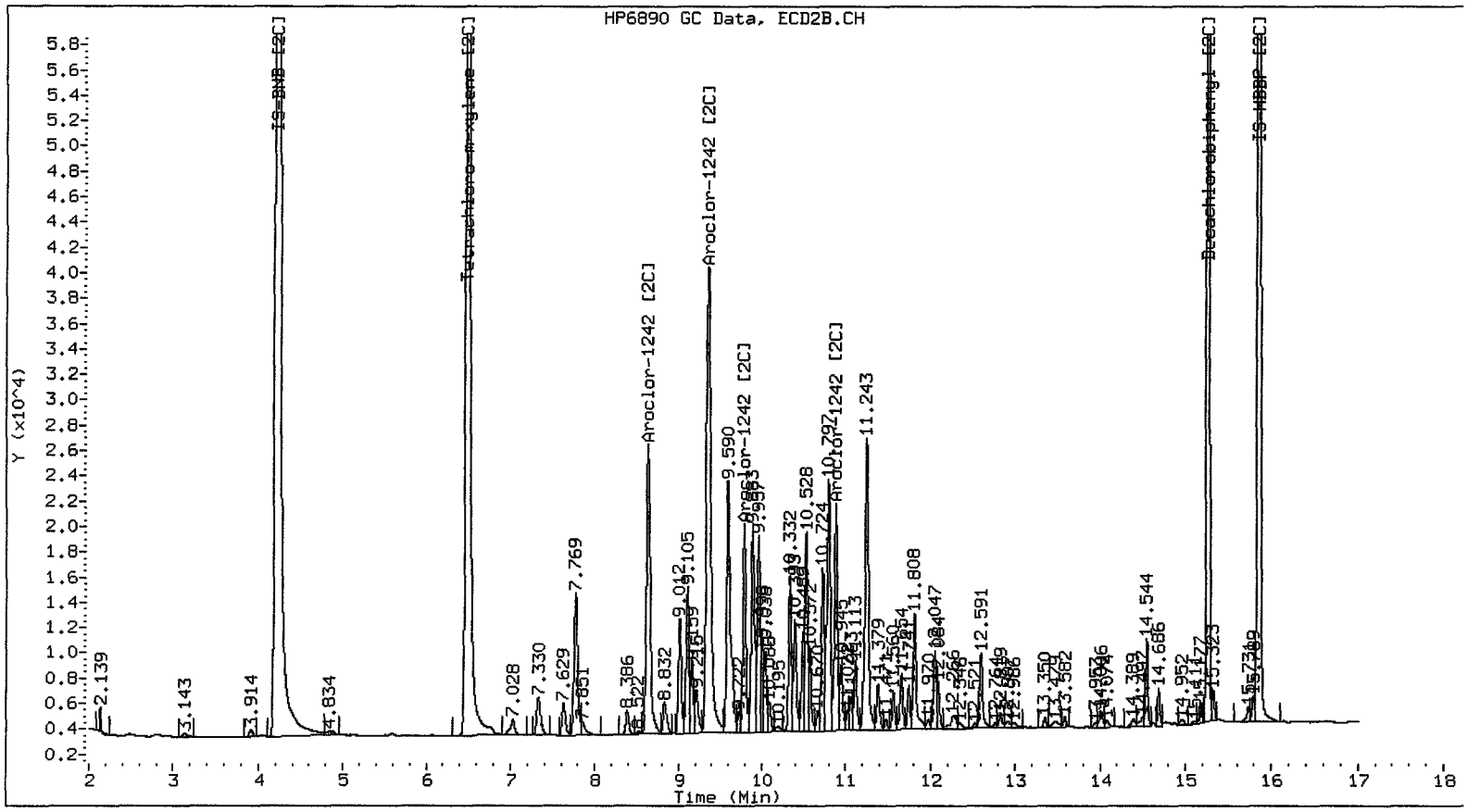
ECD7-ZB35 AR1242C 26-MAR-2016 19:57, 2ul



ECD7-ZB5 AR1242C 26-MAR-2016 19:57, 2ul



ECD7-ZB35 AR1242C 26-MAR-2016 19:57, 2ul



Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: /20160326.b/03261624.D
Data file 2: /20160326.b/20160326.b/03261624.D
Method: \\target\share\chem4\ecd7.i\20160326.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660C
Client ID:
Injection Date: 26-MAR-2016 20:19
Report Date: 03/28/2016 13:51
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.029	0.001	2732570	6.488	0.003	8510955	42.6	43.1	1.2	Tetrachloro-m-xyle
14.742	0.000	8574069	15.260	0.001	6857768	49.8	39.4	23.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	106.5	107.7
Decachlorobiphenyl	124.5	98.5

A 03/28/16

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	10288295	11845485	15.1
Hexabromobiphenyl	12470452	12895387	3.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	15804744	17039158	7.8
Hexabromobiphenyl	11807823	13608161	15.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 19-FEB-2016
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.049	0.002	400587	264.2	1	8.632	0.003	2211640	260.5
Aroclor-1016	2	8.560	0.001	1217273	260.4	2	9.356	0.002	4254773	243.4
Aroclor-1016	3	8.867	0.002	444597	278.6	3	9.590	0.002	1915895	274.6
Aroclor-1016	4	9.673	0.002	482389	271.0	4	10.528	0.002	879351	271.3

Total Col1Ave (4 peaks): 268.5 Total Col2Ave (4 peaks): 262.5 RPD = 2
Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 258.4 RPD = 3

CalAmt %D: 7.4 CalAmt %D: 5.0

Aroclor-1260	1	12.260	0.001	941631	300.6	1	12.815	0.001	2480636	197.7
Aroclor-1260	2	12.940	-0.001	3289936	276.0	2	13.581	0.002	5202205	213.8
Aroclor-1260	3	13.328	0.000	1524268	297.8	3	14.075	0.001	3643288	226.7
Aroclor-1260	4	13.430	0.000	940540	295.8	4	14.625	0.001	1568194	254.5
Aroclor-1260	5	13.841	0.000	533995	287.5	NS	---			----

Total Col1Ave (5 peaks): 291.6 Total Col2Ave (4 peaks): 223.2 RPD = 27
Corrected Ave (4 peaks): 289.3 Corrected Ave (3 peaks): 212.7 RPD = 30

CalAmt %D: 16.6 CalAmt %D: -10.7

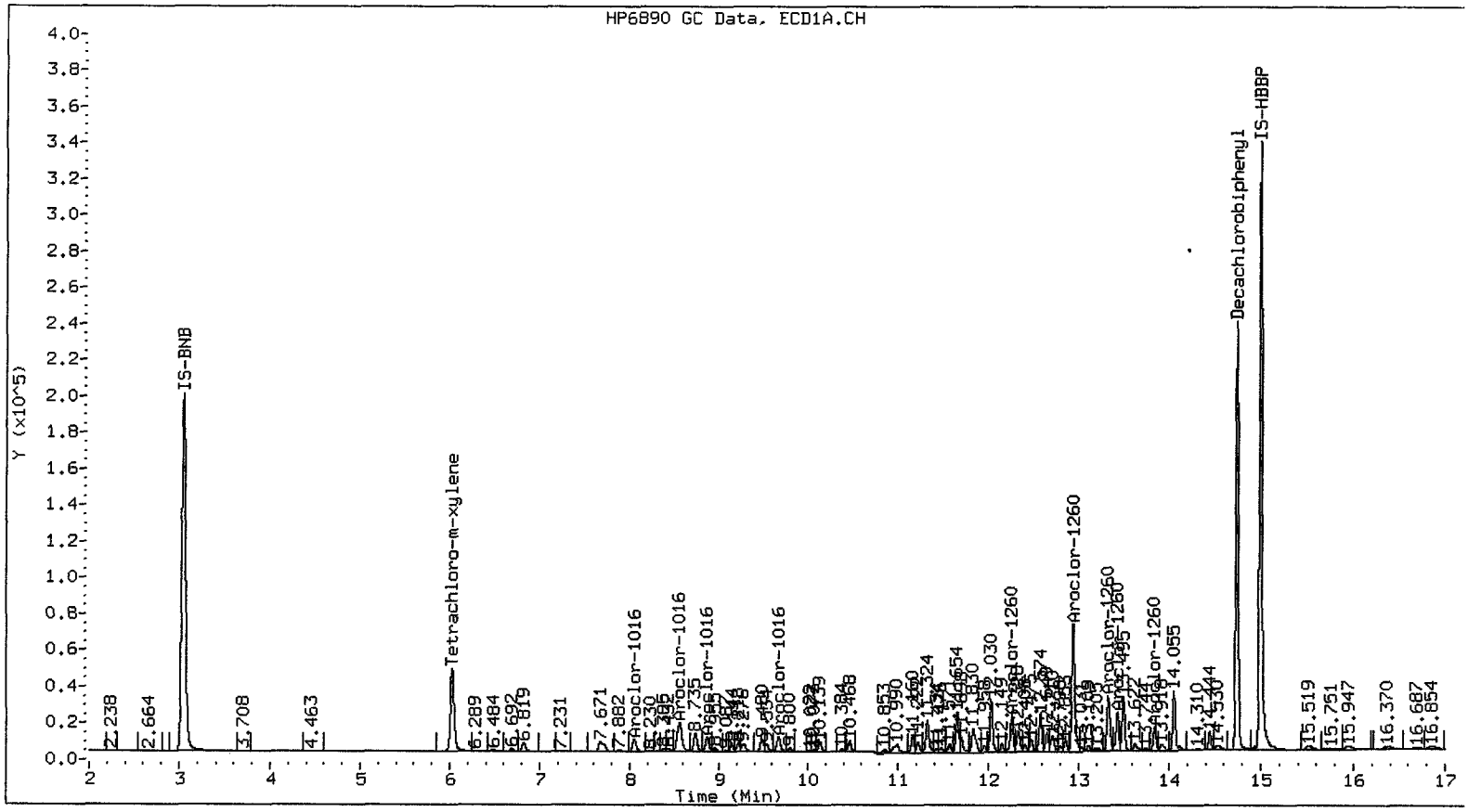
Total PCB Area Col1 (6.128 - 14.642) = 28065298 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.128 - 14.642) = 73019496 Col2 Total PCB = 0.5 ppm*

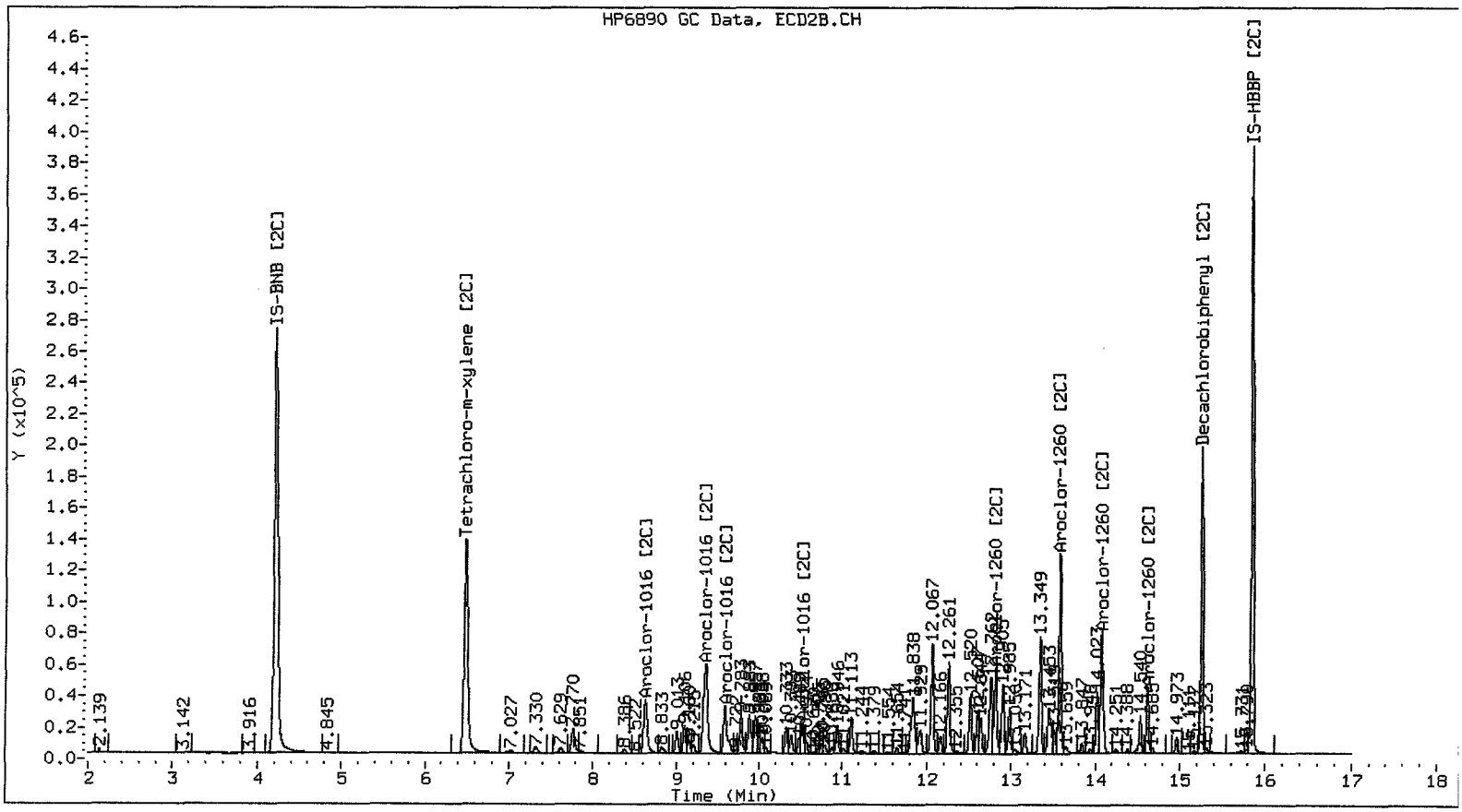
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

ECD7-ZB5 AR1660C 26-MAR-2016 20:19, 2ul



ECD7-ZB35 AR1660C 26-MAR-2016 20:19, 2ul



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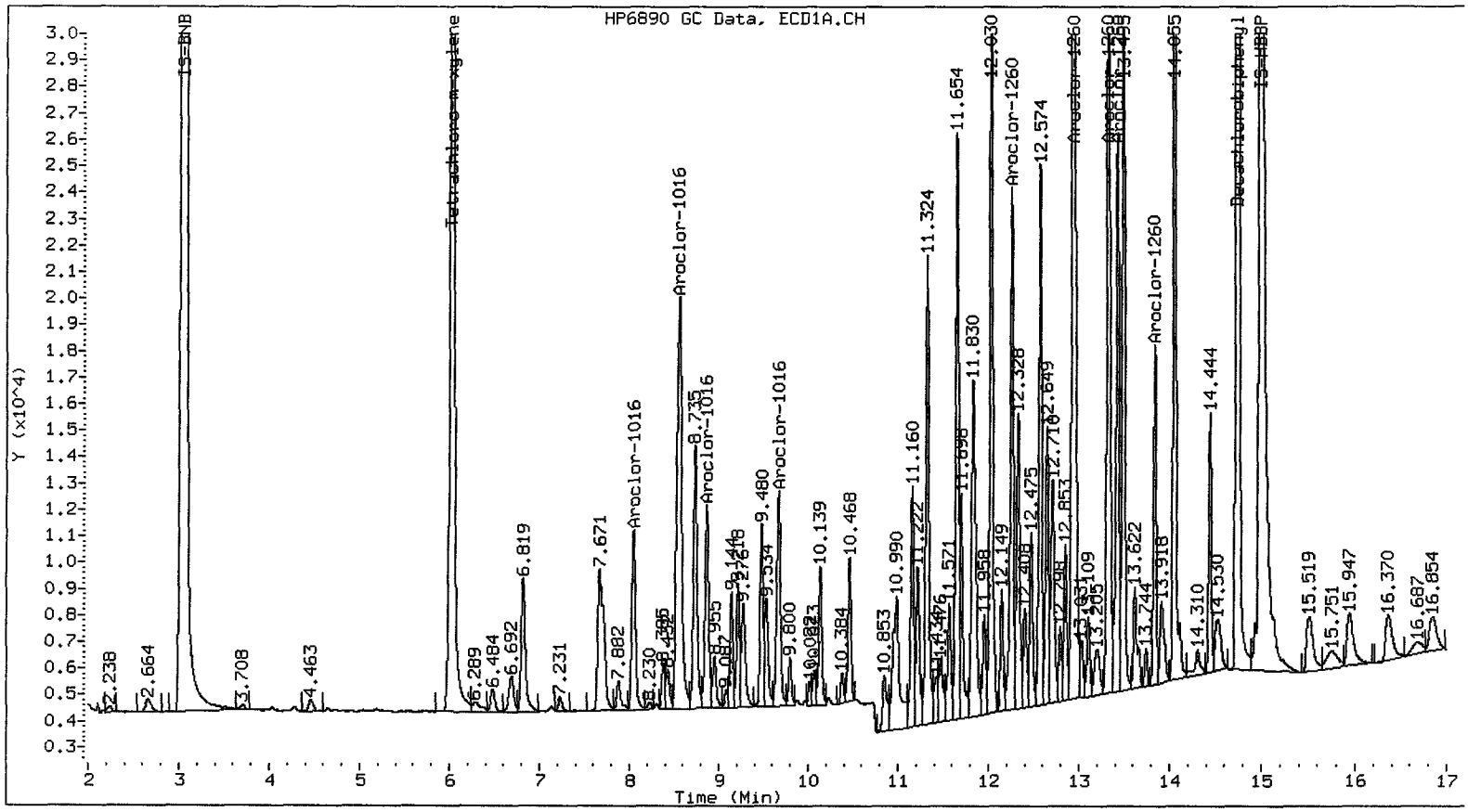

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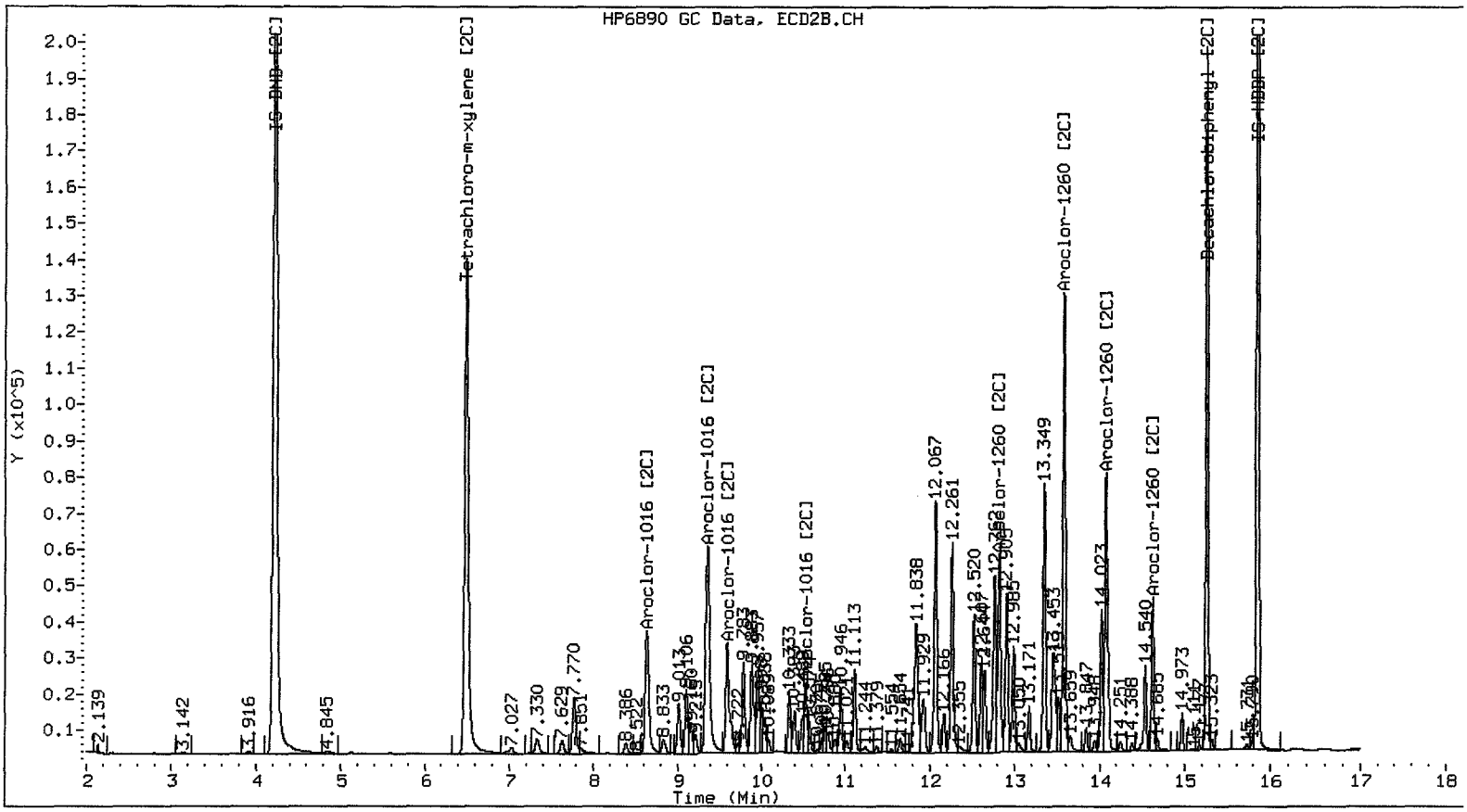


AXS8:00259

General Chemistry Raw Data
Analyst Notes and Raw Data

ARI Job ID: AXS8

3-22-16 WL

TOC Solids Prep Log

Drying at 70°C and acid purging to remove inorganic carbon prior to TOC analysis

70C Prep Date:	3/18/16 16:10
Analyst:	UW
Acidification Date	3/21/2016 14:05
Analyst:	UW / KE
Hydrochloric Acid ID:	
Phosphoric Acid ID:	D004733

Balance ID: Mettler Toledo (XS205 DU) SN 123230597

Standard Reference material: **NIST 1941 B**

KHP Spike Standard: **E000260** **47.05%** carbon

Sample ID	Initial 70 Sample Prep						Acidification for IC removal				
ARI #	matrix spike (grams KHP)	Tare Wt. (g)	Wet wt. (g)	70°C dry wt	70C % Solids	Efferv Test + / -	vial tare	70C sample + tare	70C sample	Post Treatment (g)	Acidified sample (g)
Method Blank		12.8415	13.1052	13.1054	**100.08%**		12.8415	13.1054	***0.2639***	13.1542	**0.3127**
DQL spike (200)		13.0193	13.3552	13.3555	**100.09%**		13.0193	13.3555	***0.3362***	13.3927	**0.3734**
AXS8 A1		12.9756	17.0831	16.4289	**84.07%**		12.8732	13.1773	***0.3041***	13.2179	**0.3447**
AXS8 A1 dup		12.8131	17.6119	16.8734	**84.61%**		12.8129	13.1932	***0.3803***	13.2311	**0.4182**
AXS8 A1 trip		12.8333	17.1222	16.4133	**83.47%**		12.8183	13.1103	***0.2920***	13.1544	**0.3361**
AXS8 A1 ms	0.2039	12.8336	16.9209	16.4597	**83.73%**	Wet Wt 4.0873 g	12.7921	13.1355	***0.3434***	13.1724	**0.3803**
ASX8 B1		12.7870	18.8159	17.6414	**80.52%**		12.9224	13.1768	***0.2544***	13.2200	**0.2976**
ASX8 C1		12.7605	17.6356	16.8884	**84.67%**		12.8759	13.1801	***0.3042***	13.2239	**0.3480**

AXS8:66261

TS 70 C Benchsheet

Drying at 70 °C and acid purging to remove inorganic carbon

Balance ID: Mettler Toledo (XS205 DU) SN 123230597
KHP Spike Standard ID: E000260
Phosphoric Acid ID: D004733

70C Prep Date: 3-18-16 16:10
Analyst: W
Acidification Date: 3-21-16 14:05
Analyst: W (4)

Initial 70 Sample Prep						Acidification Prep			
Sample ID	Tare Wt. (g)	Wet wt. (g)	matrix spike (g KHP)	70°C dry wt	Sample Descriptions	vial tare (g)	70C Sample + tare (g)	Efferv Test ±	Post Treatment(g)
AX58 MB	12.8415	13.1052		13.1054		12.8415	13.1054	—	13.1542
↓ DQL	13.0193	13.3552		13.3555		13.0193	13.3555	—	13.3927
AX58 A1	12.9756	17.0831		16.4289	black, sandy sed.	12.8732	13.1773	—	13.2179
A1 dup	12.8131	17.6119		16.8734		12.8129	13.1932	—	13.2311
A1 trip	12.8333	17.1222		16.4133		12.8183	13.1103	—	13.1544
A1 ms	12.8336	16.9209	0.2039	16.4597		12.7921	13.1355	—	13.1724
B1	12.7870	18.8159		17.6414		12.9224	13.1768	—	13.2200
C1	12.7605	17.6356		16.8884		12.8759	13.1801	—	13.2239

3-18-16

W

AX58 : 00292

3-22-16 UDL

TOTAL SOLIDS/VOLATILE SOLIDS (TS / TVS) BENCHSHEET DATE: 3/18/2016

SOLIDS *(dry at 104 (12-24 hr) then combust at 550 (30 min))* ANALYST: UW / KK

Instrumentation ***Drying Ovens:*** 12 ***Analytical Balance:*** 1123230597

Muffle Furnace:

Batch drying time	*TS (%) calculated as:*	*TVS (mg/kg dry wt) calculated as:*
record times as mm/dd/yy hh:mm	*Final dry wt (g) = (Dry Wt - Tare Wt)*	*Final ash wt (g) = (min ash wt - tare wt)*
3/18/2016 16:40 date/time in oven	*TS = (Final Dry Wt)/ (grams Sample-Tare)*	*TVS (mg/kg) = [(Dry wt-Ash wt)/ (dry weight)] *1,000,000*
3/19/2016 11:30 date/time out		*if ash wt > dry wt, "Chk for Err"*
elapsed hrs = 18.8		*if dry wt-ash wt < 0.001 g, "< (1/dry wt)*1,000,000*

Cal Weight ID		CV-02	CV-02	CV-02	CV-02				CV-02	CV-02			
Date & Time		3/18/16 16:30	3/18/16 16:25	3/19/16 14:00									
Cal Wt (g)	10.0000	10.0000	10.0000	9.9999									
record weights to 4 places		*Cal OK!*	*Cal OK!*	*Cal OK!*									

SAMPLE ID	DISH #	SAMPLE (grams)	TARE WT (grams)	DRY WT 104C (grams) 1			dry Wt (g)	TS (%)	ASH WT 550C (grams) 1	2		Ash Wt (g)	TVS (mg/kg)	(%)
Blank			1.0906	1.0904			0.00							
ASX8 A1		7.5910	1.0841	6.4913			5.41	**83.10%**						
ASX8 A1 dup		9.1352	1.1077	7.8439			6.74	**83.91%**						
							RPD =	0.98%				RPD =	NA	
ASX8 A1 trp		9.6314	1.0682	8.2508			7.18	**83.88%**						
							RSD =	0.55%				RSD =	NA	
ASX8 B1		9.5188	1.0949	7.8008			6.71	**79.61%**						
ASX8 C1		8.9541	1.1130	7.7778			6.66	**85.00%**						

AXS8 : 00263

Analytical Resources, Incorporated
Analytical Chemists and Consultants

TOTAL / VOLATILE SOLIDS (TS/TVS) BENCHSHEET

Analyst:	W/KK	Date:	3-18-16	Oven ID:	12	Muffle ID:		Balance ID:	1123230597
Time in Oven:	16:40			Time Out of Oven:		11:30		Elapsed Time (> 12 Hrs):	

Dry at 104 °C (12-24 hrs) then combust at 550 °C for 30 min. Record Weights to 4 places

TS (%) calculated as:
Final Dry Weight (g) = (Dry Weight – Tare Weight)
TS = (Final Dry Weight) / (Grams Sample – Tare Weight)

TVS (mg/kg dry weight) calculated as:
Final Ash Weight (g) = (Minimum Ash Weight – Tare Weight)
TVS (mg/kg) = [(Dry Weight – Ash Weight) / (Dry Weight) * 1,000,000
If Ash Weight > Dry Weight then "Check for Error"
If Dry Weight – Ash Weight < 0.001 < (1/Dry Weight) * 1,000,000

Cal Weight ID		CV-02	CV-02	CV-02	CV-02	CV-02		CV-02	CV-02	CV-02
Date & Time:		3-18-16 16:30	3-18-16 16:25	3/19/16 1400						
Cal Weight (10.0000):		10.0000 W	10.0000 W	9.9999 KK						
Sample ID	Dish #	Sample	Tare	Dry Weight 104°C 1	2	3	Dry Weight grams	Ash Weight 550°C 1	2	3
BLANK	1	–	1.0906	1.0904						
AXS8 A1	2	7.5910	1.0841	6.4913						
A1 dup	3	9.1352	1.1077	7.8439						
A1 trp	4	9.6314	1.0682	8.2508						
B1	5	9.5188	1.0949	7.8008						
C1	6	8.9541	1.1130	7.7778						

3-18-16

W

AXS8:00264

TOC, Solids Data Analysis

Mode (TOC or TC): TOC | DATE: 3/22/2016 0:00

Instrument: 183 Boat Module, Apollo 1 | *Balance ID:* Mettler XS204 B146454145 | ANALYST: KE

Standards

						dilution			ppm
Verification Standard	Source:	*E000768*	*Conc:*	5,000	*ppm*	10	*mL to*	50	1,000
Standard Reference Material	Source:	*NIST 1941B*	Prep Date	3/11/2016		70°C dry wt (g):			0.7639
Element ID # B000807	*Conc:*	29,900	*ppm*	Status:	OK	Acidified dry wt (g)			0.8388
KHP Spiking Standard:	Source:	*C003462*		*47.051%*	*% Carbon*				

Calibration Data *Cal Curve ID:* 3-15-16 Boat CaL | *Curve Date:* 03/15/16 | *CalCrv Std:* D000718

40 µL injections of designated standard | Status: OK | *Conc:* 5,000 *ppm*

Curve Range : 200 *to* 2,500 *mg/kg* = 8 *to* 100 *µg Carbon*

Silica Blanks (for dilution) *Evaluation: Mean <0.5 * Low Curve Point and replicate RSD <25%*

Replicate determinations (mg/kg)									Mean	RSD	test

Sample Data *"C corr" (with dilution) = ("C obs" - (Mean silica Blank * %Silica)) * Dilution Factor*

Sample ID	TS 104 (Total Solids at 104 °C)	TS 70 (Total Solids at 70 °C)	Prep Data: 70C dried sample (g)	Prep Data: acidified, dried sample (g)	Dilution Data: Sample wt. (mg)	Dilution Data: Final wt. (mg)	Dilution Data: Added Silica (%)	Dilution Data: Dilution Factor	Combustion Data: Burn wt. (mg)	Combustion Data: TOC obs (mg/kg)	Combustion Data: TOC 70 C ppm	TOC 104C %C Comments
ICV									40.0	1064	1,064	*106.40%*
Blank									40.0	13.13	13	*Blank OK*
~~NIST 1941B~~	~~100.00%~~	~~96.20%~~	~~0.7639~~	~~0.8388~~			-	~~1.00~~	~~1.3~~	~~34398~~	~~37,771~~	~~*126.3 %Rec*~~
NIST 1941B	100.00%	96.20%	0.7639	0.8388				1.00	1.1	25522	28,024	*93.7 %Rec*
3/16/16 MB	100.00%	99.96%	0.2652	0.3144				1.00	67.3	16.66	20	*Low, increase wt*
3/16/16 DQL	100.00%	99.90%	0.3046	0.3544				1.00	65.9	138	161	*0.016*
~~AXM3 A1~~	~~93.47%~~	~~92.00%~~	~~0.3325~~	~~0.3746~~			-	~~1.00~~	~~23.8~~	~~1221~~	~~1,376~~	~~*0.135*~~
AXM3 A1dup	93.47%	92.43%	0.3789	0.4204				1.00	24.3	393	436	*0.0431*
AXM3 A1trip	93.47%	92.20%	0.3109	0.3526				1.00	24.3	339	384	*0.0379*
AXM3 A1	93.47%	92.00%	0.3325	0.3746				1.00	24.1	518	584	*0.0574*
~~AXM3 A1ms~~	~~93.47%~~	~~93.85%~~	~~0.3912~~	~~0.4278~~			-	~~1.00~~	~~24.7~~	~~8975~~	~~9,815~~	***Offscale, dilute***
~~*Sample ms*~~	~~0.2074~~	~~*g KHP =*~~	~~97.58~~	~~*mg C to*~~	~~4.5978~~	~~*g wet wt =*~~	~~22615~~	~~*mg/kg 70C*~~	~~2.271~~	~~*%C at 104C*~~	~~*40.8 %*~~	~~*#VALUE!*~~
AXM3 A1ms	93.47%	93.85%	0.3912	0.4278				1.00	3.6	25066	27,411	*2.75*
Sample ms	0.2074	*g KHP =*	97.58	*mg C to*	4.5978	*g wet wt =*	22615	*mg/kg 70C*	2.271	*%C at 104C*	*119 %*	*119 %*
ICV									40.0	1004	1,004	*100.40%*
Blank									40.0	18.65	19	*Blank OK*
~~AXM3 H1~~	~~50.96%~~	~~51.38%~~	~~0.1671~~	~~0.2047~~			-	~~1.00~~	~~6.3~~	~~19251~~	~~23,583~~	***Offscale, dilute***
AXM3 H1	50.96%	51.38%	0.1671	0.2047				1.00	1.2	8689	10,644	*1.07*

AXS8 : 66255

Sample Data			"C corr" (with dilution) = ("C obs" - (Mean silica Blank * %Silica)) * Dilution Factor									
			Prep Data		Dilution Data				Combustion Data			
Sample ID	TS 104 (Total Solids at 104 °C)	TS 70 (Total Solids at 70 °C)	70C dried sample (g)	acidified, dried sample (g)	Sample wt. (mg)	Final wt. (mg)	Added Silica (%)	Dilution Factor	Burn wt. (mg)	TOC obs (mg/kg)	TOC 70 C ppm	TOC 104C %C Comments
AXM3 I 1	78.33%	78.61%	0.2908	0.3301				1.00	3.2	2932	3,328	*0.334*
~~AXO0 A1~~	~~98.44%~~	~~98.88%~~	~~0.3202~~	~~0.3798~~			-	~~1.00~~	~~0.6~~	~~8335~~	~~9,886~~	***Low, increase wt***
AXO0 A1	98.44%	98.88%	0.3202	0.3798				1.00	1.1	33452	39,679	*3.99*
AXO0 B1	98.58%	98.90%	0.3328	0.4049				1.00	0.6	19880	24,187	*2.43*
AXS8 MB	100.00%	100.08%	0.2639	0.3127				1.00	62.8	13.59	16	*Low, increase wt*
AXS8 DQL	100.00%	100.09%	0.3362	0.3734				1.00	63.5	139	154	*0.0155*
~~AXS8 B1~~	~~79.61%~~	~~80.52%~~	0.2544	0.2976			-	~~1.00~~	~~1.7~~	~~529~~	~~619~~	***Low, increase wt***
~~AXS8 B1~~	~~79.61%~~	~~80.52%~~	0.2544	0.2976			-	~~1.00~~	~~22.1~~	~~355~~	~~415~~	~~*Low, increase wt*~~
~~ICV~~									~~40.0~~	~~1128~~	~~1,128~~	~~*112.80%*~~
ICV									40.0	1008	1,008	*100.80%*
Blank									40.0	5.31	5	*Blank OK*
AXS8 B1	79.61%	80.52%	0.2544	0.2976				1.00	33.1	431	504	*0.051*
AXS8 C1	85.00%	84.67%	0.3042	0.3480				1.00	31.1	302	345	*0.0344*
AXS8 A1	83.10%	84.07%	0.3041	0.3447				1.00	29.9	543	615	*0.0623*
~~AXS8 A1dup~~	~~83.10%~~	~~84.61%~~	~~0.3803~~	~~0.4182~~			-	~~1.00~~	~~31.3~~	~~1062~~	~~1,168~~	~~*0.1190*~~
AXS8 A1dup	83.10%	84.61%	0.3803	0.4182				1.00	30.9	744	818	*0.0833*
AXS8 A1trip	83.10%	83.47%	0.2920	0.3361				1.00	31.6	739	851	*0.0854*
AXS8 A1ms	83.10%	83.73%	0.3434	0.3803				1.00	3.9	24323	26,937	*2.71*
Sample ms	0.2039	*g KHP =*	**95.94**	*mg C to*	**4.0873**	*g wet wt =*	28033	*mg/kg 70C*	2.825	*%C at 104C*	*93.9 %*	*93.7 %*
ICV									40.0	1008	1,008	*100.80%*
Blank									40.0	12.65	13	*Blank OK*

AXS8 : 99266

TOC Solids Instrument Run Log

DATE: 3-22-16

ANALYST: (D) 3-21-16 10:01 Am

Mode:	**TOC**
Instrument:	**Apollo #1, Boat Module #1**
Balance ID:	**Mettler XS204 B146454145**

Calibration Data

Cal Curve ID: 3-16-16 Boatcal

Curve Date: 3-16-16

CalCrv Std: D003516

Conc: 5,000 *ppm*

40 µL injections of designated standard

Curve Range

200	*to*	2,500	*mg/kg*
8	*to*	**100**	*µg Carbon*

Verification Standard

Source: E000718

Conc: **5,000** *ppm*

10 *mL to* 50

1,000 *ppm*

Standard Reference Material

Source: Nist 1941 B

Element ID: B000807

Prep Date: 3-14-16

Conc: **33,510** *ppm*

KHP Spiking Standard:

Source: C003462

47.1% % Carbon

Silica Blanks (for dilution)

Replicates (mg/kg)		

(1) 3-22-16 (D) ***Sample Data***

Sample ID	Dilution Data: Sample wt. (mg)	Dilution Data: Final wt. (mg)	Combustion Data: Burn wt. (mg)	Combustion Data: Comments
ICV			40	
Blank			40	
Nist 1941 B			1.3	
Nist 1941 B			1.1	
3-16-16 MB			67.3	
↓ DQL			65.9	
AXM3 A'			23.8	
DP A'			24.3	
+P A'			24.3	
A'			24.1	
MS A'			24.7	offscale
MS A'			3.6	(1)
CCV			40	(1)
CCB			40	
AXM3 H'			6.3	offscale
H'			1.2	
↓ I'			3.2	
AXDO A'			0.6	Low
↓ ~~B'~~ A'			~~0.6~~ 1.1	
↓ B'			0.6	
AXS8 MB			62.8	
DQL			63.5	
B'			1.7	Low
↓ B'			22.1	Low
CCV			40/40	
CCB			40	
AXS8 B'			33.1	
C'			31.1	
A'			29.9	
DP A'			31.3	
DP A'			30.9	
+P A'			31.6	
MS A'			3.9	
CCV			40	
CCB			40	
		3-22-16 (D)		

3-22-16
(W)

Detailed Analysis Report Print Date/Time: 2016/03/22 5:51:29

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03210924
Timestamp: 2016/03/21 22:01
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	3.2641	0.1306	-4860	4.306	3.036	4

Last Message: Out of Calibration

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03212304
Timestamp: 2016/03/21 23:08
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1064.2980	42.5719	9549892	3.771	4.767	174

Sample ID: ICB/CCB BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03212312
Timestamp: 2016/03/21 23:15
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	13.1254	0.5250	83943	3.609	4.603	51

Sample ID: NIST 1941 B
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03212323
Timestamp: 2016/03/21 23:30
Sample Type: Sample

3-22-16 (W)

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	34398.1953	44.7177	10067210	3.747	4.744	271

Sample ID: NIST 1941 B
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03212334
Timestamp: 2016/03/21 23:41
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	25521.6523	28.0738	6320212	3.626	4.624	284

Sample ID: 3-16-16 MB
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03212353
Timestamp: 2016/03/21 23:55
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	16.6552	1.1209	252346	3.469	4.465	62

Sample ID: 3-16-16 DQL
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220001
Timestamp: 2016/03/22 00:07
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time

1	138.4951	9.1268	2054708	3.319	4.319	176

Sample ID: AXM3 A1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220013
Timestamp: 2016/03/22 00:19
Sample Type: Sample

3-22-16 (W)

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1220.8560	29.0564	6541412	3.364	4.360	287

Sample ID: AXM3 A1 dup w 3-23-16
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220022
Timestamp: 2016/03/22 00:28
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	393.0680	9.5516	2150325	3.131	4.129	258

Sample ID: AXM3 A1 ~~dup~~ w 3-23-16
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220037
Timestamp: 2016/03/22 00:41
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	339.1858	8.2422	1855556	3.109	4.108	221

Sample ID: AXM3 A1 ~~dup~~ w 3-23-16
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220046
Timestamp: 2016/03/22 00:52
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	518.4167	12.4938	2812718	3.274	4.274	318

Sample ID: AXM3 A1 MS
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220059
Timestamp: 2016/03/22 01:07
Sample Type: Sample

3-22-16 (W)

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	8975.2695	221.6891	49908508	3.113	4.268	360

Last Message: Over-range

Sample ID: AXM3 A1 MS
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220112
Timestamp: 2016/03/22 01:16
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	25065.9746	90.2375	20315020	3.233	4.232	183

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220126
Timestamp: 2016/03/22 01:31
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration

				Baseline	Baseline	Time
1	1004.2509	40.1700	9009159	3.349	4.347	198

Sample ID: ICB/CCB BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220136
Timestamp: 2016/03/22 01:38
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	18.6451	0.7458	133648	3.229	4.228	55

3-22-16 (A)

Sample ID: AXM3 H1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220141
Timestamp: 2016/03/22 01:48
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	19250.8613	69.3031	15602091	3.372	9.577	360

Last Message: Max Integration Time Reached

Sample ID: AXM3 H1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220155
Timestamp: 2016/03/22 02:02
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	8687.9688	10.4256	2347090	3.259	4.472	360

Last Message: Max Integration Time Reached

Sample ID: AXM3 I 1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220207
Timestamp: 2016/03/22 02:13
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2932.1934	9.3830	2112383	3.109	4.108	315

3-22-16 (B)

Sample ID: AXO0 A1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220219
Timestamp: 2016/03/22 02:23
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	8334.5459	5.0007	1125805	3.249	4.248	173

Sample ID: AXO0 A1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA
Mode: TOC
Filename: 03220228
Timestamp: 2016/03/22 02:35
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	33452.3398	36.7976	8284177	3.156	5.486	360

Last Message: Max Integration Time Reached

Sample ID: AXO0 B1
Mode: TOC

Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Filename: 03220237
Timestamp: 2016/03/22 02:44
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	19880.3926	11.9282	2685384	3.343	4.423	360

Last Message: Max Integration Time Reached

Sample ID: AXS8 MB
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220300
Timestamp: 2016/03/22 03:02
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	13.5881	0.8533	192110	3.013	4.011	60

Sample ID: AXS8 DQL
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220308
Timestamp: 2016/03/22 03:12
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	138.6725	8.8057	1982413	3.191	4.187	170

Sample ID: AXS8 B1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220318
Timestamp: 2016/03/22 03:20
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	529.4755	0.9001	202640	3.138	4.135	72

3-22-16 (A)

Sample ID: AXS8 B1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220327
Timestamp: 2016/03/22 03:32
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	355.3195	7.8526	1767834	3.209	4.209	225

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220333
Timestamp: 2016/03/22 03:40
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1127.7629	45.1105	10121402	3.174	4.173	293

Last Message: Out of Calibration

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220341
Timestamp: 2016/03/22 03:48
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1008.2454	40.3298	9045130	3.152	4.149	296

Sample ID: ICB/CCB BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220351
Timestamp: 2016/03/22 03:55
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	5.3133	0.2125	13593	3.224	3.093	120

Last Message: Low Sample Detected

Sample ID: AXS8 B1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220357
Timestamp: 2016/03/22 04:04
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	430.9058	14.2630	3211001	3.141	4.586	360

Last Message: Max Integration Time Reached

Sample ID: AXS8 C1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220409
Timestamp: 2016/03/22 04:14
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	301.5436	9.3780	2111255	3.140	4.139	211

Sample ID: AXS8 A1
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220418
Timestamp: 2016/03/22 04:26
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	542.5099	16.2210	3651817	3.327	4.524	360

Last Message: Max Integration Time Reached

Sample ID: AXS8 A1 DP
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220430
Timestamp: 2016/03/22 04:37
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1061.5952	33.2279	7480549	3.086	4.943	360

Last Message: Max Integration Time Reached

Sample ID: AXS8 A1 DP
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220451
Timestamp: 2016/03/22 04:58
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	743.5469	22.9756	5172458	3.321	4.583	360

Last Message: Max Integration Time Reached

Sample ID: AXS8 A1 HP
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220504
Timestamp: 2016/03/22 05:11
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	739.2369	23.3599	5258972	3.169	4.538	360

Last Message: Max Integration Time Reached

Sample ID: AXS8 A1 MG
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220518
Timestamp: 2016/03/22 05:22
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	24322.8770	94.8592	21355496	3.493	4.492	176

Last Message: Over-range

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220538
Timestamp: 2016/03/22 05:43
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1007.5695	40.3028	9039044	3.293	4.291	220

Sample ID: ICB/CCB BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03220544
Timestamp: 2016/03/22 05:46
Sample Type: Cal. Verification

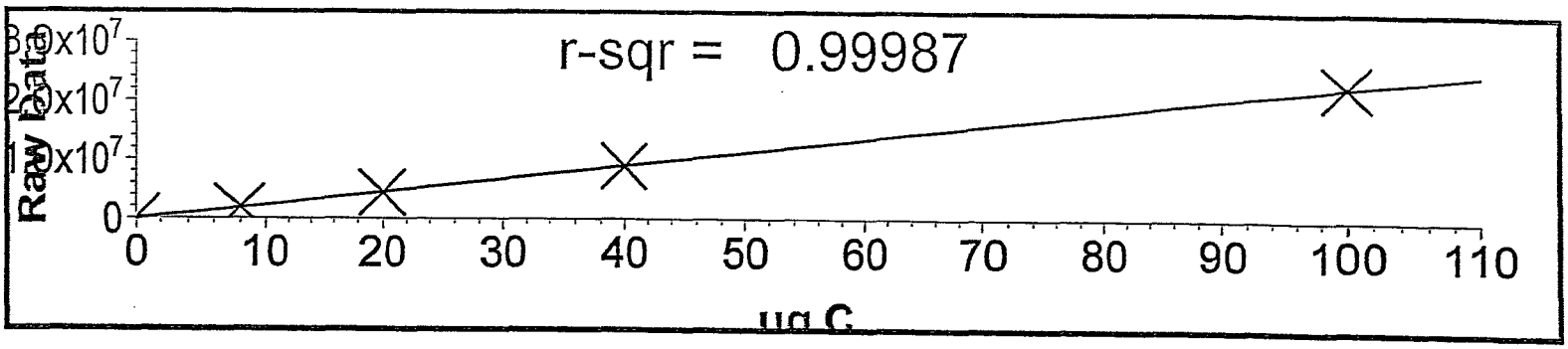
Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	12.6491	0.5060	79653	3.194	4.190	57

Calibration Report Print Date/Time: 2016/03/15 2:45:23

3-15-16 (W)

Cal. Curve ID: 03-15-16 Boat Cal
Created: 2016/03/15 02:07
Calibration Factor (m): 2.251e+05
Y Intercept (b): -34254
r-squared: 0.99987

Standard ID	Y Raw Data	X Expected ug C	Measured ug C	Message	Date & Time
DI Water	47993	0.000	0.365	Low Sample De	2016/03/14 23:59
200 ppm	1851014	8.000	8.374		2016/03/15 00:43
500 ppm	4343677	20.000	19.446		2016/03/15 01:09
1000 ppm	8870814	40.000	39.556		2016/03/15 01:33
2500 ppm	22536794	100.000	100.259		2016/03/15 02:06


r-sqr = 0.99987
Raw Data
3.0x10^7
2.0x10^7
1.0x10^7
0
0
10
20
30
40
50
60
70
80
90
100
110
ug C

3-15-16 (W)

Detailed Analysis Report Print Date/Time: 2016/03/15 2:44:22

Sample ID: DI Water
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150010
Timestamp: 2016/03/15 00:24
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			31251	3.575	3.412	120
2			21402	3.371	3.371	120
3			180233	3.479	4.477	53

Last Message: Low Sample Detected
<<<Statistics>>> Mean: 77629 Std Dev: 88994 RSD: 114.64

Sample ID: 200 ppm
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150028
Timestamp: 2016/03/15 00:43
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			1822042	3.491	4.487	89
2			1869203	3.350	4.349	94
3			1861796	3.460	4.459	96

<<<Statistics>>> Mean: 1851014 Std Dev: 25362 RSD: 1.37

Sample ID: 500 ppm
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150055
Timestamp: 2016/03/15 01:09
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			4179058	3.353	4.351	119
2			4424655	3.480	4.479	127
3			4427319	3.468	4.466	124

<<<Statistics>>> Mean: 4343678 Std Dev: 142571 RSD: 3.28

Sample ID: 1000 ppm
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150117
Timestamp: 2016/03/15 01:33
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			8679313	3.526	4.524	150
2			8976771	3.388	4.386	154
3			8956357	3.262	4.262	173

<<<Statistics>>> Mean: 8870813 Std Dev: 166158 RSD: 1.87

Sample ID: 2500 ppm
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150144
Timestamp: 2016/03/15 02:06
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			22084780	3.300	4.298	202
2			22653960	3.477	4.474	218
3			22871648	3.329	4.323	239

<<<Statistics>>> Mean: 22536794 Std Dev: 406308 RSD: 1.80

Sample ID: ICV/CCV BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150214
Timestamp: 2016/03/15 02:19
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1009.1766	40.3671	9053516	3.456	4.455	202

Sample ID: ICB/CCB BOAT
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150220
Timestamp: 2016/03/15 02:24
Sample Type: Cal. Verification

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	12.6216	0.5049	79406	3.274	3.673	120

Last Message: Low Sample Detected

Sample ID: NIST 1941 B
Method: Boat Sampler
Cal. Curve: 03-15-16 Boat Cal
Operator ID: TRINA

Mode: TOC
Filename: 03150234
Timestamp: 2016/03/15 02:40
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	25841.8125	36.1785	8144814	3.417	4.416	301