



Analytical Resources, Incorporated
Analytical Chemists and Consultants

15 October 2019

Janet Knox
Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102

RE: Swan Island Lagoon Sediment Investigation

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)

19J0044

Associated SDG ID(s)

N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PJLA Testing
Accreditation # 66169

Chain of Custody Record

Other **ARI 19I0008** **19J0044**

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/ /2019		COC No:	
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		1 of 8 COCs	
Pacific Groundwater Group		Analysis Turnaround Time						Job No. 2006-00115	
2377 Eastlake Ave E, Seattle WA 98102		standard							
206 329 0141 Phone		TAT if different from Below							
206 329 6968 FAX		☒ standard							
Swan Island Lagoon Sediment Investigation		☐ 1 week							
Site:		☐ 2 days							
P O #		☐ 1 day							

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Analysis Results	Notes
L3-SC1b-20to30-82619	8/26/19	1030	S		1	XX	
L3-SC1b-30to40-82619	8/26/19	1035	S		1	XX	
L3-SC1b-00to10-82619	8/26/19	1006	S		1	✓	
L3-SC1b-10to20-82619	8/26/19	1007	S		1	✓	
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		
	8/ /19		S		1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☒ Archive For Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

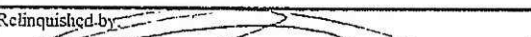
~~19I0008~~
19I0044

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/29/2019		COC No:		
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		7 of 8 COCs		
Pacific Groundwater Group		Analysis Turnaround Time								
2377 Eastlake Ave E, Seattle WA 98102		standard								
206 329 0141 Phone		TAT if different from Below _____								
206 329 6968 FAX		☒ standard								
Swan Island Lagoon Sediment Investigation		☐ 1 week								
Site:		☐ 2 days								
P O #		☐ 1 day								
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.				
D6-SC1b-20to30-826 19	8/26/19	1245	S	1	X	X	X	X	X	
D6-SC1b-30to40-826 19	8/26/19	1300	S	1	X	X	X	X	X	
D6-SC1b-40to50-826 19	8/26/19	1445	S	1	X	X	X	X	X	
D6-SC1b-50to60-826 19	8/26/19	1450	S	1	X	X	X	X	X	
D6-SC1b-60to70-826 19	8/26/19	1530	S	1	X	X	X	X	X	
D6-SC1b-70to80-826 19	8/26/19	1540	S	1	X	X	X	X	X	
D6-SC1b-80to90-826 19	8/26/19	1655	S	1	X	X	X	X	X	
D6-SC1b-90to100-826 19	8/26/19	1700	S	1	X	X	X	X	X	
D6-SC1b-100to110-826 19	8/26/19	1740	S	1	X	X	X	X	X	
D6-SC1b-110to120-826 19	8/26/19	1750	S	1	X	X	X	X	X	
D6-SC1b-10to20-826 19	8/26/19	1210	S	1	X	X	X	X	X	
411-SC1b-50to60-826 19	8/26/19	1500	S	1	X	X	X	X	X	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other										
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown		☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months								
Relinquished by:		Company:	Date/Time:	Received by:	Company:	Date/Time:				
		PGG	9/3/2019 1210		ARI	9/3/19 1430				
Relinquished by:		Company:	Date/Time:	Received by:	Company:	Date/Time:				
Relinquished by:		Company:	Date/Time:	Received by:	Company:	Date/Time:				

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/ /2019		COC No:		
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		17 of 6 COCs		
Pacific Groundwater Group		Analysis Turnaround Time						Job No. 2006-00115		
2377 Eastlake Ave E, Seattle WA 98102		standard								
206 329 0141 Phone		TAT if different from Below _____								
206 329 6968 FAX		☒ standard								
Swan Island Lagoon Sediment Investigation		☐ 1 week								
Site:		☐ 2 days								
P O #		☐ 1 day								
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:			
J3-SC1b-20to30-82719	8/27/19	1000	S	1			XX			
J3-SC1b-30to40-82719	8/27/19	1005	S	1			XX			
J3-SC1b-40to50-82719	8/27/19	1120	S	1			XX			
J3-SC1b-50to60-82719	8/27/19	1125	S	1			XX			
J3-SC1b-60to70-82719	8/27/19	1130	S	1			XX			
J3-SC1b-70to80-82719	8/27/19	1135	S	1			XX			
J3-SC1b-80to90-82719	8/27/19	1220	S	1			XX			
J3-SC1b-90to100-82719	8/27/19	1225	S	1			XX			
J3-SC1b-10to20-82719	8/27/19	0955	S	1			XX			
J3-SC1b-20to30-82719	8/ /19		S	1						
412-SC1b-20to40-82719	8/27/19	1235	S	1			XX			
	8/ /19		S	1						
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other _____										
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐						☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months				

Relinquished by: 	Company: PGG	Date/Time: 9/3/2019 1210	Received by: 	Company: ARI	Date/Time: 9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Other AR 19I0008
19J0044

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/27/2019 - 8/28/2019		COC No:		
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		5 of 8 COCs		
Pacific Groundwater Group		Analysis Turnaround Time						Job No. 2006-00115		
2377 Eastlake Ave E. Seattle WA 98102		standard								
206 329 0141 Phone		TAT if different from Below								
206 329 6968 FAX		☒ standard								
Swan Island Lagoon Sediment Investigation		☐ 1 week								
Site:		☐ 2 days								
P O #		☐ 1 day								
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:			
J6-SC1b-20to30-8 Z8 19	8/28/19	0920	S	1						
J6-SC1b-30to40-8 Z8 19	8/28/19	0925	S	1						
J6-SC1b-40to50-8 Z8 19	8/28/19	1025	S	1						
J6-SC1b-50to60-8 Z8 19	8/28/19	1030	S	1						
J6-SC1b-60to70-8 Z8 19	8/28/19	1035	S	1						
J6-SC1b-70to80-8 Z8 19	8/28/19	1040	S	1						
J6-SC1b-80to90-8 Z8 19	8/28/19	1155	S	1						
J6-SC1b-90to100-8 Z8 19	8/28/19	1200	S	1						
J6-SC1b-100to110-8 Z8 19	8/28/19	1205	S	1						
J6-SC1b-110to120-8 Z8 19	8/28/19	1210	S	1						
J6-SC1b-00to10-8 Z7 19	8/27/19	1930	S	1						
J6-SC1b-10to20-8 Z7 19	8/27/19	1935	S	1						
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other										
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐		☐ Return To Client ☐ Disposal By Lab ☒ Archive For Months								
Relinquished by:		Company:	Date/Time:	Received by:	Company:	Date/Time:				
		PGG	9/3/2019 1210		ARI	9/3/19 1430				
Relinquished by:		Company:	Date/Time:	Received by:	Company:	Date/Time:				
Relinquished by:		Company:	Date/Time:	Received by:	Company:	Date/Time:				

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19J0044

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/28/2019		COC No:		
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		17 of 6 COCs		
Pacific Groundwater Group		Analysis Turnaround Time						Job No. 2006-00115		
2377 Eastlake Ave E, Seattle WA 98102		standard								
206 329 0141 Phone		TAT if different from Below								
206 329 6968 FAX		☒ standard								
Swan Island Lagoon Sediment Investigation		☐ 1 week								
Site:		☐ 2 days								
P O #		☐ 1 day								
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:			
R4-SC1b-20to30-8 28 19	8/28/19	1400		S		1				
R4-SC1b-30to40-8 28 19	8/28/19	1405		S		1				
R4-SC1b-40to50-8 28 19	8/28/19	1510		S		1				
R4-SC1b-50to60-8 28 19	8/28/19	1520		S		1				
R4-SC1b-60to70-8 28 19	8/28/19	1530		S		1				
R4-SC1b-70to80-8 28 19	8/28/19	1555		S		1				
R4-SC1b-80to90-8 28 19	8/28/19	1630		S		1				
R4-SC1b-90to100-8 28 19	8/28/19	1640		S		1				
R4-SC1b-10to20-8 28 19										
R4-SC1b-10to20-8 28 19	8/28/19	1355		S		1	X 10/2/19			
	8/ /19			S		1				
	8/ /19			S		1				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Possible Hazard Identification							Return To Client			
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown							☐ Disposal By Lab ☒ Archive For Months			

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Other AM

19I0008

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/ /2019		COC No: 8	
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		7 of 8 COCs	
Pacific Groundwater Group		Analysis Turnaround Time		8082A Analytical TLC SW9060 Archive		Job No. 2006-00115			
2377 Eastlake Ave E, Seattle WA 98102		standard				SDG No.			
206 329 0141 Phone		TAT if different from Below							
206 329 6968 FAX		☒ standard ☐ 1 week ☐ 2 days ☐ 1 day							
Swan Island Lagoon Sediment Investigation		Site:							
P O #									
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:			
R4-SC1b-100to110-82819	8/28/19	1700		S	1	XX			
R4-SC1b-110to120-82819	8/28/19	1710		S	1	XX			
R4-SC1b-120to130-82819	8/28/19	1820		S	1	XX			
413-SC1b-40to50-82819	8/28/19	1045		S	1	XX			
413-SC1b-130to140-82819	8/28/19	1825		S	1	XX			
413-SC1b-140to150-82819	8/28/19	1830		S	1	XX			
413-SC1b-40to50-82819	8/28/19	1045		S	1	XX			
R4-SC1b-130to140-82819	8/28/19	1825		S	1	XX			
R4-SC1b-140to150-82819	8/28/19	1830		S	1	XX			
	8/ /19			S	1				
	8/ /19			S	1				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other									
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐						☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months			
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
		PGG		9/3/2019 1210				ARI	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	

Other ARI

19I0008
19J0044

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/28/2019		COC No:	
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		4 of 8 COCs	
Pacific Groundwater Group		Analysis Turnaround Time						Job No. 2006-00115	
2377 Eastlake Ave E, Seattle WA 98102		standard							
206 329 0141 Phone		TAT if different from Below							
206 329 6968 FAX		☒ standard							
Swan Island Lagoon Sediment Investigation		☐ 1 week							
Site:		☐ 2 days							
P O #		☐ 1 day							
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:		
H3-SC1b-20to30-82819	8/28/19	2015	S	1			X	X	
H3-SC1b-30to40-82819	8/29/19	0825	S	1			X	X	
H3-SC1b-40to50-82919	8/29/19	0830	S	1			X	X	
H3-SC1b-50to60-82919	8/29/19	0835	S	1			X	X	
H3-SC1b-60to70-82919	8/29/19	0900	S	1			X	X	
H3-SC1b-70to80-82919	8/29/19	0905	S	1			X	X	
H3-SC1b-80to90-82919	8/29/19	0930	S	1			X	X	
H3-SC1b-90to100-82919	8/29/19	0935	S	1			X	X	
H3-SC1b-100to110-82919	8/29/19	0950	S	1			X	X	
H3-SC1b-00to10-82819	8/28/19	2005	S	1			X	X	JP 1/4/19
H3-SC1b-10-20-82819	8/28/19	2010	S	1			X	X	JP 1/12/19
	8/ /19		S	1					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other									
Possible Hazard Identification									
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months									

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:



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SR#:

PAGE _____ OF _____ COC# _____

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Other ~~MT~~ 19I0008
19J0044

Chain of Custody Record

Client Contact		Project Manager: Janet Knox		Site Contact/Sampler: Jeff Parker		Date: 8/27/2019		COC No:	
Jeff Parker & Janet Knox		Tel/Fax:		Lab Contact:		Carrier:		4 of 8 COCs	
Pacific Groundwater Group		Analysis Turnaround Time						Job No. 2006-00115	
2377 Eastlake Ave E, Seattle WA 98102		standard							
206 329 0141 Phone		TAT if different from Below							
206 329 6968 FAX		☒ standard							
Swan Island Lagoon Sediment Investigation		☐ 1 week							
Site:		☐ 2 days							
P O #		☐ 1 day							

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Analysis Results	Archival	Sample Specific Notes
J5-SC1b-20to30-8 27 19	8/27/19	1455		S	1			
J5-SC1b-30to40-8 27 19	8/27/19	1500		S	1			
J5-SC1b-40to50-8 27 19	8/27/19	1610		S	1			
J5-SC1b-50to60-8 27 19	8/27/19	1615		S	1			
J5-SC1b-60to70-8 27 19	8/27/19	1620		S	1			
J5-SC1b-70to80-8 27 19	8/27/19	1625		S	1			
J5-SC1b-80to90-8 27 19	8/27/19	1725		S	1			
J5-SC1b-90to100-8 27 19	8/27/19	1730		S	1			
J5-SC1b-100to110-8 27 19	8/27/19	1735		S	1			
J5-SC1b-110to120-8 27 19								
J5-SC1b-00to10-8 27 19	8/27/19	1445		S	1			
J5-SC1b-10 to 20-8 27 19	8/27/19	1450		S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☒ Archive For _____ Months

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PGG	9/3/2019 1210		ARI	9/3/19 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

1950044

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Page 11 of 243 19I0008 ARISample FINAL 18 Sep 2019 1441

Additional Aroclor analyses

Jeff S. Parker

Wed 10/2/2019 2:24 PM

To: Kelly Bottem <kelly.bottem@arilabs.com>

📎 1 attachments (556 KB)
20191002112328460.pdf;

Hi Kelly,

I updated the COCs for the DTNA Sediments job with 10 or so additional Aroclor only analyses (no TOC needed).

I'm also going to hunt down three more of our samples from Test America and have them shipped (I think they are in Sacramento or Nashville). Also for Aroclors.

Thanks,
Jeff

Jeffrey Parker, LG | Environmental Geologist

Pacific Groundwater Group Water Resource & Environmental Consulting

(360) 570-8244 | jparker@pgwg.com | www.pgwg.com

PGG

Pull the Samples from 19I0008
The ones in dark black marked up on
COCs.

log under new job for
pcbs only



Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle WA, 98102

Project: Swan Island Lagoon Sediment Investigation
Project Number: Portland Harbor
Project Manager: Janet Knox

Reported:
15-Oct-2019 14:33

Case Narrative

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times for samples that have been frozen.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

The Matrix Spike/Matrix Spike duplicate recoveries and RPD were within limits with the exception of analytes flagged on the associated forms.



Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle WA, 98102

Project: Swan Island Lagoon Sediment Investigation
Project Number: Portland Harbor
Project Manager: Janet Knox

Reported:
15-Oct-2019 14:33

Case Narrative



Pacific Groundwater Group
2377 Eastlake Ave. E. Suite 200
Seattle, WA 98102

Project: Swan Island Lagoon Sediment Investigation
Project Number: Portland Harbor
Project Manager: Janet Knox

Reported:
10/15/2019 14:33

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
19J0044-01	L3-SC1b-00to10-82619	Solid	08/26/19 10:06	09/03/19 14:30
19J0044-02	L3-SC1b-10to20-82619	Solid	08/26/19 10:07	09/03/19 14:30
19J0044-03	D6-SC1b-10to20-82619	Solid	08/26/19 12:10	09/03/19 14:30
19J0044-04	J6-SC1b-00to10-82719	Solid	08/27/19 19:30	09/03/19 14:30
19J0044-05	J6-SC1b-10to20-82719	Solid	08/27/19 19:35	09/03/19 14:30
19J0044-06	R4-SC1b-10to20-82819	Solid	08/28/19 13:55	09/03/19 14:30
19J0044-07	H3-SC1b-00to10-82919	Solid	08/28/19 20:05	09/03/19 14:30
19J0044-08	H3-SC1b-10-20-82919	Solid	08/28/19 20:10	09/03/19 14:30
19J0044-09	J5-SC1b-00to10-82719	Solid	08/27/19 14:45	09/03/19 14:30
19J0044-10	J5-SC1b-10to20-82719	Solid	08/27/19 14:50	09/03/19 14:30



QUALIFIERS AND NOTES

Qualifier	Definition
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
J	Estimated concentration value detected below the reporting limit.
D	The reported value is from a dilution
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



Dual Column

L3-SC1b-00to10-82619

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-01 A

File ID: 19101119ECD7.D

Sampled: 08/26/19 10:06

Prepared: 10/07/19 13:55

Analyzed: 10/11/19 22:13

% Solids: 79.04

Preparation: EPA 3546 (Microwave)

Initial/Final: 16 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.5	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.5	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.5	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.5	4.0	U
12672-29-6	Aroclor 1248	1	1	4.8	1.5	4.0	
11097-69-1	Aroclor 1254	2	1	13.0	1.5	4.0	
11096-82-5	Aroclor 1260	1	1	11.2	0.6	4.0	
37324-23-5	Aroclor 1262	1	1	4.0	0.6	4.0	U
11100-14-4	Aroclor 1268	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9074	9.40	119	40 - 126	
<i>Tetrachlorometaxylene</i>	1	7.9074	6.83	86.4	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9074	8.36	106	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9074	6.63	83.8	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101119ECD7.D
Data file 2: /20191011.b/20191011.b/19101119ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-01
Client ID:
Injection Date: 11-OCT-2019 22:13
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.333	-0.008	110266	5.060	0.003	424584	34.6	33.5	3.0	Tetrachloro-m-xylene
13.608	-0.006	122031	13.685	-0.007	900772	47.5	42.3	11.7	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	86.4	83.8
Decachlorobiphenyl	118.9	105.8

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	257468	-2.1
Hexabromobiphenyl	382688	253667	-33.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1065827	-1.5
Hexabromobiphenyl	1006687	1109743	10.2

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.899	-0.027	4432	56.7	1	6.840	0.082	19193	36.2	
Aroclor-1016	2	7.309	-0.004	1231	4.4	2	7.381	-0.001	10387	9.4	
Aroclor-1016	3	7.476	0.016	1104	10.5	3	7.584	0.003	2003	4.5	
Aroclor-1016	4	8.262	-0.006	1382	16.1	4	7.693	-0.058	4315	15.5	
Total CollAve (4 peaks):				21.9		Total Col2Ave (4 peaks):				16.4	RPD = 29
Corrected Ave (3 peaks):				10.3		Corrected Ave (3 peaks):				9.8	RPD = 6
Aroclor-1221	1	---			0.0	1	4.377	0.094	4854	64.1	
Aroclor-1221	2	---			0.0	2	5.760	0.001	14414	91.2	
Aroclor-1221	3	---			0.0	3	6.110	0.006	13032	49.3	
CollAve: <3 Quant Peaks						Col2Ave:				68.2	
Aroclor-1232	1	---			0.0	1	4.377	0.095	4854	107.6	
Aroclor-1232	2	6.899	-0.026	4432	151.4	2	6.840	0.063	19193	85.5	
Aroclor-1232	3	7.309	-0.004	1231	11.8	3	7.381	-0.017	10387	23.1	
Aroclor-1232	4	7.476	0.016	1104	28.1	4	8.710	-0.019	14709	98.5	
Total CollAve (3 peaks):				63.8		Total Col2Ave (4 peaks):				70.7	RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				69.0	
Aroclor-1242	1	6.899	-0.027	4432	70.0	1	6.840	0.081	19193	47.5	
Aroclor-1242	2	7.309	-0.005	1231	5.4	2	7.381	-0.003	10387	11.9	
Aroclor-1242	3	8.627	-0.005	3090	40.9	3	7.693	-0.059	4315	19.4	
Aroclor-1242	4	8.915	-0.005	4857	60.3	4	8.783	-0.006	9732	35.2	
Total CollAve (4 peaks):				44.2		Total Col2Ave (4 peaks):				28.5	RPD = 43*
Corrected Ave (3 peaks):				35.6		Corrected Ave (3 peaks):				22.2	RPD = 46*
Aroclor-1248	1	8.091	-0.006	1755	15.2	1	7.381	-0.003	10387	17.9	
Aroclor-1248	2	8.627	-0.005	3090	21.5	2	8.256	-0.005	8564	19.6	
Aroclor-1248	3	8.915	-0.006	4857	36.2	3	8.783	-0.007	9732	22.1	
Aroclor-1248	4	9.501	-0.005	15167	176.2	4	9.106	-0.017	30738	54.0	
Total CollAve (4 peaks):				62.3		Total Col2Ave (4 peaks):				28.4	RPD = 75*
Corrected Ave (3 peaks):				24.3		Corrected Ave (3 peaks):				19.9	RPD = 20
Aroclor-1254	1	8.997	-0.005	11412	52.6	1	9.017	-0.010	44720	75.7	
Aroclor-1254	2	9.072	-0.006	5288	79.1	2	9.106	-0.011	30738	102.3	
Aroclor-1254	3	9.385	0.014	16461	131.9	3	9.521	-0.013	15310	33.1	
Aroclor-1254	4	9.501	-0.004	15167	56.8	4	9.670	-0.012	48062	51.9	
Aroclor-1254	5	10.201	-0.010	7974	44.7	5	10.444	-0.013	37367	65.3	
Total CollAve (5 peaks):				73.0		Total Col2Ave (5 peaks):				65.7	RPD = 11
Corrected Ave (4 peaks):				58.3		Corrected Ave (4 peaks):				56.5	RPD = 3
Aroclor-1260	1	10.757	-0.007	6654	56.8	1	10.774	-0.006	33722	48.3	
Aroclor-1260	2	11.073	-0.007	5381	47.9	2	11.209	-0.010	41074	58.2	
Aroclor-1260	3	11.442	-0.007	16144	56.6	3	11.489	-0.007	82964	46.9	
Aroclor-1260	4	11.842	-0.007	7927	61.6	4	12.002	-0.007	25725	46.8	
Aroclor-1260	5	11.959	-0.006	3653	60.0	NS	---			----	
Total CollAve (5 peaks):				56.6		Total Col2Ave (4 peaks):				50.1	RPD = 12
Corrected Ave (4 peaks):				55.3		Corrected Ave (3 peaks):				47.3	RPD = 16
Aroclor-1262	1	11.073	-0.007	5381	40.5	1	10.774	-0.020	33722	35.0	
Aroclor-1262	2	11.442	-0.007	16144	49.1	2	11.209	-0.026	41074	49.9	
Aroclor-1262	3	11.842	-0.008	7927	81.1	3	11.489	-0.022	82964	43.9	
Aroclor-1262	4	11.959	-0.006	3653	29.5	4	12.002	-0.022	25725	27.9	
Total CollAve (4 peaks):				50.1		Total Col2Ave (4 peaks):				39.2	RPD = 24
Corrected Ave (3 peaks):				39.7		Corrected Ave (3 peaks):				35.6	RPD = 11
Aroclor-1268	1	11.959	-0.006	3653	9.4	1	12.002	-0.021	25725	10.8	
Aroclor-1268	2	12.032	-0.004	4040	11.5	2	12.057	-0.034	56935	23.7	
Aroclor-1268	3	12.427	0.004	2535	8.5	3	12.459	-0.022	6301	2.9	
Aroclor-1268	4	13.200	-0.007	3076	3.3	4	13.274	-0.024	20094	2.6	
Total CollAve (4 peaks):				8.2		Total Col2Ave (4 peaks):				10.0	RPD = 20
Corrected Ave (3 peaks):				7.1		Corrected Ave (3 peaks):				5.4	RPD = 26

Total PCB Area Col1 (5.441 - 13.514) = 305258 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 1520165 Col2 Total PCB = 0.2 ppm*

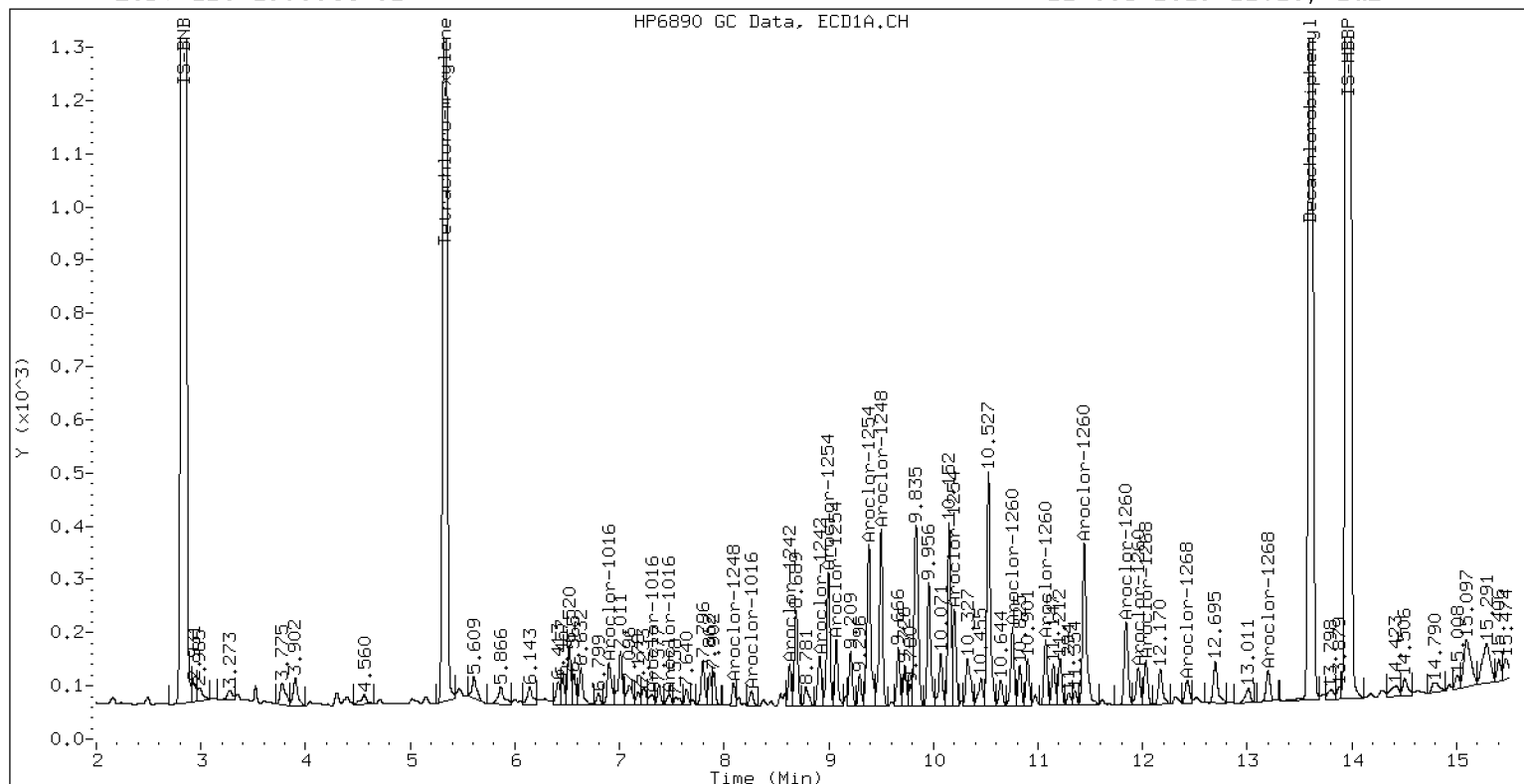
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-01

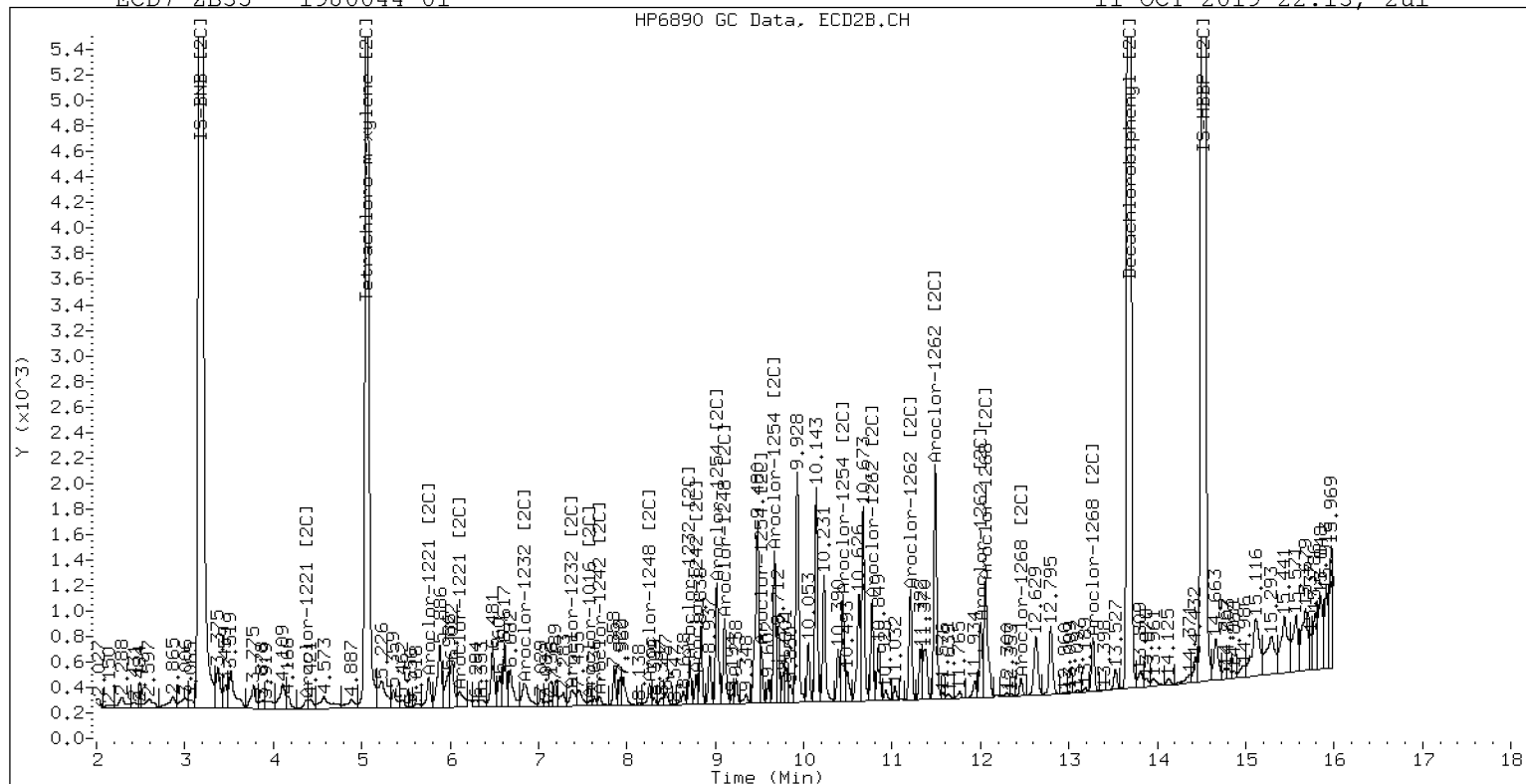
11-OCT-2019 22:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-01

11-OCT-2019 22:13, 2ul



ZB-35 Manual Integration: NO



Dual Column

L3-SC1b-10to20-82619

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-02 A

File ID: 19101122ECD7.D

Sampled: 08/26/19 10:07

Prepared: 10/07/19 13:55

Analyzed: 10/11/19 23:15

% Solids: 79.15

Preparation: EPA 3546 (Microwave)

Initial/Final: 15.89 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	1	1	5.1	1.6	4.0	
11097-69-1	Aroclor 1254	2	1	14.5	1.6	4.0	
11096-82-5	Aroclor 1260	2	1	9.5	0.6	4.0	
37324-23-5	Aroclor 1262	1	1	4.0	0.6	4.0	U
11100-14-4	Aroclor 1268	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9511	9.33	117	40 - 126	
<i>Tetrachlorometaxylene</i>	1	7.9511	7.24	91.1	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9511	8.69	109	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9511	7.07	88.9	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101122ECD7.D
Data file 2: /20191011.b/20191011.b/19101122ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-02
Client ID:
Injection Date: 11-OCT-2019 23:15
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.009	112206	5.060	0.003	436757	36.4	35.6	2.4	Tetrachloro-m-xylene
13.608	-0.005	125329	13.685	-0.008	922002	47.0	43.7	7.1	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	91.1	88.9
Decachlorobiphenyl	117.4	109.3

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	248558	-5.5
Hexabromobiphenyl	382688	263770	-31.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1033415	-4.5
Hexabromobiphenyl	1006687	1099075	9.2

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.900	-0.026	3323	44.1	1	6.844	0.086	12302	23.9	
Aroclor-1016	2	7.308	-0.005	1017	3.8	2	7.382	-0.000	8052	7.5	
Aroclor-1016	3	7.377	-0.083	1375	13.6	3	7.583	0.002	1625	3.8	
Aroclor-1016	4	8.261	-0.006	1244	15.0	4	7.692	-0.059	2437	9.0	
Total CollAve (4 peaks):				19.1	Total Col2Ave (4 peaks):				11.1	RPD = 53*	
Corrected Ave (3 peaks):				10.8	Corrected Ave (3 peaks):				6.8	RPD = 46*	
Aroclor-1221	1	---			0.0	1	4.382	0.099	3110	42.4	
Aroclor-1221	2	---			0.0	2	5.761	0.003	9497	62.0	
Aroclor-1221	3	---			0.0	3	6.105	0.001	8686	33.9	
CollAve: <3 Quant Peaks						Col2Ave: 46.1					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	6.900	-0.025	3323	117.6	2	6.844	0.067	12302	56.5	
Aroclor-1232	3	7.308	-0.005	1017	10.1	3	7.382	-0.015	8052	18.5	
Aroclor-1232	4	7.377	-0.083	1375	36.3	4	8.711	-0.018	15738	108.7	
Total CollAve (3 peaks):				54.7	Total Col2Ave (3 peaks):				61.2	RPD = 11	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1242	1	6.900	-0.026	3323	54.3	1	6.844	0.085	12302	31.4	
Aroclor-1242	2	7.308	-0.006	1017	4.6	2	7.382	-0.002	8052	9.5	
Aroclor-1242	3	8.627	-0.004	3004	41.2	3	7.692	-0.060	2437	11.3	
Aroclor-1242	4	8.915	-0.005	4539	58.4	4	8.785	-0.004	8975	33.4	
Total CollAve (4 peaks):				39.6	Total Col2Ave (4 peaks):				21.4	RPD = 60*	
Corrected Ave (3 peaks):				33.4	Corrected Ave (3 peaks):				17.4	RPD = 63*	
Aroclor-1248	1	8.091	-0.006	2273	20.3	1	7.382	-0.002	8052	14.3	
Aroclor-1248	2	8.627	-0.005	3004	21.6	2	8.257	-0.004	8086	19.1	
Aroclor-1248	3	8.915	-0.005	4539	35.1	3	8.785	-0.005	8975	21.0	
Aroclor-1248	4	9.501	-0.006	15051	181.2	4	9.108	-0.015	31879	57.7	
Total CollAve (4 peaks):				64.5	Total Col2Ave (4 peaks):				28.0	RPD = 79*	
Corrected Ave (3 peaks):				25.7	Corrected Ave (3 peaks):				18.1	RPD = 34	
Aroclor-1254	1	8.997	-0.005	11340	54.1	1	9.018	-0.009	47094	82.2	
Aroclor-1254	2	9.073	-0.005	4932	76.4	2	9.108	-0.010	31879	109.4	
Aroclor-1254	3	9.383	0.012	15183	126.0	3	9.523	-0.011	19376	43.2	
Aroclor-1254	4	9.501	-0.005	15051	58.4	4	9.672	-0.010	51238	57.0	
Aroclor-1254	5	10.202	-0.009	8287	48.1	5	10.444	-0.012	41115	74.1	
Total CollAve (5 peaks):				72.6	Total Col2Ave (5 peaks):				73.2	RPD = 1	
Corrected Ave (4 peaks):				59.3	Corrected Ave (4 peaks):				64.1	RPD = 8	
Aroclor-1260	1	10.758	-0.006	5375	44.1	1	10.775	-0.005	29348	42.4	
Aroclor-1260	2	11.074	-0.006	4274	36.6	2	11.209	-0.010	38207	54.7	
Aroclor-1260	3	11.443	-0.006	14101	47.6	3	11.491	-0.006	77065	44.0	
Aroclor-1260	4	11.843	-0.006	7057	52.8	4	12.004	-0.005	27582	50.6	
Aroclor-1260	5	11.960	-0.006	3661	57.8	NS	---			----	
Total CollAve (5 peaks):				47.8	Total Col2Ave (4 peaks):				48.0	RPD = 0	
Corrected Ave (4 peaks):				45.3	Corrected Ave (3 peaks):				45.7	RPD = 1	
Aroclor-1262	1	11.074	-0.006	4274	30.9	1	10.775	-0.019	29348	30.8	
Aroclor-1262	2	11.443	-0.006	14101	41.2	2	11.209	-0.026	38207	46.9	
Aroclor-1262	3	11.843	-0.007	7057	69.5	3	11.491	-0.020	77065	41.2	
Aroclor-1262	4	11.960	-0.006	3661	28.4	4	12.004	-0.020	27582	30.2	
Total CollAve (4 peaks):				42.5	Total Col2Ave (4 peaks):				37.8	RPD = 13	
Corrected Ave (3 peaks):				33.5	Corrected Ave (3 peaks):				34.1	RPD = 2	
Aroclor-1268	1	11.960	-0.006	3661	9.0	1	12.004	-0.019	27582	11.7	
Aroclor-1268	2	12.033	-0.003	4651	12.7	2	12.059	-0.031	63022	26.5	
Aroclor-1268	3	12.430	0.007	2723	8.8	3	12.461	-0.020	12243	5.7	
Aroclor-1268	4	13.201	-0.006	3335	3.4	4	13.275	-0.022	19091	2.5	
Total CollAve (4 peaks):				8.5	Total Col2Ave (4 peaks):				11.6	RPD = 31	
Corrected Ave (3 peaks):				7.1	Corrected Ave (3 peaks):				6.6	RPD = 7	

Total PCB Area Col1 (5.441 - 13.514) = 277933 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 1479617 Col2 Total PCB = 0.2 ppm*

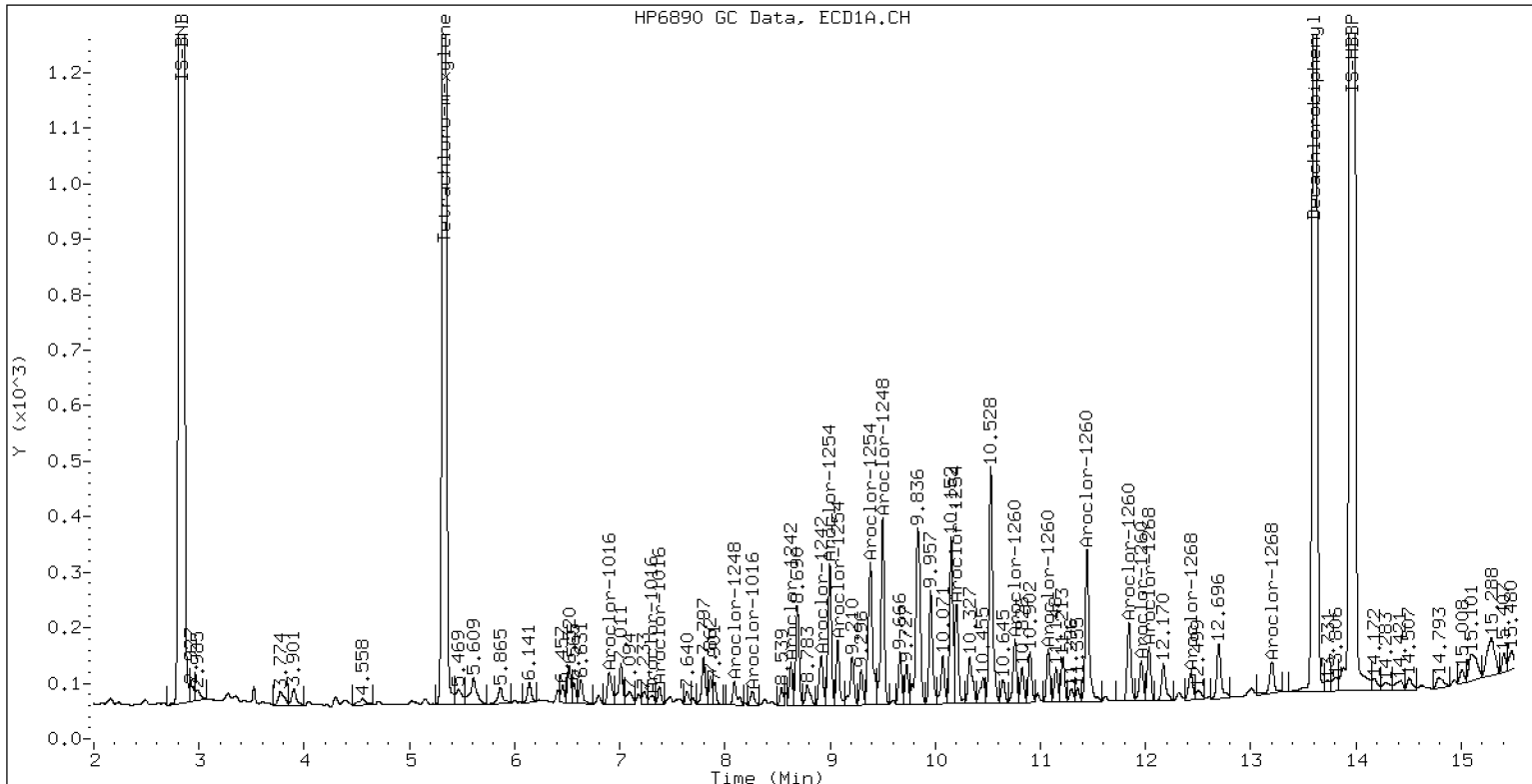
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-02

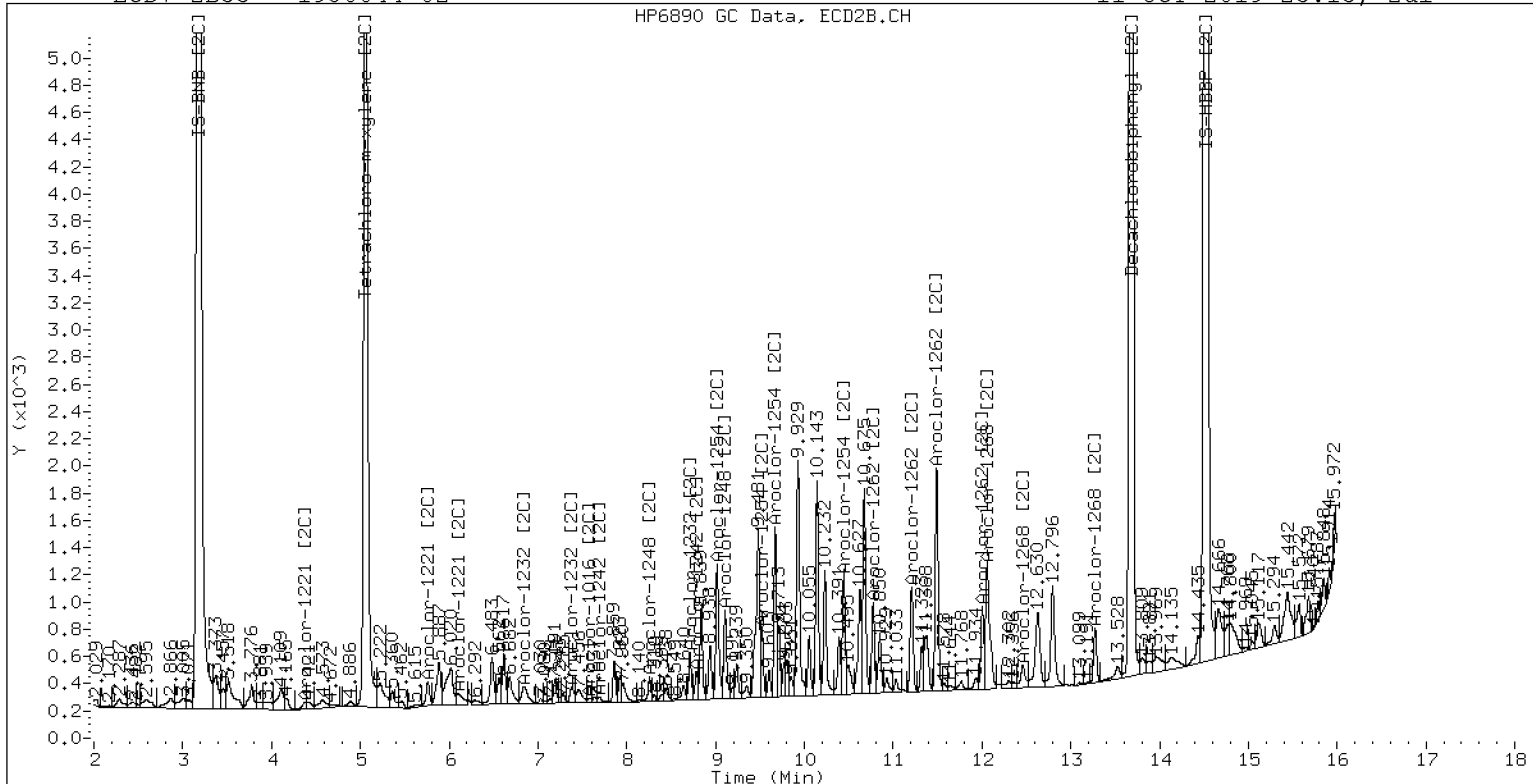
11-OCT-2019 23:15, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-02

11-OCT-2019 23:15, 2ul



ZB-35 Manual Integration: NO



Dual Column

D6-SC1b-10to20-82619

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-03 A

File ID: 19101125ECD7.D

Sampled: 08/26/19 12:10

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 00:18

% Solids: 53.02

Preparation: EPA 3546 (Microwave)

Initial/Final: 23.76 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	10	39.7	15.5	39.7	U
11104-28-2	Aroclor 1221	1	10	39.7	15.5	39.7	U
11141-16-5	Aroclor 1232	1	10	39.7	15.5	39.7	U
53469-21-9	Aroclor 1242	1	10	39.7	15.5	39.7	U
12672-29-6	Aroclor 1248	1	10	323	15.5	39.7	D
11097-69-1	Aroclor 1254	2	10	1040	15.5	39.7	D
11096-82-5	Aroclor 1260	1	10	349	5.8	39.7	D
37324-23-5	Aroclor 1262	1	10	39.7	5.8	39.7	U
11100-14-4	Aroclor 1268	1	10	39.7	5.8	39.7	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9381	15.8	199	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9381	6.12	77.2	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9381	8.77	110	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9381	7.54	95.0	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101125ECD7.D
Data file 2: /20191011.b/20191011.b/19101125ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-03
Client ID:
Injection Date: 12-OCT-2019 00:18
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 10.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.331	-0.010	9322	5.057	0.000	39936	3.1	3.8	20.7	Tetrachloro-m-xylene
13.605	-0.008	16565	13.678	-0.015	95052	8.0	4.4	57.2*	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	77.2	95.0
Decachlorobiphenyl	199.1	110.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	243833	-7.3
Hexabromobiphenyl	382688	205588	-46.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	884950	-18.2
Hexabromobiphenyl	1006687	1121002	11.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.915	-0.011	1827	24.7	1	6.760	0.002	9536	21.7	
Aroclor-1016	2	7.306	-0.006	5194	19.7	2	7.380	-0.002	23844	25.9	
Aroclor-1016	3	7.458	-0.002	2839	28.6	3	7.578	-0.003	6547	17.7	
Aroclor-1016	4	8.258	-0.009	8862	108.7	4	7.745	-0.006	2504	10.8	
Total CollAve (4 peaks):				45.4		Total Col2Ave (4 peaks):				19.0	RPD = 82*
Corrected Ave (3 peaks):				24.3		Corrected Ave (3 peaks):				16.7	RPD = 37
Aroclor-1221	1	---			0.0	1	4.372	0.089	2037	32.4	
Aroclor-1221	2	5.613	-0.098	1056	38.1	2	5.747	-0.011	2609	19.9	
Aroclor-1221	3	5.976	-0.007	1234	17.6	3	6.082	-0.022	11413	52.0	
CollAve: <3 Quant Peaks						Col2Ave: 34.8					
Aroclor-1232	1	---			0.0	1	4.372	0.090	2037	54.4	
Aroclor-1232	2	6.915	-0.010	1827	65.9	2	6.760	-0.017	9536	51.1	
Aroclor-1232	3	7.306	-0.006	5194	52.4	3	7.380	-0.017	23844	63.9	
Aroclor-1232	4	7.458	-0.001	2839	76.4	4	8.706	-0.023	100980	814.4	
Total CollAve (3 peaks):				64.9		Total Col2Ave (4 peaks):				246.0	RPD = 116*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				56.5	
Aroclor-1242	1	6.915	-0.010	1827	30.5	1	6.760	0.001	9536	28.4	
Aroclor-1242	2	7.306	-0.008	5194	24.0	2	7.380	-0.003	23844	32.9	
Aroclor-1242	3	8.624	-0.007	25070	350.7	3	7.745	-0.007	2504	13.6	
Aroclor-1242	4	8.916	-0.003	20561	269.8	4	8.777	-0.011	62032	270.0	
Total CollAve (4 peaks):				168.7		Total Col2Ave (4 peaks):				86.2	RPD = 65*
Corrected Ave (3 peaks):				108.1		Corrected Ave (3 peaks):				25.0	RPD = 125*
Aroclor-1248	1	8.088	-0.008	15594	142.3	1	7.380	-0.004	23844	49.6	
Aroclor-1248	2	8.624	-0.008	25070	183.8	2	8.255	-0.006	60693	167.3	
Aroclor-1248	3	8.916	-0.004	20561	162.0	3	8.777	-0.012	62032	169.7	
Aroclor-1248	4	9.497	-0.009	112951	1305.9	4	9.105	-0.018	153260	324.1	
Total CollAve (4 peaks):				468.5		Total Col2Ave (4 peaks):				177.7	RPD = 90*
Corrected Ave (3 peaks):				162.7		Corrected Ave (3 peaks):				128.8	RPD = 23
Aroclor-1254	1	8.994	-0.008	90314	439.6	1	9.015	-0.012	272150	555.0	
Aroclor-1254	2	9.070	-0.008	33606	530.6	2	9.105	-0.013	153260	614.4	
Aroclor-1254	3	9.363	-0.008	49369	417.7	3	9.521	-0.013	152765	397.3	
Aroclor-1254	4	9.497	-0.008	112951	446.4	4	9.668	-0.014	411082	534.5	
Aroclor-1254	5	10.199	-0.011	50033	343.6	5	10.439	-0.017	243400	512.2	
Total CollAve (5 peaks):				435.6		Total Col2Ave (5 peaks):				522.7	RPD = 18
Corrected Ave (4 peaks):				411.8		Corrected Ave (4 peaks):				459.7	RPD = 19
Aroclor-1260	1	10.753	-0.010	16412	172.9	1	10.770	-0.010	79722	113.0	
Aroclor-1260	2	11.069	-0.011	14581	160.2	2	11.200	-0.018	159523	223.9	
Aroclor-1260	3	11.439	-0.011	36584	158.3	3	11.486	-0.010	204412	114.5	
Aroclor-1260	4	11.838	-0.010	23738	227.7	4	11.999	-0.011	58581	105.4	
Aroclor-1260	5	11.955	-0.010	7923	160.5	NS	---			---	
Total CollAve (5 peaks):				175.9		Total Col2Ave (4 peaks):				139.2	RPD = 23
Corrected Ave (4 peaks):				163.0		Corrected Ave (3 peaks):				111.0	RPD = 38
Aroclor-1262	1	11.069	-0.011	14581	135.4	1	10.770	-0.024	79722	82.0	
Aroclor-1262	2	11.439	-0.010	36584	137.2	2	11.200	-0.034	159523	191.8	
Aroclor-1262	3	11.838	-0.011	23738	299.8	3	11.486	-0.024	204412	107.2	
Aroclor-1262	4	11.955	-0.010	7923	79.0	4	11.999	-0.025	58581	63.0	
Total CollAve (4 peaks):				162.8		Total Col2Ave (4 peaks):				111.0	RPD = 38
Corrected Ave (3 peaks):				117.2		Corrected Ave (3 peaks):				84.0	RPD = 33
Aroclor-1268	1	11.955	-0.010	7923	25.1	1	11.999	-0.024	58581	24.3	
Aroclor-1268	2	12.028	-0.008	9262	32.5	2	12.053	-0.037	148413	61.3	
Aroclor-1268	3	12.427	0.004	5145	21.3	3	12.457	-0.024	8726	4.0	
Aroclor-1268	4	13.197	-0.010	5473	7.2	4	13.271	-0.026	30131	3.9	
Total CollAve (4 peaks):				21.5		Total Col2Ave (4 peaks):				23.3	RPD = 8
Corrected Ave (3 peaks):				17.9		Corrected Ave (3 peaks):				10.7	RPD = 50*

Total PCB Area Col1 (5.441 - 13.514) = 1265258 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5378310 Col2 Total PCB = 0.8 ppm*

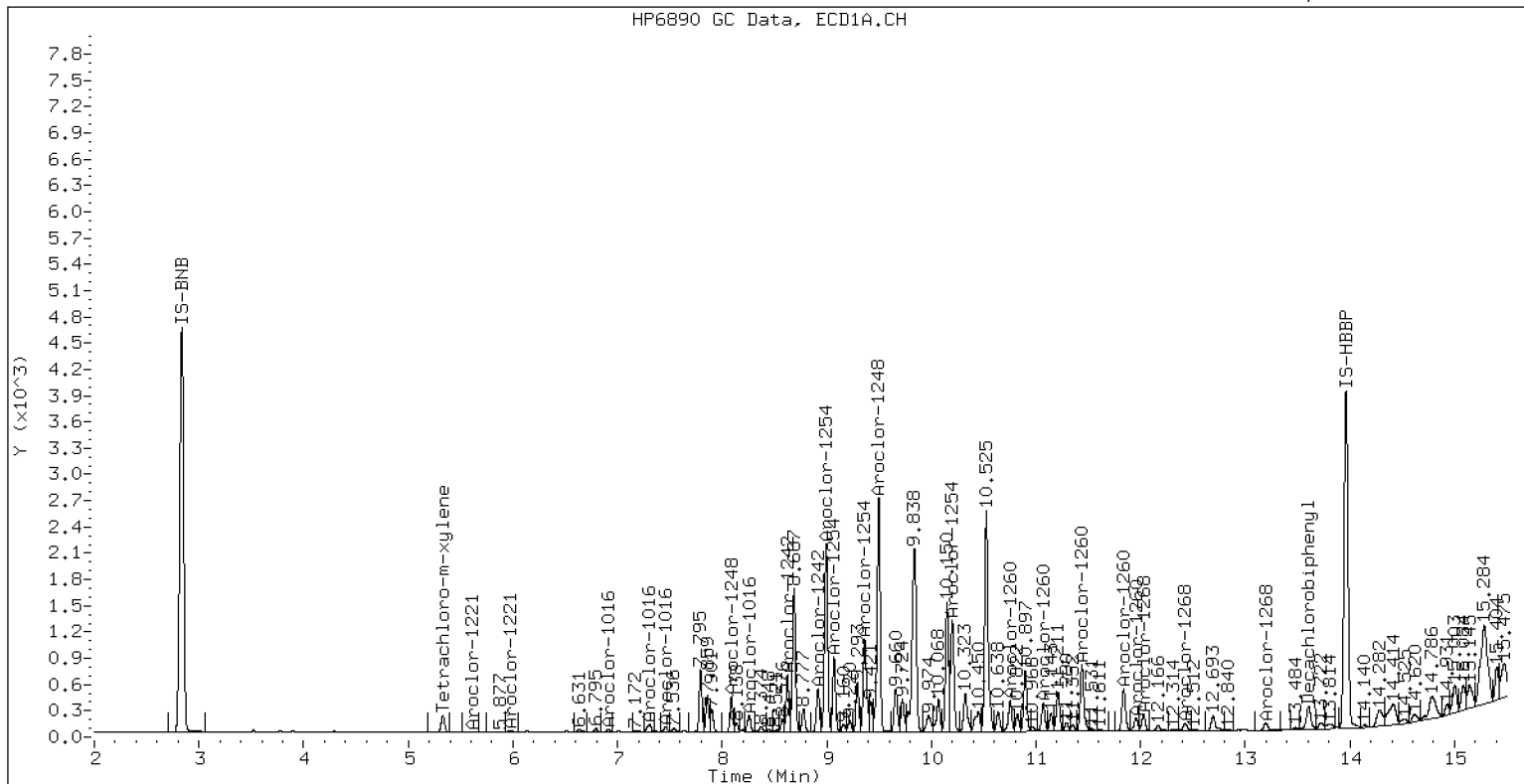
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-03

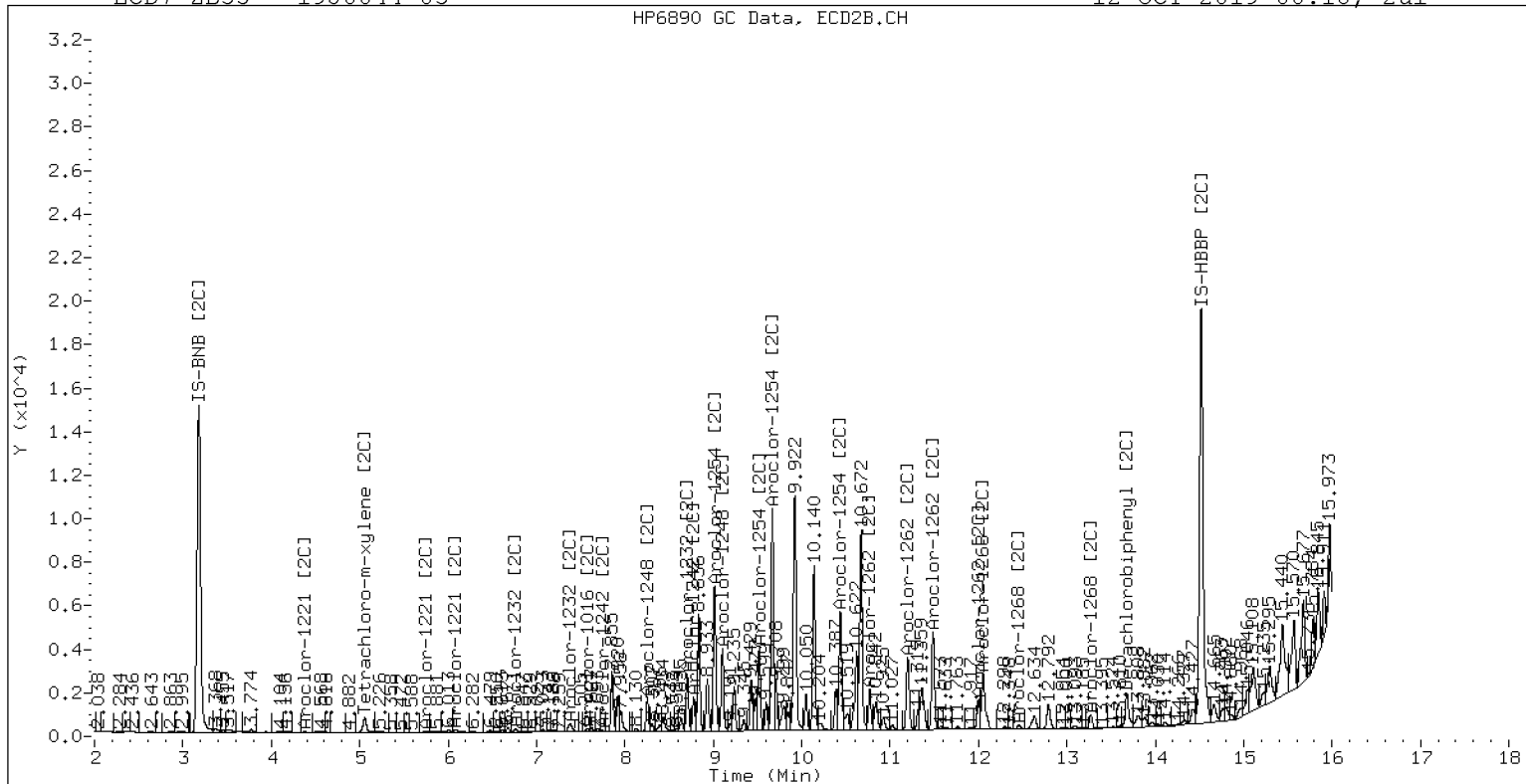
12-OCT-2019 00:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-03

12-OCT-2019 00:18, 2ul



ZB-35 Manual Integration: NO



Dual Column

J6-SC1b-00to10-82719

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-04 A

File ID: 19101126ECD7.D

Sampled: 08/27/19 19:30

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 00:39

% Solids: 52.10

Preparation: EPA 3546 (Microwave)

Initial/Final: 24.06 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	10	39.9	15.6	39.9	U
11104-28-2	Aroclor 1221	1	10	39.9	15.6	39.9	U
11141-16-5	Aroclor 1232	1	10	39.9	15.6	39.9	U
53469-21-9	Aroclor 1242	1	10	39.9	15.6	39.9	U
12672-29-6	Aroclor 1248	1	10	39.9	15.6	39.9	U
11097-69-1	Aroclor 1254	2	10	720	15.6	39.9	D
11096-82-5	Aroclor 1260	1	10	444	5.9	39.9	D
37324-23-5	Aroclor 1262	1	10	39.9	5.9	39.9	U
11100-14-4	Aroclor 1268	1	10	39.9	5.9	39.9	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9775	20.4	255	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9775	6.62	83.0	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9775	11.7	147	40 - 126	*
<i>Tetrachlorometaxylene</i>	2	7.9775	8.02	100	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101126ECD7.D
Data file 2: /20191011.b/20191011.b/19101126ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-04
Client ID:
Injection Date: 12-OCT-2019 00:39
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 10.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.009	10162	5.059	0.002	46206	3.3	4.0	19.0	Tetrachloro-m-xylene
13.605	-0.008	22003	13.678	-0.014	130140	10.2	5.9	54.1*	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	83.0	100.5
Decachlorobiphenyl	255.3	146.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	246997	-6.1
Hexabromobiphenyl	382688	212982	-44.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	967772	-10.6
Hexabromobiphenyl	1006687	1156993	14.9

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.916	-0.010	2900	38.7	1	6.765	0.006	8895	18.5	
Aroclor-1016	2	7.311	-0.001	7331	27.5	2	7.384	0.002	34868	34.7	
Aroclor-1016	3	7.463	0.003	4388	43.7	3	7.580	-0.002	5164	12.7	
Aroclor-1016	4	8.255	-0.012	10031	121.5	4	7.745	-0.006	2920	11.5	
Total CollAve (4 peaks):				57.8	Total Col2Ave (4 peaks):				19.4	RPD = 100*	
Corrected Ave (3 peaks):				36.6	Corrected Ave (3 peaks):				14.3	RPD = 88*	
Aroclor-1221	1	---			0.0	1	4.214	-0.069	1072	15.6	
Aroclor-1221	2	---			0.0	2	5.755	-0.003	2432	16.9	
Aroclor-1221	3	---			0.0	3	6.106	0.002	7290	30.4	
CollAve: <3 Quant Peaks						Col2Ave: 21.0					
Aroclor-1232	1	---			0.0	1	4.214	-0.068	1072	26.2	
Aroclor-1232	2	6.916	-0.009	2900	103.3	2	6.765	-0.012	8895	43.6	
Aroclor-1232	3	7.311	-0.001	7331	73.1	3	7.384	-0.013	34868	85.5	
Aroclor-1232	4	7.463	0.004	4388	116.6	4	8.708	-0.022	77864	574.2	
Total CollAve (3 peaks):				97.6	Total Col2Ave (4 peaks):				182.4	RPD = 61*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				51.8		
Aroclor-1242	1	6.916	-0.010	2900	47.7	1	6.765	0.005	8895	24.2	
Aroclor-1242	2	7.311	-0.003	7331	33.4	2	7.384	0.001	34868	44.0	
Aroclor-1242	3	8.625	-0.007	17576	242.7	3	7.745	-0.008	2920	14.5	
Aroclor-1242	4	8.916	-0.004	20676	267.8	4	8.778	-0.010	56079	223.2	
Total CollAve (4 peaks):				147.9	Total Col2Ave (4 peaks):				76.5	RPD = 64*	
Corrected Ave (3 peaks):				107.9	Corrected Ave (3 peaks):				27.6	RPD = 119*	
Aroclor-1248	1	8.089	-0.008	10829	97.5	1	7.384	0.000	34868	66.3	
Aroclor-1248	2	8.625	-0.007	17576	127.2	2	8.255	-0.006	44094	111.1	
Aroclor-1248	3	8.916	-0.004	20676	160.8	3	8.778	-0.011	56079	140.3	
Aroclor-1248	4	9.498	-0.008	89792	1007.6	4	9.105	-0.018	132573	256.4	
Total CollAve (4 peaks):				368.3	Total Col2Ave (4 peaks):				143.5	RPD = 88*	
Corrected Ave (3 peaks):				128.5	Corrected Ave (3 peaks):				105.9	RPD = 19	
Aroclor-1254	1	8.996	-0.007	66309	318.6	1	9.016	-0.011	225835	421.1	
Aroclor-1254	2	9.071	-0.007	27193	423.8	2	9.105	-0.012	132573	486.0	
Aroclor-1254	3	9.368	-0.003	44017	367.7	3	9.521	-0.012	99702	237.1	
Aroclor-1254	4	9.498	-0.007	89792	350.3	4	9.669	-0.013	269524	320.4	
Aroclor-1254	5	10.199	-0.012	40007	233.9	5	10.440	-0.016	176580	339.8	
Total CollAve (5 peaks):				338.9	Total Col2Ave (5 peaks):				360.9	RPD = 6	
Corrected Ave (4 peaks):				317.6	Corrected Ave (4 peaks):				329.6	RPD = 4	
Aroclor-1260	1	10.754	-0.010	20804	211.5	1	10.771	-0.009	103632	142.4	
Aroclor-1260	2	11.069	-0.011	17884	189.6	2	11.204	-0.015	149462	203.3	
Aroclor-1260	3	11.440	-0.009	48977	204.6	3	11.487	-0.010	264279	143.4	
Aroclor-1260	4	11.839	-0.010	27907	258.4	4	11.999	-0.010	97247	169.6	
Aroclor-1260	5	11.956	-0.010	12677	248.0	NS	---			----	
Total CollAve (5 peaks):				222.4	Total Col2Ave (4 peaks):				164.7	RPD = 30	
Corrected Ave (4 peaks):				213.4	Corrected Ave (3 peaks):				151.8	RPD = 34	
Aroclor-1262	1	11.069	-0.011	17884	160.3	1	10.771	-0.024	103632	103.2	
Aroclor-1262	2	11.440	-0.009	48977	177.3	2	11.204	-0.031	149462	174.1	
Aroclor-1262	3	11.839	-0.011	27907	340.2	3	11.487	-0.024	264279	134.3	
Aroclor-1262	4	11.956	-0.010	12677	121.9	4	11.999	-0.025	97247	101.3	
Total CollAve (4 peaks):				200.0	Total Col2Ave (4 peaks):				128.2	RPD = 44*	
Corrected Ave (3 peaks):				153.2	Corrected Ave (3 peaks):				112.9	RPD = 30	
Aroclor-1268	1	11.956	-0.010	12677	38.7	1	11.999	-0.024	97247	39.0	
Aroclor-1268	2	12.028	-0.008	13380	45.3	2	12.054	-0.036	208191	83.3	
Aroclor-1268	3	12.419	-0.004	10247	41.0	3	12.456	-0.025	59070	26.1	
Aroclor-1268	4	13.198	-0.008	17531	22.2	4	13.272	-0.025	117730	14.7	
Total CollAve (4 peaks):				36.8	Total Col2Ave (4 peaks):				40.8	RPD = 10	
Corrected Ave (3 peaks):				34.0	Corrected Ave (3 peaks):				26.6	RPD = 24	

Total PCB Area Col1 (5.441 - 13.514) = 1234692 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5722968 Col2 Total PCB = 0.8 ppm*

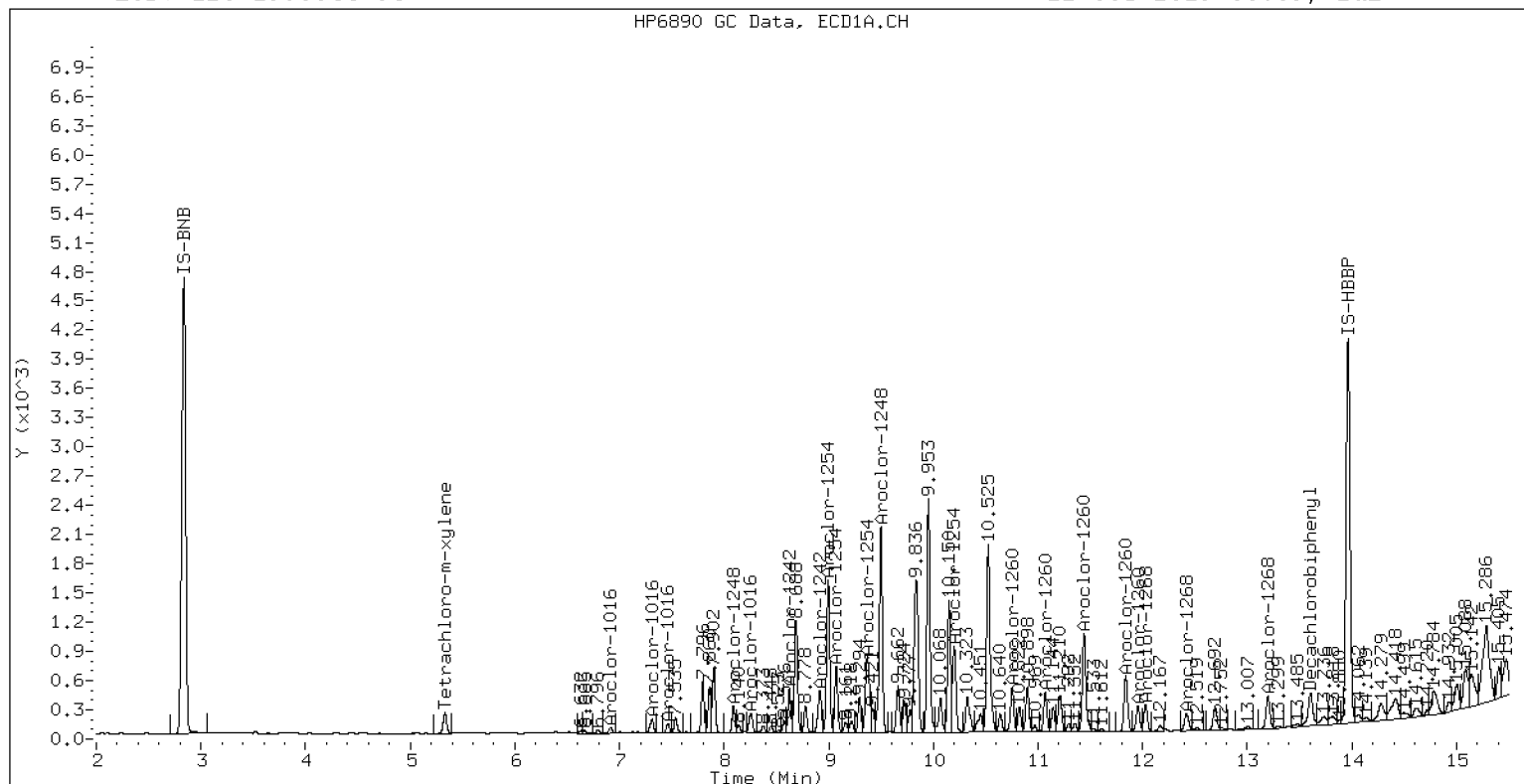
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-04

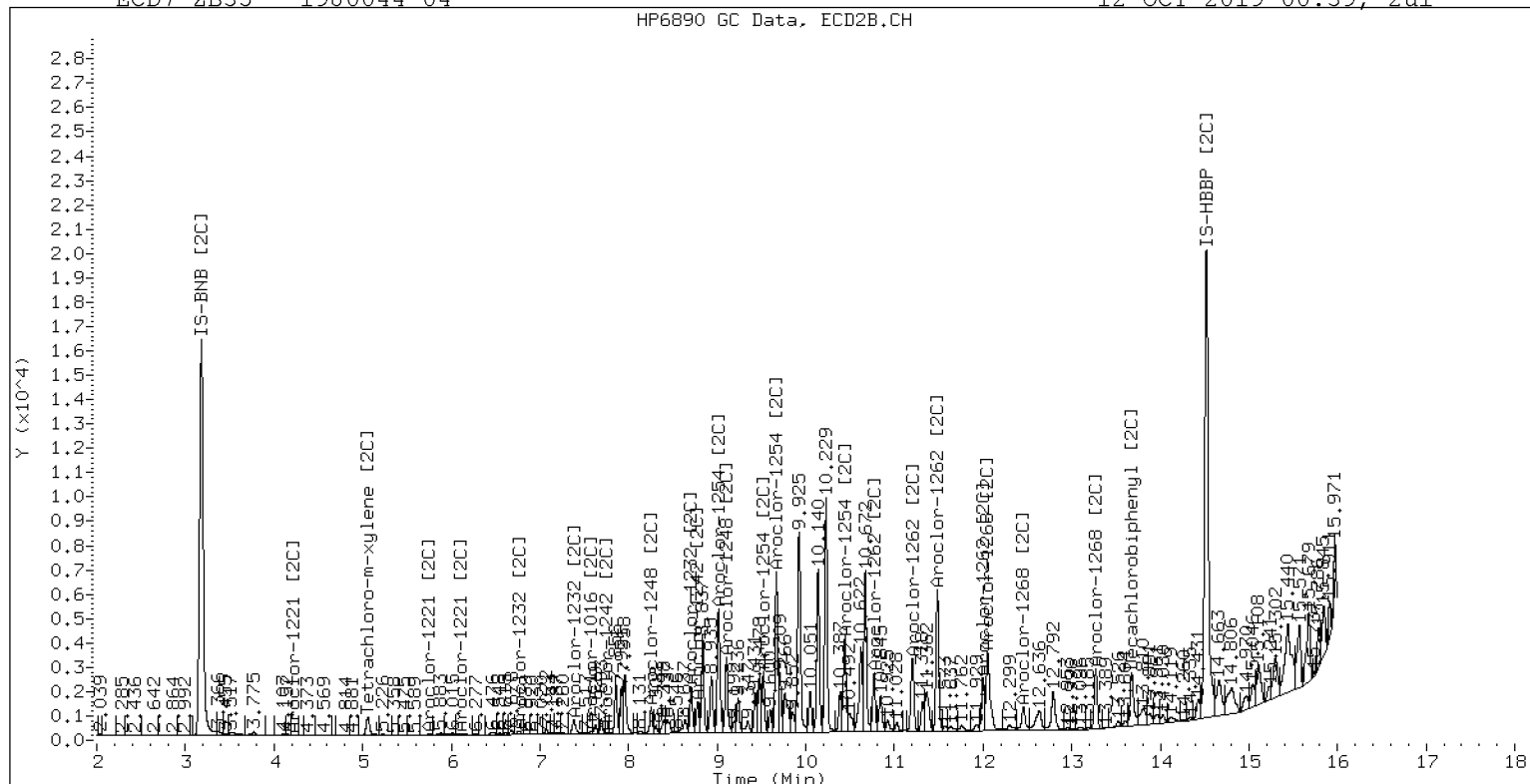
12-OCT-2019 00:39, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-04

12-OCT-2019 00:39, 2ul



ZB-35 Manual Integration: NO



Dual Column

J6-SC1b-10to20-82719

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-05 A

File ID: 19101127ECD7.D

Sampled: 08/27/19 19:35

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 01:00

% Solids: 51.89

Preparation: EPA 3546 (Microwave)

Initial/Final: 24.27 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	5	19.9	7.7	19.9	U
11104-28-2	Aroclor 1221	1	5	19.9	7.7	19.9	U
11141-16-5	Aroclor 1232	1	5	19.9	7.7	19.9	U
53469-21-9	Aroclor 1242	1	5	19.9	7.7	19.9	U
12672-29-6	Aroclor 1248	2	5	84.7	7.7	19.9	D
11097-69-1	Aroclor 1254	2	5	161	7.7	19.9	D
11096-82-5	Aroclor 1260	1	5	178	2.9	19.9	D
37324-23-5	Aroclor 1262	1	5	19.9	2.9	19.9	U
11100-14-4	Aroclor 1268	1	5	19.9	2.9	19.9	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9405	12.7	160	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9405	6.25	78.8	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9405	8.18	103	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9405	6.99	88.0	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101127ECD7.D
Data file 2: /20191011.b/20191011.b/19101127ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-05
Client ID:
Injection Date: 12-OCT-2019 01:00
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 5.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.331	-0.009	20277	5.058	0.001	80961	6.3	7.0	11.1	Tetrachloro-m-xylene
13.604	-0.010	27507	13.677	-0.016	167169	12.8	8.2	43.1*	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	78.8	88.0
Decachlorobiphenyl	159.7	103.0

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	259798	-1.2
Hexabromobiphenyl	382688	212805	-44.4

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	968271	-10.5
Hexabromobiphenyl	1006687	1057324	5.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.911	-0.015	3305	41.9	1	6.758	-0.000	15438	32.1	
Aroclor-1016	2	7.307	-0.006	8255	29.4	2	7.379	-0.003	37372	37.1	
Aroclor-1016	3	7.455	-0.005	3166	29.9	3	7.578	-0.003	15306	37.7	
Aroclor-1016	4	8.256	-0.011	6477	74.6	4	7.744	-0.007	5614	22.2	
Total CollAve (4 peaks):				44.0		Total Col2Ave (4 peaks):				32.3	RPD = 31
Corrected Ave (3 peaks):				33.8		Corrected Ave (3 peaks):				30.5	RPD = 10
Aroclor-1221	1	4.183	-0.002	2537	133.4	1	4.299	0.016	1837	26.7	
Aroclor-1221	2	5.695	-0.016	2932	99.3	2	5.752	-0.006	4740	33.0	
Aroclor-1221	3	5.988	0.005	2407	32.1	3	6.111	0.007	16852	70.2	
Total CollAve (3 peaks):				88.3		Total Col2Ave (3 peaks):				43.3	RPD = 68*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks					
Aroclor-1232	1	4.183	-0.001	2537	226.7	1	4.299	0.017	1837	44.8	
Aroclor-1232	2	6.911	-0.014	3305	111.9	2	6.758	-0.019	15438	75.7	
Aroclor-1232	3	7.307	-0.006	8255	78.2	3	7.379	-0.018	37372	91.6	
Aroclor-1232	4	7.455	-0.005	3166	80.0	4	8.706	-0.023	52032	383.5	
Total CollAve (4 peaks):				124.2		Total Col2Ave (4 peaks):				148.9	RPD = 18
Corrected Ave (3 peaks):				90.0		Corrected Ave (3 peaks):				70.7	RPD = 24
Aroclor-1242	1	6.911	-0.014	3305	51.7	1	6.758	-0.001	15438	42.1	
Aroclor-1242	2	7.307	-0.007	8255	35.7	2	7.379	-0.004	37372	47.1	
Aroclor-1242	3	8.623	-0.008	11656	153.0	3	7.744	-0.008	5614	27.8	
Aroclor-1242	4	8.912	-0.007	14624	180.1	4	8.777	-0.011	42127	167.6	
Total CollAve (4 peaks):				105.1		Total Col2Ave (4 peaks):				71.1	RPD = 39
Corrected Ave (3 peaks):				80.2		Corrected Ave (3 peaks):				39.0	RPD = 69*
Aroclor-1248	1	8.088	-0.009	7467	63.9	1	7.379	-0.004	37372	71.0	
Aroclor-1248	2	8.623	-0.009	11656	80.2	2	8.254	-0.007	31573	79.5	
Aroclor-1248	3	8.912	-0.008	14624	108.1	3	8.777	-0.012	42127	105.3	
Aroclor-1248	4	9.496	-0.010	41417	477.0	4	9.104	-0.019	86718	167.6	
Total CollAve (4 peaks):				182.3		Total Col2Ave (4 peaks):				105.9	RPD = 53*
Corrected Ave (3 peaks):				84.1		Corrected Ave (3 peaks):				85.3	RPD = 1
Aroclor-1254	1	8.994	-0.008	33594	153.5	1	9.014	-0.012	121609	226.7	
Aroclor-1254	2	9.070	-0.009	15570	230.7	2	9.104	-0.014	86718	317.7	
Aroclor-1254	3	9.380	0.009	38527	305.9	3	9.519	-0.015	39038	92.8	
Aroclor-1254	4	9.496	-0.009	41417	153.6	4	9.667	-0.015	132447	157.4	
Aroclor-1254	5	10.197	-0.014	19011	105.7	5	10.439	-0.017	90257	173.6	
Total CollAve (5 peaks):				189.9		Total Col2Ave (5 peaks):				193.6	RPD = 2
Corrected Ave (4 peaks):				160.9		Corrected Ave (4 peaks):				162.6	RPD = 1
Aroclor-1260	1	10.752	-0.012	18345	186.7	1	10.769	-0.011	88881	133.6	
Aroclor-1260	2	11.067	-0.013	15435	163.8	2	11.203	-0.015	90722	135.0	
Aroclor-1260	3	11.439	-0.011	40328	168.6	3	11.485	-0.011	209013	124.1	
Aroclor-1260	4	11.838	-0.011	20539	190.4	4	11.998	-0.011	65968	125.9	
Aroclor-1260	5	11.954	-0.011	9679	189.5	NS	---			----	
Total CollAve (5 peaks):				179.8		Total Col2Ave (4 peaks):				129.7	RPD = 32
Corrected Ave (4 peaks):				177.1		Corrected Ave (3 peaks):				127.9	RPD = 32
Aroclor-1262	1	11.067	-0.013	15435	138.5	1	10.769	-0.025	88881	96.9	
Aroclor-1262	2	11.439	-0.011	40328	146.1	2	11.203	-0.031	90722	115.6	
Aroclor-1262	3	11.838	-0.012	20539	250.6	3	11.485	-0.026	209013	116.2	
Aroclor-1262	4	11.954	-0.011	9679	93.2	4	11.998	-0.026	65968	75.2	
Total CollAve (4 peaks):				157.1		Total Col2Ave (4 peaks):				101.0	RPD = 43*
Corrected Ave (3 peaks):				125.9		Corrected Ave (3 peaks):				95.9	RPD = 27
Aroclor-1268	1	11.954	-0.011	9679	29.6	1	11.998	-0.025	65968	29.0	
Aroclor-1268	2	12.027	-0.009	10646	36.0	2	12.052	-0.038	150008	65.6	
Aroclor-1268	3	12.427	0.005	7228	29.0	3	12.456	-0.025	18022	8.7	
Aroclor-1268	4	13.197	-0.009	5803	7.4	4	13.270	-0.027	29643	4.0	
Total CollAve (4 peaks):				25.5		Total Col2Ave (4 peaks):				26.8	RPD = 5

Corrected Ave (3 peaks): 22.0 Corrected Ave (3 peaks): 13.9 RPD = 45*

Total PCB Area Col1 (5.441 - 13.514) = 751689 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 3566418 Col2 Total PCB = 0.5 ppm*

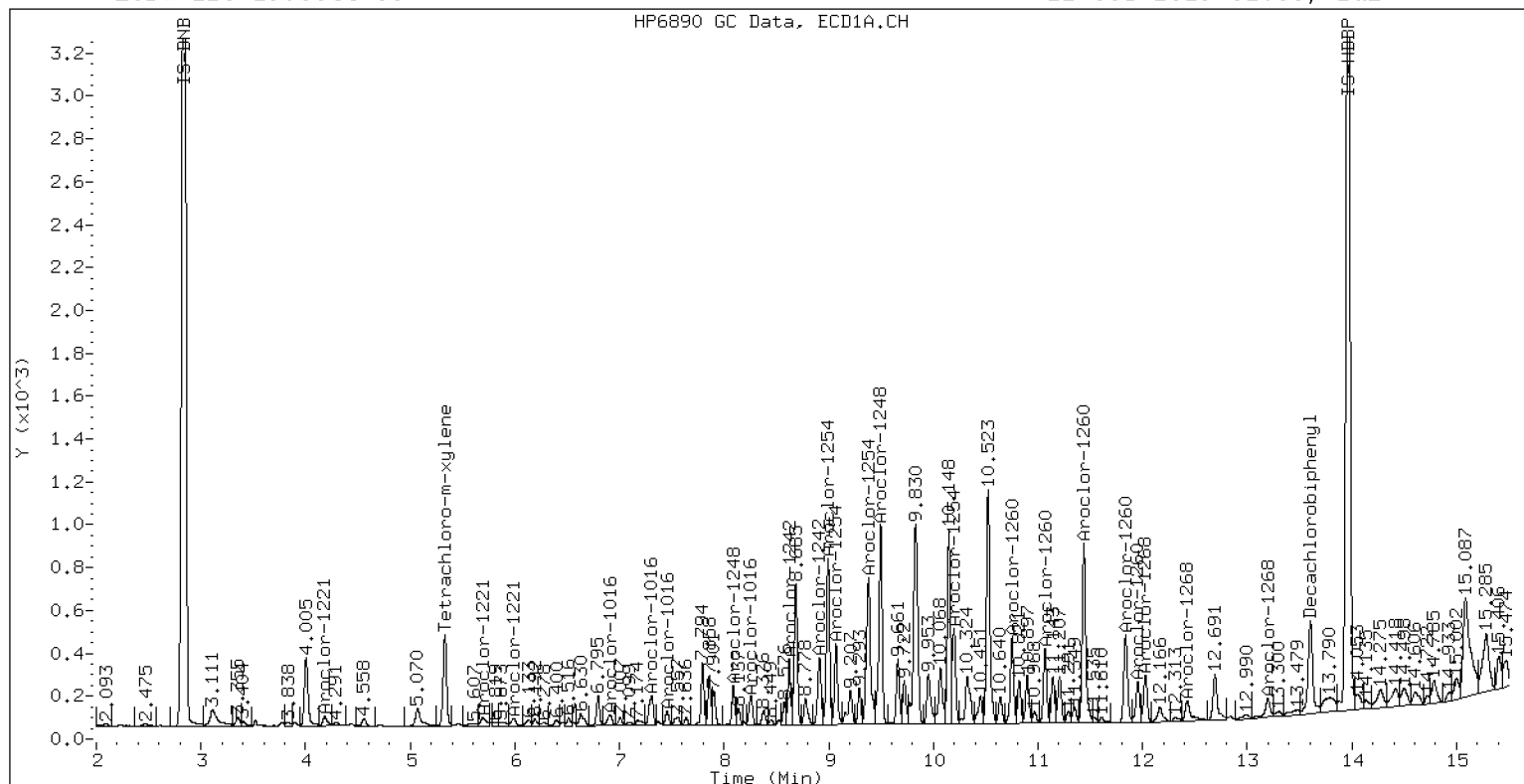
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-05

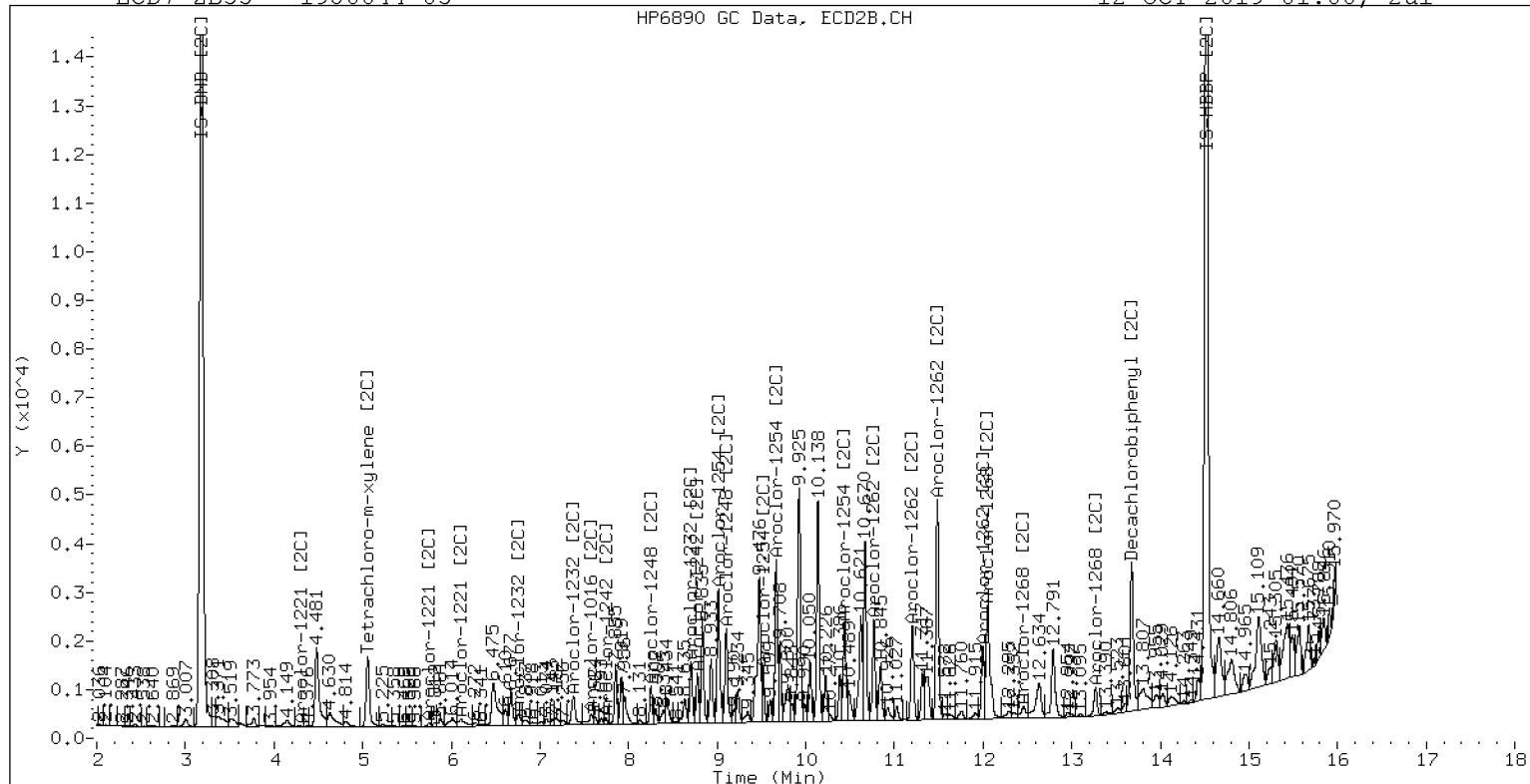
12-OCT-2019 01:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-05

12-OCT-2019 01:00, 2ul



ZB-35 Manual Integration: NO



Dual Column

R4-SC1b-10to20-82819

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-06 A

File ID: 19101128ECD7.D

Sampled: 08/28/19 13:55

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 01:21

% Solids: 52.44

Preparation: EPA 3546 (Microwave)

Initial/Final: 23.94 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	5	19.9	7.8	19.9	U
11104-28-2	Aroclor 1221	1	5	19.9	7.8	19.9	U
11141-16-5	Aroclor 1232	1	5	19.9	7.8	19.9	U
53469-21-9	Aroclor 1242	1	5	19.9	7.8	19.9	U
12672-29-6	Aroclor 1248	1	5	74.8	7.8	19.9	D
11097-69-1	Aroclor 1254	2	5	157	7.8	19.9	D
11096-82-5	Aroclor 1260	1	5	170	2.9	19.9	D
37324-23-5	Aroclor 1262	1	5	19.9	2.9	19.9	U
11100-14-4	Aroclor 1268	1	5	19.9	2.9	19.9	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9655	12.0	151	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9655	6.03	75.7	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9655	7.85	98.5	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9655	7.07	88.8	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101128ECD7.D ARI ID: 19J0044-06
Data file 2: /20191011.b/20191011.b/19101128ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m Injection Date: 12-OCT-2019 01:21
Compound Sublist: PCB.sub Report Date: 10/15/2019 06:10
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 5.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.330	-0.010	19588	5.057	0.000	81601	6.1	7.1	16.0	Tetrachloro-m-xylene
13.604	-0.010	25311	13.676	-0.016	157706	12.0	7.9	41.8*	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	75.7	88.8
Decachlorobiphenyl	150.5	98.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	261224	-0.6
Hexabromobiphenyl	382688	207743	-45.7

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	967071	-10.6
Hexabromobiphenyl	1006687	1043099	3.6

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.904	-0.022	3360	42.4	1	6.757	-0.001	8601	17.9	
Aroclor-1016	2	7.306	-0.007	6746	23.9	2	7.379	-0.003	31650	31.5	
Aroclor-1016	3	7.455	-0.004	2812	26.5	3	7.578	-0.003	8755	21.6	
Aroclor-1016	4	8.256	-0.011	5609	64.2	4	7.745	-0.006	3265	12.9	
Total CollAve (4 peaks):				39.3	Total Col2Ave (4 peaks):				21.0	RPD = 61*	
Corrected Ave (3 peaks):				30.9	Corrected Ave (3 peaks):				17.5	RPD = 56*	
Aroclor-1221	1	---			0.0	1	4.300	0.017	945	13.8	
Aroclor-1221	2	---			0.0	2	5.751	-0.007	6727	46.9	
Aroclor-1221	3	---			0.0	3	6.111	0.007	12835	53.5	
Total CollAve (3 peaks):				82.5	Total Col2Ave (4 peaks):				20.1		
Aroclor-1232	1	---			0.0	1	4.300	0.018	945	23.1	
Aroclor-1232	2	6.904	-0.021	3360	113.1	2	6.757	-0.020	8601	42.2	
Aroclor-1232	3	7.306	-0.006	6746	63.6	3	7.379	-0.018	31650	77.6	
Aroclor-1232	4	7.455	-0.004	2812	70.7	4	8.705	-0.024	45893	338.7	
Total CollAve (3 peaks):				82.5	Total Col2Ave (4 peaks):				120.4	RPD = 37	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				47.6		
Aroclor-1242	1	6.904	-0.022	3360	52.3	1	6.757	-0.002	8601	23.5	
Aroclor-1242	2	7.306	-0.008	6746	29.0	2	7.379	-0.004	31650	40.0	
Aroclor-1242	3	8.623	-0.008	10331	134.9	3	7.745	-0.008	3265	16.2	
Aroclor-1242	4	8.911	-0.008	12502	153.1	4	8.777	-0.012	37469	149.2	
Total CollAve (4 peaks):				92.2	Total Col2Ave (4 peaks):				57.2	RPD = 47*	
Corrected Ave (3 peaks):				72.1	Corrected Ave (3 peaks):				26.5	RPD = 92*	
Aroclor-1248	1	8.087	-0.010	7359	62.7	1	7.379	-0.004	31650	60.2	
Aroclor-1248	2	8.623	-0.009	10331	70.7	2	8.253	-0.008	26965	68.0	
Aroclor-1248	3	8.911	-0.009	12502	91.9	3	8.777	-0.013	37469	93.8	
Aroclor-1248	4	9.496	-0.010	40807	467.4	4	9.104	-0.019	74170	149.5	
Total CollAve (4 peaks):				173.2	Total Col2Ave (4 peaks):				91.4	RPD = 62*	
Corrected Ave (3 peaks):				75.1	Corrected Ave (3 peaks):				74.0	RPD = 1	
Aroclor-1254	1	8.993	-0.009	31176	141.6	1	9.013	-0.013	108150	201.8	
Aroclor-1254	2	9.069	-0.009	13664	201.4	2	9.104	-0.014	74170	72.1	
Aroclor-1254	3	9.378	0.007	37292	294.5	3	9.518	-0.016	41288	98.3	
Aroclor-1254	4	9.496	-0.009	40807	150.5	4	9.666	-0.016	133425	158.7	
Aroclor-1254	5	10.196	-0.014	19915	110.1	5	10.438	-0.018	88549	170.5	
Total CollAve (5 peaks):				179.6	Total Col2Ave (5 peaks):				180.2	RPD = 0	
Corrected Ave (4 peaks):				150.9	Corrected Ave (4 peaks):				157.3	RPD = 4	
Aroclor-1260	1	10.752	-0.012	16121	168.0	1	10.769	-0.011	79124	120.6	
Aroclor-1260	2	11.067	-0.013	14374	156.3	2	11.203	-0.016	91904	138.6	
Aroclor-1260	3	11.438	-0.011	37395	160.2	3	11.484	-0.012	193326	116.4	
Aroclor-1260	4	11.837	-0.012	19342	183.6	4	11.998	-0.012	61352	118.7	
Aroclor-1260	5	11.954	-0.011	9221	184.9	NS	---			----	
Total CollAve (5 peaks):				170.6	Total Col2Ave (4 peaks):				123.6	RPD = 32	
Corrected Ave (4 peaks):				167.0	Corrected Ave (3 peaks):				118.5	RPD = 34	
Aroclor-1262	1	11.067	-0.013	14374	132.1	1	10.769	-0.025	79124	87.4	
Aroclor-1262	2	11.438	-0.011	37395	138.8	2	11.203	-0.032	91904	118.8	
Aroclor-1262	3	11.837	-0.012	19342	241.8	3	11.484	-0.026	193326	108.9	
Aroclor-1262	4	11.954	-0.011	9221	90.9	4	11.998	-0.026	61352	70.9	
Total CollAve (4 peaks):				150.9	Total Col2Ave (4 peaks):				86.5	RPD = 44*	
Corrected Ave (3 peaks):				120.6	Corrected Ave (3 peaks):				89.1	RPD = 30	
Aroclor-1268	1	11.954	-0.011	9221	28.9	1	11.998	-0.026	61352	27.3	
Aroclor-1268	2	12.027	-0.009	10058	34.9	2	12.051	-0.039	136338	60.5	
Aroclor-1268	3	12.426	0.003	5324	21.8	3	12.456	-0.025	11359	5.6	
Aroclor-1268	4	13.196	-0.011	5080	6.6	4	13.269	-0.028	30671	4.2	
Total CollAve (4 peaks):				23.1	Total Col2Ave (4 peaks):				24.4	RPD = 6	
Corrected Ave (3 peaks):				19.1	Corrected Ave (3 peaks):				12.4	RPD = 43*	

Total PCB Area Col1 (5.441 - 13.514) = 699492 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 3146219 Col2 Total PCB = 0.4 ppm*

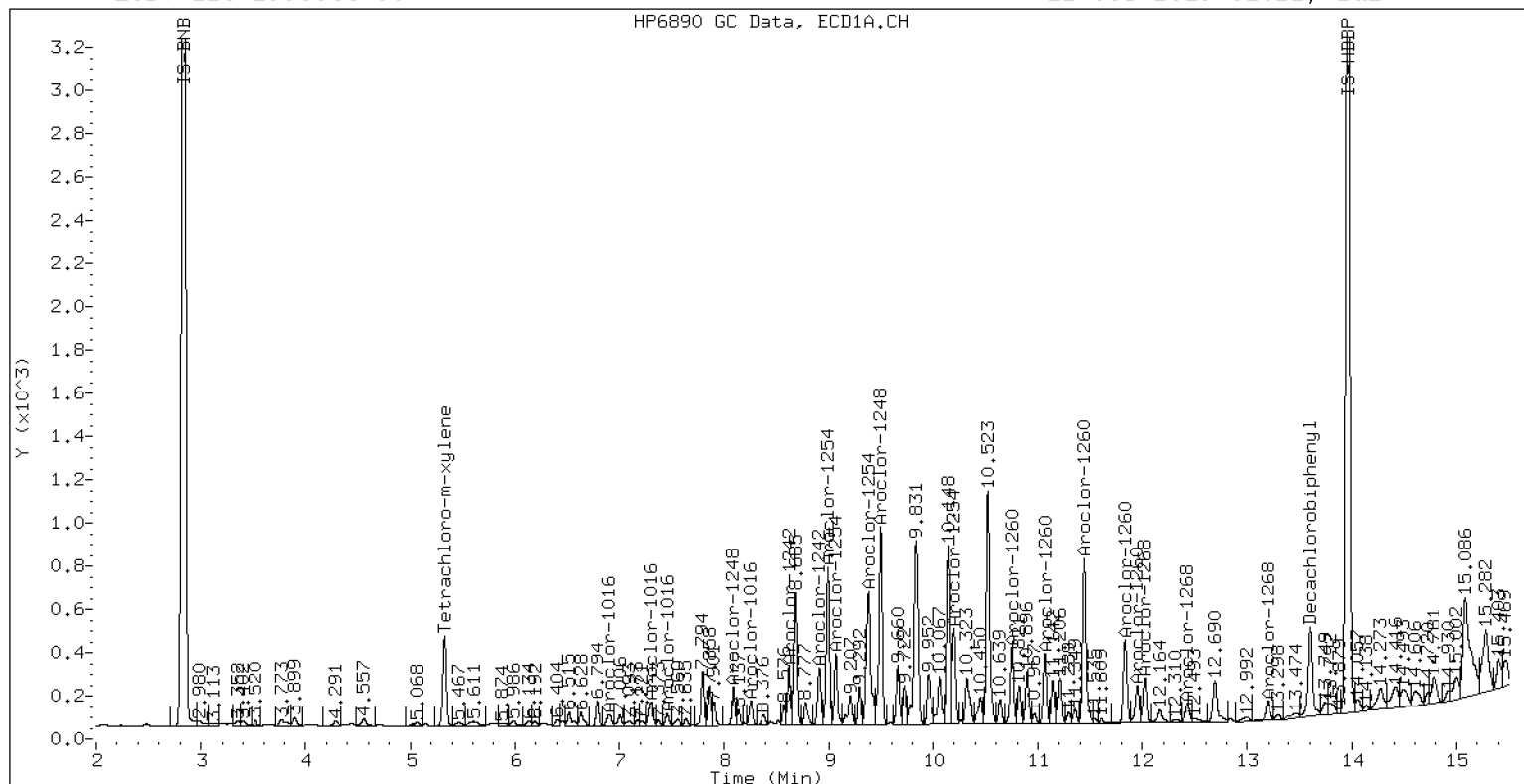
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-06

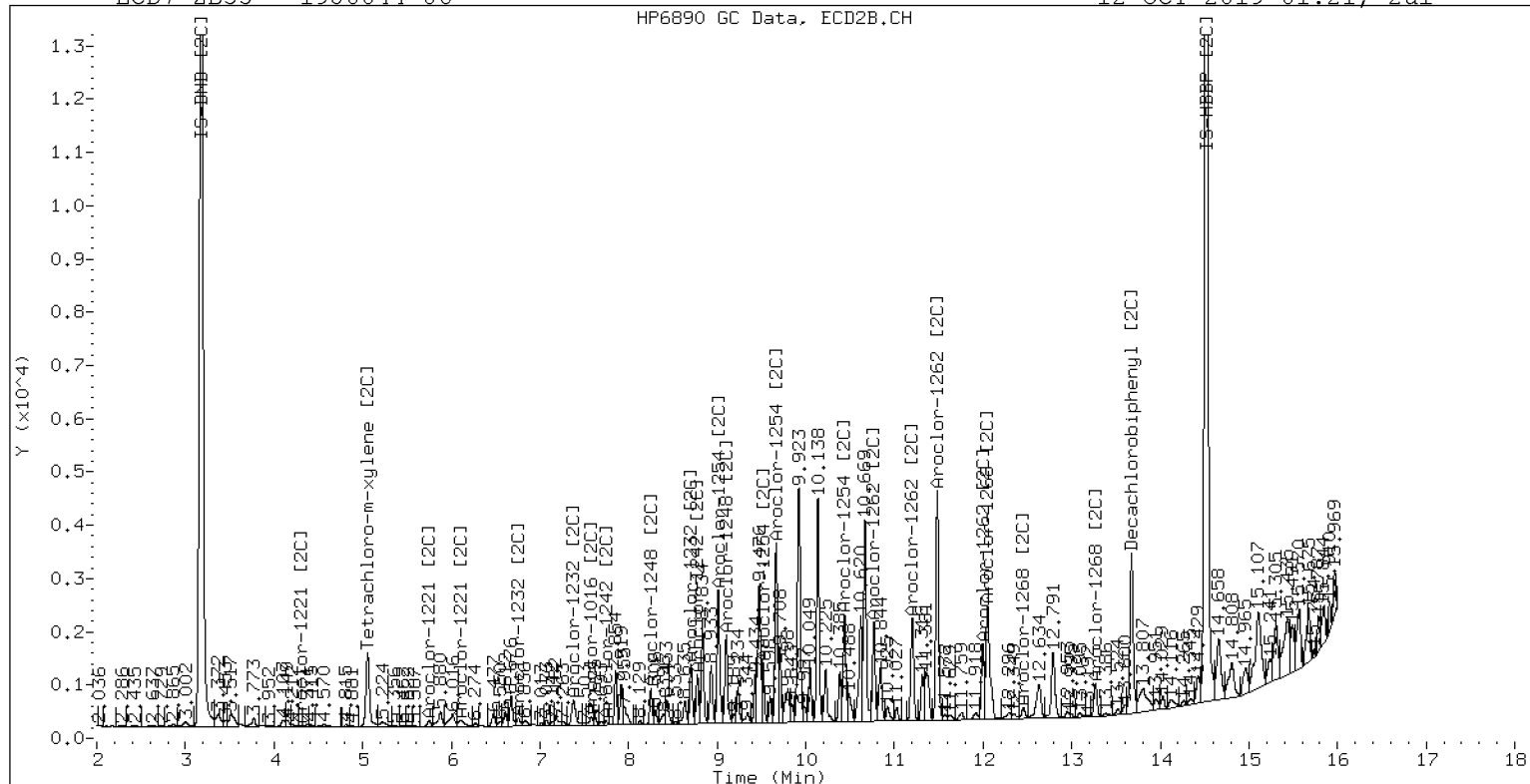
12-OCT-2019 01:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-06

12-OCT-2019 01:21, 2ul



ZB-35 Manual Integration: NO



Dual Column

H3-SC1b-00to10-82919

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-07 A

File ID: 19101129ECD7.D

Sampled: 08/28/19 20:05

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 01:42

% Solids: 52.75

Preparation: EPA 3546 (Microwave)

Initial/Final: 23.91 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	10	39.6	15.5	39.6	U
11104-28-2	Aroclor 1221	1	10	39.6	15.5	39.6	U
11141-16-5	Aroclor 1232	1	10	39.6	15.5	39.6	U
53469-21-9	Aroclor 1242	1	10	39.6	15.5	39.6	U
12672-29-6	Aroclor 1248	1	10	250	15.5	39.6	P1, D
11097-69-1	Aroclor 1254	2	10	775	15.5	39.6	D
11096-82-5	Aroclor 1260	1	10	460	5.8	39.6	D
37324-23-5	Aroclor 1262	1	10	39.6	5.8	39.6	U
11100-14-4	Aroclor 1268	1	10	39.6	5.8	39.6	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9286	16.3	206	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9286	5.76	72.6	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9286	10.7	135	40 - 126	*
<i>Tetrachlorometaxylene</i>	2	7.9286	6.86	86.6	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101129ECD7.D
Data file 2: /20191011.b/20191011.b/19101129ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-07
Client ID:
Injection Date: 12-OCT-2019 01:42
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 10.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.009	8905	5.058	0.001	39523	2.9	3.5	17.6	Tetrachloro-m-xylene
13.604	-0.010	17122	13.676	-0.016	107156	8.2	5.4	41.6*	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	72.6	86.6
Decachlorobiphenyl	206.0	135.0

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	247563	-5.8
Hexabromobiphenyl	382688	205384	-46.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	960836	-11.2
Hexabromobiphenyl	1006687	1034414	2.8

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	6.916	-0.009	1145	15.2	1	6.758	-0.000	7681	16.1	
Aroclor-1016	2	7.307	-0.006	4423	16.6	2	7.379	-0.003	18173	18.2	
Aroclor-1016	3	7.458	-0.002	2418	24.0	3	7.579	-0.002	7883	19.6	
Aroclor-1016	4	8.258	-0.009	6602	79.8	4	7.744	-0.007	2180	8.7	
Total CollAve (4 peaks):				33.9		Total Col2Ave (4 peaks):				15.6	RPD = 74*
Corrected Ave (3 peaks):				18.6		Corrected Ave (3 peaks):				14.3	RPD = 26
Aroclor-1221	1	---			0.0	1	4.261	-0.022	3855	56.5	
Aroclor-1221	2	---			0.0	2	5.753	-0.005	920	6.5	
Aroclor-1221	3	---			0.0	3	6.111	0.007	6513	27.3	
CollAve: <3 Quant Peaks						Col2Ave: 30.1					
Aroclor-1232	1	---			0.0	1	4.261	-0.021	3855	94.8	
Aroclor-1232	2	6.916	-0.009	1145	40.7	2	6.758	-0.019	7681	37.9	
Aroclor-1232	3	7.307	-0.006	4423	44.0	3	7.379	-0.018	18173	44.9	
Aroclor-1232	4	7.458	-0.001	2418	64.1	4	8.705	-0.024	72139	535.8	
Total CollAve (3 peaks):				49.6		Total Col2Ave (4 peaks):				178.4	RPD = 113*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				59.2	
Aroclor-1242	1	6.916	-0.009	1145	18.8	1	6.758	-0.001	7681	21.1	
Aroclor-1242	2	7.307	-0.007	4423	20.1	2	7.379	-0.005	18173	23.1	
Aroclor-1242	3	8.624	-0.008	17508	241.3	3	7.744	-0.008	2180	10.9	
Aroclor-1242	4	8.914	-0.005	19568	252.9	4	8.777	-0.011	37703	151.1	
Total CollAve (4 peaks):				133.3		Total Col2Ave (4 peaks):				51.5	RPD = 88*
Corrected Ave (3 peaks):				93.4		Corrected Ave (3 peaks):				18.4	RPD = 134*
Aroclor-1248	1	8.088	-0.008	11117	99.9	1	7.379	-0.005	18173	34.8	
Aroclor-1248	2	8.624	-0.008	17508	126.4	2	8.254	-0.007	44696	113.5	
Aroclor-1248	3	8.914	-0.006	19568	151.8	3	8.777	-0.013	37703	95.0	
Aroclor-1248	4	9.496	-0.010	91674	1107.9	4	9.103	-0.020	123833	241.2	
Total CollAve (4 peaks):				271.5		Total Col2Ave (4 peaks):				121.1	RPD = 102*
Corrected Ave (3 peaks):				126.1		Corrected Ave (3 peaks):				81.1	RPD = 43*
Aroclor-1254	1	8.993	-0.009	67452	323.4	1	9.014	-0.013	211716	397.6	
Aroclor-1254	2	9.069	-0.009	25366	394.5	2	9.103	-0.014	123833	457.2	
Aroclor-1254	3	9.370	-0.002	65461	545.5	3	9.519	-0.015	117086	280.5	
Aroclor-1254	4	9.496	-0.009	91674	356.8	4	9.666	-0.015	319352	382.4	
Aroclor-1254	5	10.198	-0.013	52385	304.9	5	10.438	-0.018	225452	436.9	
Total CollAve (5 peaks):				385.0		Total Col2Ave (5 peaks):				390.9	RPD = 2
Corrected Ave (4 peaks):				344.9		Corrected Ave (4 peaks):				374.4	RPD = 8
Aroclor-1260	1	10.752	-0.011	21510	226.8	1	10.769	-0.011	102236	157.1	
Aroclor-1260	2	11.068	-0.012	17255	189.7	2	11.200	-0.019	179108	272.4	
Aroclor-1260	3	11.439	-0.011	54188	234.8	3	11.484	-0.012	252014	153.0	
Aroclor-1260	4	11.837	-0.011	29505	283.3	4	11.997	-0.012	82379	160.7	
Aroclor-1260	5	11.954	-0.011	11100	225.1	NS	---			---	
Total CollAve (5 peaks):				232.0		Total Col2Ave (4 peaks):				185.8	RPD = 22
Corrected Ave (4 peaks):				219.1		Corrected Ave (3 peaks):				156.9	RPD = 33
Aroclor-1262	1	11.068	-0.012	17255	160.4	1	10.769	-0.025	102236	113.9	
Aroclor-1262	2	11.439	-0.011	54188	203.4	2	11.200	-0.035	179108	233.4	
Aroclor-1262	3	11.837	-0.012	29505	373.0	3	11.484	-0.026	252014	143.2	
Aroclor-1262	4	11.954	-0.011	11100	110.7	4	11.997	-0.027	82379	96.0	
Total CollAve (4 peaks):				211.9		Total Col2Ave (4 peaks):				146.6	RPD = 36
Corrected Ave (3 peaks):				158.2		Corrected Ave (3 peaks):				117.7	RPD = 29
Aroclor-1268	1	11.954	-0.011	11100	35.2	1	11.997	-0.026	82379	37.0	
Aroclor-1268	2	12.026	-0.010	12898	45.3	2	12.052	-0.038	194416	87.0	
Aroclor-1268	3	12.429	0.006	9106	37.8	3	12.455	-0.026	12155	6.0	
Aroclor-1268	4	13.196	-0.010	8041	10.6	4	13.270	-0.027	40545	5.6	
Total CollAve (4 peaks):				32.2		Total Col2Ave (4 peaks):				33.9	RPD = 5
Corrected Ave (3 peaks):				27.8		Corrected Ave (3 peaks):				16.2	RPD = 53*

Total PCB Area Col1 (5.441 - 13.514) = 1188089 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5239789 Col2 Total PCB = 0.7 ppm*

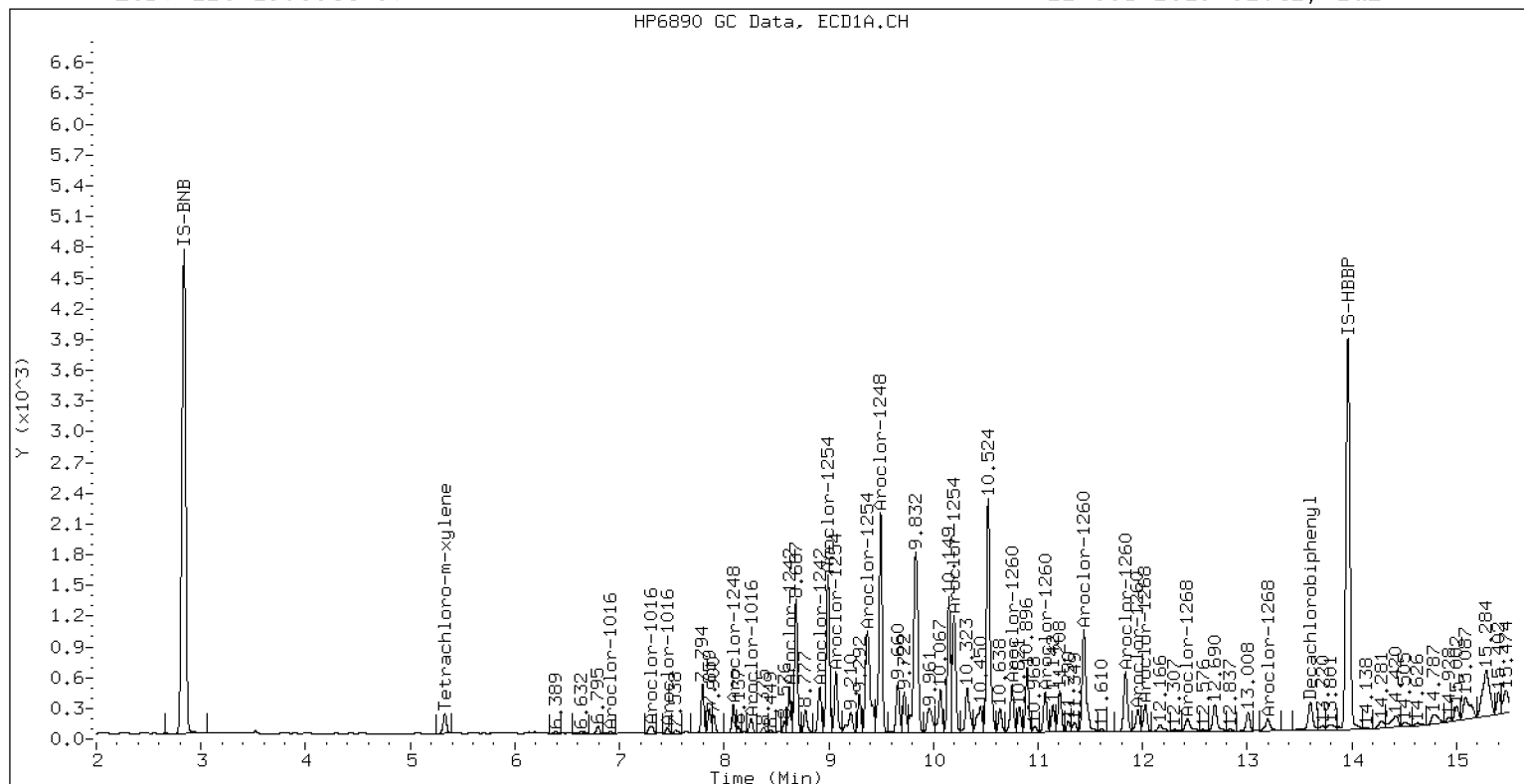
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-07

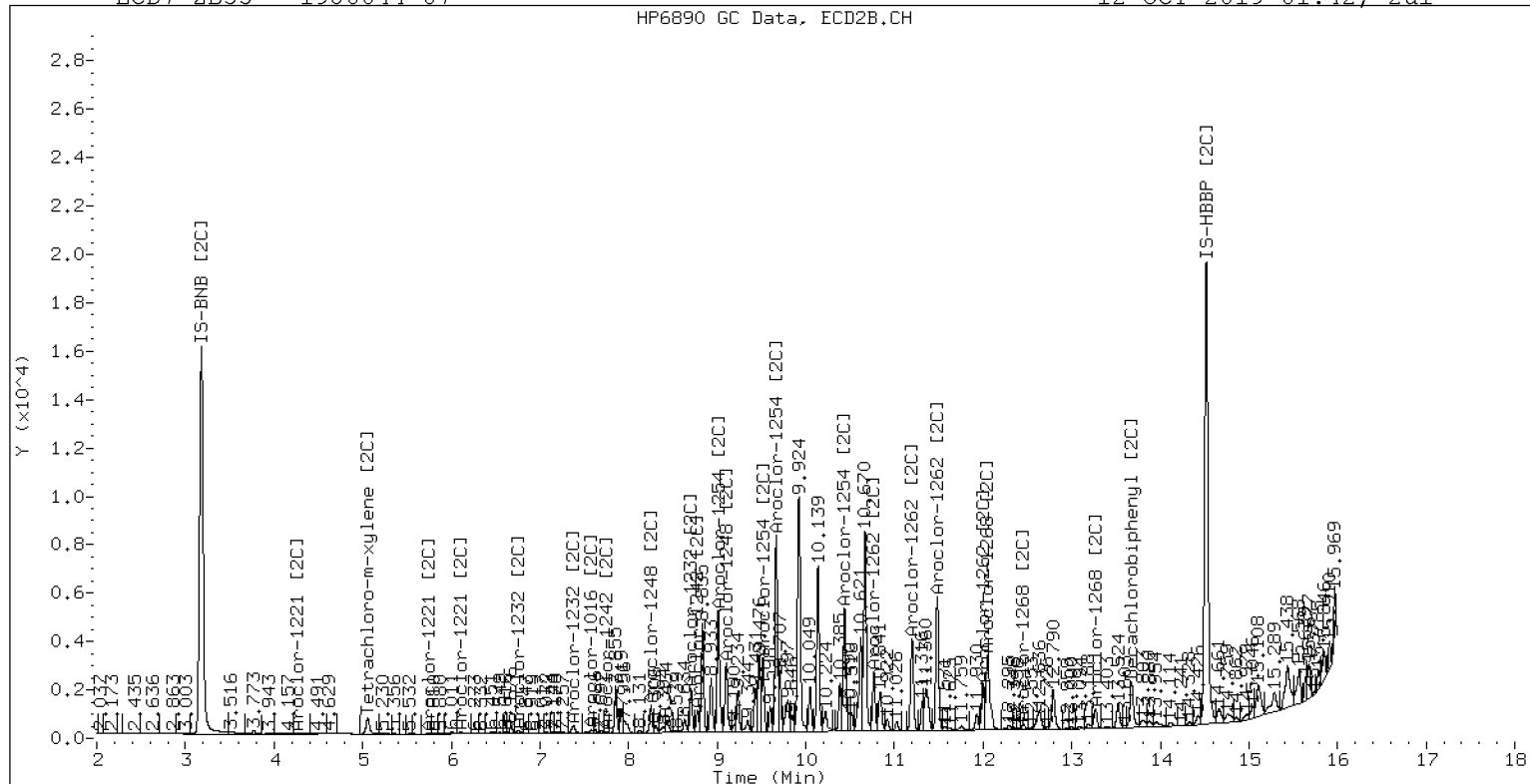
12-OCT-2019 01:42, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-07

12-OCT-2019 01:42, 2ul



ZB-35 Manual Integration: NO



Dual Column

H3-SC1b-10-20-82919

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-08 A

File ID: 19101130ECD7.D

Sampled: 08/28/19 20:10

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 02:02

% Solids: 53.18

Preparation: EPA 3546 (Microwave)

Initial/Final: 23.85 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	10	39.4	15.4	39.4	U
11104-28-2	Aroclor 1221	1	10	39.4	15.4	39.4	U
11141-16-5	Aroclor 1232	1	10	39.4	15.4	39.4	U
53469-21-9	Aroclor 1242	1	10	39.4	15.4	39.4	U
12672-29-6	Aroclor 1248	1	10	39.4	15.4	39.4	U
11097-69-1	Aroclor 1254	2	10	1070	15.4	39.4	D
11096-82-5	Aroclor 1260	1	10	474	5.8	39.4	D
37324-23-5	Aroclor 1262	1	10	39.4	5.8	39.4	U
11100-14-4	Aroclor 1268	1	10	39.4	5.8	39.4	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.8843	18.8	238	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.8843	6.03	76.5	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.8843	12.8	162	40 - 126	*
<i>Tetrachlorometaxylene</i>	2	7.8843	6.98	88.6	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101130ECD7.D
Data file 2: /20191011.b/20191011.b/19101130ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-08
Client ID:
Injection Date: 12-OCT-2019 02:02
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 10.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.330	-0.011	9266	5.056	-0.001	38027	3.1	3.5	14.6	Tetrachloro-m-xylene
13.604	-0.010	19773	13.676	-0.016	130013	9.5	6.5	37.8	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	76.5	88.6
Decachlorobiphenyl	237.9	162.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	244412	-7.0
Hexabromobiphenyl	382688	205398	-46.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	903558	-16.5
Hexabromobiphenyl	1006687	1044205	3.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	6.915	-0.011	1821	24.6	1	6.756	-0.002	10977	24.4	
Aroclor-1016	2	7.304	-0.009	5423	20.6	2	7.377	-0.006	24379	26.0	
Aroclor-1016	3	7.454	-0.006	2424	24.4	3	7.576	-0.005	10005	26.4	
Aroclor-1016	4	8.258	-0.010	8405	102.9	4	7.743	-0.008	5837	24.7	
Total CollAve (4 peaks):				42.1		Total Col2Ave (4 peaks):				25.4	RPD = 52*
Corrected Ave (3 peaks):				23.2		Corrected Ave (3 peaks):				25.0	RPD = 8
Aroclor-1221	1	---			0.0	1	4.294	0.011	1390	21.7	
Aroclor-1221	2	---			0.0	2	5.751	-0.007	2232	16.7	
Aroclor-1221	3	---			0.0	3	6.109	0.005	10765	48.0	
CollAve: <3 Quant Peaks						Col2Ave:				28.8	
Aroclor-1232	1	---			0.0	1	4.294	0.012	1390	36.3	
Aroclor-1232	2	6.915	-0.010	1821	65.5	2	6.756	-0.021	10977	57.7	
Aroclor-1232	3	7.304	-0.008	5423	54.6	3	7.377	-0.021	24379	64.0	
Aroclor-1232	4	7.454	-0.006	2424	65.1	4	8.704	-0.025	108222	854.8	
Total CollAve (3 peaks):				61.7		Total Col2Ave (4 peaks):				253.2	RPD = 122*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				52.7	
Aroclor-1242	1	6.915	-0.011	1821	30.3	1	6.756	-0.003	10977	32.0	
Aroclor-1242	2	7.304	-0.010	5423	25.0	2	7.377	-0.007	24379	33.0	
Aroclor-1242	3	8.623	-0.009	26176	365.3	3	7.743	-0.010	5837	31.0	
Aroclor-1242	4	8.914	-0.005	23366	305.8	4	8.776	-0.013	42074	179.3	
Total CollAve (4 peaks):				181.6		Total Col2Ave (4 peaks):				68.8	RPD = 90*
Corrected Ave (3 peaks):				120.4		Corrected Ave (3 peaks):				32.0	RPD = 116*
Aroclor-1248	1	8.087	-0.010	18226	165.9	1	7.377	-0.007	24379	49.6	
Aroclor-1248	2	8.623	-0.009	26176	191.5	2	8.252	-0.009	66814	180.4	
Aroclor-1248	3	8.914	-0.006	23366	183.6	3	8.776	-0.014	42074	112.7	
Aroclor-1248	4	9.496	-0.010	108278	1925.4	4	9.103	-0.020	167675	347.3	
Total CollAve (4 peaks):				466.6		Total Col2Ave (4 peaks):				172.5	RPD = 92*
Corrected Ave (3 peaks):				180.3		Corrected Ave (3 peaks):				114.2	RPD = 45*
Aroclor-1254	1	8.994	-0.008	88840	431.4	1	9.014	-0.013	292091	583.4	
Aroclor-1254	2	9.069	-0.009	32648	514.3	2	9.103	-0.014	167675	658.3	
Aroclor-1254	3	9.369	-0.002	91263	770.4	3	9.519	-0.015	172503	439.4	
Aroclor-1254	4	9.496	-0.009	108278	426.9	4	9.667	-0.015	382998	487.7	
Aroclor-1254	5	10.200	-0.011	61785	365.0	5	10.438	-0.018	268374	553.1	
Total CollAve (5 peaks):				501.6		Total Col2Ave (5 peaks):				544.4	RPD = 8
Corrected Ave (4 peaks):				434.4		Corrected Ave (4 peaks):				515.9	RPD = 17
Aroclor-1260	1	10.753	-0.011	25411	267.9	1	10.769	-0.011	124613	189.7	
Aroclor-1260	2	11.069	-0.011	18502	203.4	2	11.201	-0.017	178796	269.4	
Aroclor-1260	3	11.439	-0.011	50847	220.3	3	11.485	-0.011	281792	169.5	
Aroclor-1260	4	11.838	-0.010	27474	263.8	4	11.998	-0.011	92949	179.6	
Aroclor-1260	5	11.955	-0.010	12167	246.8	NS	---			---	
Total CollAve (5 peaks):				240.4		Total Col2Ave (4 peaks):				202.0	RPD = 17
Corrected Ave (4 peaks):				233.6		Corrected Ave (3 peaks):				179.6	RPD = 26
Aroclor-1262	1	11.069	-0.011	18502	172.0	1	10.769	-0.025	124613	137.5	
Aroclor-1262	2	11.439	-0.010	50847	190.9	2	11.201	-0.033	178796	230.8	
Aroclor-1262	3	11.838	-0.011	27474	347.3	3	11.485	-0.025	281792	158.6	
Aroclor-1262	4	11.955	-0.011	12167	121.4	4	11.998	-0.026	92949	107.3	
Total CollAve (4 peaks):				207.9		Total Col2Ave (4 peaks):				158.5	RPD = 27
Corrected Ave (3 peaks):				161.4		Corrected Ave (3 peaks):				134.5	RPD = 18
Aroclor-1268	1	11.955	-0.010	12167	38.5	1	11.998	-0.025	92949	41.3	
Aroclor-1268	2	12.028	-0.008	14313	50.2	2	12.053	-0.037	208564	92.4	
Aroclor-1268	3	12.426	0.003	7150	29.7	3	12.456	-0.025	26978	13.2	
Aroclor-1268	4	13.197	-0.010	8037	10.6	4	13.271	-0.027	51065	7.0	
Total CollAve (4 peaks):				32.2		Total Col2Ave (4 peaks):				38.5	RPD = 18
Corrected Ave (3 peaks):				26.3		Corrected Ave (3 peaks):				20.5	RPD = 25

Total PCB Area Col1 (5.441 - 13.514) = 1366339 Col1 Total PCB = 0.7 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 6299901 Col2 Total PCB = 0.9 ppm*

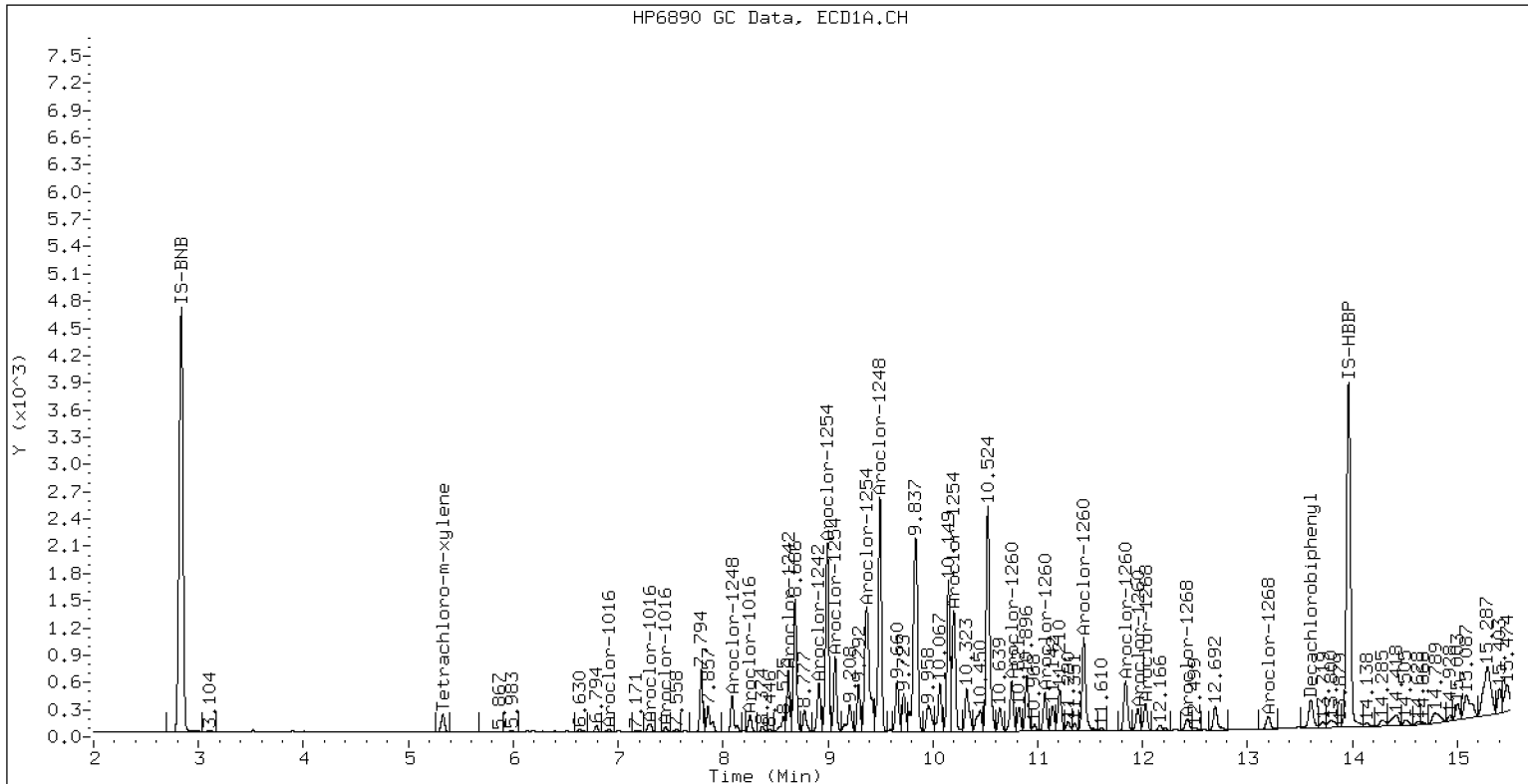
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-08

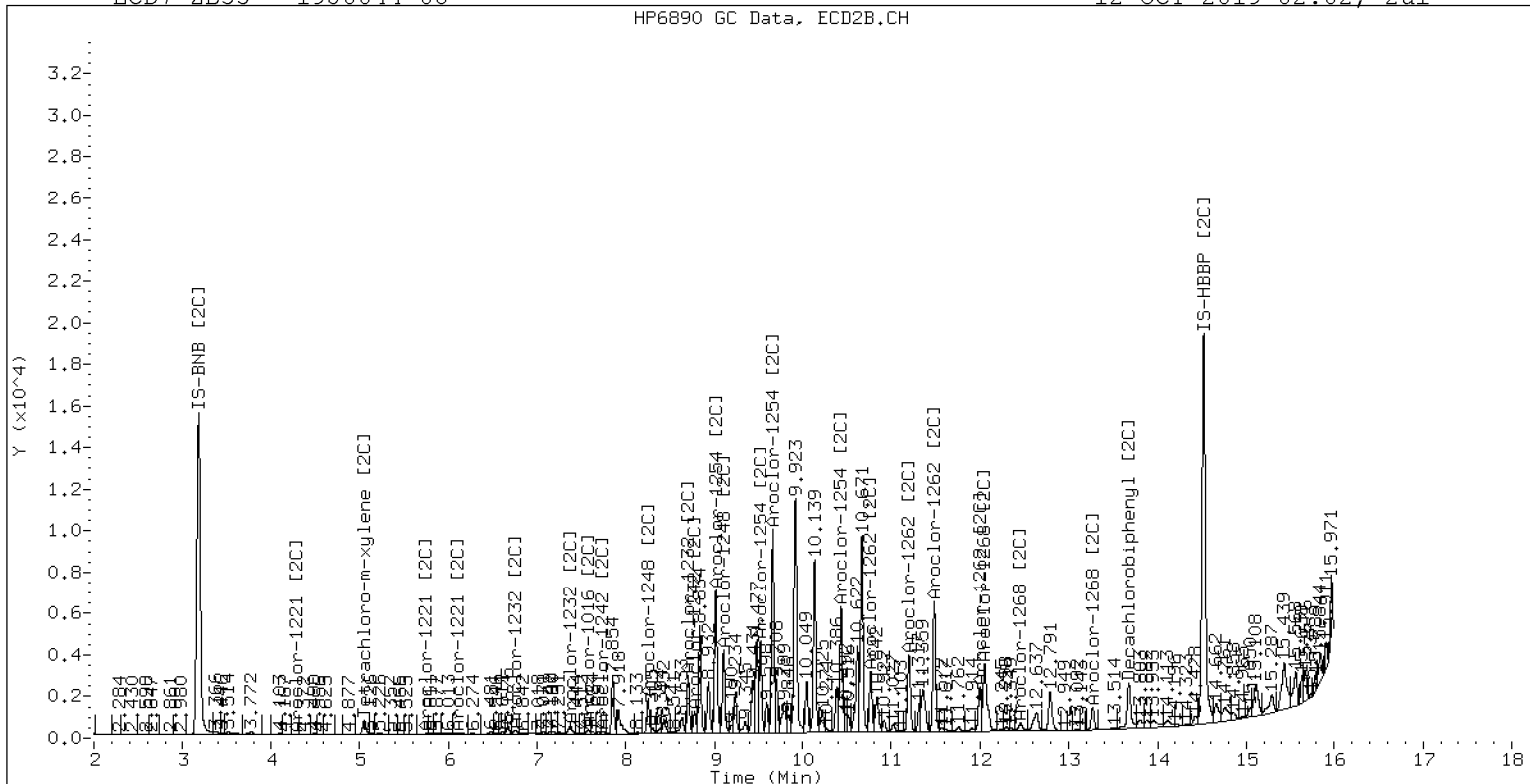
12-OCT-2019 02:02, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-08

12-OCT-2019 02:02, 2ul



ZB-35 Manual Integration: NO



Dual Column

J5-SC1b-00to10-82719

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-09 A

File ID: 19101132ECD7.D

Sampled: 08/27/19 14:45

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 02:44

% Solids: 46.19

Preparation: EPA 3546 (Microwave)

Initial/Final: 27.18 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	5	19.9	7.8	19.9	U
11104-28-2	Aroclor 1221	1	5	19.9	7.8	19.9	U
11141-16-5	Aroclor 1232	1	5	19.9	7.8	19.9	U
53469-21-9	Aroclor 1242	1	5	19.9	7.8	19.9	U
12672-29-6	Aroclor 1248	1	5	19.9	7.8	19.9	U
11097-69-1	Aroclor 1254	2	5	320	7.8	19.9	D
11096-82-5	Aroclor 1260	1	5	279	2.9	19.9	D
37324-23-5	Aroclor 1262	1	5	19.9	2.9	19.9	U
11100-14-4	Aroclor 1268	1	5	19.9	2.9	19.9	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9653	12.1	151	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9653	6.33	79.5	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9653	7.99	100	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9653	6.82	85.6	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101132ECD7.D
Data file 2: /20191011.b/20191011.b/19101132ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 19J0044-09
Client ID:
Injection Date: 12-OCT-2019 02:44
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 5.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.331	-0.010	21036	5.058	0.001	87943	6.4	6.8	7.4	Tetrachloro-m-xylene
13.603	-0.011	27075	13.676	-0.016	172021	12.1	8.0	40.6*	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	79.5	85.6
Decachlorobiphenyl	151.4	100.3

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	267050	1.6
Hexabromobiphenyl	382688	220949	-42.3

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1080825	-0.1
Hexabromobiphenyl	1006687	1117477	11.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.915	-0.011	3937	48.6	1	6.764	0.006	9231	17.2	
Aroclor-1016	2	7.308	-0.005	5066	17.6	2	7.398	0.015	41261	36.7	
Aroclor-1016	3	7.463	0.003	7950	73.1	3	7.579	-0.002	3257	7.2	
Aroclor-1016	4	8.251	-0.017	9177	102.8	4	7.691	-0.059	79630	281.7	
Total CollAve (4 peaks):				60.5		Total Col2Ave (4 peaks):				85.7	RPD = 34
Corrected Ave (3 peaks):				46.4		Corrected Ave (3 peaks):				20.4	RPD = 78*
Aroclor-1221	1	---			0.0	1	4.214	-0.069	10617	138.3	
Aroclor-1221	2	---			0.0	2	5.753	-0.005	2898	18.1	
Aroclor-1221	3	---			0.0	3	6.111	0.007	8013	29.9	
CollAve: <3 Quant Peaks						Col2Ave: 62.1					
Aroclor-1232	1	---			0.0	1	4.214	-0.068	10617	232.1	
Aroclor-1232	2	6.915	-0.010	3937	129.7	2	6.764	-0.013	9231	40.5	
Aroclor-1232	3	7.308	-0.005	5066	46.7	3	7.398	0.000	41261	90.6	
Aroclor-1232	4	7.463	0.004	7950	195.4	4	8.705	-0.024	61773	407.9	
Total CollAve (3 peaks):				123.9		Total Col2Ave (4 peaks):				192.8	RPD = 43*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				121.1	
Aroclor-1242	1	6.915	-0.011	3937	59.9	1	6.764	0.005	9231	22.5	
Aroclor-1242	2	7.308	-0.006	5066	21.3	2	7.398	0.014	41261	46.6	
Aroclor-1242	3	8.623	-0.009	13329	170.3	3	7.691	-0.061	79630	953.0	
Aroclor-1242	4	8.915	-0.004	17771	212.9	4	8.775	-0.014	39887	142.1	
Total CollAve (4 peaks):				116.1		Total Col2Ave (4 peaks):				141.1	RPD = 19
Corrected Ave (3 peaks):				83.8		Corrected Ave (3 peaks):				70.4	RPD = 17
Aroclor-1248	1	8.085	-0.012	13793	114.9	1	7.398	0.014	41261	70.2	
Aroclor-1248	2	8.623	-0.009	13329	89.2	2	8.253	-0.008	36599	82.6	
Aroclor-1248	3	8.915	-0.005	17771	127.8	3	8.775	-0.015	39887	89.3	
Aroclor-1248	4	9.495	-0.011	74736	837.3	4	9.102	-0.021	121566	210.5	
Total CollAve (4 peaks):				292.3		Total Col2Ave (4 peaks):				113.2	RPD = 88*
Corrected Ave (3 peaks):				110.7		Corrected Ave (3 peaks):				80.7	RPD = 31
Aroclor-1254	1	8.995	-0.007	73467	326.5	1	9.016	-0.010	253892	423.9	
Aroclor-1254	2	9.069	-0.010	24698	356.1	2	9.102	-0.015	121566	399.0	
Aroclor-1254	3	9.364	-0.007	52120	402.7	3	9.518	-0.015	99828	212.6	
Aroclor-1254	4	9.495	-0.010	74736	269.7	4	9.666	-0.016	241047	256.6	
Aroclor-1254	5	10.197	-0.014	41312	223.4	5	10.437	-0.019	182700	314.8	
Total CollAve (5 peaks):				315.6		Total Col2Ave (5 peaks):				321.4	RPD = 2
Corrected Ave (4 peaks):				293.9		Corrected Ave (4 peaks):				295.7	RPD = 1
Aroclor-1260	1	10.751	-0.012	29461	288.7	1	10.768	-0.012	148772	211.6	
Aroclor-1260	2	11.067	-0.013	23019	235.3	2	11.202	-0.016	170787	240.5	
Aroclor-1260	3	11.438	-0.012	74823	301.3	3	11.484	-0.012	343573	193.1	
Aroclor-1260	4	11.837	-0.012	36178	322.9	4	11.997	-0.013	107691	194.5	
Aroclor-1260	5	11.953	-0.012	13522	254.9	NS	---			----	
Total CollAve (5 peaks):				280.6		Total Col2Ave (4 peaks):				209.9	RPD = 29
Corrected Ave (4 peaks):				270.1		Corrected Ave (3 peaks):				199.7	RPD = 30
Aroclor-1262	1	11.067	-0.013	23019	198.9	1	10.768	-0.026	148772	153.4	
Aroclor-1262	2	11.438	-0.011	74823	261.1	2	11.202	-0.032	170787	206.0	
Aroclor-1262	3	11.837	-0.013	36178	425.2	3	11.484	-0.026	343573	180.7	
Aroclor-1262	4	11.953	-0.012	13522	125.4	4	11.997	-0.027	107691	116.1	
Total CollAve (4 peaks):				252.6		Total Col2Ave (4 peaks):				164.1	RPD = 43*
Corrected Ave (3 peaks):				195.1		Corrected Ave (3 peaks):				150.1	RPD = 26
Aroclor-1268	1	11.953	-0.012	13522	39.8	1	11.997	-0.027	107691	44.7	
Aroclor-1268	2	12.026	-0.009	17083	55.7	2	12.052	-0.038	250952	103.9	
Aroclor-1268	3	12.426	0.003	9827	37.9	3	12.457	-0.024	22898	10.5	
Aroclor-1268	4	13.196	-0.011	4453	5.4	4	13.270	-0.027	32616	4.2	
Total CollAve (4 peaks):				34.7		Total Col2Ave (4 peaks):				40.8	RPD = 16
Corrected Ave (3 peaks):				27.7		Corrected Ave (3 peaks):				19.8	RPD = 33

Total PCB Area Col1 (5.441 - 13.514) = 1325419 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 6058938 Col2 Total PCB = 0.7 ppm*

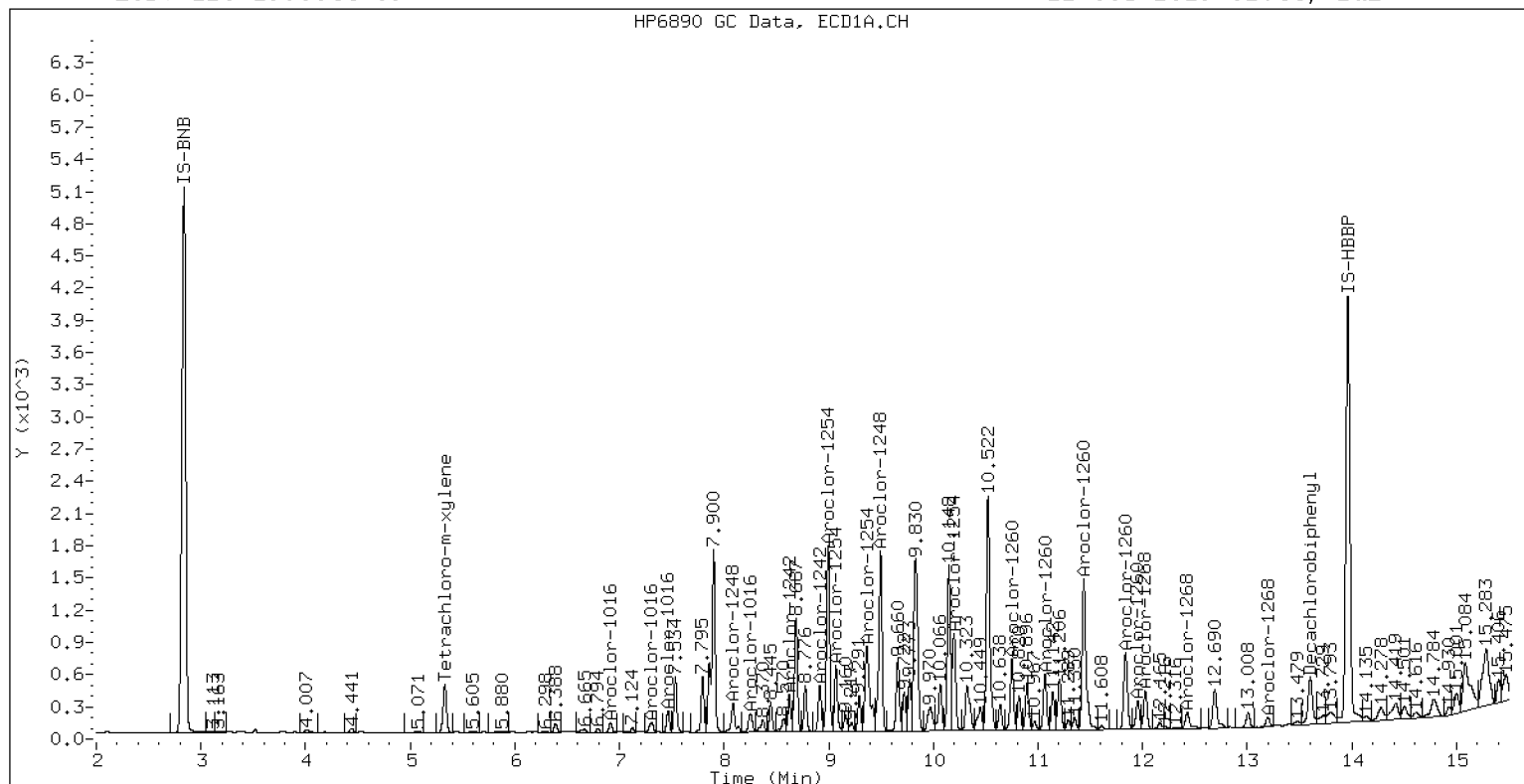
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-09

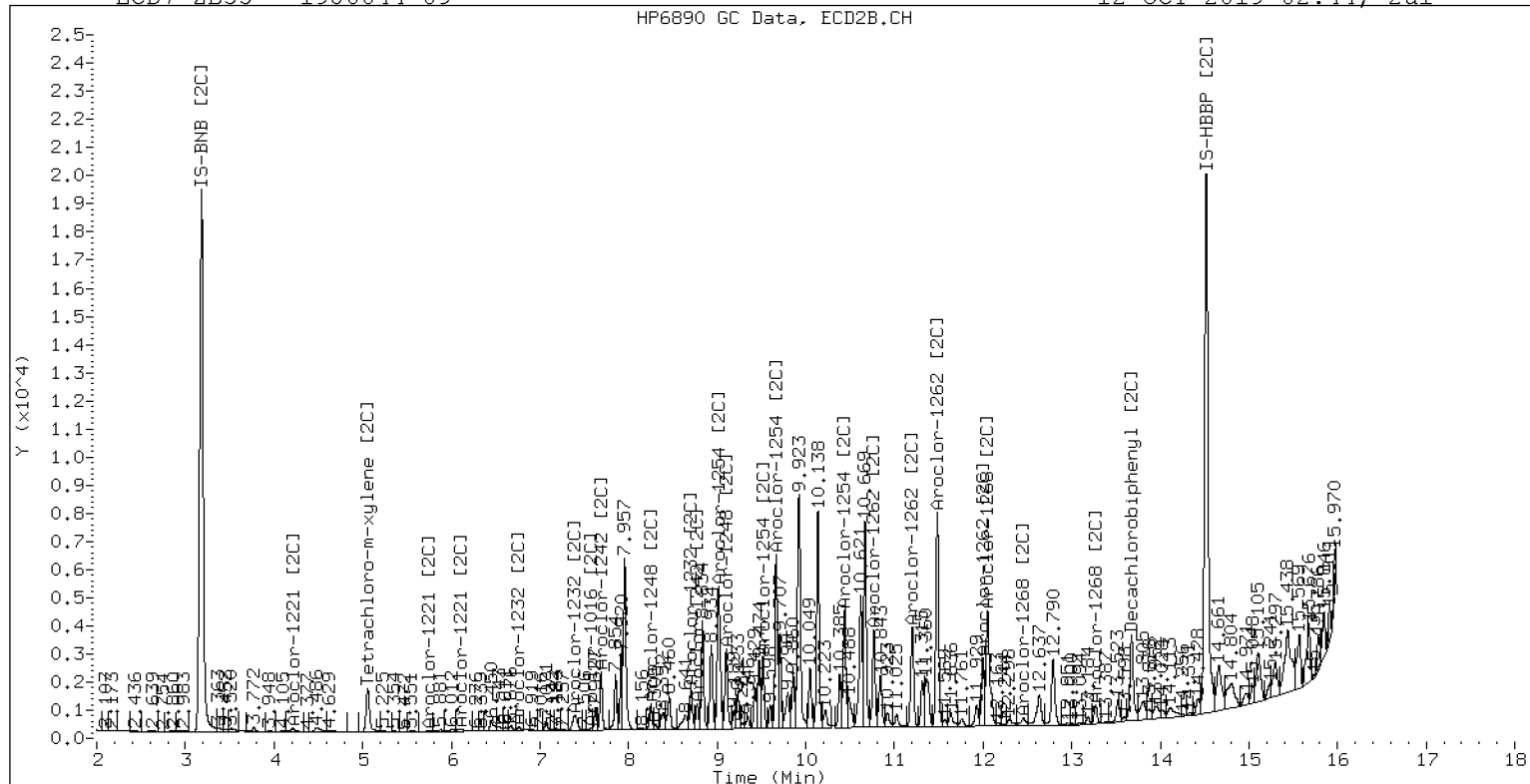
12-OCT-2019 02:44, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-09

12-OCT-2019 02:44, 2u1



ZB-35 Manual Integration: NO



Dual Column

J5-SC1b-10to20-82719

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: 19J0044-10 A

File ID: 19101133ECD7.D

Sampled: 08/27/19 14:50

Prepared: 10/07/19 13:55

Analyzed: 10/12/19 03:05

% Solids: 52.47

Preparation: EPA 3546 (Microwave)

Initial/Final: 24 g Wet / 2.5 mL

Batch: BHJ0164

Sequence: SHJ0236

Calibration: CI00052

Instrument: ECD7

Column 1: ZB5

Column 2: ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	RL	Q
12674-11-2	Aroclor 1016	1	10	39.7	15.5	39.7	U
11104-28-2	Aroclor 1221	1	10	39.7	15.5	39.7	U
11141-16-5	Aroclor 1232	1	10	39.7	15.5	39.7	U
53469-21-9	Aroclor 1242	1	10	39.7	15.5	39.7	U
12672-29-6	Aroclor 1248	1	10	268	15.5	39.7	D
11097-69-1	Aroclor 1254	2	10	681	15.5	39.7	D
11096-82-5	Aroclor 1260	1	10	266	5.8	39.7	D
37324-23-5	Aroclor 1262	1	10	39.7	5.8	39.7	U
11100-14-4	Aroclor 1268	1	10	39.7	5.8	39.7	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
<i>Decachlorobiphenyl</i>	1	7.9410	14.2	179	40 - 126	*
<i>Tetrachlorometaxylene</i>	1	7.9410	6.12	77.0	44 - 120	
<i>Decachlorobiphenyl</i>	2	7.9410	9.18	116	40 - 126	
<i>Tetrachlorometaxylene</i>	2	7.9410	6.99	88.0	44 - 120	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101133ECD7.D ARI ID: 19J0044-10
Data file 2: /20191011.b/20191011.b/19101133ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m Injection Date: 12-OCT-2019 03:05
Compound Sublist: PCB.sub Report Date: 10/15/2019 06:10
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 10.0

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag			
5.329	-0.011	9673	5.056	-0.001	43643	3.1	3.5	13.3	Tetrachloro-m-xylene
13.606	-0.008	15522	13.678	-0.015	96155	7.2	4.6	43.2*	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	77.0	88.0
Decachlorobiphenyl	179.4	115.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	253491	-3.6
Hexabromobiphenyl	382688	213813	-44.1

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1044010	-3.5
Hexabromobiphenyl	1006687	1083743	7.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.914	-0.012	1676	21.8	1	6.758	-0.000	10915	21.0	
Aroclor-1016	2	7.306	-0.006	5564	20.3	2	7.380	-0.002	25731	23.7	
Aroclor-1016	3	7.456	-0.004	2366	22.9	3	7.579	-0.003	7979	18.3	
Aroclor-1016	4	8.258	-0.009	7978	94.2	4	7.745	-0.006	3276	12.0	
Total CollAve (4 peaks):				39.8		Total Col2Ave (4 peaks):				18.7	RPD = 72*
Corrected Ave (3 peaks):				21.7		Corrected Ave (3 peaks):				17.1	RPD = 24
Aroclor-1221	1	---			0.0	1	4.258	-0.025	1052	14.2	
Aroclor-1221	2	---			0.0	2	5.749	-0.009	2839	18.3	
Aroclor-1221	3	---			0.0	3	6.084	-0.020	8459	32.7	
CollAve: <3 Quant Peaks						Col2Ave: 21.7					
Aroclor-1232	1	---			0.0	1	4.258	-0.024	1052	23.8	
Aroclor-1232	2	6.914	-0.011	1676	58.2	2	6.758	-0.019	10915	49.6	
Aroclor-1232	3	7.306	-0.006	5564	54.0	3	7.380	-0.018	25731	58.5	
Aroclor-1232	4	7.456	-0.003	2366	61.3	4	8.707	-0.022	83923	573.7	
Total CollAve (3 peaks):				57.8		Total Col2Ave (4 peaks):				176.4	RPD = 101*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				44.0	
Aroclor-1242	1	6.914	-0.011	1676	26.9	1	6.758	-0.001	10915	27.6	
Aroclor-1242	2	7.306	-0.008	5564	24.7	2	7.380	-0.004	25731	30.1	
Aroclor-1242	3	8.624	-0.007	24451	329.0	3	7.745	-0.007	3276	15.0	
Aroclor-1242	4	8.916	-0.004	16528	208.6	4	8.778	-0.010	52133	192.3	
Total CollAve (4 peaks):				147.3		Total Col2Ave (4 peaks):				66.3	RPD = 76*
Corrected Ave (3 peaks):				86.7		Corrected Ave (3 peaks):				24.2	RPD = 113*
Aroclor-1248	1	8.088	-0.009	12221	107.3	1	7.380	-0.004	25731	45.3	
Aroclor-1248	2	8.624	-0.007	24451	172.4	2	8.255	-0.006	49173	114.9	
Aroclor-1248	3	8.916	-0.004	16528	125.2	3	8.778	-0.011	52133	120.9	
Aroclor-1248	4	9.497	-0.009	82086	968.8	4	9.105	-0.018	123192	226.8	
Total CollAve (4 peaks):				343.4		Total Col2Ave (4 peaks):				125.5	RPD = 93*
Corrected Ave (3 peaks):				135.0		Corrected Ave (3 peaks):				93.7	RPD = 36
Aroclor-1254	1	8.994	-0.008	66091	309.4	1	9.015	-0.011	209671	362.4	
Aroclor-1254	2	9.070	-0.008	24461	371.5	2	9.105	-0.012	123192	418.6	
Aroclor-1254	3	9.365	-0.006	41651	339.0	3	9.521	-0.013	119604	263.7	
Aroclor-1254	4	9.497	-0.008	82086	312.1	4	9.669	-0.013	300407	331.1	
Aroclor-1254	5	10.200	-0.011	43715	249.0	5	10.439	-0.017	190733	340.2	
Total CollAve (5 peaks):				316.2		Total Col2Ave (5 peaks):				343.2	RPD = 8
Corrected Ave (4 peaks):				302.4		Corrected Ave (4 peaks):				324.3	RPD = 7
Aroclor-1260	1	10.753	-0.011	13175	133.4	1	10.770	-0.010	62410	91.5	
Aroclor-1260	2	11.069	-0.011	11563	122.1	2	11.201	-0.017	122287	177.5	
Aroclor-1260	3	11.440	-0.010	29983	124.8	3	11.486	-0.010	167160	96.9	
Aroclor-1260	4	11.839	-0.009	18042	166.4	4	11.998	-0.011	48135	89.6	
Aroclor-1260	5	11.956	-0.009	6326	123.3	NS	---			----	
Total CollAve (5 peaks):				134.0		Total Col2Ave (4 peaks):				113.9	RPD = 16
Corrected Ave (4 peaks):				125.9		Corrected Ave (3 peaks):				92.7	RPD = 30
Aroclor-1262	1	11.069	-0.011	11563	103.2	1	10.770	-0.024	62410	66.4	
Aroclor-1262	2	11.440	-0.009	29983	108.1	2	11.201	-0.033	122287	152.1	
Aroclor-1262	3	11.839	-0.010	18042	219.1	3	11.486	-0.024	167160	90.7	
Aroclor-1262	4	11.956	-0.009	6326	60.6	4	11.998	-0.025	48135	53.5	
Total CollAve (4 peaks):				122.8		Total Col2Ave (4 peaks):				90.7	RPD = 30
Corrected Ave (3 peaks):				90.7		Corrected Ave (3 peaks):				70.2	RPD = 25
Aroclor-1268	1	11.956	-0.009	6326	19.3	1	11.998	-0.025	48135	20.6	
Aroclor-1268	2	12.029	-0.007	7102	23.9	2	12.052	-0.038	123875	52.9	
Aroclor-1268	3	12.428	0.005	3521	14.0	3	12.458	-0.023	16219	7.6	
Aroclor-1268	4	13.197	-0.009	3985	5.0	4	13.271	-0.027	19607	2.6	
Total CollAve (4 peaks):				15.6		Total Col2Ave (4 peaks):				20.9	RPD = 29
Corrected Ave (3 peaks):				12.8		Corrected Ave (3 peaks):				10.3	RPD = 22

Total PCB Area Col1 (5.441 - 13.514) = 959143 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 4369491 Col2 Total PCB = 0.6 ppm*

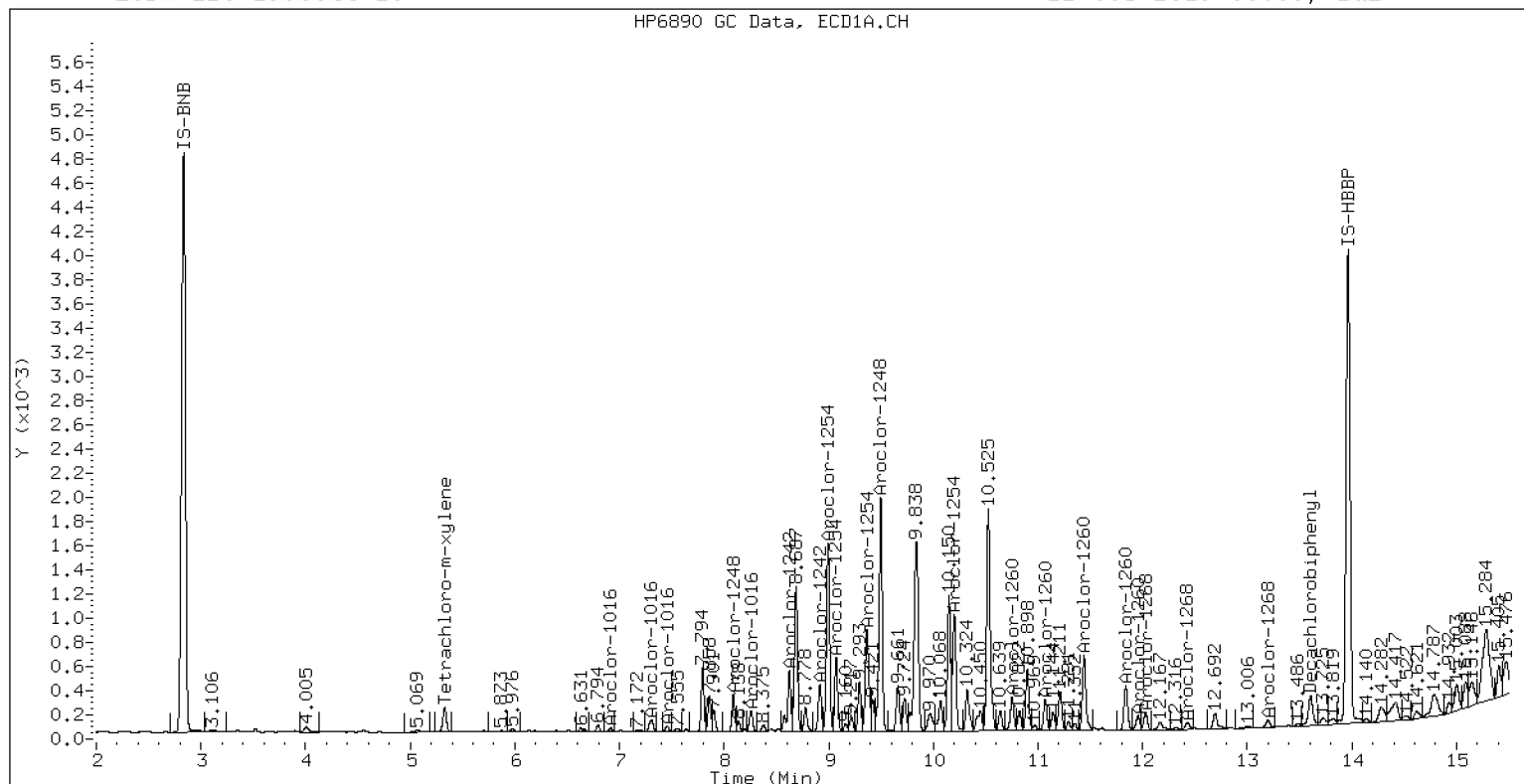
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 19J0044-10

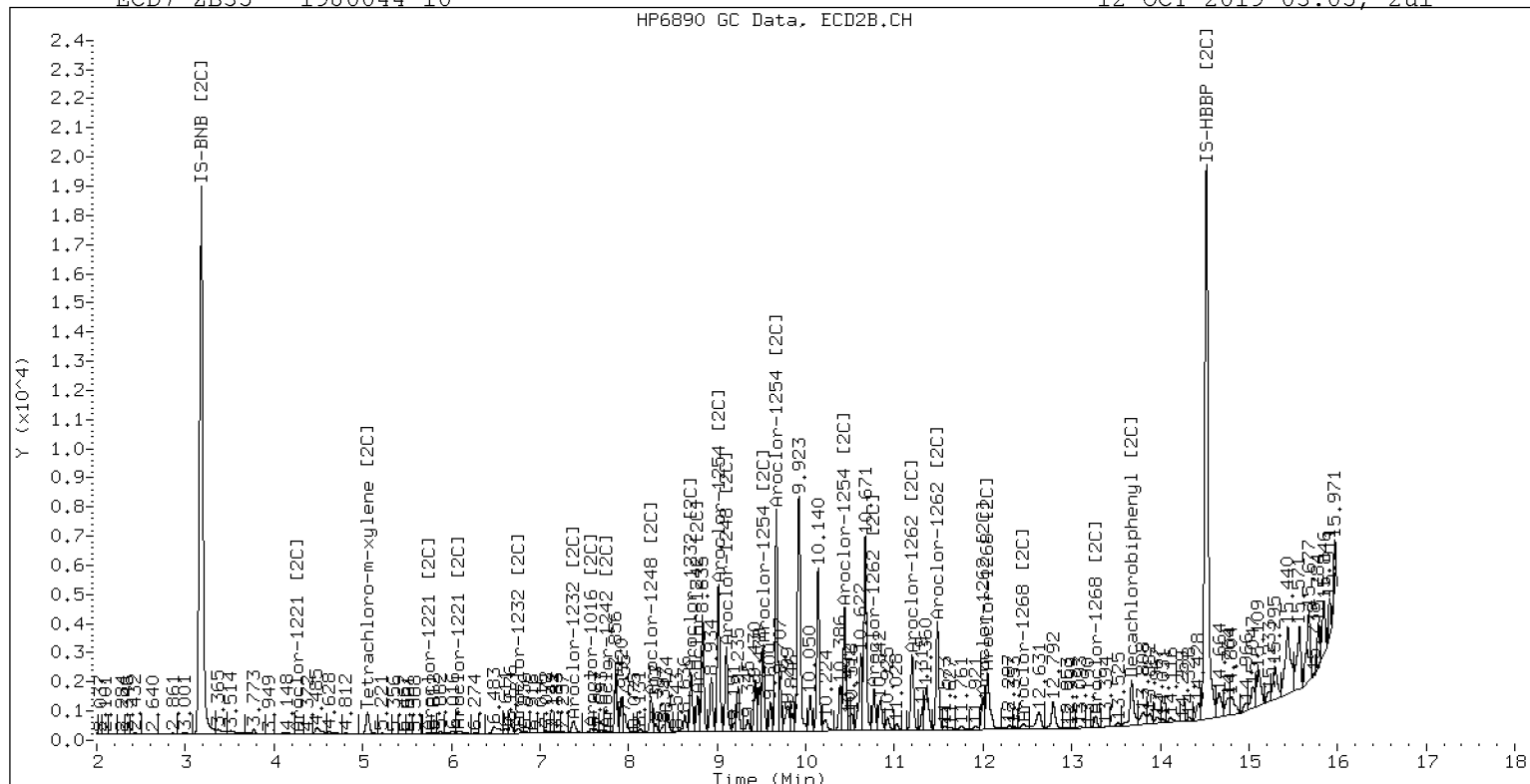
12-OCT-2019 03:05, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 19J0044-10

12-OCT-2019 03:05, 2ul



ZB-35 Manual Integration: NO



PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Batch: BHJ0164

Batch Matrix: Solid

Preparation: EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
L3-SC1b-00to10-82619	19J0044-01	19101119ECD7.D	10/07/19 13:55	
L3-SC1b-10to20-82619	19J0044-02	19101122ECD7.D	10/07/19 13:55	
D6-SC1b-10to20-82619	19J0044-03	19101125ECD7.D	10/07/19 13:55	
J6-SC1b-00to10-82719	19J0044-04	19101126ECD7.D	10/07/19 13:55	
J6-SC1b-10to20-82719	19J0044-05	19101127ECD7.D	10/07/19 13:55	
R4-SC1b-10to20-82819	19J0044-06	19101128ECD7.D	10/07/19 13:55	
H3-SC1b-00to10-82919	19J0044-07	19101129ECD7.D	10/07/19 13:55	
H3-SC1b-10-20-82919	19J0044-08	19101130ECD7.D	10/07/19 13:55	
J5-SC1b-00to10-82719	19J0044-09	19101132ECD7.D	10/07/19 13:55	
J5-SC1b-10to20-82719	19J0044-10	19101133ECD7.D	10/07/19 13:55	
Blank	BHJ0164-BLK1	19101115ECD7.D	10/07/19 13:55	
LCS	BHJ0164-BS1	19101116ECD7.D	10/07/19 13:55	
LCS Dup	BHJ0164-BSD1	19101117ECD7.D	10/07/19 13:55	
H3-SC1b-10-20-82919	BHJ0164-DUP1	19101131ECD7.D	10/07/19 13:55	
L3-SC1b-00to10-82619	BHJ0164-MS1	19101120ECD7.D	10/07/19 13:55	
L3-SC1b-00to10-82619	BHJ0164-MSD1	19101121ECD7.D	10/07/19 13:55	
Reference	BHJ0164-SRM1	19101118ECD7.D	10/07/19 13:55	



Batch: BHJ0164

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid

Matrix: Solid

Date Prepared: 10-7-19

Balance ID: B139298002

Set Up By: RCSM 10/07/19

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

Analysis: 8082A PCB Solid 4

Lab Number & Container	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
19J0044-01 A	79.0	(15.82) <u>16.00</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-02 A	79.2	(15.79) <u>15.89</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-03 A	53.0	(23.58) <u>23.76</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-04 A	52.1	(23.99) <u>24.06</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-05 A	51.9	(24.09) <u>24.27</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-06 A	52.4	(23.84) <u>23.94</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-07 A	52.8	(23.70) <u>23.91</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-08 A	53.2	(23.51) <u>23.85</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-09 A	46.2	(27.06) <u>27.19</u>	5mL	5mL	2mL	2.5	1.0	
19J0044-10 A	52.5	(23.82) <u>24.00</u>	5mL	5mL	2mL	2.5	1.0	

Batch QC

Lab Number	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BHJ0164-BLK1	100.0	(12.50) <u>12.50</u>	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.) Carboflon
BHJ0164-BS1	100.0	(12.50) <u>12.50</u>	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.) Carboflon
BHJ0164-BSD1	100.0	(12.50) <u>12.50</u>	5mL	5mL	2mL	2.5	1.0	(10g Actual Wt.) Carboflon
BHJ0164-DUP1	53.2	(23.51) <u>23.62</u>	5mL	5mL	2mL	2.5	1.0	Use 19J0044-08
BHJ0164-MS1	79.0	(15.82) <u>16.01</u>	5mL	5mL	2mL	2.5	1.0	Use 19J0044-01
BHJ0164-MSD1	79.0	(15.82) <u>16.01</u>	5mL	5mL	2mL	2.5	1.0	Use 19J0044-01
BHJ0164-SRM1	100.0	(12.50) 1g <u>1.01</u>	5mL	5mL	<u>2mL</u>	10	1.0	Use H002054 Carboflon

500µL

DM 10-7-19

Client ID verified By

Date

CUB 10/10/19

Preparation Reviewed By

Date

10/07/19

Extraction Date and Time

SH 13:55



Batch: BHJ0164

Prepared using: EPA 3546 (Microwave)
8082A PCB Solid 4 in Solid

Prep Steps	Reagents Used	Surrogates & Spike Standards Used																																													
Microwave ① 2 3 10-7-19 DN Analyst/Date	<table border="1"> <thead> <tr> <th>Station/Reagent</th> <th>Standard ID</th> </tr> </thead> <tbody> <tr> <td>Microwave</td> <td></td> </tr> <tr> <td>Analyst: DN Date: 10-7-19</td> <td></td> </tr> <tr> <td>Anhydrous Sodium Sulfate</td> <td>H008948</td> </tr> <tr> <td>Neutral Glass Wool</td> <td>H007969</td> </tr> <tr> <td>1:1 Hexane/Acetone</td> <td>H009278</td> </tr> <tr> <td>80:20 Hexane/Acetone</td> <td>H009373</td> </tr> <tr> <td>Hexane</td> <td>H007064</td> </tr> <tr> <td>KD</td> <td></td> </tr> <tr> <td>Analyst: BH Date: 10/10/19</td> <td></td> </tr> </tbody> </table>	Station/Reagent	Standard ID	Microwave		Analyst: DN Date: 10-7-19		Anhydrous Sodium Sulfate	H008948	Neutral Glass Wool	H007969	1:1 Hexane/Acetone	H009278	80:20 Hexane/Acetone	H009373	Hexane	H007064	KD		Analyst: BH Date: 10/10/19		<table border="1"> <thead> <tr> <th>Type</th> <th>Vial ID / Standard ID</th> <th>Vol uL</th> <th>Analyst</th> <th>Witness</th> </tr> </thead> <tbody> <tr> <td>Surrogate</td> <td>N H007719 Exp: 10/12/2019</td> <td>50µL</td> <td></td> <td>SH</td> </tr> <tr> <td>2µg/mL</td> <td></td> <td></td> <td>DN</td> <td></td> </tr> <tr> <td>Spike</td> <td>1 H008743 Exp: 09/10/2020</td> <td>63µL</td> <td></td> <td>SH</td> </tr> <tr> <td>20µg/mL</td> <td></td> <td></td> <td>DN</td> <td></td> </tr> </tbody> </table>	Type	Vial ID / Standard ID	Vol uL	Analyst	Witness	Surrogate	N H007719 Exp: 10/12/2019	50µL		SH	2µg/mL			DN		Spike	1 H008743 Exp: 09/10/2020	63µL		SH	20µg/mL			DN	
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KD 100°C Hexane Exchange (2 X 20 mL) 1 2 3 ④ ⑤ 6 BH 10/10/19 Analyst/Date		(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards. If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator in the Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).																																													
TurboVap Pre Cleanups 1 2 ③ 4 5 CT 10/10/19 Analyst/Date	<table border="1"> <tbody> <tr> <td>Hexane</td> <td>H007064</td> </tr> <tr> <td>Anhydrous Sodium Sulfate</td> <td>N/A</td> </tr> <tr> <td>Vialing</td> <td></td> </tr> <tr> <td>Analyst: CT Date: 10/10/19</td> <td></td> </tr> <tr> <td>Hexane</td> <td>H007064</td> </tr> </tbody> </table>	Hexane	H007064	Anhydrous Sodium Sulfate	N/A	Vialing		Analyst: CT Date: 10/10/19		Hexane	H007064																																				
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Vialing CT 10/10/19 Analyst/Date																																															



Batch: BHJ0164

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into beakers-lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels). 3. Add 1:1 Hexane/Acetone 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 R-05 15 minutes. Re-homogenize while cool. 7. Decant 1:1 Hex/Ace into Erlenmeyer flask with sodium sulfate in bottom and funnel with neutral glasswool plug. 8. Rinse with Hexane. 9. Add 8:2 Hexane/Acetone to the vessel 3 inches above the soil layer after homogenization. Microwave a 2nd time. 10. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 11. KD on 100° bath. 12. Exchange (2 X with 20mL) Hexane. 13. TurboVap. 14. Clean-ups. 15. TurboVap. 16. Vial with Hexane. A. Need Total Solids Y ☒ N B. Archive/Freeze ☒ Y N	



Extraction Parameter: PCB 4 Extraction Batch BHJ064

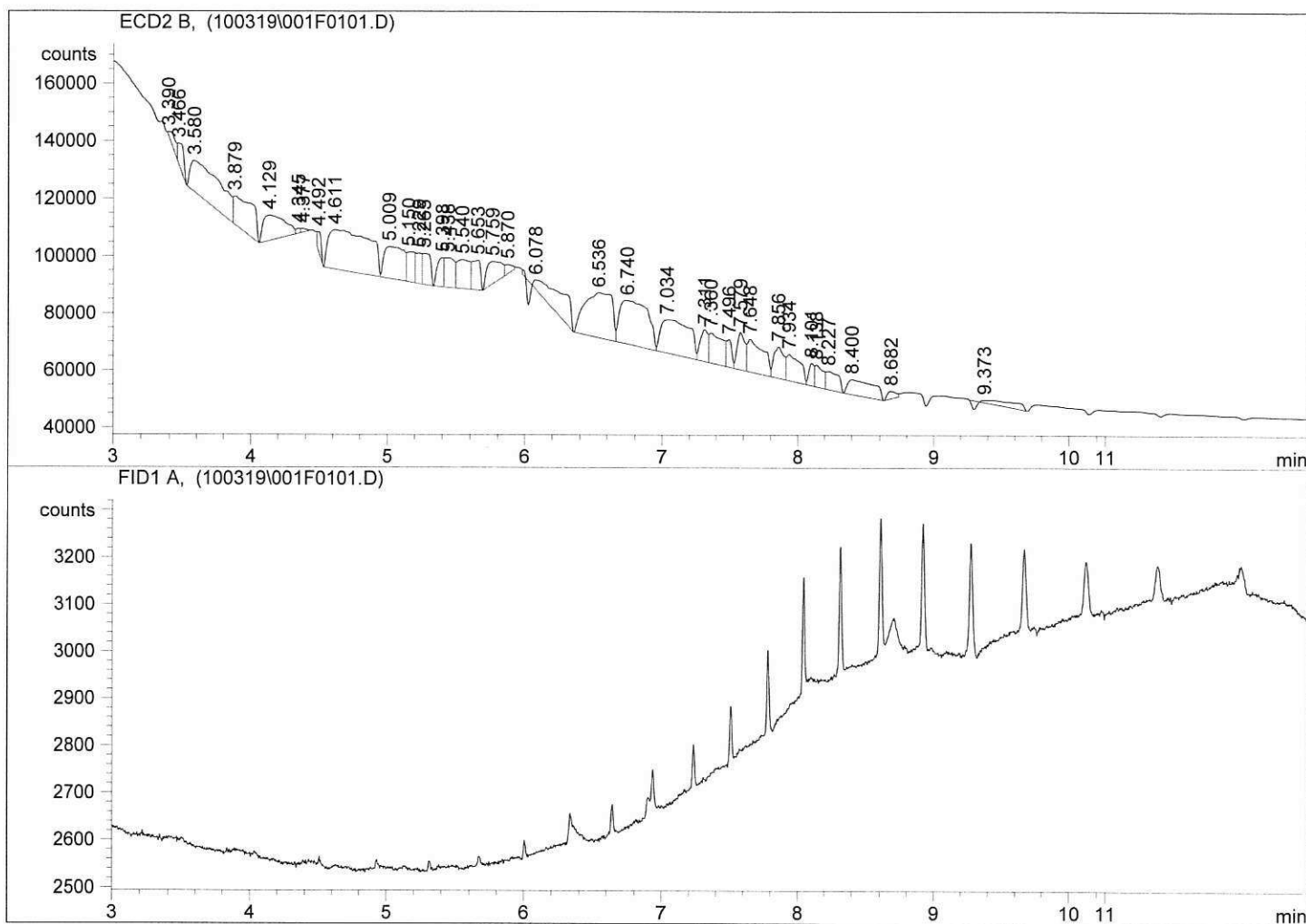
Total Solids Batch: BHJ0645 Work Order(s): 19J0444

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= <u>φ1, φ2, φ5, φ6,</u>	<u>φ1/φ3/19</u>
☒ Standing Water Decanted (Not shared)= <u>φ3, φ4, φ5, φ6, φ7, φ8, φ9, 1φ.</u>	<u>φ1/φ3/19</u>
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☒ Oily, obvious fuel/sulfur odors= <u>sulfur odor = φ3, φ4, φ7, φ8, φ9, 1φ.</u>	<u>φ1/φ3/19</u>
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ 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). <u>- Limited vol = φ3, φ6, φ7, φ9, 1φ.</u> <u>QC changed, approved by Kelly Bottom</u>	<u>φ1/φ3/19</u>
☒ Share Samples Y/N <u>Y</u>	<u>φ1/φ3/19</u>
☒ Multiple Jars Y/N <u>Y</u>	<u>φ1/φ3/19</u>
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

=====

Injection Date	: 10/3/2019 3:22:14 PM	Seq. Line	: 1
Sample Name	: DCM RINSE	Location	: Vial 1
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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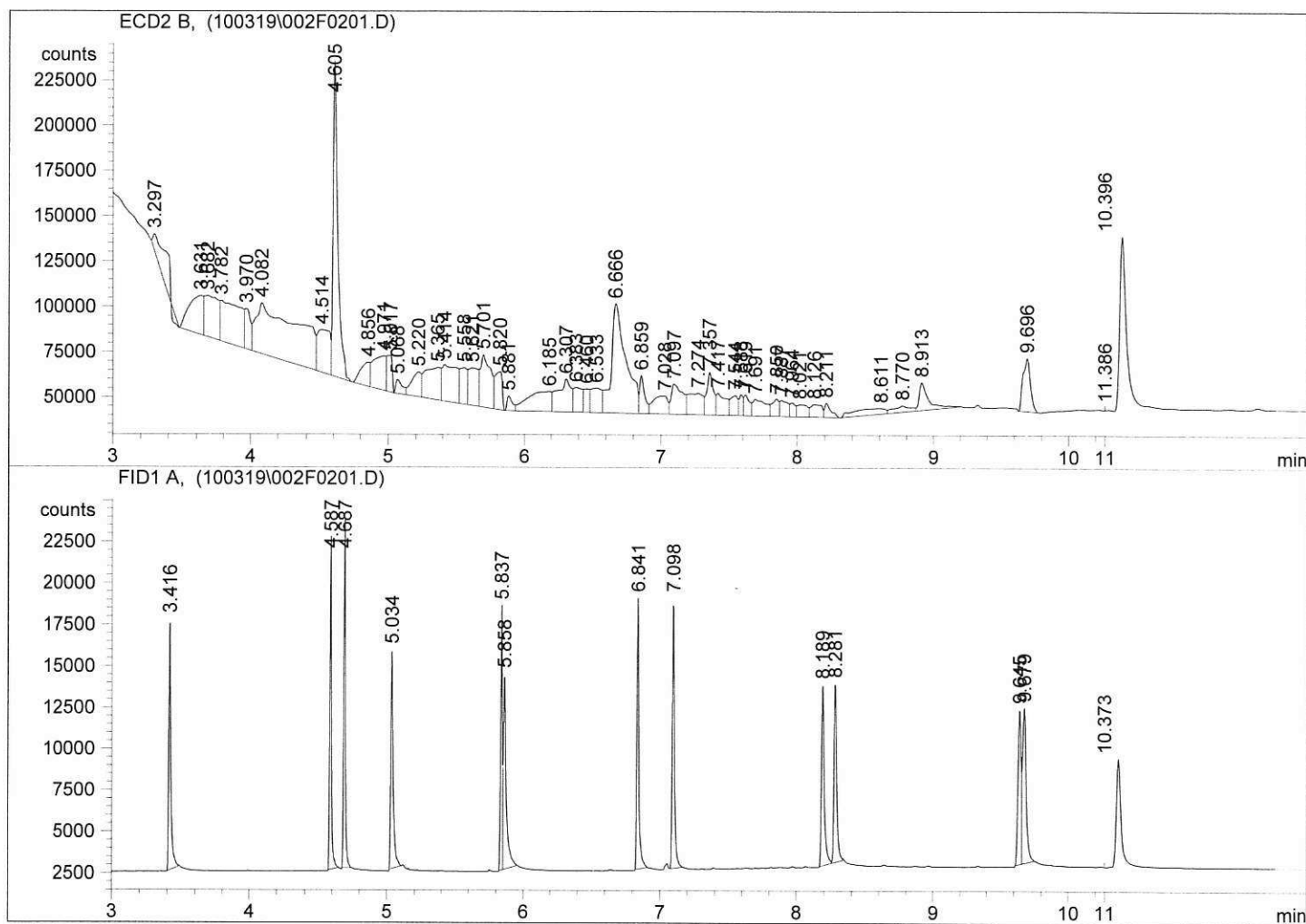


*** End of Report ***

=====

Injection Date	: 10/3/2019 3:37:54 PM	Seq. Line	: 2
Sample Name	: PNA STD 10PPM	Location	: Vial 2
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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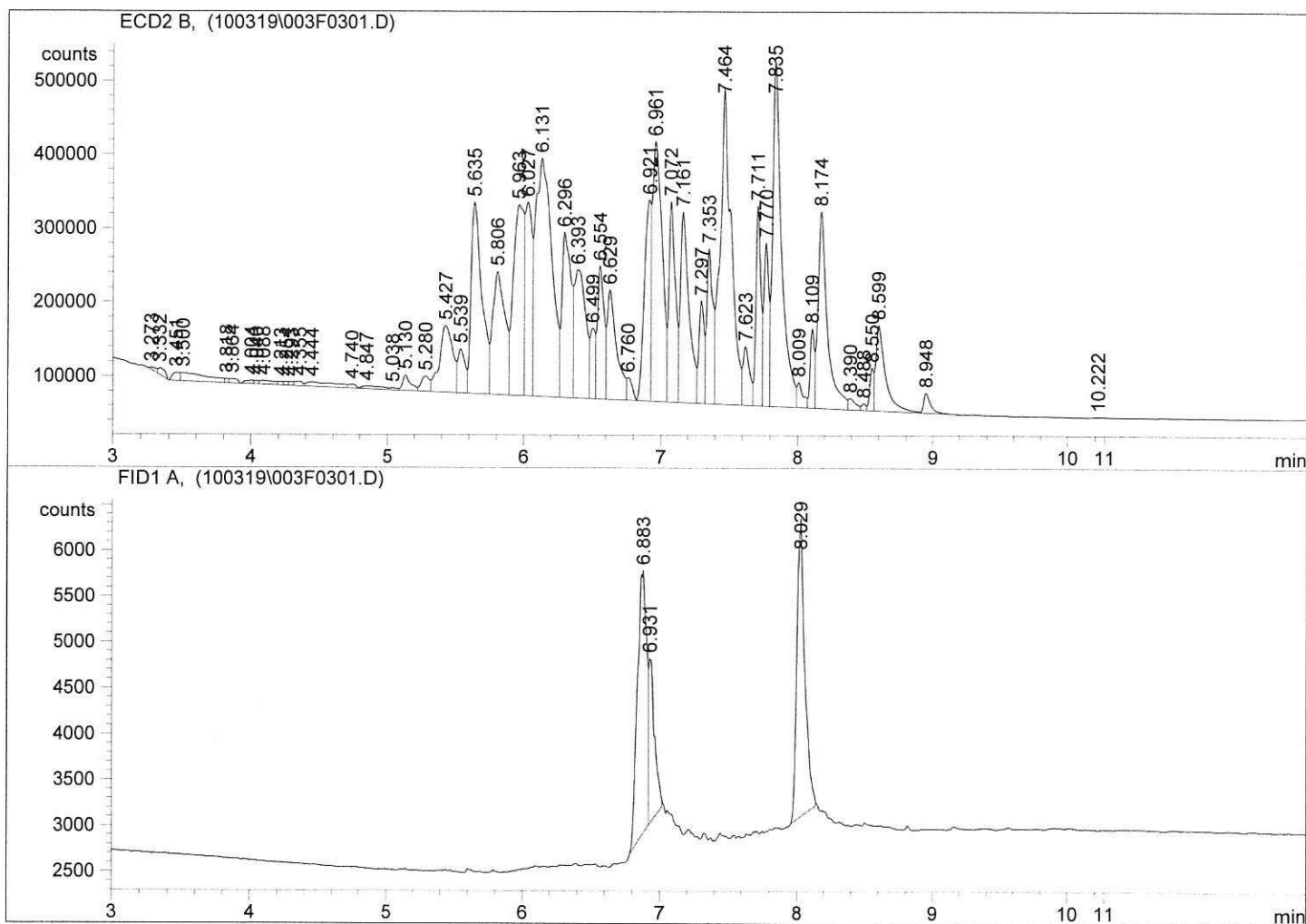


*** End of Report ***

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Injection Date	: 10/3/2019 3:53:37 PM	Seq. Line	: 3
Sample Name	: AR1660 1PPM	Location	: Vial 3
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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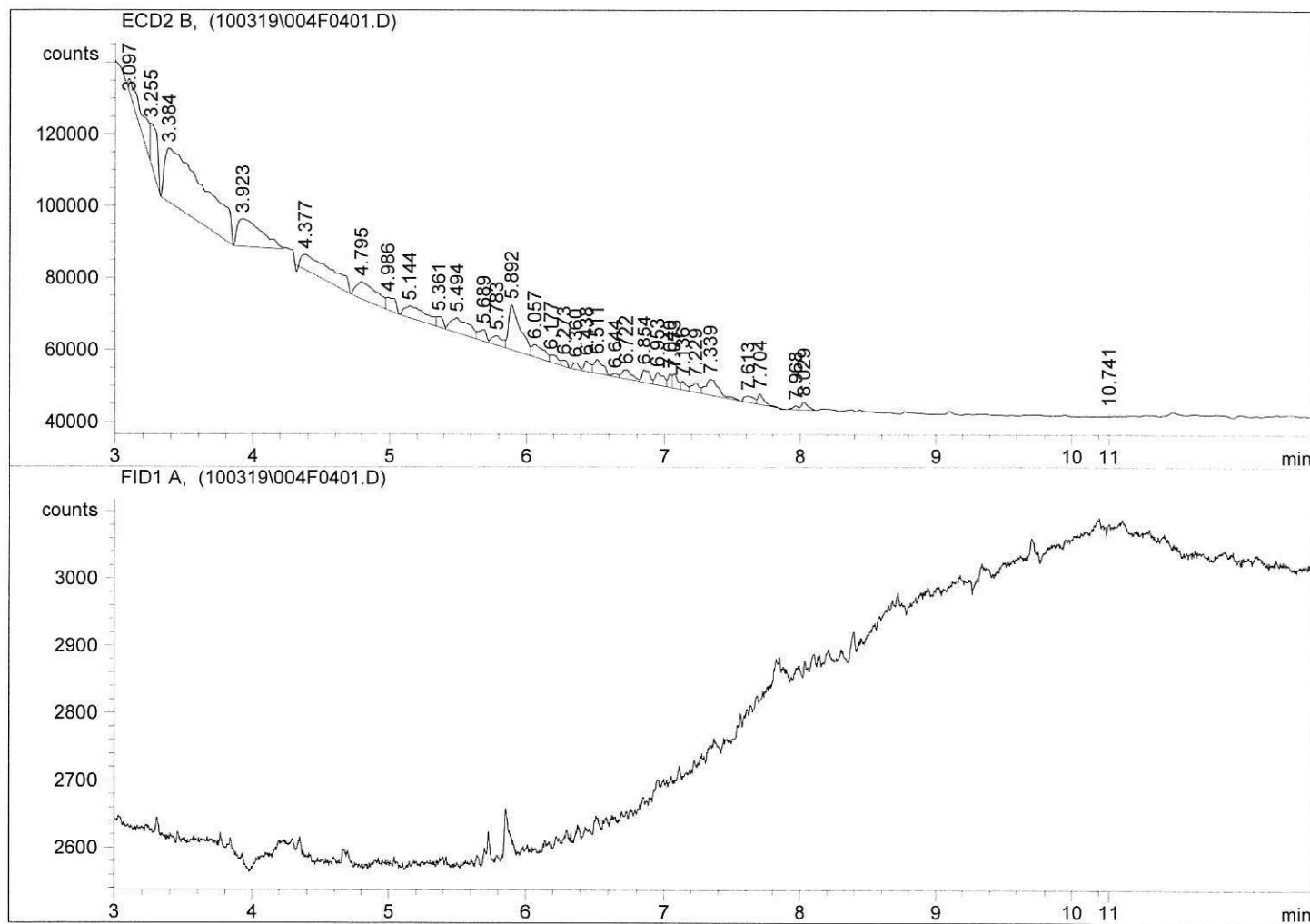
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Injection Date	: 10/3/2019 4:09:25 PM	Seq. Line	: 4
Sample Name	: 19J0044 01	Location	: Vial 4
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl

Sequence File : C:\HPCHEM\1\SEQUENCE\100319.S
Method : C:\HPCHEM\1\METHODS\SCREEN.M
Last changed : 5/22/2019 5:40:20 PM by DDM

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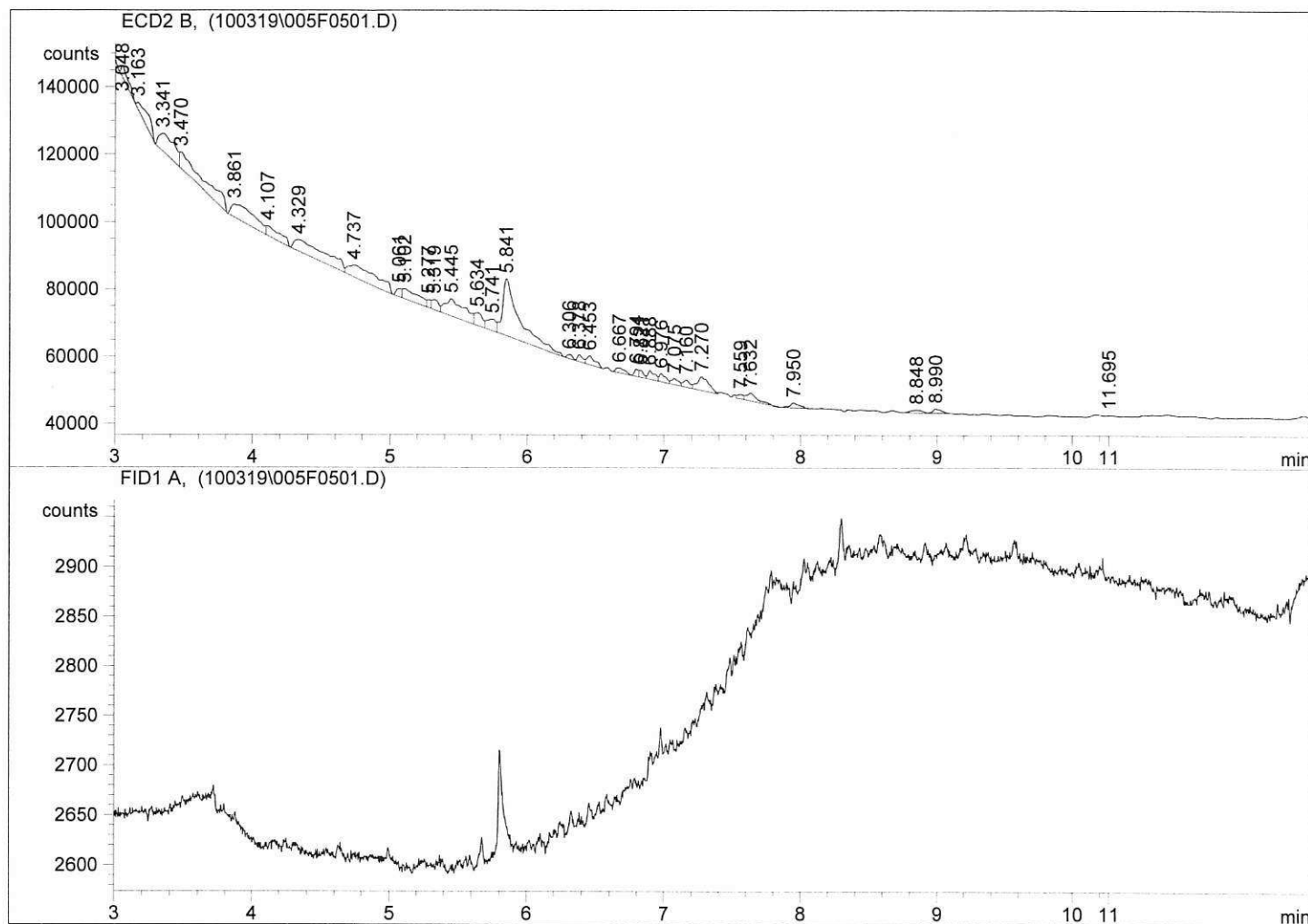


*** End of Report ***

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Injection Date	: 10/3/2019 4:25:14 PM	Seq. Line	: 5
Sample Name	: 19J0044 02	Location	: Vial 5
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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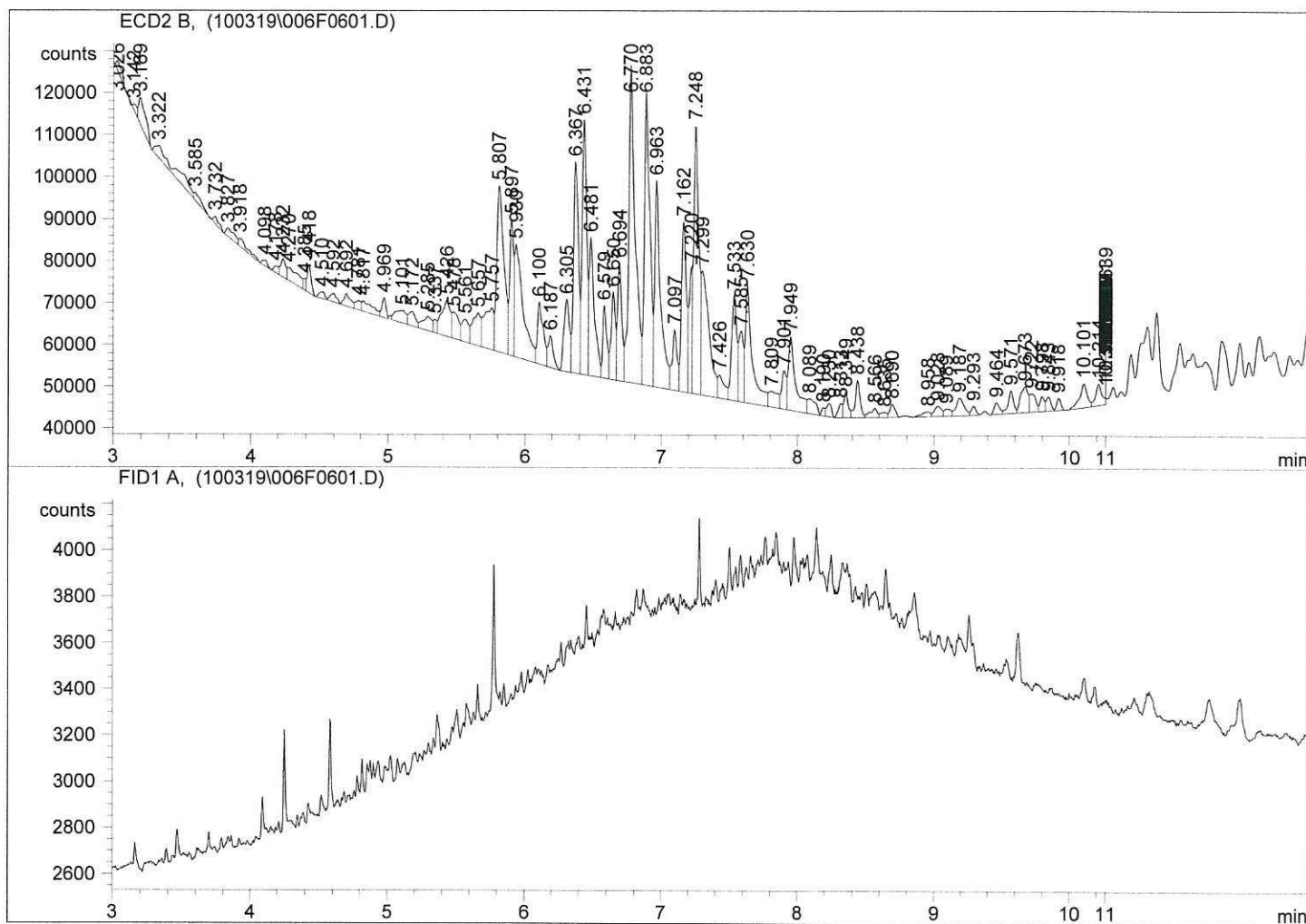


*** End of Report ***

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Injection Date	: 10/3/2019 4:41:01 PM	Seq. Line	: 6
Sample Name	: 19J0044 03	Location	: Vial 6
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
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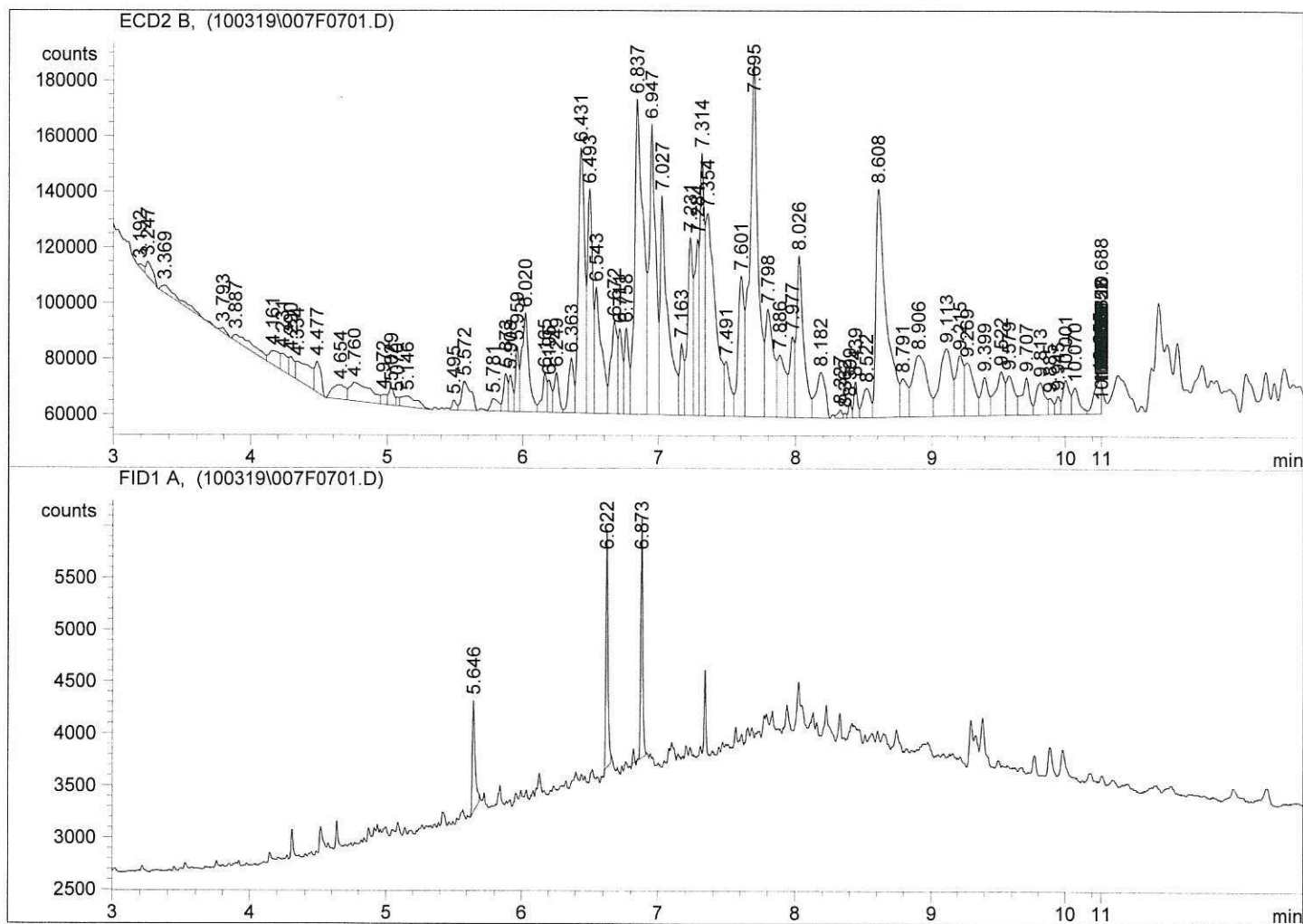
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Injection Date	: 10/3/2019 4:56:38 PM	Seq. Line	: 7
Sample Name	: 19J0044 04	Location	: Vial 7
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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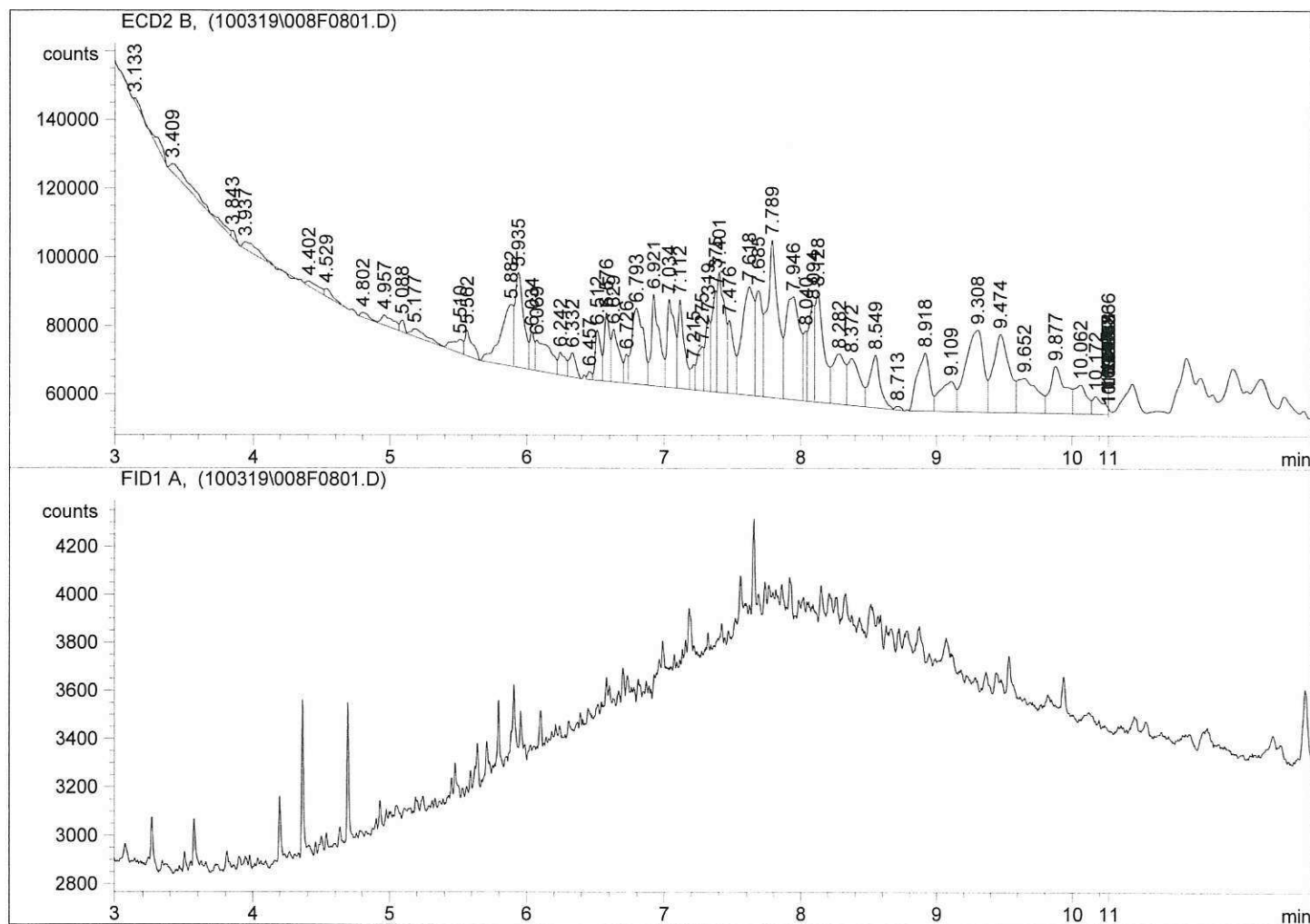


*** End of Report ***

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Injection Date	: 10/3/2019 5:12:12 PM	Seq. Line	: 8
Sample Name	: 19J0044 05	Location	: Vial 8
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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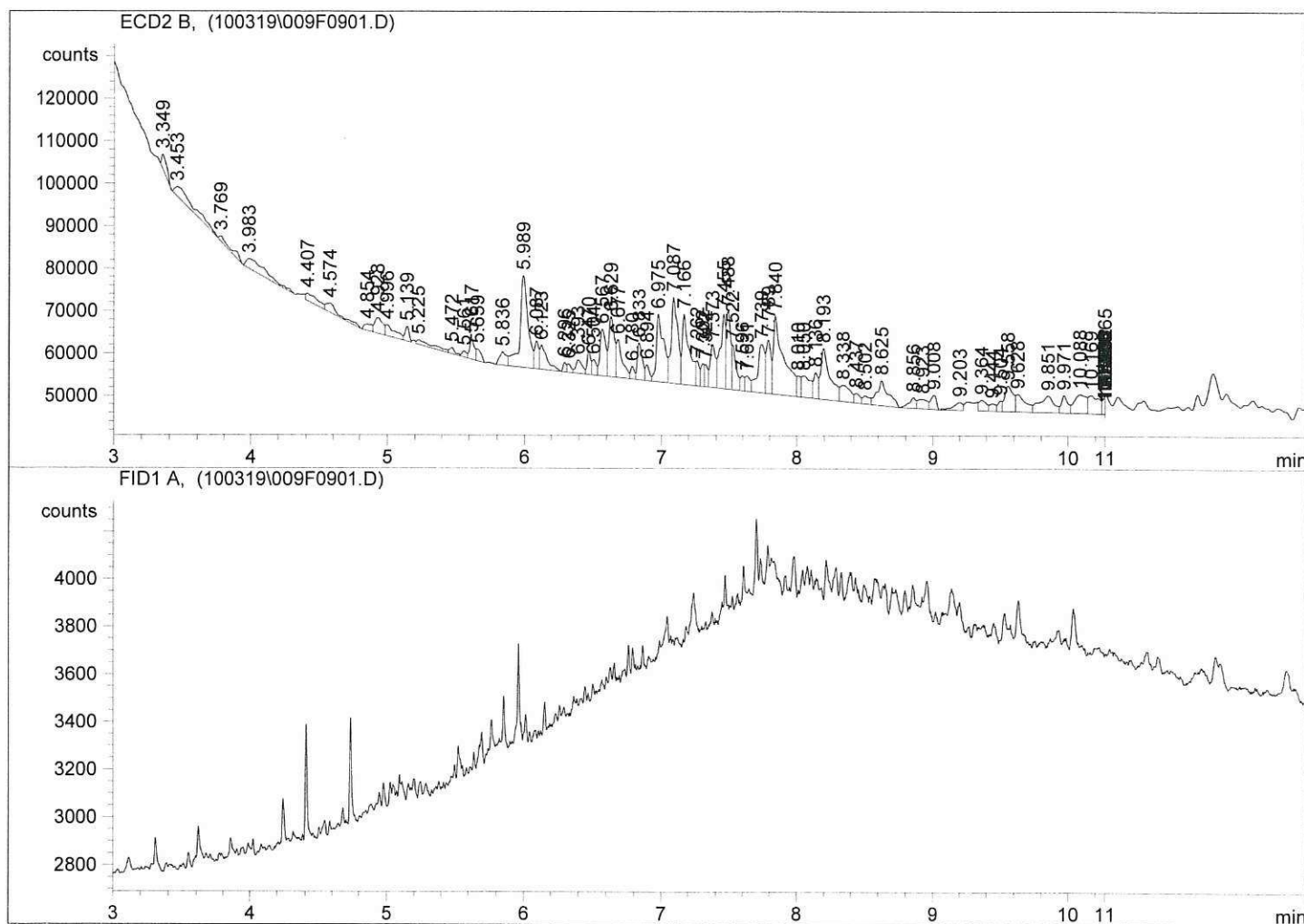


*** End of Report ***

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Injection Date	: 10/3/2019 5:27:45 PM	Seq. Line	: 9
Sample Name	: 19J0044 06	Location	: Vial 9
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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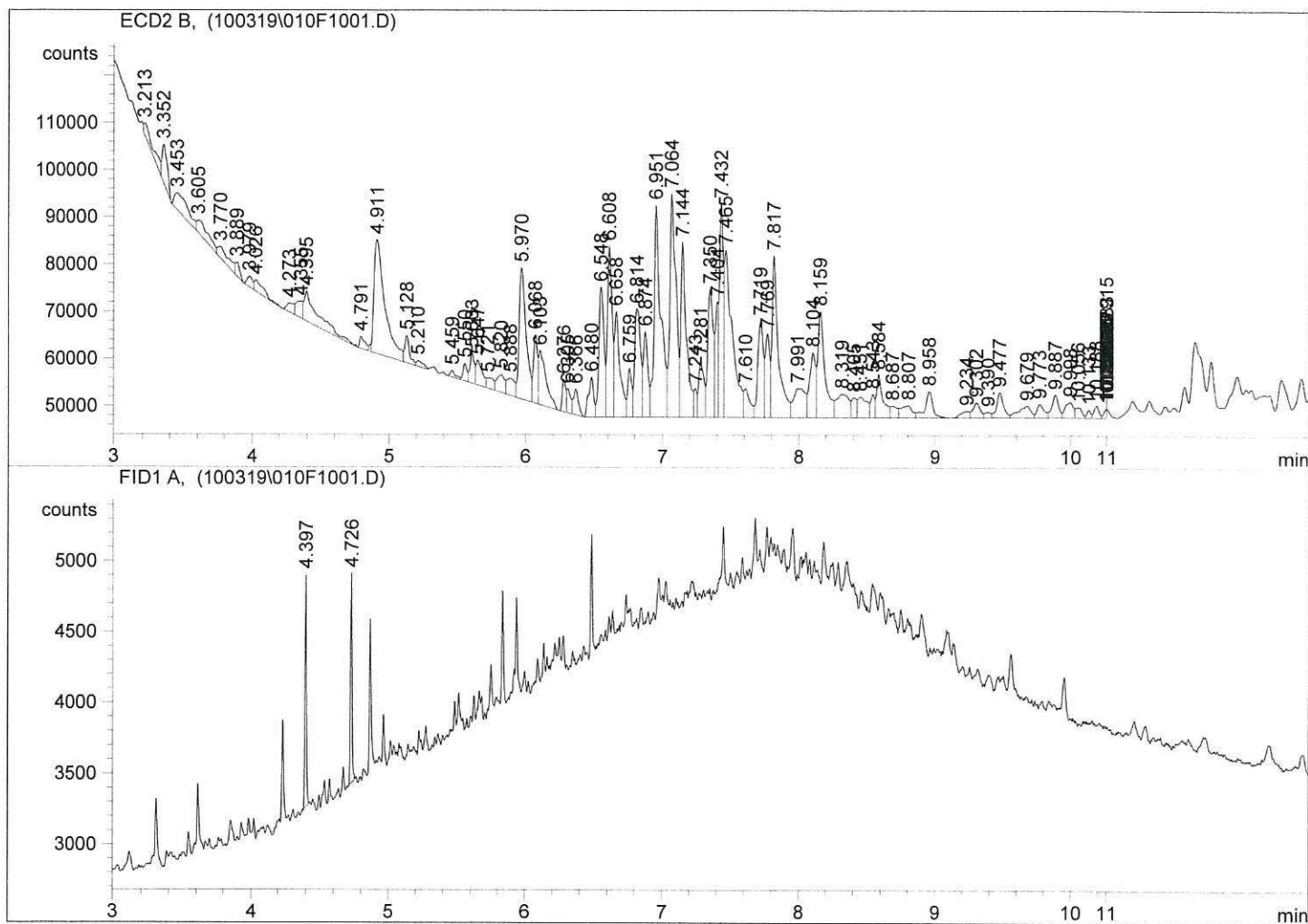


*** End of Report ***

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Injection Date	: 10/3/2019 5:43:24 PM	Seq. Line	: 10
Sample Name	: 19J0044 07	Location	: Vial 10
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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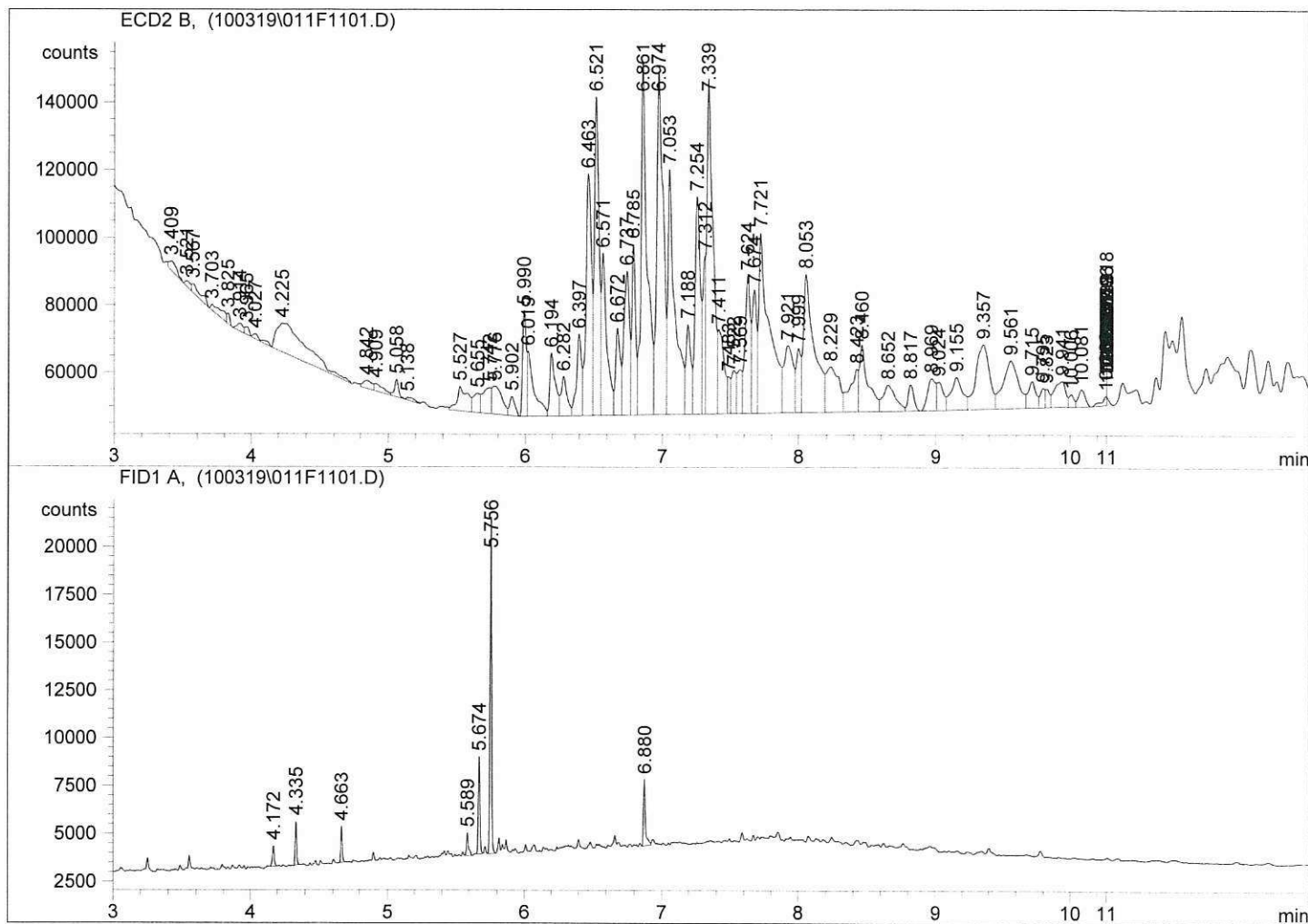


*** End of Report ***

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Injection Date	: 10/3/2019 5:59:08 PM	Seq. Line	: 11
Sample Name	: 19J0044 08	Location	: Vial 11
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
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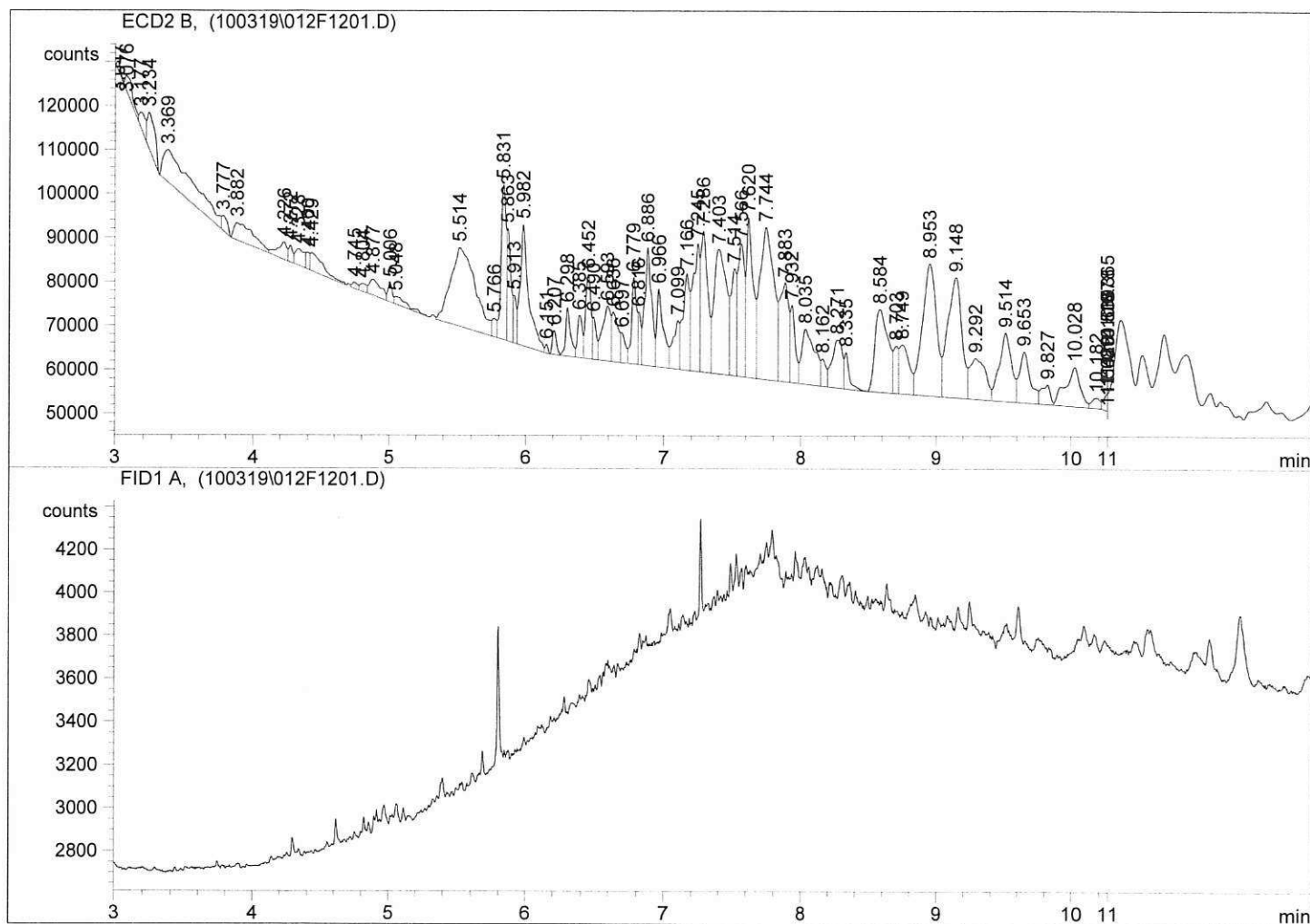


*** End of Report ***

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Injection Date	: 10/3/2019 6:14:53 PM	Seq. Line	: 12
Sample Name	: 19J0044 09	Location	: Vial 12
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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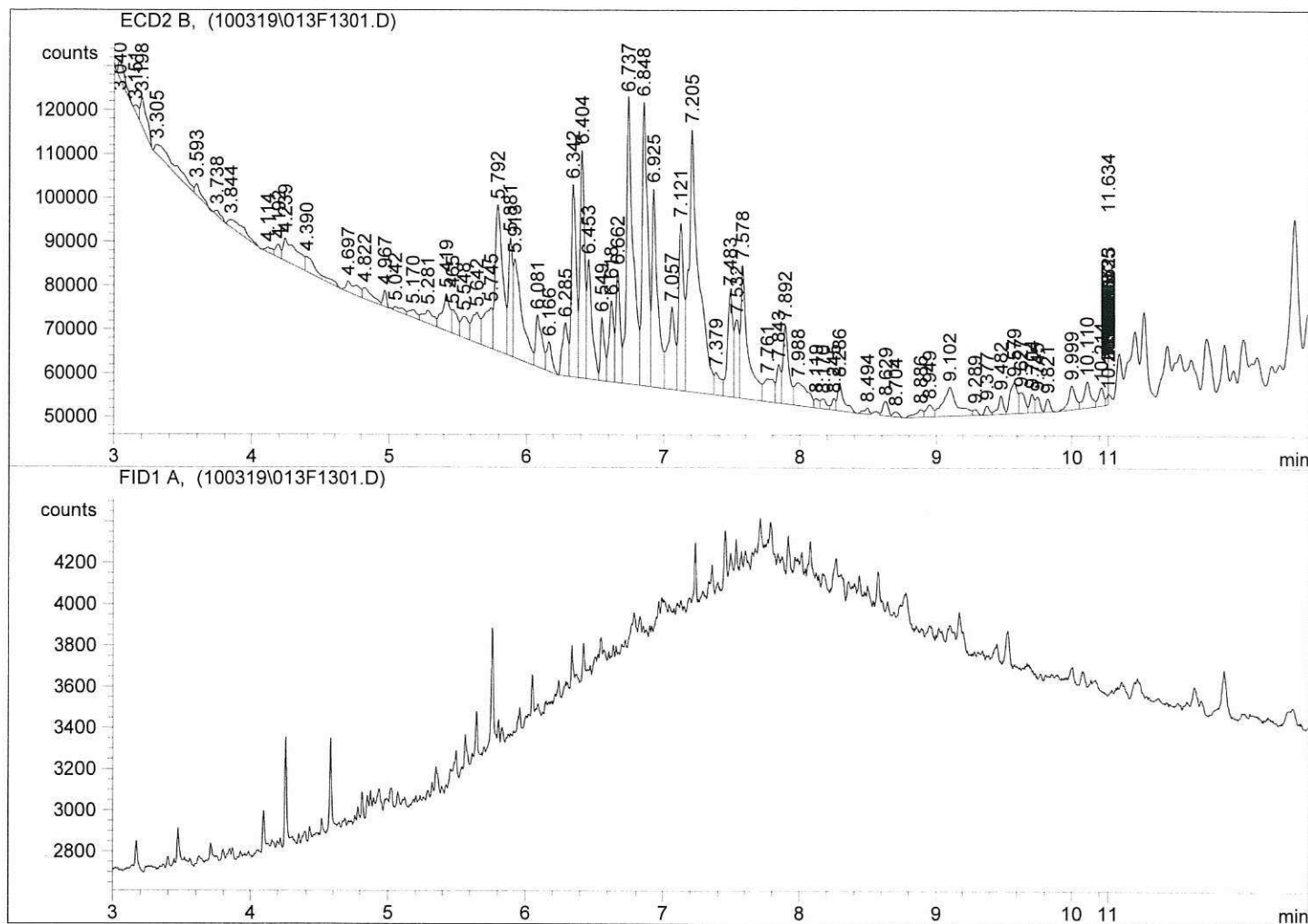


*** End of Report ***

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Injection Date	: 10/3/2019 6:30:40 PM	Seq. Line	: 13
Sample Name	: 19J0044 10	Location	: Vial 13
Acq. Operator	: YL	Inj	: 1
		Inj Volume	: 1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\100319.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 5/22/2019 5:40:20 PM by DDM		

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*** End of Report ***

Batch: BHJ0164

Batch Comment: **NONE**

Project: Swan Island Lagoon Sediment Investigation

Project Comments: <C> MS/MSD per batch and a LCS/LCSD</C>

<E> MS/MSD as specified per batch/ LCS/LCSD and RM H002054 </E>

Work Order:19J0044

Work Order Comments: <C> MS/MSD per batch and a LCS/LCSD and 1 sample DUP per batch</C>

<E> MS/MSD as specified per batch/ LCS/LCSD/ 1 sediment sample DUP per batch and RM H002054 per sediment batch </E>

Sample: 19J0044-01

Sample Comments: Sample was previously frozen.

Sample: 19J0044-02

Sample Comments: Sample was previously frozen.

Sample: 19J0044-03

Sample Comments: Sample was previously frozen. MS/MSD

Sample: 19J0044-04

Sample Comments: Sample was previously frozen.

Sample: 19J0044-05

Sample Comments: Sample was previously frozen.

Sample: 19J0044-06

Sample Comments: Sample was previously frozen.

Sample: 19J0044-07

Sample Comments: Sample was previously frozen.

Sample: 19J0044-08

Sample Comments: Sample was previously frozen.

Sample: 19J0044-09

Sample Comments: Sample was previously frozen.

Sample: 19J0044-10

Sample Comments: Sample was previously frozen.

1
(1g + 10 mL)



CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigat

Cleanup Batch: CHJ0096

Cleanup Type: Sulfuric Acid

Cleanup Method: EPA 3665A Sulfuric Acid Cleanup

Analysis: EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Reference	BHJ0164-SRM1	19101118ECD7.D	10/10/2019	
D6-SC1b-10to20-82619	19J0044-03	19101125ECD7.D	10/10/2019	
R4-SC1b-10to20-82819	19J0044-06	19101128ECD7.D	10/10/2019	
L3-SC1b-10to20-82619	19J0044-02	19101122ECD7.D	10/10/2019	
L3-SC1b-00to10-82619	19J0044-01	19101119ECD7.D	10/10/2019	
Blank	BHJ0164-BLK1	19101115ECD7.D	10/10/2019	
Duplicate	BHJ0164-DUP1	19101131ECD7.D	10/10/2019	
Matrix Spike	BHJ0164-MS1	19101120ECD7.D	10/10/2019	
Matrix Spike Dup	BHJ0164-MSD1	19101121ECD7.D	10/10/2019	
H3-SC1b-10-20-82919	19J0044-08	19101130ECD7.D	10/10/2019	
J5-SC1b-10to20-82719	19J0044-10	19101133ECD7.D	10/10/2019	
H3-SC1b-00to10-82919	19J0044-07	19101129ECD7.D	10/10/2019	
LCS	BHJ0164-BS1	19101116ECD7.D	10/10/2019	
J5-SC1b-00to10-82719	19J0044-09	19101132ECD7.D	10/10/2019	
J6-SC1b-00to10-82719	19J0044-04	19101126ECD7.D	10/10/2019	
J6-SC1b-10to20-82719	19J0044-05	19101127ECD7.D	10/10/2019	
LCS Dup	BHJ0164-BSD1	19101117ECD7.D	10/10/2019	



CLEANUP BENCH SHEET

CHJ0096

Matrix: Solid

Cleanup using: Organics - EPA 3665A Sulfuric Acid Cleanup

Printed: 10/10/2019 7:31:52PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
19J0044-10	A	J5-SC1b-10to20-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-09	A	J5-SC1b-00to10-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-05	A	J6-SC1b-10to20-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-06	A	R4-SC1b-10to20-82819	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-07	A	H3-SC1b-00to10-82919	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-08	A	H3-SC1b-10-20-82919	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-02	A	L3-SC1b-10to20-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-03	A	D6-SC1b-10to20-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-04	A	J6-SC1b-00to10-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-01	A	L3-SC1b-00to10-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
BHJ0164-SRM1	-	Reference	-	10	10	-	10/10/2019	CCT	
BHJ0164-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-MS1	-	Matrix Spike	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-DUP1	-	Duplicate	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BSD1	-	LCS Dup	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BS1	-	LCS	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BLK1	-	Blank	-	2.5	2.5	-	10/10/2019	CCT	



CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigat

Cleanup Batch: CHJ0097

Cleanup Type: Sulfur

Cleanup Method: EPA 3660B Sulfur Cleanup

Analysis: EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Duplicate	BHJ0164-DUP1	19101131ECD7.D	10/10/2019	
L3-SC1b-00to10-82619	19J0044-01	19101119ECD7.D	10/10/2019	
L3-SC1b-10to20-82619	19J0044-02	19101122ECD7.D	10/10/2019	
R4-SC1b-10to20-82819	19J0044-06	19101128ECD7.D	10/10/2019	
J6-SC1b-00to10-82719	19J0044-04	19101126ECD7.D	10/10/2019	
J5-SC1b-10to20-82719	19J0044-10	19101133ECD7.D	10/10/2019	
J5-SC1b-00to10-82719	19J0044-09	19101132ECD7.D	10/10/2019	
D6-SC1b-10to20-82619	19J0044-03	19101125ECD7.D	10/10/2019	
H3-SC1b-00to10-82919	19J0044-07	19101129ECD7.D	10/10/2019	
LCS	BHJ0164-BS1	19101116ECD7.D	10/10/2019	
Blank	BHJ0164-BLK1	19101115ECD7.D	10/10/2019	
LCS Dup	BHJ0164-BSD1	19101117ECD7.D	10/10/2019	
Matrix Spike	BHJ0164-MS1	19101120ECD7.D	10/10/2019	
Matrix Spike Dup	BHJ0164-MSD1	19101121ECD7.D	10/10/2019	
J6-SC1b-10to20-82719	19J0044-05	19101127ECD7.D	10/10/2019	
Reference	BHJ0164-SRM1	19101118ECD7.D	10/10/2019	
H3-SC1b-10-20-82919	19J0044-08	19101130ECD7.D	10/10/2019	



CLEANUP BENCH SHEET

CHJ0097

Matrix: Solid

Cleanup using: Organics - EPA 3660B Sulfur Cleanup

Printed: 10/10/2019 7:32:45PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
19J0044-10	A	J5-SC1b-10to20-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-09	A	J5-SC1b-00to10-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-05	A	J6-SC1b-10to20-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-06	A	R4-SC1b-10to20-82819	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-07	A	H3-SC1b-00to10-82919	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-08	A	H3-SC1b-10-20-82919	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-02	A	L3-SC1b-10to20-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-03	A	D6-SC1b-10to20-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-04	A	J6-SC1b-00to10-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-01	A	L3-SC1b-00to10-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
BHJ0164-SRM1	-	Reference	-	10	10	-	10/10/2019	CCT	
BHJ0164-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-MS1	-	Matrix Spike	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-DUP1	-	Duplicate	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BSD1	-	LCS Dup	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BS1	-	LCS	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BLK1	-	Blank	-	2.5	2.5	-	10/10/2019	CCT	



CLEANUP BATCH SUMMARY

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigat

Cleanup Batch: CHJ0098

Cleanup Type: Silica Gel

Cleanup Method: EPA 3630C Silica Gel Cleanup

Analysis: EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
D6-SC1b-10to20-82619	19J0044-03	19101125ECD7.D	10/10/2019	
L3-SC1b-10to20-82619	19J0044-02	19101122ECD7.D	10/10/2019	
Matrix Spike Dup	BHJ0164-MSD1	19101121ECD7.D	10/10/2019	
Matrix Spike	BHJ0164-MS1	19101120ECD7.D	10/10/2019	
LCS Dup	BHJ0164-BSD1	19101117ECD7.D	10/10/2019	
LCS	BHJ0164-BS1	19101116ECD7.D	10/10/2019	
Duplicate	BHJ0164-DUP1	19101131ECD7.D	10/10/2019	
J6-SC1b-10to20-82719	19J0044-05	19101127ECD7.D	10/10/2019	
R4-SC1b-10to20-82819	19J0044-06	19101128ECD7.D	10/10/2019	
Blank	BHJ0164-BLK1	19101115ECD7.D	10/10/2019	
L3-SC1b-00to10-82619	19J0044-01	19101119ECD7.D	10/10/2019	
Reference	BHJ0164-SRM1	19101118ECD7.D	10/10/2019	
J6-SC1b-00to10-82719	19J0044-04	19101126ECD7.D	10/10/2019	
J5-SC1b-00to10-82719	19J0044-09	19101132ECD7.D	10/10/2019	
H3-SC1b-10-20-82919	19J0044-08	19101130ECD7.D	10/10/2019	
H3-SC1b-00to10-82919	19J0044-07	19101129ECD7.D	10/10/2019	
J5-SC1b-10to20-82719	19J0044-10	19101133ECD7.D	10/10/2019	



CLEANUP BENCH SHEET

CHJ0098

Matrix: Solid

Cleanup using: Organics - EPA 3630C Silica Gel Cleanup

Printed: 10/10/2019 7:33:19PM

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
19J0044-10	A	J5-SC1b-10to20-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-09	A	J5-SC1b-00to10-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-05	A	J6-SC1b-10to20-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-06	A	R4-SC1b-10to20-82819	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-07	A	H3-SC1b-00to10-82919	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-08	A	H3-SC1b-10-20-82919	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-02	A	L3-SC1b-10to20-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-03	A	D6-SC1b-10to20-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-04	A	J6-SC1b-00to10-82719	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
19J0044-01	A	L3-SC1b-00to10-82619	A 01	2.5	2.5	8082A PCB Solid 4	10/10/2019	CCT	
BHJ0164-SRM1	-	Reference	-	10	10	-	10/10/2019	CCT	
BHJ0164-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-MS1	-	Matrix Spike	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-DUP1	-	Duplicate	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BSD1	-	LCS Dup	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BS1	-	LCS	-	2.5	2.5	-	10/10/2019	CCT	
BHJ0164-BLK1	-	Blank	-	2.5	2.5	-	10/10/2019	CCT	



Form I
METHOD BLANK DATA SHEET
EPA 8082A

Blank

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Inv
Matrix: Solid Laboratory ID: BHJ0164-BLK1 File ID: 19101115ECD7.D
Sampled: N/A Prepared: 10/07/19 13:55 Analyzed: 10/11/19 20:49
Solids: Preparation: EPA 3546 (Microwave) Initial/Final: 12.5 g / 2.5 mL
Batch: BHJ0164 Sequence: SHJ0236 Calibration: C100052
Instrument: ECD7 Column: ZB5 Cleanups: Silica Gel, Sulfur, Sulfuric Acid

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
12674-11-2	Aroclor 1016	1	4.0	U	1.6	4.0
11104-28-2	Aroclor 1221	1	4.0	U	1.6	4.0
11141-16-5	Aroclor 1232	1	4.0	U	1.6	4.0
53469-21-9	Aroclor 1242	1	4.0	U	1.6	4.0
12672-29-6	Aroclor 1248	1	4.0	U	1.6	4.0
11097-69-1	Aroclor 1254	1	4.0	U	1.6	4.0
11096-82-5	Aroclor 1260	1	4.0	U	0.6	4.0
37324-23-5	Aroclor 1262	1	4.0	U	0.6	4.0
11100-14-4	Aroclor 1268	1	4.0	U	0.6	4.0
SURROGATES		ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl		8.0000	8.12	101	40 - 126	
Tetrachlorometaxylene		8.0000	7.26	90.7	44 - 120	
Decachlorobiphenyl [2C]		8.0000	8.43	105	40 - 126	
Tetrachlorometaxylene [2C]		8.0000	6.42	80.3	44 - 120	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101115ECD7.D
Data file 2: /20191011.b/20191011.b/19101115ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-BLK1
Client ID:
Injection Date: 11-OCT-2019 20:49
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
=====									
5.335	-0.005	111407	5.063	0.006	454075	36.3	32.1	12.2	Tetrachloro-m-xylene
13.613	-0.001	160758	13.688	-0.005	991618	40.6	42.2	3.8	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	90.7	80.3
Decachlorobiphenyl	101.5	105.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	247838	-5.7
Hexabromobiphenyl	382688	391442	2.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1190318	10.0
Hexabromobiphenyl	1006687	1225896	21.8

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	---			0.0	1	6.753	-0.005	4782	8.1
Aroclor-1016	2	---			0.0	2	7.379	-0.003	18012	14.6
Aroclor-1016	3	---			0.0	3	7.550	-0.032	5386	10.8
Aroclor-1016	4	---			0.0	4	7.725	-0.026	4992	16.0
CollAve: <3 Quant Peaks						Col2Ave: 12.4				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.769	0.011	22042	124.9
Aroclor-1221	3	---			0.0	3	6.098	-0.006	11059	37.5
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.203	0.019	1076	100.8	1	---			0.0
Aroclor-1232	2	6.867	-0.058	1047	37.2	2	6.753	-0.024	4782	19.1
Aroclor-1232	3	---			0.0	3	7.379	-0.018	18012	35.9
Aroclor-1232	4	---			0.0	4	8.723	-0.007	5916	35.5
CollAve: <3 Quant Peaks						Col2Ave: 30.1				
Aroclor-1242	1	6.867	-0.059	1047	17.2	1	6.753	-0.006	4782	10.6
Aroclor-1242	2	---			0.0	2	7.379	-0.005	18012	18.5
Aroclor-1242	3	8.542	-0.089	1533	21.1	3	7.725	-0.027	4992	20.1
Aroclor-1242	4	---			0.0	4	8.723	-0.066	5916	19.1
CollAve: <3 Quant Peaks						Col2Ave: 17.1				
Aroclor-1248	1	8.112	0.015	1016	9.1	1	7.379	-0.005	18012	27.8
Aroclor-1248	2	8.542	-0.089	1533	11.1	2	8.223	-0.038	7127	14.6
Aroclor-1248	3	---			0.0	3	8.723	-0.067	5916	12.0
Aroclor-1248	4	---			0.0	4	9.152	0.029	1888	3.0
CollAve: <3 Quant Peaks						Col2Ave: 14.4				
Aroclor-1254	1	---			0.0	1	8.946	-0.080	4726	7.2
Aroclor-1254	2	---			0.0	2	9.115	-0.003	4406	13.1
Aroclor-1254	3	---			0.0	3	9.490	-0.043	12624	24.4
Aroclor-1254	4	---			0.0	4	9.674	-0.008	788	0.8
Aroclor-1254	5	---			0.0	5	10.361	-0.095	1259	2.0
CollAve: <3 Quant Peaks						Col2Ave: 9.5				
Aroclor-1260	1	---			0.0	1	10.861	0.081	4064	5.3
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	11.947	-0.062	5351	8.8
Aroclor-1260	5	---			0.0	NS	---			----
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	10.861	0.066	4064	3.8
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	11.947	-0.077	5351	5.3
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	11.947	-0.076	5351	2.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.471	-0.010	2419	1.0
Aroclor-1268	4	---			0.0	4	13.281	-0.016	546	0.1
CollAve: <3 Quant Peaks						Col2Ave: 1.0				

Total PCB Area Coll1 (5.441 - 13.514) = 16475

Coll1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 274194 Col2 Total PCB = 0.0 ppm*

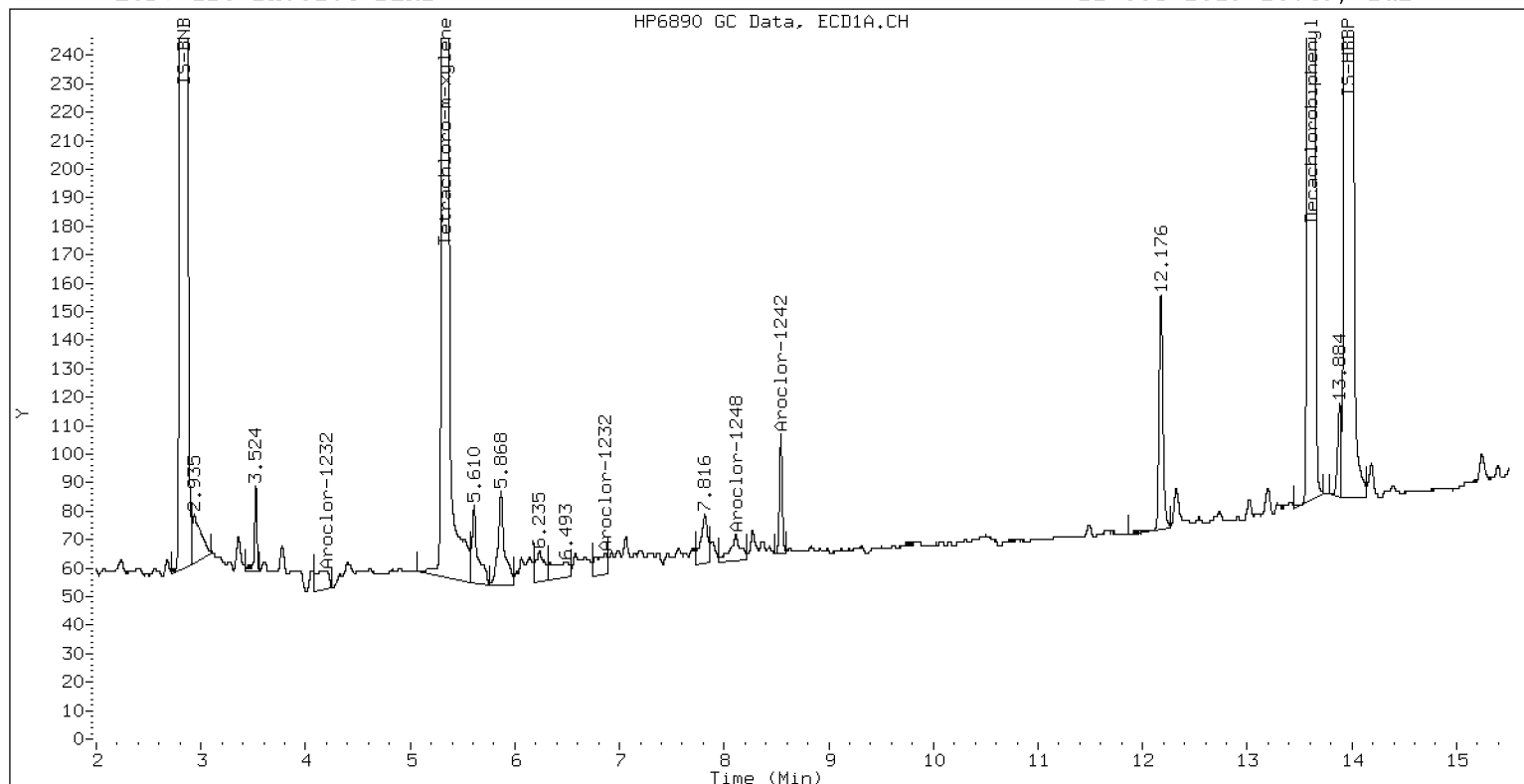
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0164-BLK1

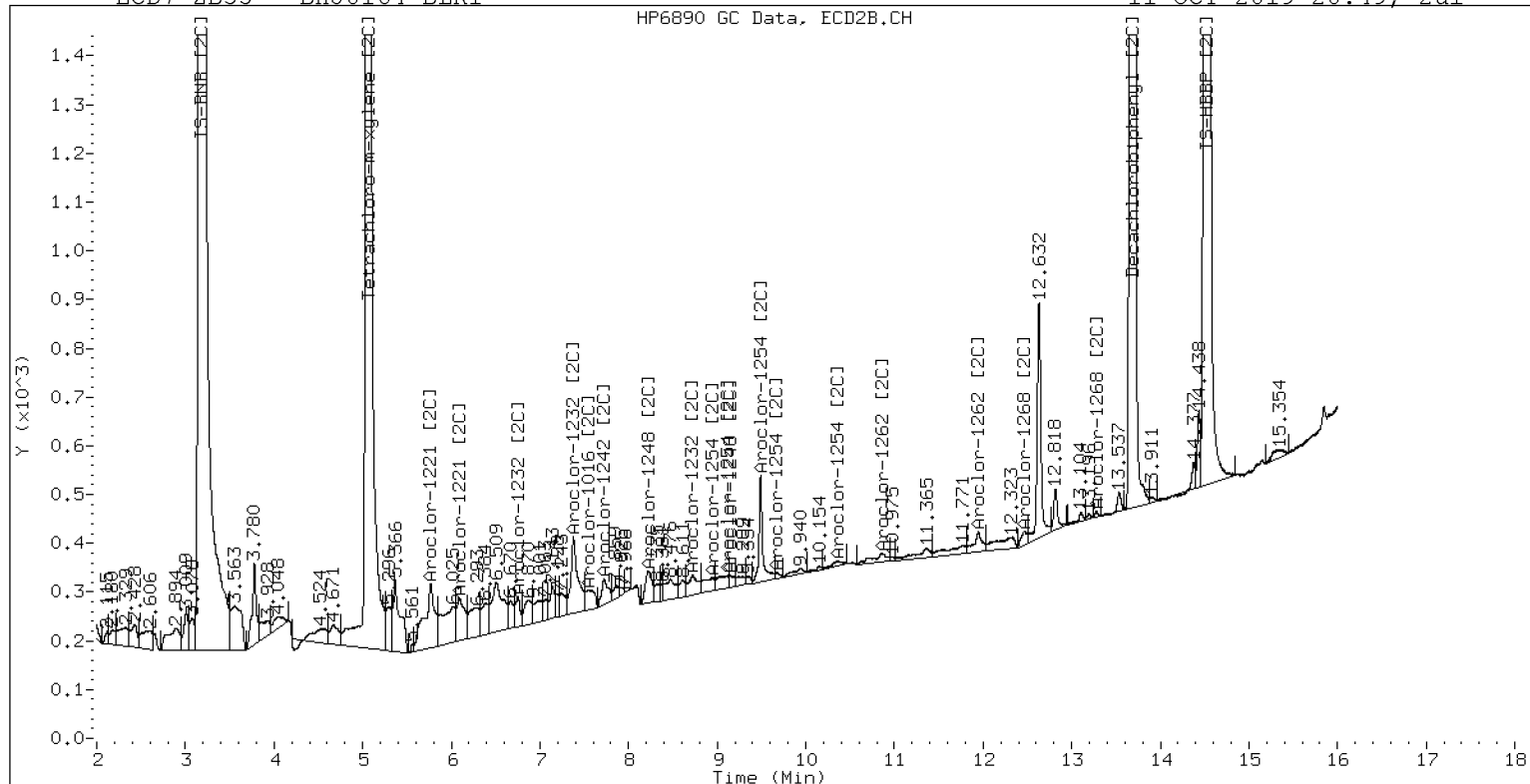
11-OCT-2019 20:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0164-BLK1

11-OCT-2019 20:49, 2ul



ZB-35 Manual Integration: NO



DUAL COLUMN DUPLICATES
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: BHJ0164-DUP1

Batch: BHJ0164

Lab Source ID: 19J0044-08

Preparation: EPA 3546 (Microwave)

Initial/Final: 23.62 g / 2.5 mL

Source Sample Name: H3-SC1b-10-20-82919

% Solids: 53.18

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
Aroclor 1016 (Col 1)		ND	ND		
Aroclor 1221 (Col 1)		ND	ND		
Aroclor 1232 (Col 1)		ND	ND		
Aroclor 1242 (Col 1)		ND	ND		
Aroclor 1248 (Col 1)		ND	ND		
Aroclor 1254 (Col 2)	30	1070	915	15.9	
Aroclor 1260 (Col 1)	30	474	454	4.31	
Aroclor 1262 (Col 1)		ND	ND		
Aroclor 1268 (Col 1)		ND	ND		
Decachlorobiphenyl (Col 1)		18.8	21.5		*
Tetrachlorometaxylene (Col 1)		6.03	5.97		

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = $\pm$ RL instead of 20% RPD

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101131ECD7.D
Data file 2: /20191011.b/20191011.b/19101131ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-DUP1
Client ID:
Injection Date: 12-OCT-2019 02:23
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 10.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.330	-0.011	8930	5.057	-0.000	38883	3.0	3.6	18.4	Tetrachloro-m-xylene
13.604	-0.009	22970	13.678	-0.014	144950	10.8	7.3	38.1	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	75.0	90.2
Decachlorobiphenyl	270.3	183.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	240254	-8.6
Hexabromobiphenyl	382688	210002	-45.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	906768	-16.2
Hexabromobiphenyl	1006687	1027988	2.1

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col						
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount		
=====												
Aroclor-1016	1	6.914	-0.012	1451	19.9	1	6.756	-0.002	8653	19.2		
Aroclor-1016	2	7.304	-0.008	4728	18.2	2	7.377	-0.006	19443	20.6		
Aroclor-1016	3	7.454	-0.006	2438	24.9	3	7.577	-0.005	7504	19.8		
Aroclor-1016	4	8.258	-0.009	7491	93.3	4	7.743	-0.008	3496	14.7		
Total CollAve (4 peaks):					39.1	Total Col2Ave (4 peaks):					18.6	RPD = 71*
Corrected Ave (3 peaks):					21.0	Corrected Ave (3 peaks):					17.9	RPD = 16
Aroclor-1221	1	---			0.0	1	4.292	0.009	893	13.9		
Aroclor-1221	2	---			0.0	2	5.752	-0.006	1338	10.0		
Aroclor-1221	3	---			0.0	3	6.110	0.006	7056	31.4		
CollAve: <3 Quant Peaks						Col2Ave: 18.4						
Aroclor-1232	1	---			0.0	1	4.292	0.010	893	23.3		
Aroclor-1232	2	6.914	-0.011	1451	53.1	2	6.756	-0.021	8653	45.3		
Aroclor-1232	3	7.304	-0.008	4728	48.4	3	7.377	-0.021	19443	50.9		
Aroclor-1232	4	7.454	-0.006	2438	66.6	4	8.705	-0.024	94462	743.5		
Total CollAve (3 peaks):					56.1	Total Col2Ave (4 peaks):					215.7	RPD = 117*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):					39.8	
Aroclor-1242	1	6.914	-0.011	1451	24.5	1	6.756	-0.003	8653	25.2		
Aroclor-1242	2	7.304	-0.010	4728	22.1	2	7.377	-0.007	19443	26.2		
Aroclor-1242	3	8.623	-0.008	22793	323.6	3	7.743	-0.009	3496	18.5		
Aroclor-1242	4	8.914	-0.005	22232	296.0	4	8.777	-0.012	43070	182.9		
Total CollAve (4 peaks):					166.6	Total Col2Ave (4 peaks):					63.2	RPD = 90*
Corrected Ave (3 peaks):					114.2	Corrected Ave (3 peaks):					23.3	RPD = 132*
Aroclor-1248	1	8.087	-0.009	16019	148.4	1	7.377	-0.007	19443	39.4		
Aroclor-1248	2	8.623	-0.009	22793	169.6	2	8.254	-0.007	55684	149.8		
Aroclor-1248	3	8.914	-0.006	22232	177.7	3	8.777	-0.013	43070	115.0		
Aroclor-1248	4	9.496	-0.010	97923	1219.4	4	9.104	-0.019	154895	319.7		
Total CollAve (4 peaks):					428.8	Total Col2Ave (4 peaks):					156.0	RPD = 93*
Corrected Ave (3 peaks):					165.2	Corrected Ave (3 peaks):					101.4	RPD = 48*
Aroclor-1254	1	8.993	-0.009	81085	400.5	1	9.014	-0.013	269129	535.6		
Aroclor-1254	2	9.069	-0.009	30376	486.7	2	9.104	-0.014	154895	606.0		
Aroclor-1254	3	9.370	-0.001	84776	728.0	3	9.520	-0.014	149757	380.1		
Aroclor-1254	4	9.496	-0.009	97923	392.8	4	9.667	-0.015	338209	429.1		
Aroclor-1254	5	10.199	-0.011	55465	333.3	5	10.437	-0.019	240702	494.3		
Total CollAve (5 peaks):					468.3	Total Col2Ave (5 peaks):					489.0	RPD = 4
Corrected Ave (4 peaks):					403.3	Corrected Ave (4 peaks):					459.8	RPD = 13
Aroclor-1260	1	10.752	-0.011	24685	254.5	1	10.769	-0.011	120215	185.9		
Aroclor-1260	2	11.068	-0.012	17977	193.3	2	11.201	-0.017	167998	257.1		
Aroclor-1260	3	11.439	-0.011	49781	210.9	3	11.485	-0.011	271171	165.7		
Aroclor-1260	4	11.838	-0.010	26439	248.3	4	11.999	-0.011	90079	176.8		
Aroclor-1260	5	11.955	-0.011	11761	233.3	NS	---			---		
Total CollAve (5 peaks):					228.1	Total Col2Ave (4 peaks):					196.4	RPD = 15
Corrected Ave (4 peaks):					221.5	Corrected Ave (3 peaks):					176.1	RPD = 23
Aroclor-1262	1	11.068	-0.012	17977	163.4	1	10.769	-0.025	120215	134.8		
Aroclor-1262	2	11.439	-0.010	49781	182.8	2	11.201	-0.033	167998	220.3		
Aroclor-1262	3	11.838	-0.011	26439	326.9	3	11.485	-0.025	271171	155.0		
Aroclor-1262	4	11.955	-0.011	11761	114.7	4	11.999	-0.025	90079	105.6		
Total CollAve (4 peaks):					197.0	Total Col2Ave (4 peaks):					152.8	RPD = 25
Corrected Ave (3 peaks):					153.6	Corrected Ave (3 peaks):					131.8	RPD = 15
Aroclor-1268	1	11.955	-0.011	11761	36.4	1	11.999	-0.024	90079	40.7		
Aroclor-1268	2	12.028	-0.008	13883	47.6	2	12.053	-0.037	204619	92.1		
Aroclor-1268	3	12.426	0.003	6796	27.6	3	12.456	-0.025	27460	13.6		
Aroclor-1268	4	13.197	-0.010	8637	11.1	4	13.270	-0.027	50524	7.1		
Total CollAve (4 peaks):					30.7	Total Col2Ave (4 peaks):					38.4	RPD = 22
Corrected Ave (3 peaks):					25.0	Corrected Ave (3 peaks):					20.5	RPD = 20

Total PCB Area Col1 (5.441 - 13.514) = 1270881 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5830956 Col2 Total PCB = 0.9 ppm*

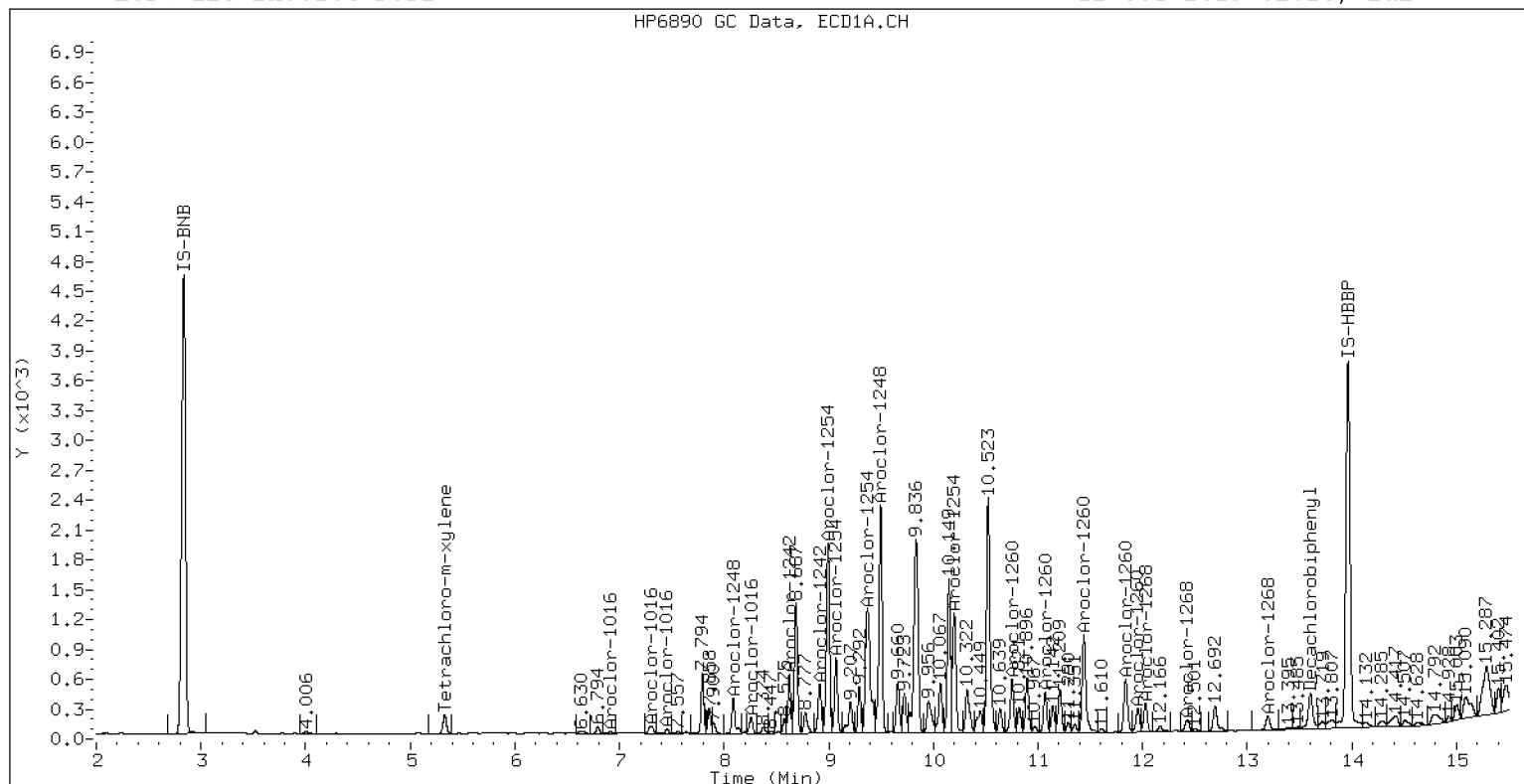
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0164-DUP1

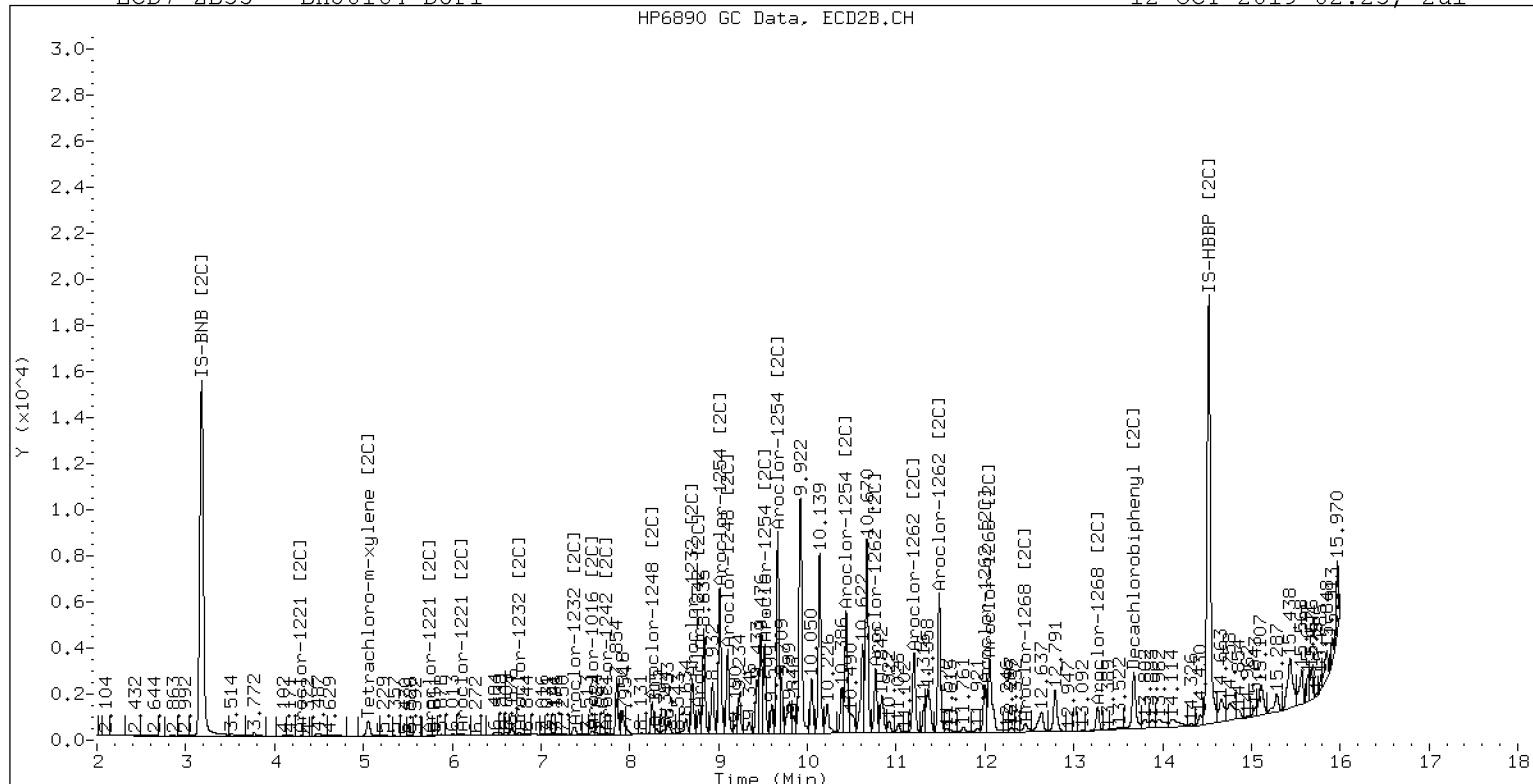
12-OCT-2019 02:23, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0164-DUP1

12-OCT-2019 02:23, 2u1



ZB-35 Manual Integration: NO



LCS / LCS DUPLICATE RECOVERY EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Analyzed: 10/11/19 21:10

Batch: BHJ0164

Laboratory ID: BHJ0164-BS1

Preparation: EPA 3546 (Microwave)

Sequence Name: LCS

Initial/Final: 12.5 g / 2.5 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Aroclor 1016	101	87.9		87.2	56 - 120
Aroclor 1260 [2C]	101	87.8		87.1	58 - 120

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	101	96.4		95.6	9.23	30	56 - 120
Aroclor 1260 [2C]	101	94.5		93.7	7.38	30	58 - 120

* Indicates values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101116ECD7.D
Data file 2: /20191011.b/20191011.b/19101116ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-BS1
Client ID:
Injection Date: 11-OCT-2019 21:10
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
=====									
5.335	-0.006	120643	5.064	0.007	483083	35.6	32.4	9.5	Tetrachloro-m-xylene
13.613	-0.000	174253	13.688	-0.004	1062137	40.9	42.6	3.9	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	89.1	81.0
Decachlorobiphenyl	102.3	106.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	273358	4.0
Hexabromobiphenyl	382688	420706	9.9

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1255853	16.1
Hexabromobiphenyl	1006687	1300385	29.2

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.922	-0.004	35716	430.6	1	6.763	0.005	250252	400.6
Aroclor-1016	2	7.311	-0.002	131270	445.0	2	7.385	0.003	571878	438.3
Aroclor-1016	3	7.458	-0.002	48422	435.3	3	7.585	0.004	228843	435.2
Aroclor-1016	4	8.266	-0.002	40791	446.5	4	7.754	0.003	151134	460.2
Total CollAve (4 peaks):				439.3	Total Col2Ave (4 peaks):				433.6	RPD = 1
Corrected Ave (3 peaks):				437.0	Corrected Ave (3 peaks):				424.7	RPD = 3
Aroclor-1221	1	4.177	-0.008	1750	87.5	1	---			0.0
Aroclor-1221	2	5.703	-0.008	3950	127.2	2	5.741	-0.017	41310	221.9
Aroclor-1221	3	5.975	-0.008	20118	255.4	3	6.088	-0.016	129066	414.3
Total CollAve (3 peaks):				156.7	Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	4.177	-0.007	1750	148.6	1	---			0.0
Aroclor-1232	2	6.922	-0.003	35716	1149.2	2	6.763	-0.014	250252	945.8
Aroclor-1232	3	7.311	-0.002	131270	1181.9	3	7.385	-0.012	571878	1080.3
Aroclor-1232	4	7.458	-0.002	48422	1162.8	4	8.718	-0.011	35263	200.4
Total CollAve (4 peaks):				910.6	Total Col2Ave (3 peaks):				742.2	RPD = 20
Corrected Ave (3 peaks):				820.2	Corrected Ave: < 3 Peaks					
Aroclor-1242	1	6.922	-0.003	35716	531.0	1	6.763	0.004	250252	525.6
Aroclor-1242	2	7.311	-0.003	131270	540.0	2	7.385	0.002	571878	556.2
Aroclor-1242	3	8.631	-0.000	6074	75.8	3	7.754	0.002	151134	576.6
Aroclor-1242	4	8.924	0.004	5492	64.3	4	8.789	0.001	21301	65.3
Total CollAve (4 peaks):				302.8	Total Col2Ave (4 peaks):				431.0	RPD = 35
Corrected Ave (3 peaks):				223.7	Corrected Ave (3 peaks):				382.4	RPD = 52*
Aroclor-1248	1	8.095	-0.002	37192	302.7	1	7.385	0.002	571878	837.5
Aroclor-1248	2	8.631	-0.001	6074	39.7	2	8.262	0.001	176173	342.2
Aroclor-1248	3	8.924	0.003	5492	38.6	3	8.789	-0.000	21301	41.1
Aroclor-1248	4	9.502	-0.005	32328	353.8	4	9.122	-0.001	17856	26.6
Total CollAve (4 peaks):				183.7	Total Col2Ave (4 peaks):				311.8	RPD = 52*
Corrected Ave (3 peaks):				127.0	Corrected Ave (3 peaks):				136.6	RPD = 7
Aroclor-1254	1	9.003	0.001	33058	143.5	1	9.025	-0.002	146290	210.2
Aroclor-1254	2	---			0.0	2	9.122	0.005	17856	50.4
Aroclor-1254	3	9.369	-0.002	6077	45.9	3	9.531	-0.003	38461	70.5
Aroclor-1254	4	9.502	-0.004	32328	114.0	4	9.719	0.037	309068	283.2
Aroclor-1254	5	10.157	-0.053	153134	808.8	5	10.454	-0.002	150095	222.6
Total CollAve (4 peaks):				278.0	Total Col2Ave (5 peaks):				167.4	RPD = 50*
Corrected Ave (3 peaks):				101.1	Corrected Ave (4 peaks):				138.4	RPD = 31
Aroclor-1260	1	10.763	-0.001	74979	385.9	1	10.781	0.001	344971	421.7
Aroclor-1260	2	11.079	-0.001	79239	425.4	2	11.220	0.001	368769	446.2
Aroclor-1260	3	11.449	-0.001	206452	436.7	3	11.498	0.002	942019	454.9
Aroclor-1260	4	11.849	0.000	107989	506.3	4	12.011	0.002	278750	432.5
Aroclor-1260	5	11.965	-0.000	38525	381.5	NS	---			----
Total CollAve (5 peaks):				427.1	Total Col2Ave (4 peaks):				438.8	RPD = 3
Corrected Ave (4 peaks):				407.4	Corrected Ave (3 peaks):				433.5	RPD = 6
Aroclor-1262	1	11.079	-0.001	79239	359.6	1	10.781	-0.013	344971	305.8
Aroclor-1262	2	11.449	-0.000	206452	378.4	2	11.220	-0.015	368769	382.2
Aroclor-1262	3	11.849	-0.001	107989	666.5	3	11.498	-0.012	942019	425.8
Aroclor-1262	4	11.965	-0.000	38525	187.6	4	12.011	-0.013	278750	258.3
Total CollAve (4 peaks):				398.0	Total Col2Ave (4 peaks):				343.0	RPD = 15
Corrected Ave (3 peaks):				308.5	Corrected Ave (3 peaks):				315.4	RPD = 2
Aroclor-1268	1	11.965	-0.000	38525	59.6	1	12.011	-0.012	278750	99.5
Aroclor-1268	2	12.038	0.002	46433	79.5	2	12.066	-0.024	618220	220.0
Aroclor-1268	3	12.438	0.015	20611	41.8	3	12.465	-0.015	18656	7.3
Aroclor-1268	4	13.206	-0.001	13383	8.6	4	13.281	-0.016	87507	9.7
Total CollAve (4 peaks):				47.4	Total Col2Ave (4 peaks):				84.1	RPD = 56*
Corrected Ave (3 peaks):				36.6	Corrected Ave (3 peaks):				38.9	RPD = 6

Total PCB Area Col1 (5.441 - 13.514) = 2101188 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 9699578 Col2 Total PCB = 1.0 ppm*

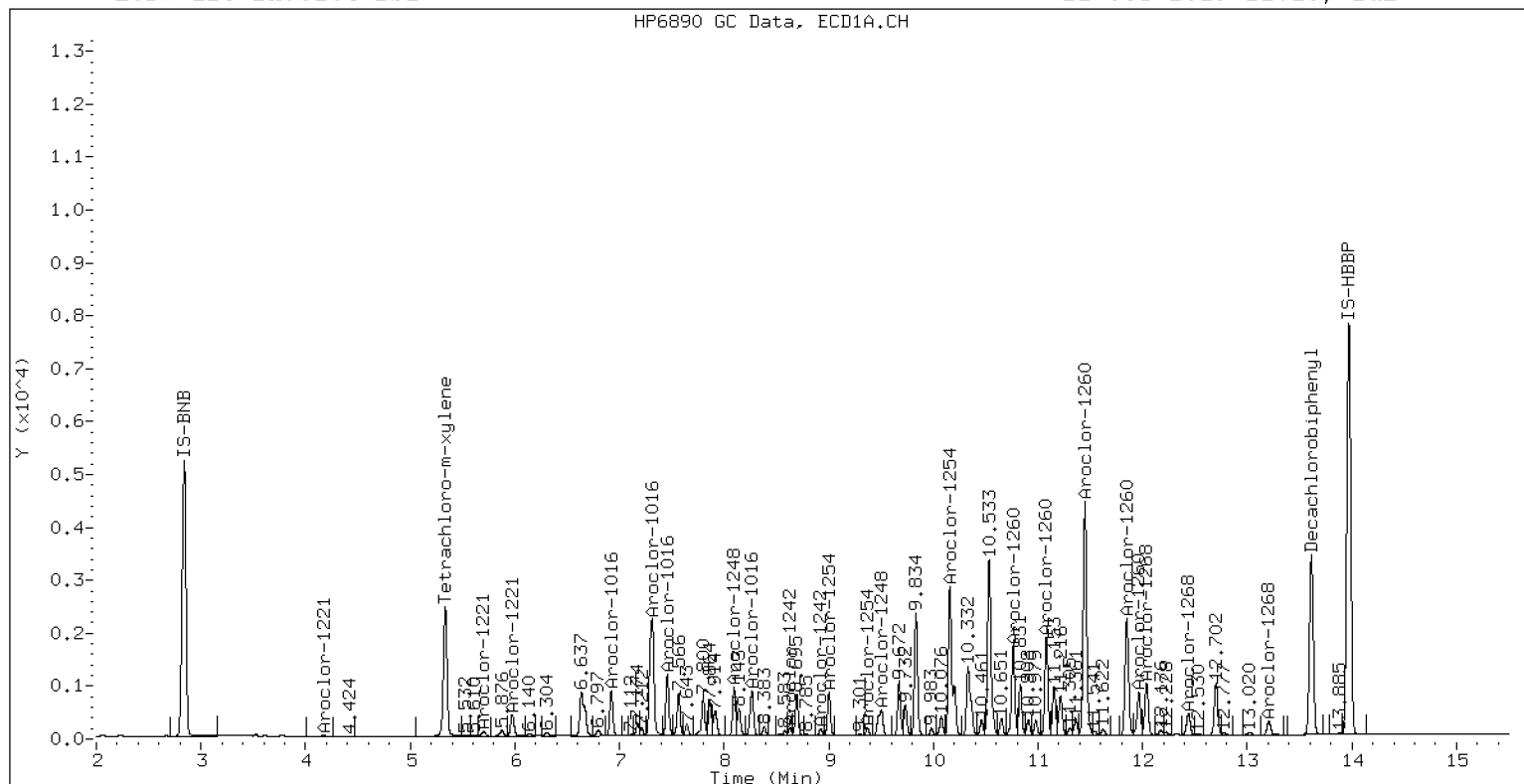
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BJJ0164-BS1

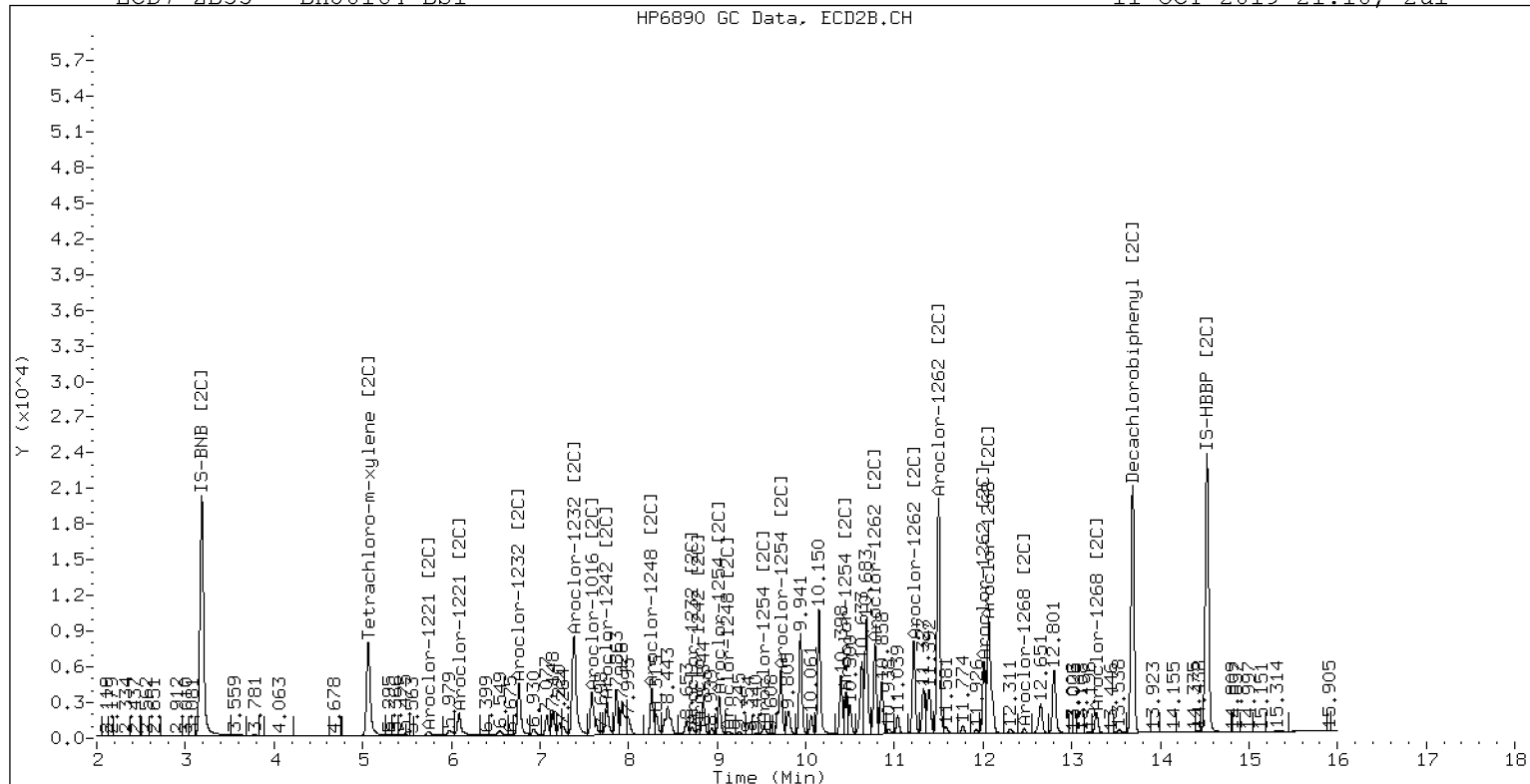
11-OCT-2019 21:10, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJJ0164-BS1

11-OCT-2019 21:10, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101117ECD7.D
Data file 2: /20191011.b/20191011.b/19101117ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-BSD1
Client ID:
Injection Date: 11-OCT-2019 21:31
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
=====									
5.335	-0.005	123558	5.064	0.007	493217	39.5	34.9	12.3	Tetrachloro-m-xylene
13.613	-0.000	187847	13.687	-0.005	1130942	47.0	47.9	1.8	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	98.7	87.3
Decachlorobiphenyl	117.5	119.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	252538	-4.0
Hexabromobiphenyl	382688	394995	3.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1189594	10.0
Hexabromobiphenyl	1006687	1231386	22.3

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.922	-0.004	35985	469.6	1	6.764	0.006	252675	427.0
Aroclor-1016	2	7.311	-0.002	132669	486.8	2	7.386	0.004	585059	473.4
Aroclor-1016	3	7.458	-0.002	49153	478.2	3	7.585	0.004	236452	474.7
Aroclor-1016	4	8.265	-0.002	41585	492.7	4	7.754	0.003	155422	499.6
Total CollAve (4 peaks):				481.9	Total Col2Ave (4 peaks):				468.7	RPD = 3
Corrected Ave (3 peaks):				478.2	Corrected Ave (3 peaks):				458.3	RPD = 4
Aroclor-1221	1	4.177	-0.007	1812	98.0	1	---			0.0
Aroclor-1221	2	5.703	-0.008	4067	141.7	2	5.742	-0.016	42368	240.2
Aroclor-1221	3	5.976	-0.007	19993	274.7	3	6.088	-0.016	130843	443.4
Total CollAve (3 peaks):				171.5	Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	4.177	-0.006	1812	166.6	1	---			0.0
Aroclor-1232	2	6.922	-0.003	35985	1253.3	2	6.764	-0.013	252675	1008.1
Aroclor-1232	3	7.311	-0.002	132669	1293.0	3	7.386	-0.011	585059	1166.8
Aroclor-1232	4	7.458	-0.002	49153	1277.7	4	8.718	-0.011	36287	217.7
Total CollAve (4 peaks):				997.6	Total Col2Ave (3 peaks):				797.5	RPD = 22
Corrected Ave (3 peaks):				899.2	Corrected Ave: < 3 Peaks					
Aroclor-1242	1	6.922	-0.003	35985	579.1	1	6.764	0.005	252675	560.3
Aroclor-1242	2	7.311	-0.003	132669	590.8	2	7.386	0.003	585059	600.7
Aroclor-1242	3	8.631	-0.001	6215	84.0	3	7.754	0.002	155422	626.0
Aroclor-1242	4	8.923	0.004	5609	71.1	4	8.789	0.001	21887	70.9
Total CollAve (4 peaks):				331.2	Total Col2Ave (4 peaks):				464.5	RPD = 33
Corrected Ave (3 peaks):				244.7	Corrected Ave (3 peaks):				410.6	RPD = 51*
Aroclor-1248	1	8.094	-0.002	37402	329.5	1	7.386	0.002	585059	904.6
Aroclor-1248	2	8.631	-0.001	6215	44.0	2	8.262	0.001	183019	375.2
Aroclor-1248	3	8.923	0.003	5609	42.7	3	8.789	-0.000	21887	44.5
Aroclor-1248	4	9.502	-0.004	33286	394.3	4	9.123	-0.000	18796	29.6
Total CollAve (4 peaks):				202.6	Total Col2Ave (4 peaks):				338.5	RPD = 50*
Corrected Ave (3 peaks):				138.7	Corrected Ave (3 peaks):				149.8	RPD = 8
Aroclor-1254	1	9.003	0.000	33951	159.6	1	9.024	-0.002	150781	228.7
Aroclor-1254	2	---			0.0	2	9.123	0.005	18796	56.1
Aroclor-1254	3	9.370	-0.002	6166	50.4	3	9.531	-0.003	39711	76.8
Aroclor-1254	4	9.502	-0.003	33286	127.0	4	9.720	0.038	318658	308.2
Aroclor-1254	5	10.158	-0.053	158646	907.0	5	10.454	-0.002	157197	246.1
Total CollAve (4 peaks):				311.0	Total Col2Ave (5 peaks):				183.2	RPD = 52*
Corrected Ave (3 peaks):				112.3	Corrected Ave (4 peaks):				151.9	RPD = 30
Aroclor-1260	1	10.763	-0.001	77766	426.3	1	10.781	0.001	348948	450.4
Aroclor-1260	2	11.080	-0.001	82006	468.9	2	11.219	0.001	380728	486.5
Aroclor-1260	3	11.449	-0.001	213256	480.4	3	11.498	0.002	961390	490.3
Aroclor-1260	4	11.848	-0.001	110773	553.1	4	12.009	0.000	282296	462.6
Aroclor-1260	5	11.965	-0.001	40018	422.1	NS	---			----
Total CollAve (5 peaks):				470.2	Total Col2Ave (4 peaks):				472.5	RPD = 0
Corrected Ave (4 peaks):				449.4	Corrected Ave (3 peaks):				466.5	RPD = 4
Aroclor-1262	1	11.080	-0.001	82006	396.3	1	10.781	-0.013	348948	326.6
Aroclor-1262	2	11.449	-0.000	213256	416.3	2	11.219	-0.015	380728	416.7
Aroclor-1262	3	11.848	-0.002	110773	728.2	3	11.498	-0.012	961390	458.9
Aroclor-1262	4	11.965	-0.001	40018	207.6	4	12.009	-0.014	282296	276.2
Total CollAve (4 peaks):				437.1	Total Col2Ave (4 peaks):				369.6	RPD = 17
Corrected Ave (3 peaks):				340.1	Corrected Ave (3 peaks):				339.9	RPD = 0
Aroclor-1268	1	11.965	-0.001	40018	65.9	1	12.009	-0.014	282296	106.4
Aroclor-1268	2	12.038	0.002	48155	87.8	2	12.064	-0.026	633877	238.2
Aroclor-1268	3	12.438	0.015	21370	46.1	3	12.465	-0.016	19707	8.2
Aroclor-1268	4	13.206	-0.001	14130	9.6	4	13.280	-0.017	90295	10.6
Total CollAve (4 peaks):				52.4	Total Col2Ave (4 peaks):				90.8	RPD = 54*
Corrected Ave (3 peaks):				40.6	Corrected Ave (3 peaks):				41.7	RPD = 3

Total PCB Area Col1 (5.441 - 13.514) = 2158075 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 9913145 Col2 Total PCB = 1.1 ppm*

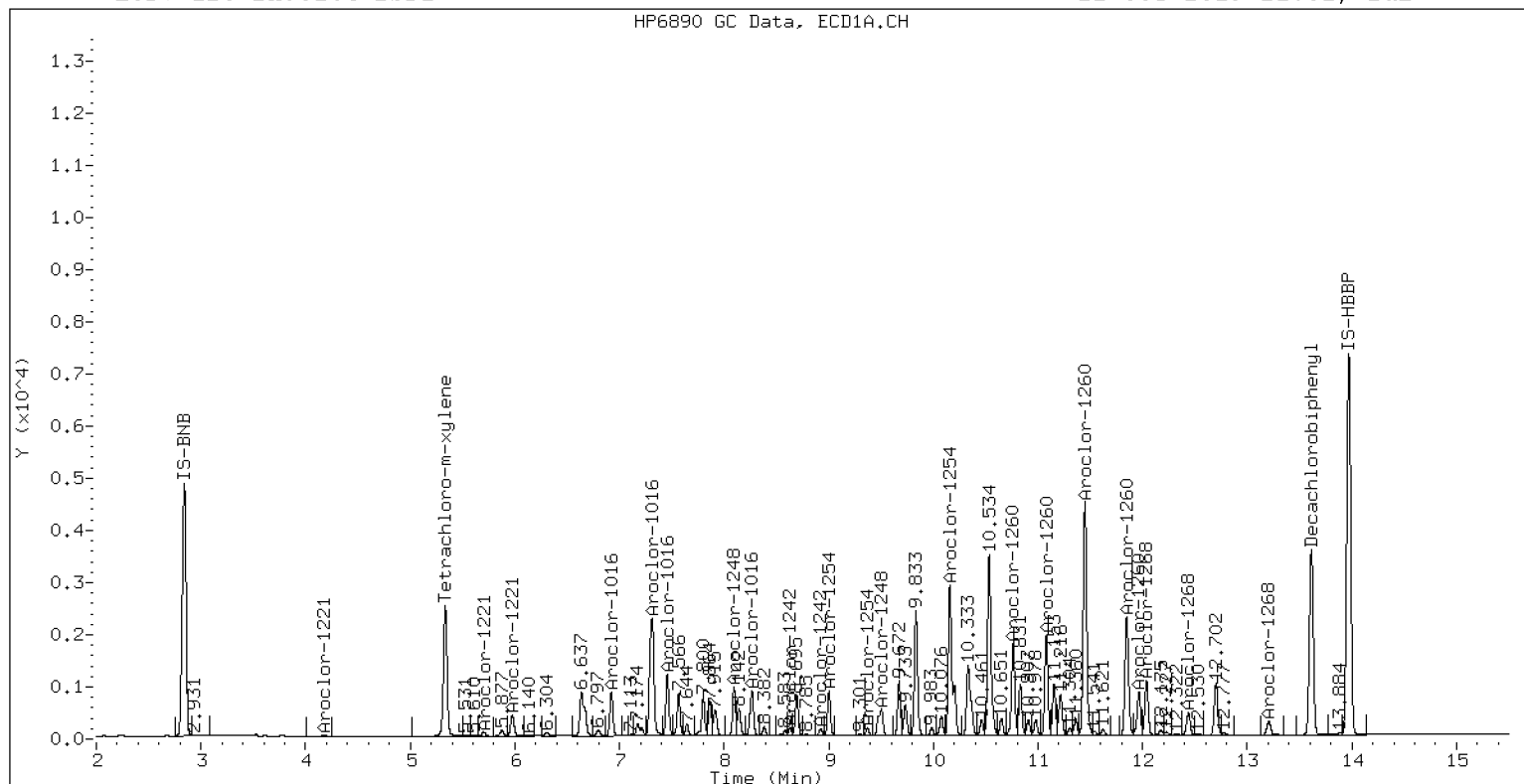
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0164-BSD1

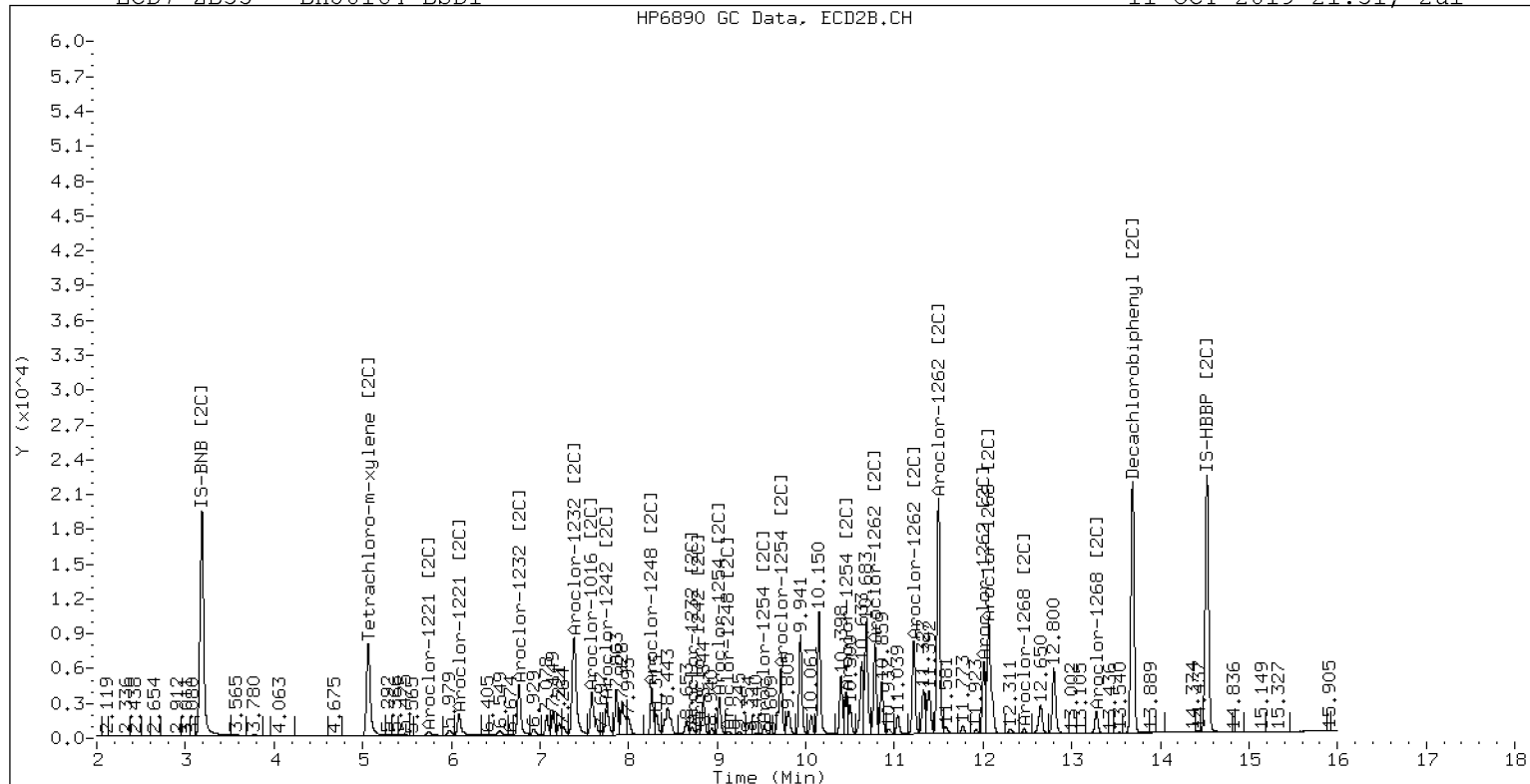
11-OCT-2019 21:31, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0164-BSD1

11-OCT-2019 21:31, 2ul



ZB-35 Manual Integration: NO



MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Analyzed: 10/11/19 22:33

Batch: BHJ0164

Laboratory ID: BHJ0164-MS1

Preparation: EPA 3546 (Microwave)

Sequence Name: Matrix Spike

Initial/Final: 16.01 g / 2.5 mL

Source Sample: L3-SC1b-00to10-82619

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Aroclor 1016	99.6	ND	U	76.5		76.8	56 - 120
Aroclor 1260	99.6	11.2		111		100	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.



MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Analyzed: 10/11/19 22:54

Batch: BHJ0164

Laboratory ID: BHJ0164-MSD1

Preparation: EPA 3546 (Microwave)

Sequence Name: Matrix Spike Dup

Initial/Final: 16.01 g / 2.5 mL

Source Sample: L3-SC1b-00to10-82619

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	99.6	73.5		73.8	4.05	30	56 - 120
Aroclor 1260	99.6	98.6		87.8	11.4	30	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101120ECD7.D
Data file 2: /20191011.b/20191011.b/19101120ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-MS1
Client ID:
Injection Date: 11-OCT-2019 22:33
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.333	-0.008	104594	5.061	0.004	386114	33.7	34.7	3.1	Tetrachloro-m-xylene
13.607	-0.006	118604	13.684	-0.009	880048	46.7	40.6	14.0	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	84.2	86.9
Decachlorobiphenyl	116.8	101.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	250559	-4.7
Hexabromobiphenyl	382688	250830	-34.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	935416	-13.5
Hexabromobiphenyl	1006687	1128908	12.1

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.919	-0.007	33643	442.5	1	6.760	0.001	175718	377.6
Aroclor-1016	2	7.309	-0.004	100221	370.7	2	7.380	-0.002	403047	414.7
Aroclor-1016	3	7.454	-0.006	36754	360.4	3	7.580	-0.001	149533	381.8
Aroclor-1016	4	8.262	-0.005	31470	375.8	4	7.748	-0.003	89969	367.8
Total CollAve (4 peaks):				387.4	Total Col2Ave (4 peaks):				385.5	RPD = 0
Corrected Ave (3 peaks):				369.0	Corrected Ave (3 peaks):				375.7	RPD = 2
Aroclor-1221	1	---			0.0	1	4.379	0.096	5128	77.2
Aroclor-1221	2	5.701	-0.010	3127	109.8	2	5.748	-0.010	25444	183.5
Aroclor-1221	3	5.973	-0.010	18135	251.1	3	6.084	-0.020	88250	380.3
CollAve: <3 Quant Peaks					Col2Ave: 213.7					
Aroclor-1232	1	---			0.0	1	4.379	0.097	5128	129.5
Aroclor-1232	2	6.919	-0.006	33643	1181.0	2	6.760	-0.017	175718	891.6
Aroclor-1232	3	7.309	-0.003	100221	984.5	3	7.380	-0.017	403047	1022.2
Aroclor-1232	4	7.454	-0.005	36754	962.9	4	8.710	-0.020	64586	492.8
Total CollAve (3 peaks):				1042.8	Total Col2Ave (4 peaks):				634.0	RPD = 49*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				504.6	
Aroclor-1242	1	6.919	-0.007	33643	545.7	1	6.760	0.001	175718	495.5
Aroclor-1242	2	7.309	-0.005	100221	449.8	2	7.380	-0.003	403047	526.3
Aroclor-1242	3	8.627	-0.005	15134	206.0	3	7.748	-0.004	89969	460.8
Aroclor-1242	4	8.918	-0.002	14237	181.8	4	8.782	-0.007	30017	123.6
Total CollAve (4 peaks):				345.8	Total Col2Ave (4 peaks):				401.6	RPD = 15
Corrected Ave (3 peaks):				279.2	Corrected Ave (3 peaks):				360.0	RPD = 25
Aroclor-1248	1	8.091	-0.006	32213	286.1	1	7.380	-0.003	403047	792.5
Aroclor-1248	2	8.627	-0.005	15134	108.0	2	8.257	-0.004	139018	362.5
Aroclor-1248	3	8.918	-0.002	14237	109.1	3	8.782	-0.008	30017	77.7
Aroclor-1248	4	9.500	-0.007	71518	854.0	4	9.108	-0.015	79051	158.2
Total CollAve (4 peaks):				339.3	Total Col2Ave (4 peaks):				347.7	RPD = 2
Corrected Ave (3 peaks):				167.7	Corrected Ave (3 peaks):				199.4	RPD = 17
Aroclor-1254	1	8.997	-0.005	59751	283.0	1	9.017	-0.009	206262	397.9
Aroclor-1254	2	9.072	-0.006	13620	209.3	2	9.108	-0.009	79051	299.8
Aroclor-1254	3	9.372	0.001	48561	399.9	3	9.524	-0.010	97332	239.5
Aroclor-1254	4	9.500	-0.005	71518	275.1	4	9.672	-0.010	213381	262.5
Aroclor-1254	5	10.199	-0.011	50641	291.8	5	10.444	-0.012	219467	436.9
Total CollAve (5 peaks):				291.8	Total Col2Ave (5 peaks):				327.3	RPD = 11
Corrected Ave (4 peaks):				264.8	Corrected Ave (4 peaks):				299.9	RPD = 12
Aroclor-1260	1	10.757	-0.007	64327	555.3	1	10.775	-0.005	307125	432.4
Aroclor-1260	2	11.073	-0.007	58037	522.6	2	11.211	-0.007	335513	467.6
Aroclor-1260	3	11.443	-0.006	153885	545.9	3	11.492	-0.004	812806	452.1
Aroclor-1260	4	11.842	-0.007	80086	629.7	4	12.003	-0.006	251030	448.7
Aroclor-1260	5	11.959	-0.006	32794	544.6	NS	---			----
Total CollAve (5 peaks):				559.6	Total Col2Ave (4 peaks):				450.2	RPD = 22
Corrected Ave (4 peaks):				542.1	Corrected Ave (3 peaks):				444.4	RPD = 20
Aroclor-1262	1	11.073	-0.007	58037	441.7	1	10.775	-0.020	307125	313.6
Aroclor-1262	2	11.443	-0.006	153885	473.1	2	11.211	-0.023	335513	400.6
Aroclor-1262	3	11.842	-0.007	80086	829.1	3	11.492	-0.018	812806	423.2
Aroclor-1262	4	11.959	-0.006	32794	267.9	4	12.003	-0.021	251030	267.9
Total CollAve (4 peaks):				502.9	Total Col2Ave (4 peaks):				351.3	RPD = 35
Corrected Ave (3 peaks):				394.2	Corrected Ave (3 peaks):				327.4	RPD = 19
Aroclor-1268	1	11.959	-0.006	32794	85.1	1	12.003	-0.020	251030	103.3
Aroclor-1268	2	12.032	-0.004	38452	110.5	2	12.057	-0.033	529025	216.8
Aroclor-1268	3	12.430	0.008	17738	60.3	3	12.458	-0.022	22245	10.1
Aroclor-1268	4	13.199	-0.007	13295	14.3	4	13.274	-0.024	94389	12.0
Total CollAve (4 peaks):				67.5	Total Col2Ave (4 peaks):				85.5	RPD = 24
Corrected Ave (3 peaks):				53.2	Corrected Ave (3 peaks):				41.8	RPD = 24

Total PCB Area Col1 (5.441 - 13.514) = 2111461 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 9392111 Col2 Total PCB = 1.3 ppm*

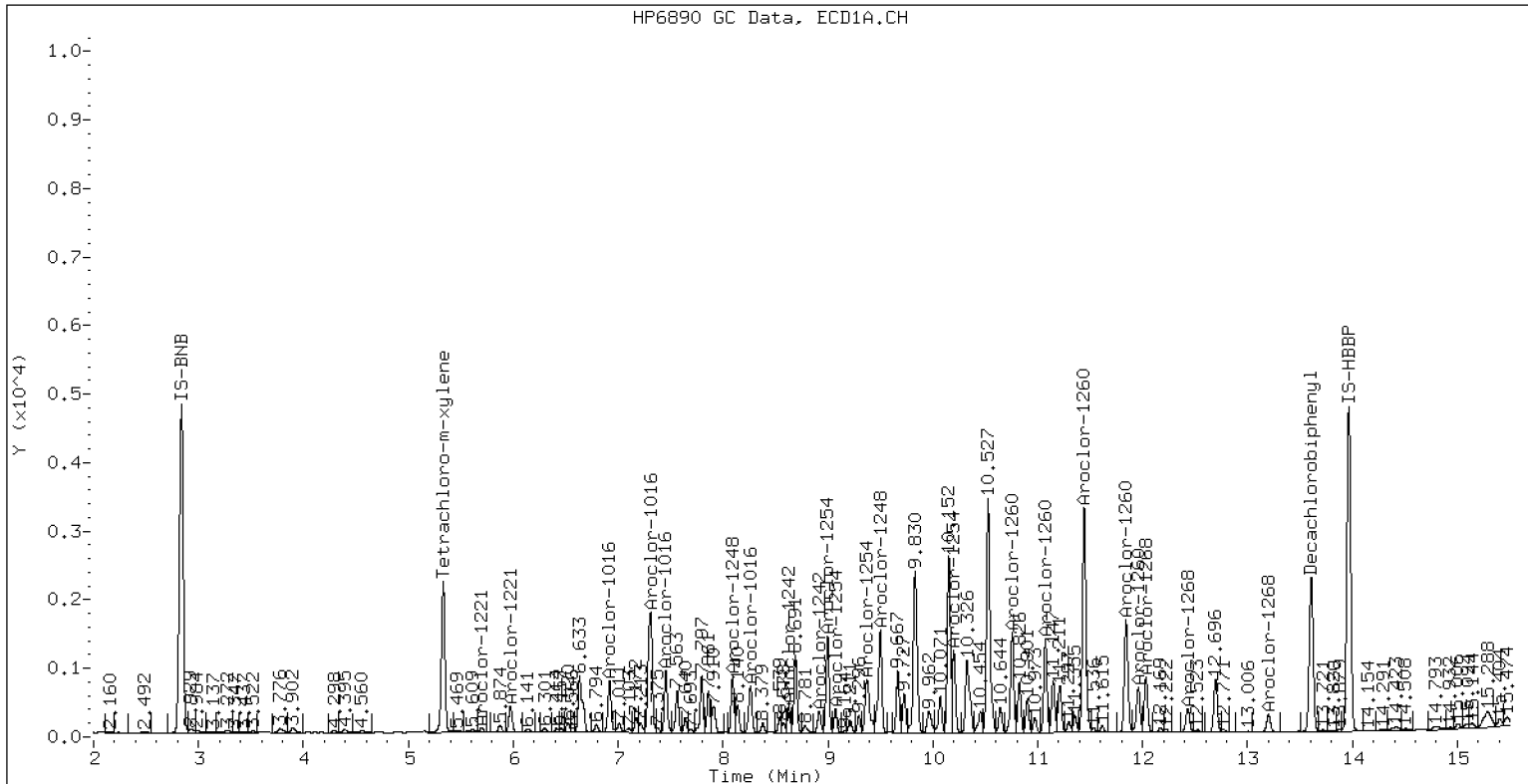
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0164-MS1

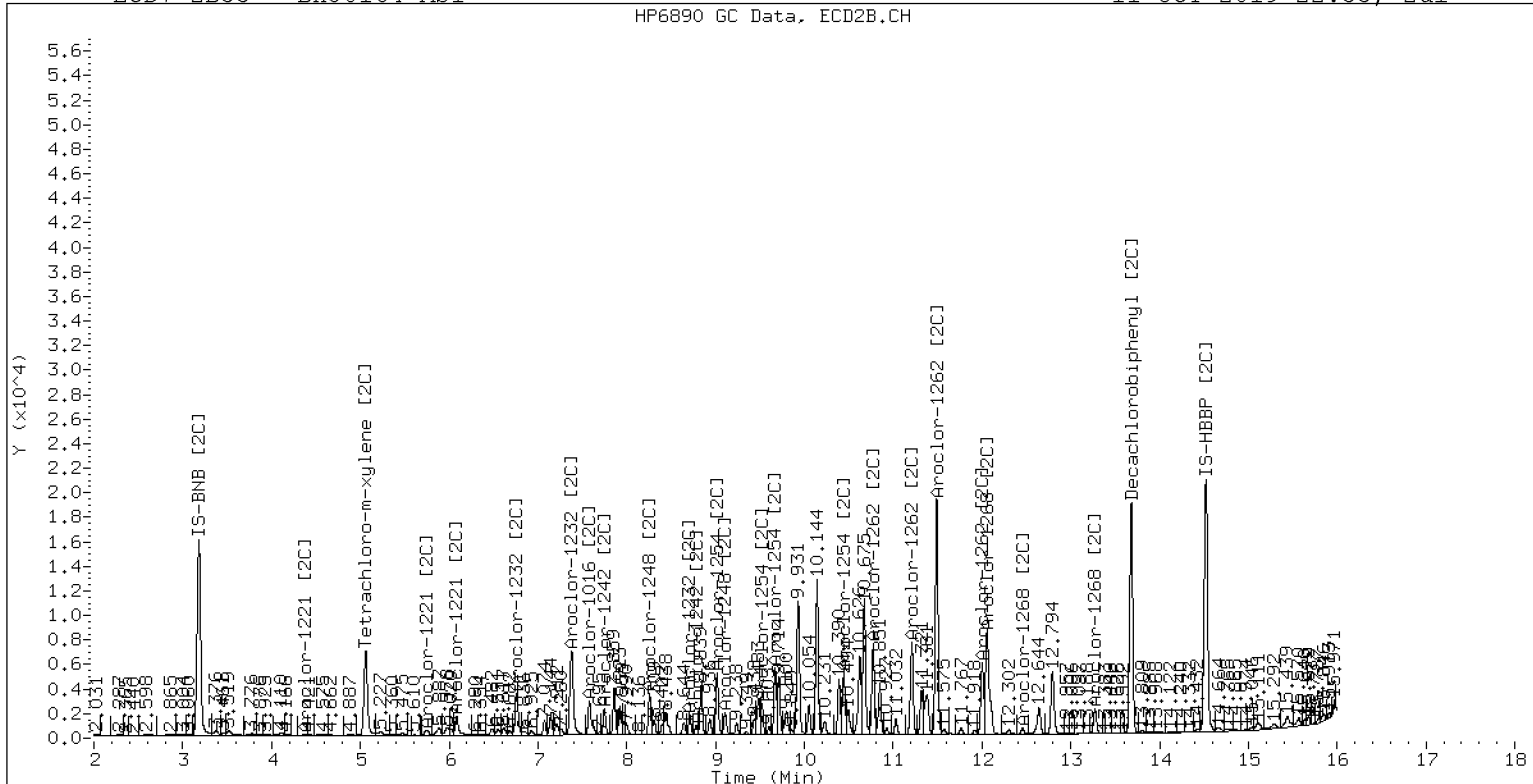
11-OCT-2019 22:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0164-MS1

11-OCT-2019 22:33, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101121ECD7.D
Data file 2: /20191011.b/20191011.b/19101121ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-MSD1
Client ID:
Injection Date: 11-OCT-2019 22:54
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.009	106647	5.060	0.003	403950	32.5	31.1	4.3	Tetrachloro-m-xylene
13.608	-0.005	118865	13.682	-0.010	847760	44.8	37.7	17.2	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	81.2	77.7
Decachlorobiphenyl	111.9	94.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	265183	0.9
Hexabromobiphenyl	382688	262432	-31.4

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1094061	1.1
Hexabromobiphenyl	1006687	1172285	16.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.919	-0.007	33250	413.3	1	6.759	0.000	181582	333.6
Aroclor-1016	2	7.307	-0.006	105224	367.7	2	7.379	-0.003	411519	362.0
Aroclor-1016	3	7.454	-0.006	37862	350.8	3	7.579	-0.002	154307	336.8
Aroclor-1016	4	8.261	-0.006	31560	356.1	4	7.748	-0.003	92432	323.1
Total CollAve (4 peaks):				372.0	Total Col2Ave (4 peaks):				338.9	RPD = 9
Corrected Ave (3 peaks):				358.2	Corrected Ave (3 peaks):				331.2	RPD = 8
Aroclor-1221	1	---			0.0	1	4.379	0.096	4061	52.3
Aroclor-1221	2	5.700	-0.011	3684	122.3	2	5.747	-0.011	25117	154.8
Aroclor-1221	3	5.973	-0.010	19038	249.1	3	6.083	-0.021	92423	340.5
CollAve: <3 Quant Peaks					Col2Ave: 182.5					
Aroclor-1232	1	---			0.0	1	4.379	0.097	4061	87.7
Aroclor-1232	2	6.919	-0.006	33250	1102.8	2	6.759	-0.018	181582	787.7
Aroclor-1232	3	7.307	-0.005	105224	976.6	3	7.379	-0.018	411519	892.4
Aroclor-1232	4	7.454	-0.006	37862	937.2	4	8.710	-0.020	52077	339.7
Total CollAve (3 peaks):				1005.6	Total Col2Ave (4 peaks):				526.9	RPD = 62*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				405.0	
Aroclor-1242	1	6.919	-0.007	33250	509.6	1	6.759	-0.000	181582	437.8
Aroclor-1242	2	7.307	-0.007	105224	446.2	2	7.379	-0.004	411519	459.4
Aroclor-1242	3	8.626	-0.005	11513	148.1	3	7.748	-0.005	92432	404.8
Aroclor-1242	4	8.918	-0.002	12113	146.1	4	8.782	-0.006	28026	98.7
Total CollAve (4 peaks):				312.5	Total Col2Ave (4 peaks):				350.2	RPD = 11
Corrected Ave (3 peaks):				246.8	Corrected Ave (3 peaks):				313.8	RPD = 24
Aroclor-1248	1	8.090	-0.006	31341	263.0	1	7.379	-0.005	411519	691.8
Aroclor-1248	2	8.626	-0.006	11513	77.6	2	8.257	-0.004	134199	299.2
Aroclor-1248	3	8.918	-0.002	12113	87.7	3	8.782	-0.007	28026	62.0
Aroclor-1248	4	9.499	-0.007	59990	676.8	4	9.108	-0.015	65394	111.9
Total CollAve (4 peaks):				276.3	Total Col2Ave (4 peaks):				291.2	RPD = 5
Corrected Ave (3 peaks):				142.8	Corrected Ave (3 peaks):				157.7	RPD = 10
Aroclor-1254	1	8.997	-0.005	50433	225.7	1	9.017	-0.010	177963	293.6
Aroclor-1254	2	9.072	-0.006	10638	154.4	2	9.108	-0.010	65394	212.0
Aroclor-1254	3	9.370	-0.001	33893	263.7	3	9.523	-0.010	78795	165.8
Aroclor-1254	4	9.499	-0.006	59990	218.0	4	9.671	-0.011	173143	182.1
Aroclor-1254	5	10.198	-0.013	42974	234.0	5	10.445	-0.011	192989	328.5
Total CollAve (5 peaks):				219.2	Total Col2Ave (5 peaks):				236.4	RPD = 8
Corrected Ave (4 peaks):				208.0	Corrected Ave (4 peaks):				213.4	RPD = 3
Aroclor-1260	1	10.757	-0.007	55916	461.4	1	10.775	-0.006	269777	365.8
Aroclor-1260	2	11.073	-0.007	56789	488.7	2	11.212	-0.007	321533	431.6
Aroclor-1260	3	11.442	-0.007	148609	503.9	3	11.493	-0.004	781727	418.8
Aroclor-1260	4	11.842	-0.006	78743	591.8	4	12.003	-0.006	227896	392.3
Aroclor-1260	5	11.959	-0.007	28385	450.6	NS	---			----
Total CollAve (5 peaks):				499.3	Total Col2Ave (4 peaks):				402.1	RPD = 22
Corrected Ave (4 peaks):				476.1	Corrected Ave (3 peaks):				392.3	RPD = 19
Aroclor-1262	1	11.073	-0.007	56789	413.1	1	10.775	-0.020	269777	265.2
Aroclor-1262	2	11.442	-0.007	148609	436.6	2	11.212	-0.023	321533	369.7
Aroclor-1262	3	11.842	-0.007	78743	779.1	3	11.493	-0.018	781727	391.9
Aroclor-1262	4	11.959	-0.007	28385	221.6	4	12.003	-0.021	227896	234.2
Total CollAve (4 peaks):				462.6	Total Col2Ave (4 peaks):				315.3	RPD = 38
Corrected Ave (3 peaks):				357.1	Corrected Ave (3 peaks):				289.7	RPD = 21
Aroclor-1268	1	11.959	-0.007	28385	70.4	1	12.003	-0.020	227896	90.3
Aroclor-1268	2	12.032	-0.004	33486	91.9	2	12.057	-0.033	502799	198.4
Aroclor-1268	3	12.431	0.008	15881	51.6	3	12.459	-0.022	25123	10.9
Aroclor-1268	4	13.200	-0.007	11777	12.1	4	13.274	-0.023	82599	10.2
Total CollAve (4 peaks):				56.5	Total Col2Ave (4 peaks):				77.5	RPD = 31
Corrected Ave (3 peaks):				44.7	Corrected Ave (3 peaks):				37.1	RPD = 19

Total PCB Area Col1 (5.441 - 13.514) = 1952225 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 8757650 Col2 Total PCB = 1.1 ppm*

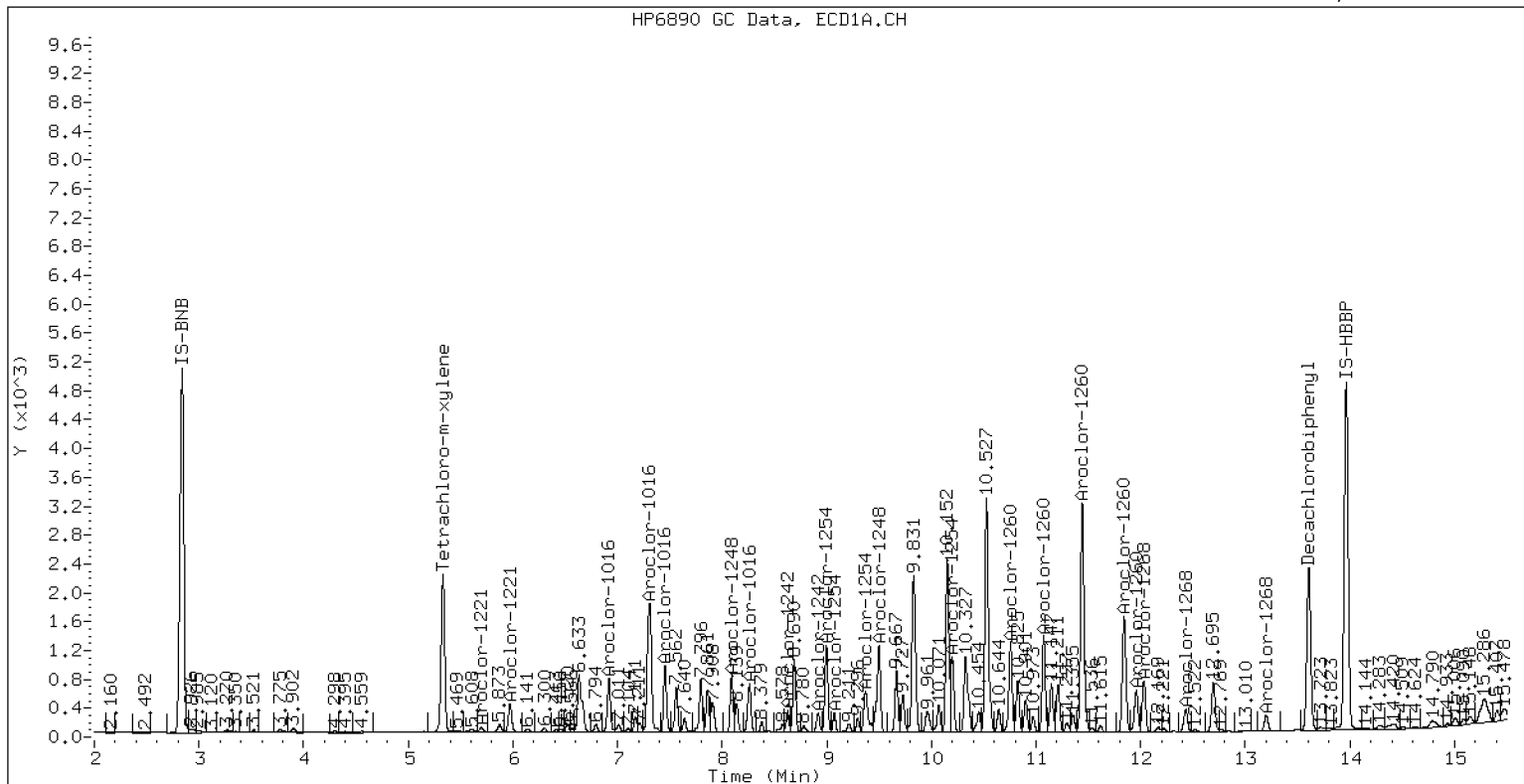
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0164-MSD1

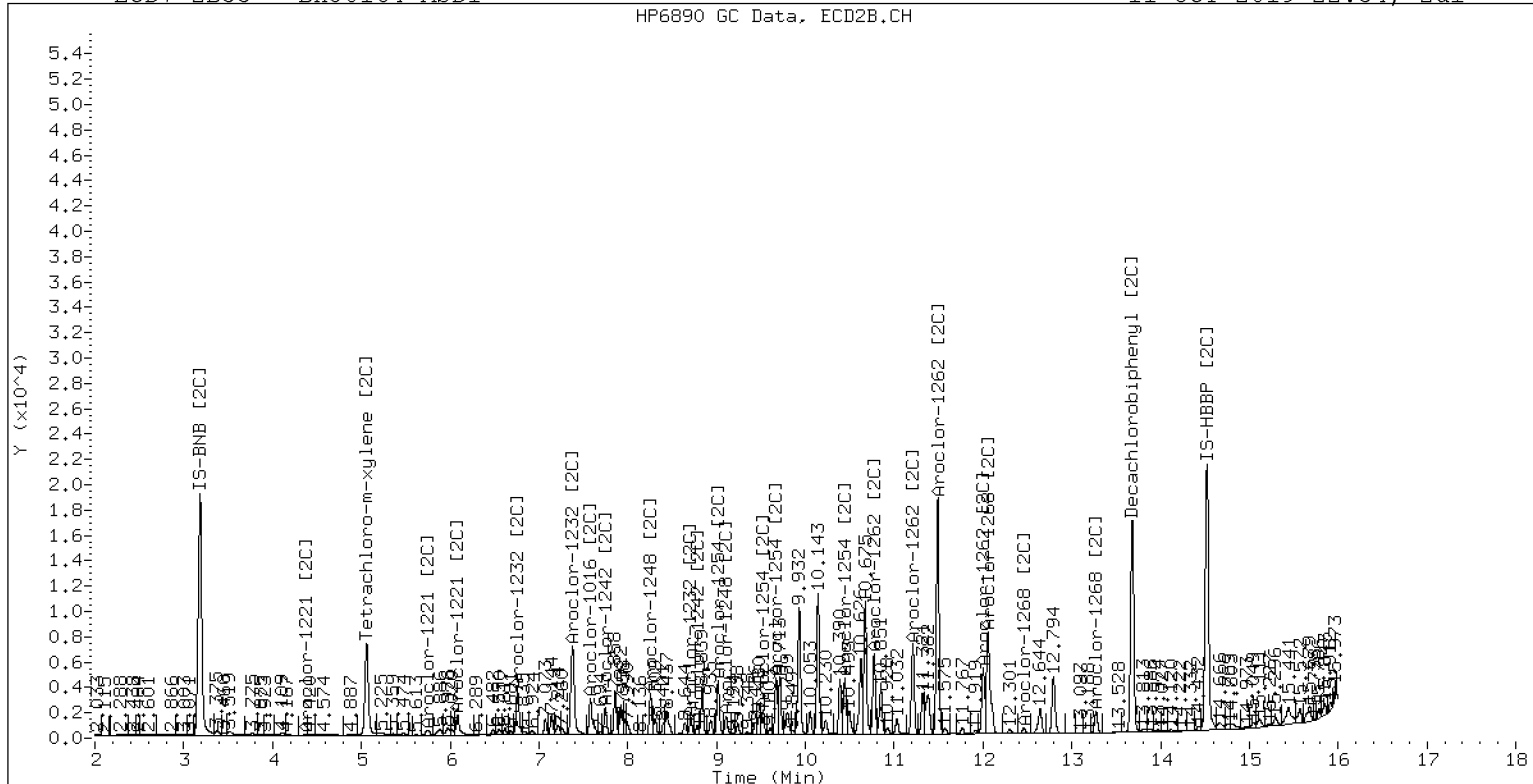
11-OCT-2019 22:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0164-MSD1

11-OCT-2019 22:54, 2ul



ZB-35 Manual Integration: NO



STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Matrix: Solid

Laboratory ID: BHJ0164-SRM1

Batch: BHJ0164

Initial/Final: 1.01 g / 10 mL

Preparation: EPA 3546 (Microwave)

Analyzed: 10/11/2019 21:52

Standard ID: H002054

Description: PCB 1254 - Loam

Expires: 12/31/2021

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1254	5930.0	6710	77.2	198		113	41.3 - 158.7
Aroclor 1254 [2C]	5930.0	7060	77.2	198		119	41.3 - 158.7

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101118ECD7.D
Data file 2: /20191011.b/20191011.b/19101118ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BHJ0164-SRM1
Client ID:
Injection Date: 11-OCT-2019 21:52
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.335	-0.006	29404	5.063	0.006	143907	9.1	9.9	9.3	Tetrachloro-m-xylene
13.613	-0.001	45493	13.687	-0.005	300943	11.2	12.4	10.0	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	22.6	24.8
Decachlorobiphenyl	28.1	31.1

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	262114	-0.3
Hexabromobiphenyl	382688	399810	4.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1219123	12.7
Hexabromobiphenyl	1006687	1262203	25.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.922	-0.004	2025	25.5	1	6.760	0.002	13172	21.7
Aroclor-1016	2	7.302	-0.010	6189	21.9	2	7.381	-0.001	49105	38.8
Aroclor-1016	3	7.463	0.003	2708	25.4	3	7.585	0.003	15231	29.8
Aroclor-1016	4	8.265	-0.003	12638	144.3	4	7.753	0.002	10681	33.5
Total CollAve (4 peaks):				54.2	Total Col2Ave (4 peaks):				31.0	RPD = 55*
Corrected Ave (3 peaks):				24.2	Corrected Ave (3 peaks):				28.4	RPD = 16
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.770	0.012	19609	108.5
Aroclor-1221	3	---			0.0	3	6.016	-0.089	79757	263.7
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.922	-0.003	2025	68.0	2	6.760	-0.017	13172	51.3
Aroclor-1232	3	7.302	-0.010	6189	58.1	3	7.381	-0.016	49105	95.6
Aroclor-1232	4	7.463	0.003	2708	67.8	4	8.717	-0.013	184080	1077.6
Total CollAve (3 peaks):				64.6	Total Col2Ave (3 peaks):				408.1	RPD = 145*
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks					
Aroclor-1242	1	6.922	-0.004	2025	31.4	1	6.760	0.001	13172	28.5
Aroclor-1242	2	7.302	-0.012	6189	26.6	2	7.381	-0.002	49105	49.2
Aroclor-1242	3	8.630	-0.001	52618	684.8	3	7.753	0.001	10681	42.0
Aroclor-1242	4	8.923	0.003	29805	363.8	4	8.787	-0.002	61362	193.9
Total CollAve (4 peaks):				276.6	Total Col2Ave (4 peaks):				78.4	RPD = 112*
Corrected Ave (3 peaks):				140.6	Corrected Ave (3 peaks):				39.9	RPD = 112*
Aroclor-1248	1	8.094	-0.003	28918	245.5	1	7.381	-0.002	49105	74.1
Aroclor-1248	2	8.630	-0.002	52618	358.9	2	8.262	0.001	136574	273.2
Aroclor-1248	3	8.923	0.002	29805	218.4	3	8.787	-0.003	61362	121.9
Aroclor-1248	4	9.504	-0.003	180415	2059.3	4	9.113	-0.009	234795	360.4
Total CollAve (4 peaks):				720.5	Total Col2Ave (4 peaks):				207.4	RPD = 111*
Corrected Ave (3 peaks):				274.3	Corrected Ave (3 peaks):				156.4	RPD = 55*
Aroclor-1254	1	9.000	-0.002	139721	632.6	1	9.023	-0.003	455272	673.9
Aroclor-1254	2	9.076	-0.002	43910	644.9	2	9.113	-0.004	234795	683.2
Aroclor-1254	3	9.369	-0.002	92998	732.0	3	9.530	-0.004	395578	746.8
Aroclor-1254	4	9.504	-0.001	180415	663.3	4	9.678	-0.004	757837	715.2
Aroclor-1254	5	10.209	-0.001	129949	715.8	5	10.451	-0.005	487501	744.6
Total CollAve (5 peaks):				677.7	Total Col2Ave (5 peaks):				712.8	RPD = 5
Corrected Ave (4 peaks):				664.2	Corrected Ave (4 peaks):				704.3	RPD = 6
Aroclor-1260	1	10.761	-0.003	11015	59.7	1	10.780	-0.000	56867	71.6
Aroclor-1260	2	11.079	-0.001	13030	73.6	2	11.209	-0.009	247924	309.1
Aroclor-1260	3	11.448	-0.002	31909	71.0	3	11.496	-0.000	202688	100.8
Aroclor-1260	4	11.847	-0.001	29112	143.6	4	12.010	0.001	29173	46.6
Aroclor-1260	5	11.964	-0.001	1679	17.5	NS	---			----
Total CollAve (5 peaks):				73.1	Total Col2Ave (4 peaks):				132.0	RPD = 57*
Corrected Ave (4 peaks):				55.4	Corrected Ave (3 peaks):				73.0	RPD = 27
Aroclor-1262	1	11.079	-0.001	13030	62.2	1	10.780	-0.014	56867	51.9
Aroclor-1262	2	11.448	-0.001	31909	61.5	2	11.209	-0.025	247924	264.7
Aroclor-1262	3	11.847	-0.002	29112	189.1	3	11.496	-0.015	202688	94.4
Aroclor-1262	4	11.964	-0.001	1679	8.6	4	12.010	-0.014	29173	27.8
Total CollAve (4 peaks):				80.4	Total Col2Ave (4 peaks):				109.7	RPD = 31
Corrected Ave (3 peaks):				44.1	Corrected Ave (3 peaks):				58.1	RPD = 27
Aroclor-1268	1	11.964	-0.001	1679	2.7	1	12.010	-0.013	29173	10.7
Aroclor-1268	2	12.037	0.001	2135	3.8	2	12.061	-0.029	138106	50.6
Aroclor-1268	3	12.437	0.015	1157	2.5	3	12.519	0.038	4451	1.8
Aroclor-1268	4	---			0.0	4	13.280	-0.017	2260	0.3
Total CollAve (3 peaks):				3.0	Total Col2Ave (4 peaks):				15.9	RPD = 136*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				4.3	

Total PCB Area Col1 (5.441 - 13.514) = 1890419 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 8330899 Col2 Total PCB = 0.9 ppm*

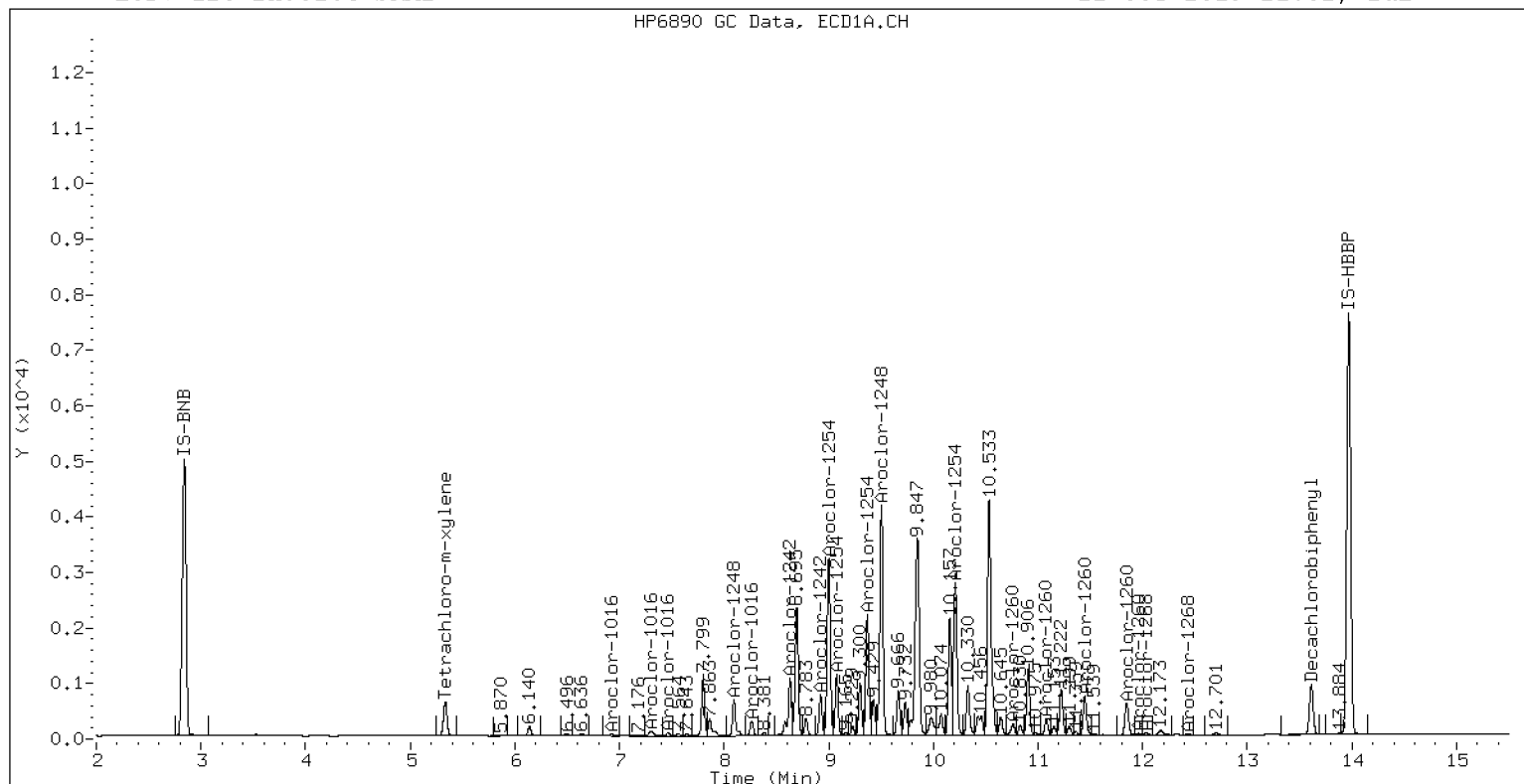
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 BHJ0164-SRM1

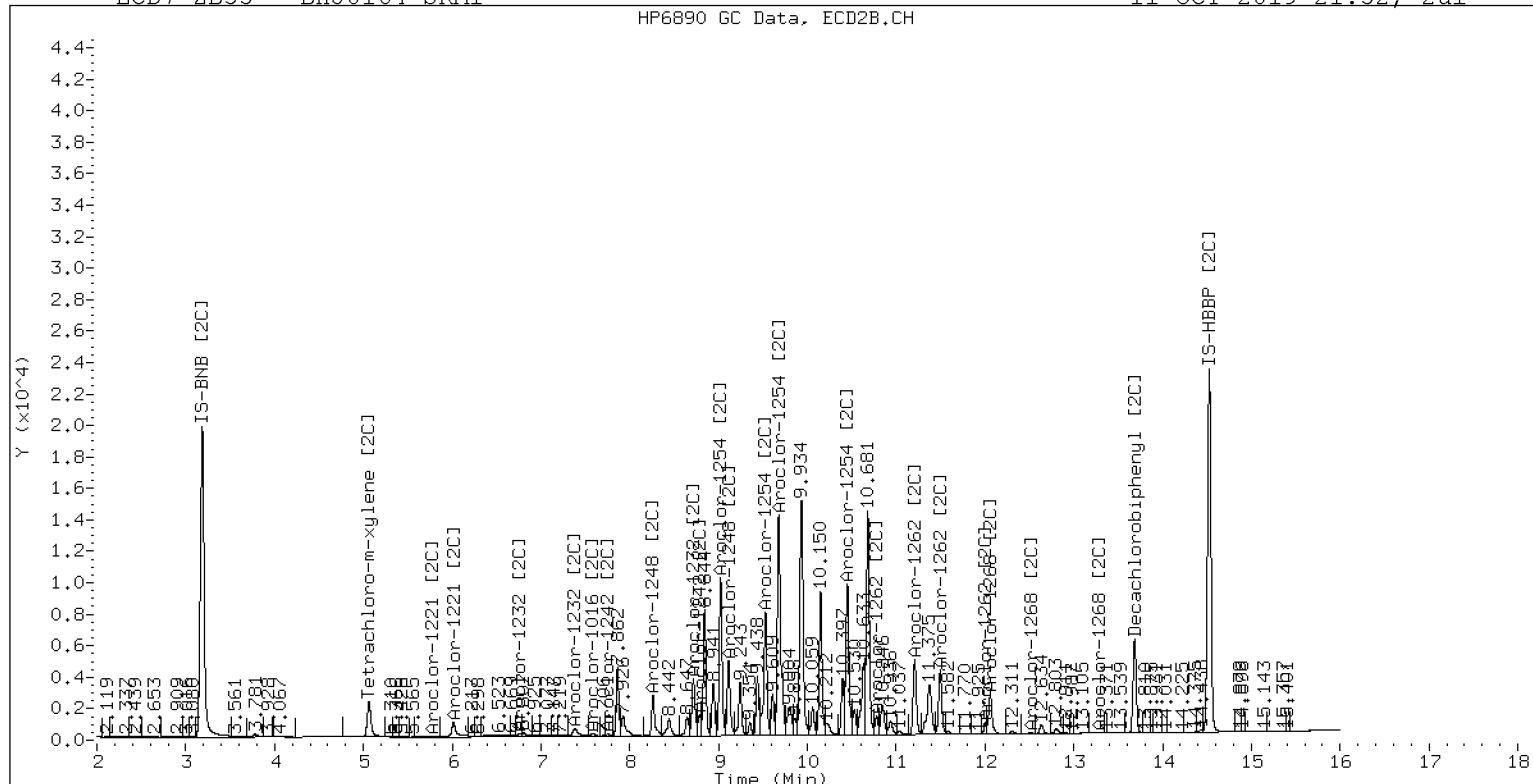
11-OCT-2019 21:52, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 BHJ0164-SRM1

11-OCT-2019 21:52, 2u1



ZB-35 Manual Integration: NO



INITIAL CALIBRATION DATA EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Calibration: CI00052 Instrument: ECD7
Calibration Date: 09/15/2019 0:00 Column (1): ZB5

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016	250	4.393413E-02	20	4.133584E-02	50	4.065482E-02	1000	4.338323E-02	100	4.194711E-02	500	4.358601E-02
Aroclor 1260	250	4.582507E-02	20	4.276971E-02	50	4.122985E-02	1000	4.728331E-02	100	4.268391E-02	500	4.665315E-02
Decachlorobiphenyl	40	0.8401204	3.2	0.7991349	8	0.7733589	160	0.8186171	16	0.8066353	80	0.8186529
Tetrachlorometaxylene	40	1.066771	3.2	0.8590354	8	0.9013762	160	1.064691	16	0.9899642	80	1.064505



EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0044
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221							250	1.266709E-02				
Aroclor 1232									250	1.430781E-02		
Aroclor 1242	250	3.482001E-02										
Aroclor 1248			250	3.727312E-02								
Aroclor 1254					250	5.307811E-02						
Aroclor 1262							250	5.387845E-02				
Aroclor 1268									250	0.1561223		



INITIAL CALIBRATION DATA EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0044
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016	4.247352E-02	3.2			RSD (20)	
Aroclor 1221		0.0			RSD (20)	
Aroclor 1232		0.0			RSD (20)	
Aroclor 1242		0.0			RSD (20)	
Aroclor 1248		0.0			RSD (20)	
Aroclor 1254		0.0			RSD (20)	
Aroclor 1260	0.0444075	5.6			RSD (20)	
Aroclor 1262		0.0			RSD (20)	
Aroclor 1268		0.0			RSD (20)	
Decachlorobiphenyl	0.8094199	2.8			RSD (20)	
Tetrachlorometaxylene	0.9910571	9.3			RSD (20)	



EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0044
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (2):	ZB35

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016 [2C]	250	0.0430825	20	5.212481E-02	50	4.627794E-02	1000	3.914649E-02	100	4.501848E-02	500	4.034643E-02
Aroclor 1260 [2C]	250	6.602228E-02	20	6.989316E-02	50	0.0682598	1000	6.690031E-02	100	6.708502E-02	500	6.415865E-02
Decachlorobiphenyl [2C]	40	1.452851	3.2	1.517032	8	1.464417	160	1.7641	16	1.455763	80	1.554568
Tetrachlorometaxylene [2C]	40	0.9337294	3.2	0.9631729	8	0.9329121	160	0.9977537	16	0.9491359	80	0.9252393



EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0044
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221 [2C]							250	1.246263E-02				
Aroclor 1232 [2C]									250	1.629326E-02		
Aroclor 1242 [2C]	250	3.332238E-02										
Aroclor 1248 [2C]			250	3.802171E-02								
Aroclor 1254 [2C]					250	4.282625E-02						
Aroclor 1262 [2C]							250	8.281786E-02				
Aroclor 1268 [2C]									250	0.2642944		



INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	19J0044
Client:	Pacific Groundwater Group	Project:	Swan Island Lagoon Sediment Investigation
Calibration:	CI00052	Instrument:	ECD7
Calibration Date:	09/15/2019 0:00	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	4.433277E-02	10.5			RSD (20)	
Aroclor 1221 [2C]		0.0			RSD (20)	
Aroclor 1232 [2C]		0.0			RSD (20)	
Aroclor 1242 [2C]		0.0			RSD (20)	
Aroclor 1248 [2C]		0.0			RSD (20)	
Aroclor 1254 [2C]		0.0			RSD (20)	
Aroclor 1260 [2C]	0.0670532	2.9			RSD (20)	
Aroclor 1262 [2C]		0.0			RSD (20)	
Aroclor 1268 [2C]		0.0			RSD (20)	
Decachlorobiphenyl [2C]	1.534789	7.8			RSD (20)	
Tetrachlorometaxylene [2C]	0.9503239	2.8			RSD (20)	



ANALYSIS SEQUENCE

SHI0216

Printed: 9/16/2019 11:22:17AM

Instrument: ECD7

Element Column ID: g2294g2295

Calibration ID: CI00052

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHI0216-CAL1	0.25PPM AR1660	QC		1	G010781	H001058	
SHI0216-CAL2	0.02PPM AR1660	QC		2	G010784	H001058	
SHI0216-CAL3	0.05PPM AR1660	QC		3	G010783	H001058	
SHI0216-CAL4	1.0PPM AR1660	QC		4	G010124	H001058	
SHI0216-CAL5	0.1PPM AR1660	QC		5	G010782	H001058	
SHI0216-CAL6	0.5PPM AR1660	QC		6	G010780	H001058	
SHI0216-CAL7	0.25PPM AR1242	QC		7	G010125	H001058	
SHI0216-CAL8	0.25PPM AR1248	QC		8	G010126	H001058	
SHI0216-CAL9	0.25PPM AR1254	QC		9	G010127	H001058	
SHI0216-CALA	0.25PPM AR2162	QC		10	H006284	H001058	
SHI0216-CALB	0.25PPM AR3268	QC		11	G010129	H001058	
SHI0216-SCV1	AR1660SCV1	QC		12	H004289	H001058	
SHI0216-SCV2	AR1242SCV2	QC		13	H004290	H001058	
SHI0216-SCV3	AR1248SCV3	QC		14	H004291	H001058	
SHI0216-SCV4	AR1254SCV4	QC		15	H004292	H001058	
SHI0216-SCV5	AR2162SCV5	QC		16	H004293	H001058	
SHI0216-SCV6	AR3268SCV6	QC		17	H004294	H001058	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20190915.b

	Inject Date/Time		Filename	DF	LabID	ClientID
1	15-SEP-2019	12:14	19091501ECD7.D	1	RINSE	
2	15-SEP-2019	12:35	19091502ECD7.D	1	RINSE	
3	15-SEP-2019	12:56	19091503ECD7.D	1	RINSE	
4	15-SEP-2019	13:17	19091504ECD7.D	1	IB	
5	15-SEP-2019	13:38	19091505ECD7.D	1	0.25PPMAR1660	
6	15-SEP-2019	13:59	19091506ECD7.D	1	0.02PPMAR1660	
7	15-SEP-2019	14:20	19091507ECD7.D	1	0.05PPMAR1660	
8	15-SEP-2019	14:41	19091508ECD7.D	1	1PPMAR1660	
9	15-SEP-2019	15:02	19091509ECD7.D	1	0.1PPMAR1660	
10	15-SEP-2019	15:23	19091510ECD7.D	1	0.5PPMAR1660	
11	15-SEP-2019	15:44	19091511ECD7.D	1	AR1242	
12	15-SEP-2019	16:05	19091512ECD7.D	1	AR1248	
13	15-SEP-2019	16:26	19091513ECD7.D	1	AR1254	
14	15-SEP-2019	16:47	19091514ECD7.D	1	AR2162	
15	15-SEP-2019	17:08	19091515ECD7.D	1	AR3268	
16	15-SEP-2019	17:29	19091516ECD7.D	1	AR1660SCV1	
17	15-SEP-2019	17:50	19091517ECD7.D	1	AR1242SCV2	
18	15-SEP-2019	18:11	19091518ECD7.D	1	AR1248SCV3	
19	15-SEP-2019	18:32	19091519ECD7.D	1	AR1254SCV4	
20	15-SEP-2019	18:53	19091520ECD7.D	1	AR2162SCV5	
21	15-SEP-2019	19:14	19091521ECD7.D	1	AR3268SCV6	
22	15-SEP-2019	19:35	19091522ECD7.D	1	0.1 PPM DDTs	
23	15-SEP-2019	19:56	19091523ECD7.D	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20190915.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 15-SEP-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds

1214	19091501ECD7.D RINSE			1	NO MANUAL INTEGRATION

1235	19091502ECD7.D RINSE			1	NO MANUAL INTEGRATION

1256	19091503ECD7.D RINSE			1	NO MANUAL INTEGRATION

1317	19091504ECD7.D IB			1	NO MANUAL INTEGRATION

1338	19091505ECD7.D 0.25PPMAR1660			1	NO MANUAL INTEGRATION

1359	19091506ECD7.D 0.02PPMAR1660			1	NO MANUAL INTEGRATION

1420	19091507ECD7.D 0.05PPMAR1660			1	NO MANUAL INTEGRATION

1441	19091508ECD7.D 1PPMAR1660			1	NO MANUAL INTEGRATION

1502	19091509ECD7.D 0.1PPMAR1660			1	NO MANUAL INTEGRATION

1523	19091510ECD7.D 0.5PPMAR1660			1	NO MANUAL INTEGRATION

1544	19091511ECD7.D AR1242			1	NO MANUAL INTEGRATION

1605	19091512ECD7.D AR1248			1	NO MANUAL INTEGRATION

1626	19091513ECD7.D AR1254			1	NO MANUAL INTEGRATION

1647	19091514ECD7.D AR2162			1	NO MANUAL INTEGRATION

1708	19091515ECD7.D AR3268			1	NO MANUAL INTEGRATION

1729	19091516ECD7.D AR1660SCV1			1	NO MANUAL INTEGRATION

1750	19091517ECD7.D AR1242SCV2			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20190915.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1811	19091518ECD7.D	AR1248SCV3		1	NO MANUAL INTEGRATION
1832	19091519ECD7.D	AR1254SCV4		1	NO MANUAL INTEGRATION
1853	19091520ECD7.D	AR2162SCV5		1	NO MANUAL INTEGRATION
1914	19091521ECD7.D	AR3268SCV6		1	NO MANUAL INTEGRATION
1935	19091522ECD7.D	0.1 PPM DDTS		1	NO MANUAL INTEGRATION
1956	19091523ECD7.D	DDT BD		1	NO MANUAL INTEGRATION

Security Status Report

Date: 16-Sep-2019 09:50

19091501ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091502ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091503ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091504ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091505ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091506ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091507ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091508ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091509ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091510ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091511ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091512ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091513ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091514ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091515ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091516ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091517ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091518ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091519ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091520ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091521ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091522ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50
19091523ECD7.D	Data Locked	j rains, 16-Sep-2019 09:50

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-SEP-2019 13:38
End Cal Date : 15-SEP-2019 19:35
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Last Edit : 16-Sep-2019 09:45 jrains
Curve Type : Average

Calibration File Names:

Level 1: \\target\share\chem4\ecd7.i\20190915.b\19091506.D
Level 2: \\target\share\chem4\ecd7.i\20190915.b\19091507.D
Level 3: \\target\share\chem4\ecd7.i\20190915.b\19091509.D
Level 4: \\target\share\chem4\ecd7.i\20190915.b\19091505.D
Level 5: \\target\share\chem4\ecd7.i\20190915.b\19091510.D
Level 6: \\target\share\chem4\ecd7.i\20190915.b\19091508.D
Level 7: \\target\share\chem4\ecd7.i\20190915.b\19091515.D
Level 8: \\target\share\chem4\ecd7.i\20190915.b\19091522.D

	20.000	50.000	100.000	250.000	500.000	1000.000		
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	-----	-----	-----	-----	-----	-----		
	250.000	0.000e+00						
	Level 7	Level 8						
	-----	-----	-----	-----	-----	-----	-----	-----
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00586	+++++					0.00586	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00909	+++++					0.00909	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02306	+++++					0.02306	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01968	+++++					0.01968	0.000

(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07114	+++++					0.07114	0.000

(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02345	+++++					0.02345	0.000

(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02501	+++++					0.02501	0.000

4 Aroclor-1232 (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00345	+++++					0.00345	0.000

ARI Labs, Inc.

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 Last Edit : 16-Sep-2019 09:45 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	0.000e+00						
	Level 7	Level 8						
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00910	+++++					0.00910	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03250	+++++					0.03250	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01219	+++++					0.01219	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
7 Aroclor-1016(1)	0.02501	0.02388	0.02379	0.02472	0.02429	0.02395		
	+++++	+++++					0.02427	2.043
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	0.08107	0.08185	0.08597	0.09070	0.08986	0.08851		
	+++++	+++++					0.08633	4.754
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	0.03264	0.03147	0.03210	0.03333	0.03295	0.03286		
	+++++	+++++					0.03256	2.064
	-----	-----	-----	-----	-----	-----	-----	-----
(4)	0.02663	0.02543	0.02592	0.02698	0.02724	0.02821		
	+++++	+++++					0.02674	3.698
	-----	-----	-----	-----	-----	-----	-----	-----
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		

	0.03596	+++++					0.03596	0.000

(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04475	+++++					0.04475	0.000

(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04165	+++++					0.04165	0.000

(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02674	+++++					0.02674	0.000

ARI Labs, Inc.

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 Last Edit : 16-Sep-2019 09:45 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	0.000e+00						
	Level 7	Level 8						
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06741	+++++					0.06741	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02078	+++++					0.02078	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03878	+++++					0.03878	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08302	+++++					0.08302	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05541	+++++					0.05541	0.000
9 Aroclor-1260(1)	0.04093	0.03572	0.03469	0.03640	0.03634	0.03759		
	+++++	+++++					0.03695	5.871
(2)	0.03620	0.03327	0.03363	0.03589	0.03605	0.03750		
	+++++	+++++					0.03542	4.615
(3)	0.08304	0.08205	0.08686	0.09414	0.09794	0.09539		

	+++++	+++++					0.08990	7.556
(4)	0.03577	0.03704	0.03945	0.04286	0.04321	0.04504		
	+++++	+++++					0.04056	9.153
(5)	0.01791	0.01806	0.01879	0.01984	0.01973	0.02089		
	+++++	+++++					0.01920	6.013
10 Aroclor-1262 (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04191	+++++					0.04191	0.000

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 Last Edit : 16-Sep-2019 09:45 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	0.000e+00						
	Level 7	Level 8						
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.10375	+++++					0.10375	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03081	+++++					0.03081	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03905	+++++					0.03905	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
11 Aroclor-1268 (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12295	+++++					0.12295	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.11102	+++++					0.11102	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09384	+++++					0.09384	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.29668	+++++					0.29668	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		

	+++++	768					768	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	804					804	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	873					873	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1368					1368	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
_____	_____	_____	_____	_____	_____	_____	_____	_____

ARI Labs, Inc.

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 Target Version : 4.14
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 Last Edit : 16-Sep-2019 09:45 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	0.000e+00						
	Level 7	Level 8						
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1250					1250	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1181					1181	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
\$ 1 Tetrachloro-m-xylene	0.85904	0.90138	0.98996	1.06677	1.06450	1.06469		
	+++++	+++++					0.99106	9.250
\$ 13 Decachlorobiphenyl	0.79913	0.77336	0.80664	0.84012	0.81865	0.81862		
	+++++	+++++					0.80942	2.777

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 ecd7.i
Curve Type : Average

Calibration File Names:

Level 1: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091506.D
Level 2: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091507.D
Level 3: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091509.D
Level 4: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091505.D
Level 5: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091510.D
Level 6: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091508.D
Level 7: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091515.D
Level 8: \\target\share\chem4\ecd7.i\20190915.b\20190915.b\19091522.D

	20.000	50.000	100.000	250.000	500.000	1000.000		
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	RRF	% RSD
	-----	-----	-----	-----	-----	-----		
	250.000	0.000e+00						
	Level 7	Level 8						
	-----	-----	-----	-----	-----	-----	-----	-----
1 Aroclor-1221 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00568	+++++					0.00568	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01186	+++++					0.01186	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01985	+++++					0.01985	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
4 Aroclor-1232 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00339	+++++					0.00339	0.000

(2)		+++++	+++++	+++++	+++++	+++++	+++++		
		0.01686	+++++					0.01686	0.000

(3)		+++++	+++++	+++++	+++++	+++++	+++++		
		0.03372	+++++					0.03372	0.000

(4)		+++++	+++++	+++++	+++++	+++++	+++++		
		0.01121	+++++					0.01121	0.000

3 Aroclor-1242 [2C] (1)		+++++	+++++	+++++	+++++	+++++	+++++		
		0.03033	+++++					0.03033	0.000

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Last Edit : 16-Sep-2019 09:42 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	0.000e+00						
	Level 7	Level 8						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.06549	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01670	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02077	0.000
6 Aroclor-1248 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04350	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.03280	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03304	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.04275	0.000
7 Aroclor-1016 [2C] (1)	0.05210	0.04213	0.03999	0.03777	0.03441	0.03238		

		+++++	+++++					0.03980	17.592
(2)	0.09411	0.08652	0.08487	0.08137	0.07659	0.07524			
	+++++	+++++					0.08312	8.391	
(3)	0.03876	0.03514	0.03421	0.03262	0.03067	0.02959			
	+++++	+++++					0.03350	9.898	
(4)	0.02353	0.02132	0.02100	0.02058	0.01972	0.01938			
	+++++	+++++					0.02092	7.061	

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 Last Edit : 16-Sep-2019 09:42 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	0.000e+00						
	Level 7	Level 8						
8 Aroclor-1254 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04433	0.000
	0.04433	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.02255	0.000
	0.02255	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03476	0.000
	0.03476	+++++						
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.06953	0.000
	0.06953	+++++						
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.04296	0.000
	0.04296	+++++						
10 Aroclor-1262 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++	0.06941	0.000
	0.06941	+++++						
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.05935	0.000
	0.05935	+++++						
(3)	+++++	+++++	+++++	+++++	+++++	+++++		

	0.13611	++++					0.13611	0.000

(4)	++++	++++	++++	++++	++++	++++		
	0.06640	++++					0.06640	0.000

9 Aroclor-1260 [2C] (1)	0.05495	0.05253	0.05112	0.04984	0.04690	0.04664		
	++++	++++					0.05033	6.433

(2)	0.05522	0.05293	0.05160	0.05035	0.04759	0.04736		
	++++	++++					0.05084	6.036

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 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	0.000e+00						
	Level 7	Level 8						
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	0.12911	0.12706	0.12563	0.12377	0.12332	0.13548		
	+++++	+++++					0.12739	3.532
	-----	-----	-----	-----	-----	-----	-----	-----
(4)	0.04030	0.04051	0.03999	0.04013	0.03883	0.03813		
	+++++	+++++					0.03965	2.392
	-----	-----	-----	-----	-----	-----	-----	-----
11 Aroclor-1268 [2C] (1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.17229	+++++					0.17229	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.17291	+++++					0.17291	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.15665	+++++					0.15665	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.55532	+++++					0.55532	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1405					1405	0.000
	-----	-----	-----	-----	-----	-----	-----	-----
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++		

	+++++	734					734	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	735					735	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1002					1002	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1068					1068	0.000
-----	-----	-----	-----	-----	-----	-----	-----	-----
_____	_____	_____	_____	_____	_____	_____	_____	_____

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 Last Edit : 16-Sep-2019 09:42 ecd7.i
 Curve Type : Average

Compound	20.000	50.000	100.000	250.000	500.000	1000.000	RRF	% RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6		
	250.000	0.000e+00						
	Level 7	Level 8						
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
\$ 2 Tetrachloro-m-xylene [2C]	0.96317	0.93291	0.94914	0.93373	0.92524	0.99775	0.95032	2.833
\$ 13 Decachlorobiphenyl [2C]	1.51703	1.46442	1.45576	1.45285	1.55457	1.76410	1.53479	7.775

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\20190915.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	19091505ECD7	19091506ECD7	19091507ECD7	19091508ECD7	19091509ECD7	19091510ECD7
INJ.DATE:	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019
INJ.TIME:	13:38	13:59	14:20	14:41	15:02	15:23

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.847	2.847	2.848	2.844	2.848	2.847	2.841	2.741-2.941	2.847	0.002
\$ 1 Tetrachloro-m-xylene	5.342	5.342	5.342	5.339	5.342	5.342	5.341	5.241-5.441	5.342	0.001
2 Aroclor-1221	++++	++++	++++	++++	++++	++++	4.185	4.085-4.285	++++	++++
3 Aroclor-1242	++++	++++	++++	++++	++++	++++	6.926	6.826-7.026	++++	++++
4 Aroclor-1232	++++	++++	++++	++++	++++	++++	4.184	4.084-4.284	++++	++++
7 Aroclor-1016	6.926	6.927	6.927	6.925	6.927	6.926	6.926	6.826-7.026	6.926	0.001
6 Aroclor-1248	++++	++++	++++	++++	++++	++++	8.097	7.997-8.197	++++	++++
8 Aroclor-1254	++++	++++	++++	++++	++++	++++	9.002	8.902-9.102	++++	++++
9 Aroclor-1260	10.764	10.764	10.764	10.764	10.764	10.764	10.764	10.664-10.864	10.764	0.000
10 Aroclor-1262	++++	++++	++++	++++	++++	++++	11.080	10.980-11.180	++++	++++
11 Aroclor-1268	++++	++++	++++	++++	++++	++++	11.965	11.865-12.065	++++	++++
\$ 13 Decachlorobiphenyl	13.613	13.613	13.613	13.614	13.614	13.614	13.614	13.514-13.714	13.614	0.001
* 12 IS-HBBP	13.971	13.970	13.972	13.970	13.971	13.970	13.971	13.871-14.071	13.971	0.001
42 2,4-DDE	++++	++++	++++	++++	++++	++++	8.970	8.920-9.020	++++	++++
43 2,4-DDD	++++	++++	++++	++++	++++	++++	9.514	9.464-9.564	++++	++++
44 2,4-DDT	++++	++++	++++	++++	++++	++++	10.017	9.967-10.067	++++	++++
46 4,4-DDE	++++	++++	++++	++++	++++	++++	9.394	9.293-9.494	++++	++++

Reviewer 1	_____	Date: _____
Reviewer 2	_____	Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m

Batch File: \\target\share\chem4\ecd7.i\20190915.b

Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.962	9.862-10.062	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.474	10.374-10.574	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m
Batch File: \\target\share\chem4\ecd7.i\20190915.b\20190915.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	19091505ECD7	19091506ECD7	19091507ECD7	19091508ECD7	19091509ECD7	19091510ECD7
INJ.DATE:	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019	15-SEP-2019
INJ.TIME:	13:38	13:59	14:20	14:41	15:02	15:23

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB [2C]	3.203	3.203	3.204	3.199	3.203	3.202	3.197	3.097-3.297	3.202	0.002
\$ 2 Tetrachloro-m-xylene [	5.082	5.082	5.082	5.080	5.082	5.084	5.080	4.980-5.180	5.082	0.001
1 Aroclor-1221 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.283	4.183-4.383	+++++	+++++
4 Aroclor-1232 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	4.282	4.182-4.382	+++++	+++++
3 Aroclor-1242 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	6.778	6.678-6.878	+++++	+++++
6 Aroclor-1248 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	7.396	7.296-7.496	+++++	+++++
7 Aroclor-1016 [2C]	6.779	6.779	6.779	6.778	6.779	6.778	6.778	6.678-6.878	6.779	0.001
8 Aroclor-1254 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.037	8.937-9.137	+++++	+++++
10 Aroclor-1262 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.795	10.695-10.895	+++++	+++++
9 Aroclor-1260 [2C]	10.795	10.795	10.795	10.795	10.794	10.795	10.795	10.695-10.895	10.795	0.000
11 Aroclor-1268 [2C]	+++++	+++++	+++++	+++++	+++++	+++++	12.023	11.923-12.123	+++++	+++++
\$ 13 Decachlorobiphenyl [2C]	13.701	13.702	13.701	13.714	13.700	13.704	13.702	13.602-13.802	13.704	0.005
* 12 IS-HBBP [2C]	14.542	14.543	14.543	14.542	14.542	14.542	14.544	14.444-14.644	14.542	0.001
41 2,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.507	9.457-9.557	+++++	+++++
42 2,4-DDD [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.118	9.068-9.168	+++++	+++++
44 4,4-DDE [2C]	+++++	+++++	+++++	+++++	+++++	+++++	9.789	9.689-9.889	+++++	+++++
45 4,4-DDD/2,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++	10.254	10.154-10.354	+++++	+++++

Reviewer 1	_____	Date: _____
Reviewer 2	_____	Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\20190915.b\PCB.m\PCB2.m

Batch File: \\target\share\chem4\ecd7.i\20190915.b\20190915.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]	+++++	+++++	+++++	+++++	+++++	+++++	10.685	10.585-10.785	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.178	7.078-7.278	+++++	+++++
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091504ECD7.D ARI ID: IB
Data file 2: /20190915.b/20190915.b/19091504ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 13:17
Compound Sublist: PCB.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	140495	5.079	-0.001	509475	43.6	40.3	7.8	Tetrachloro-m-xylene
13.613	-0.001	162482	13.702	-0.000	721743	42.1	37.9	10.7	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	108.9	100.7
Decachlorobiphenyl	105.4	94.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	260313	-1.0
Hexabromobiphenyl	382688	381006	-0.4

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1064650	-1.6
Hexabromobiphenyl	1006687	993418	-1.3

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	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
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks					
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	5.782	0.023	5111	32.4
Aroclor-1221	3	---			0.0	3	6.119	0.015	1300	4.9
CollAve: <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
CollAve: <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
CollAve: <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	8.742	-0.058	2464	5.6
Aroclor-1248	4	---			0.0	4	9.246	0.111	9703	17.1
CollAve: <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	9.639	0.096	6442	13.9
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	10.518	0.055	674	1.2
CollAve: <3 Quant Peaks					Col2Ave: <3 Quant Peaks					
Aroclor-1260	1	---			0.0	1	10.865	0.070	1938	3.1
Aroclor-1260	2	---			0.0	2	11.236	0.003	781	1.2
Aroclor-1260	3	---			0.0	3	11.569	0.057	1673	1.1
Aroclor-1260	4	---			0.0	4	11.961	-0.061	4910	10.0
Aroclor-1260	5	---			0.0	NS	---			----
CollAve: <3 Quant Peaks					Col2Ave: 3.8					
Aroclor-1262	1	---			0.0	1	10.865	0.070	1938	2.2
Aroclor-1262	2	---			0.0	2	11.236	0.002	781	1.1
Aroclor-1262	3	---			0.0	3	11.569	0.059	1673	1.0
Aroclor-1262	4	---			0.0	4	11.961	-0.062	4910	6.0
CollAve: <3 Quant Peaks					Col2Ave: 2.6					
Aroclor-1268	1	---			0.0	1	11.961	-0.062	4910	2.3
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.481	0.000	1033	0.5
Aroclor-1268	4	---			0.0	4	13.296	-0.001	1200	0.2
CollAve: <3 Quant Peaks					Col2Ave: 1.0					

Total PCB Area Coll (5.441 - 13.514) = 19486

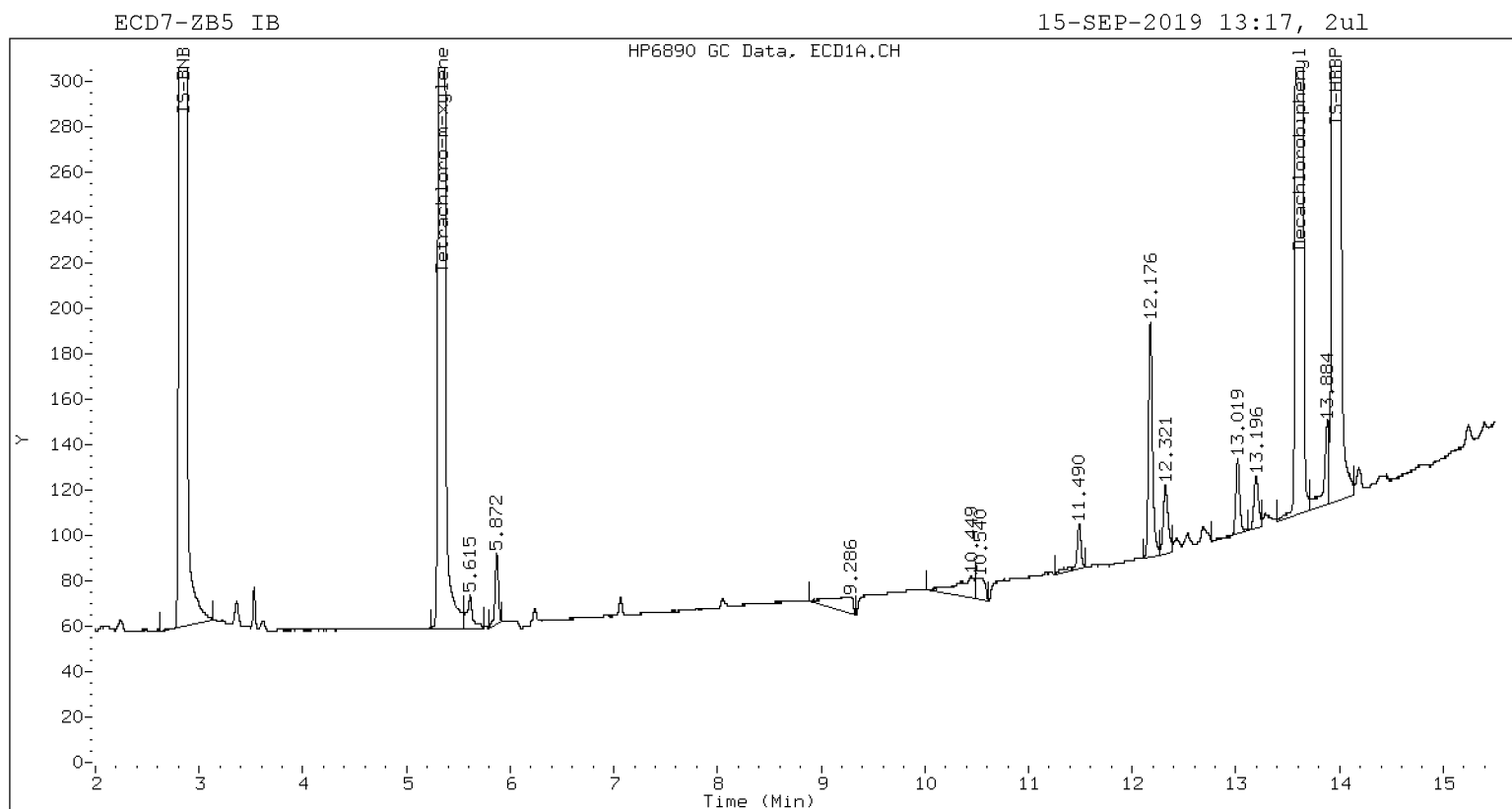
Coll Total PCB = 0.0 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 107673 Col2 Total PCB = 0.0 ppm*

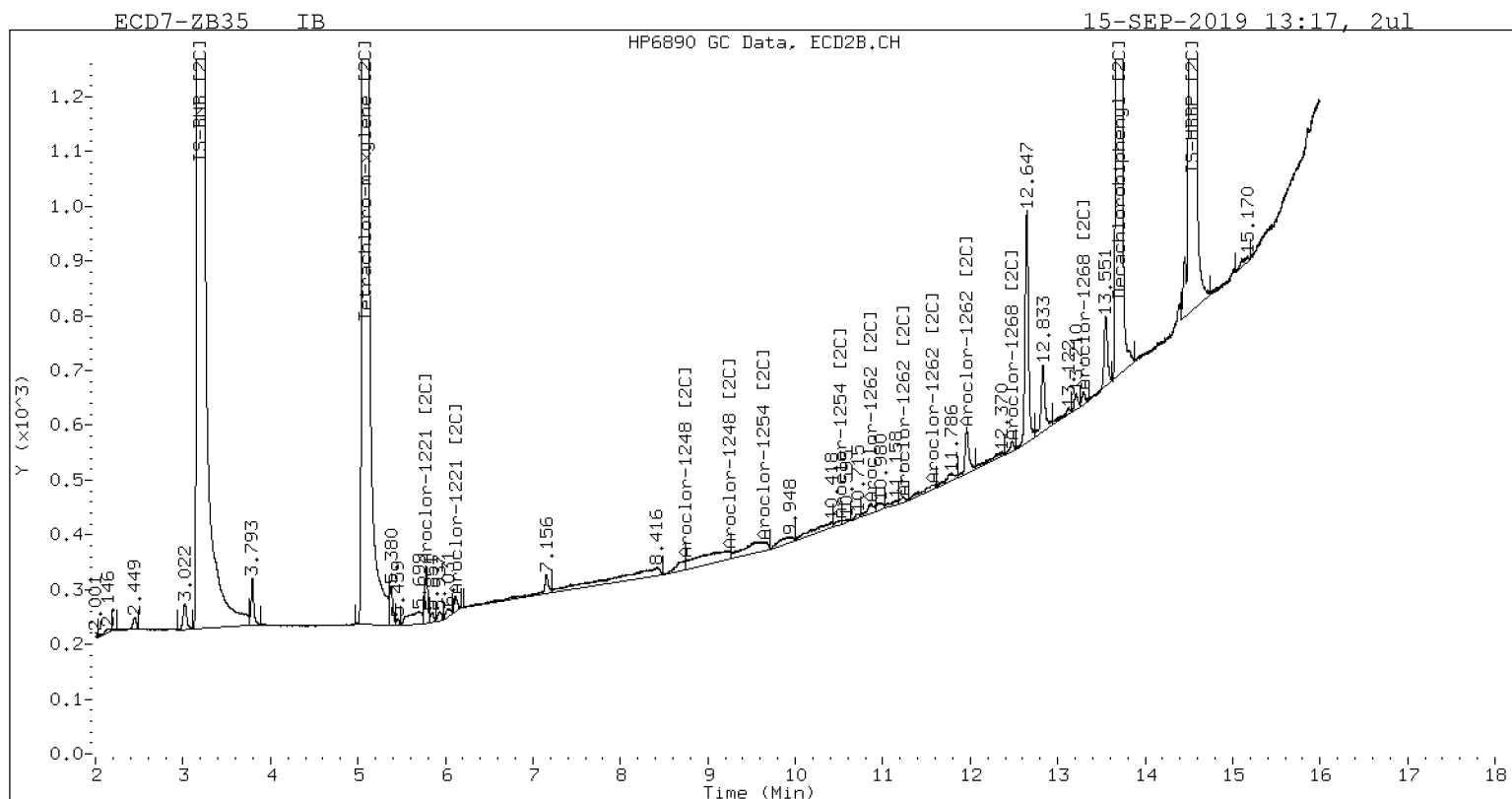
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms



ZB-5 Manual Integration: NO



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091505ECD7.D ARI ID: 0.25PPMAR1660
Data file 2: /20190915.b/20190915.b/19091505ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 13:38
Compound Sublist: AR1660.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.002 140243	5.082 0.002 505114	43.1	39.3	9.1	Tetrachloro-m-xylene
13.613	-0.001 160752	13.701 -0.001 731283	41.5	37.9	9.2	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	107.6	98.3
Decachlorobiphenyl	103.8	94.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	262930	0.0
Hexabromobiphenyl	382688	382688	0.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1081928	0.0
Hexabromobiphenyl	1006687	1006687	0.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.926	0.000	20314	254.6	1	6.779	0.000	127685	237.2
Aroclor-1016	2	7.314	0.001	74523	262.7	2	7.400	0.001	275117	244.8
Aroclor-1016	3	7.461	0.001	27386	255.9	3	7.598	0.000	110282	243.4
Aroclor-1016	4	8.268	0.001	22172	252.3	4	7.768	0.001	69568	245.9
Total CollAve (4 peaks):				256.4	Total Col2Ave (4 peaks):				242.8	RPD = 5
Corrected Ave (3 peaks):				254.3	Corrected Ave (3 peaks):				241.8	RPD = 5

CalAmt %D: 2.6

CalAmt %D: -2.9

Aroclor-1260	1	10.764	0.000	43533	246.3	1	10.795	0.000	156793	247.6
Aroclor-1260	2	11.080	-0.000	42915	253.3	2	11.233	-0.000	158404	247.6
Aroclor-1260	3	11.449	-0.001	112582	261.8	3	11.510	-0.002	389357	242.9
Aroclor-1260	4	11.848	-0.000	51257	264.2	4	12.023	0.001	126243	253.0
Aroclor-1260	5	11.965	-0.001	23724	258.3	NS	---			----
Total CollAve (5 peaks):				256.8	Total Col2Ave (4 peaks):				247.8	RPD = 4
Corrected Ave (4 peaks):				254.9	Corrected Ave (3 peaks):				246.0	RPD = 4

CalAmt %D: 2.7

CalAmt %D: -0.9

Total PCB Area Coll (5.441 - 13.514) = 1102687 Coll Total PCB = 0.5 ppm*

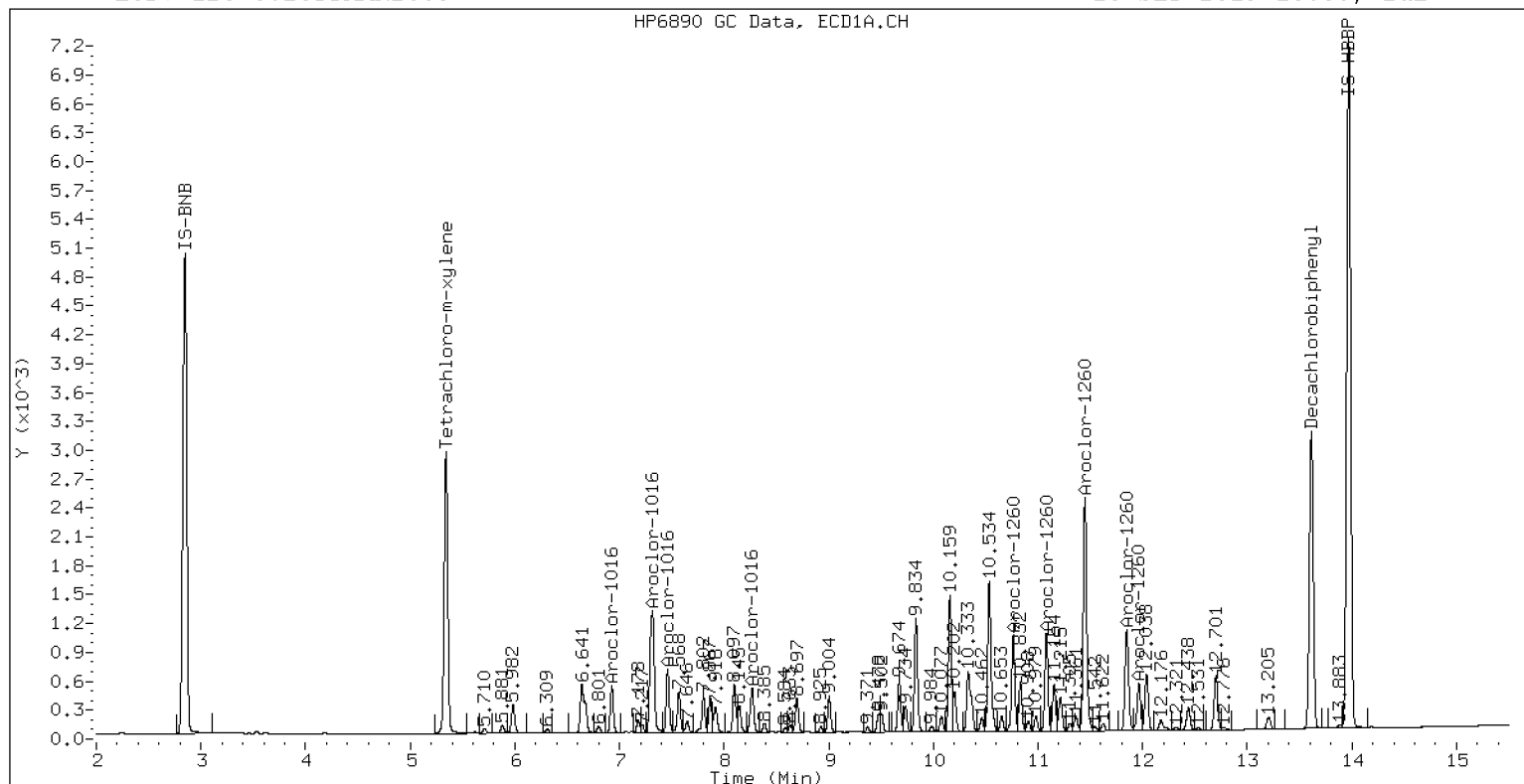
Total PCB Area Col2 (5.441 - 13.514) = 4071056 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 0.25PPMAR1660

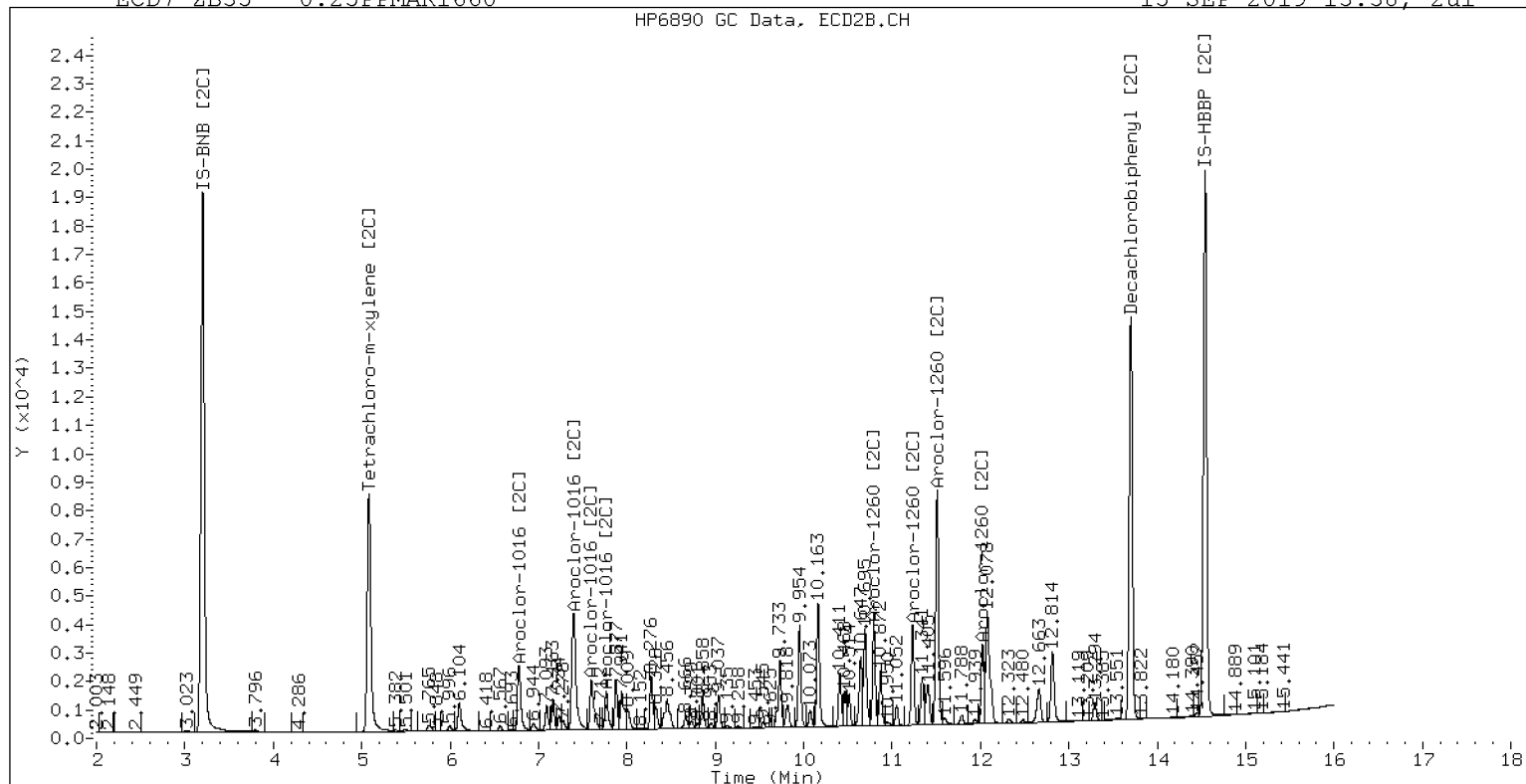
15-SEP-2019 13:38, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.25PPMAR1660

15-SEP-2019 13:38, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091506ECD7.D ARI ID: 0.02PPMAR1660
Data file 2: /20190915.b/20190915.b/19091506ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 13:59
Compound Sublist: AR1660.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.002	9218	5.082	0.002	42610	2.8	3.2	15.6	Tetrachloro-m-xylene
13.613	-0.000	12571	13.702	0.000	62915	3.2	3.2	0.1	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	6.9	8.1
Decachlorobiphenyl	7.9	7.9

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	268266	2.0
Hexabromobiphenyl	382688	393269	2.8

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1105980	2.2
Hexabromobiphenyl	1006687	1036811	3.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.927	0.001	1677	20.6	1	6.779	0.001	14405	26.2	
Aroclor-1016	2	7.314	0.001	5437	18.8	2	7.399	0.001	26020	22.6	
Aroclor-1016	3	7.461	0.001	2189	20.0	3	7.600	0.003	10718	23.1	
Aroclor-1016	4	8.268	0.001	1786	19.9	4	7.769	0.002	6506	22.5	
Total CollAve (4 peaks):				19.8	Total Col2Ave (4 peaks):				23.6	RPD = 17	
Corrected Ave (3 peaks):				19.6	Corrected Ave (3 peaks):				22.8	RPD = 15	
CalAmt %D:				-0.8	CalAmt %D:				18.1		
Aroclor-1260	1	10.764	0.000	4024	22.2	1	10.795	0.000	14242	21.8	
Aroclor-1260	2	11.080	0.000	3559	20.4	2	11.234	0.001	14313	21.7	
Aroclor-1260	3	11.450	0.000	8164	18.5	3	11.511	-0.001	33465	20.3	
Aroclor-1260	4	11.849	0.001	3517	17.6	4	12.024	0.001	10446	20.3	
Aroclor-1260	5	11.966	0.001	1761	18.7	NS	---			----	
Total CollAve (5 peaks):				19.5	Total Col2Ave (4 peaks):				21.0	RPD = 8	
Corrected Ave (4 peaks):				18.8	Corrected Ave (3 peaks):				20.8	RPD = 10	
CalAmt %D:				-2.6	CalAmt %D:				5.2		

Total PCB Area Coll (5.441 - 13.514) = 90637 Coll Total PCB = 0.0 ppm*

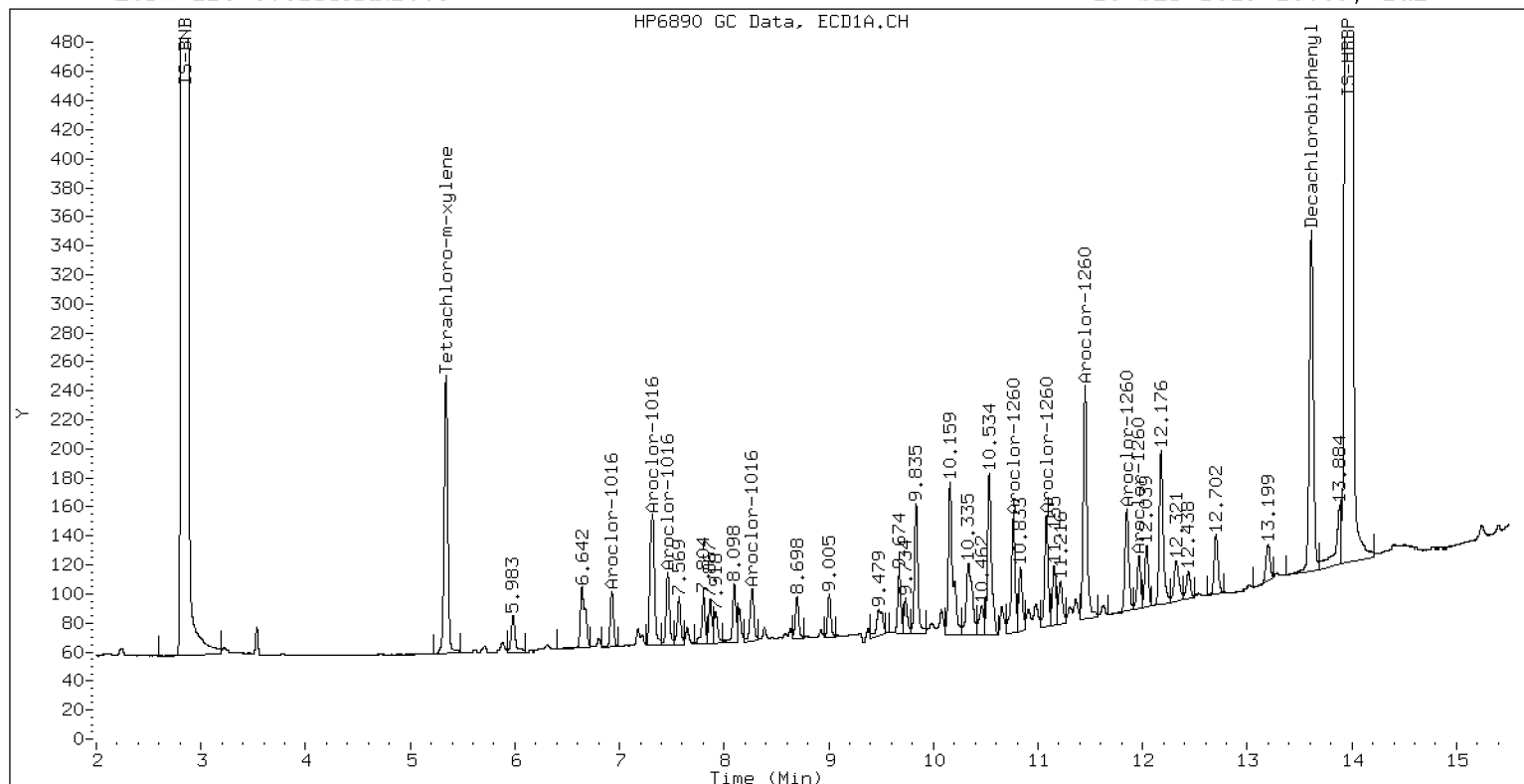
Total PCB Area Col2 (5.441 - 13.514) = 411136 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 0.02PPMAR1660

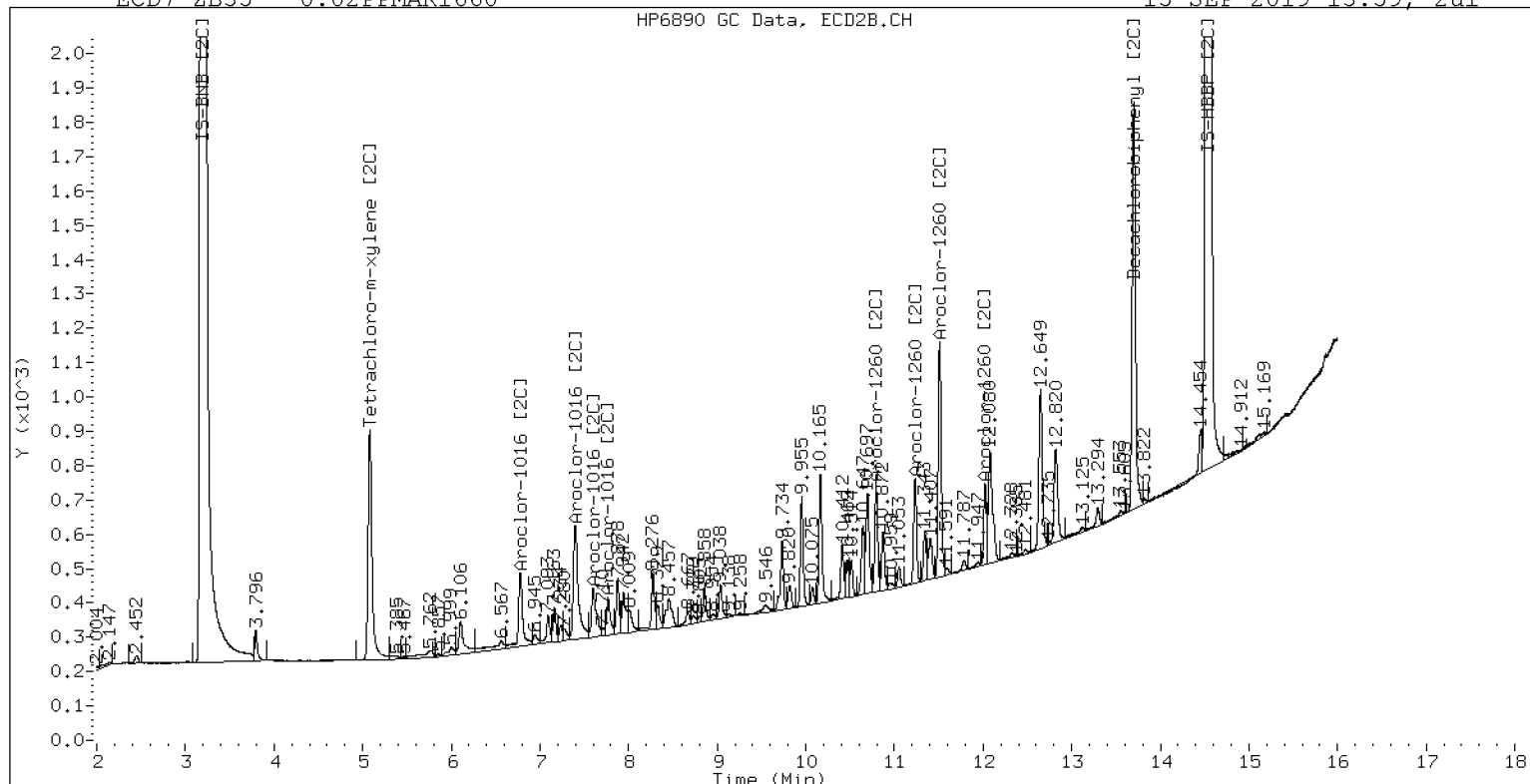
15-SEP-2019 13:59, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.02PPMAR1660

15-SEP-2019 13:59, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091507ECD7.D ARI ID: 0.05PPMAR1660
Data file 2: /20190915.b/20190915.b/19091507ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 14:20
Compound Sublist: AR1660.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.342	0.002	24260	5.082	0.002	103145	7.3	7.9	7.6	Tetrachloro-m-xylene
13.613	-0.000	30493	13.701	-0.001	150296	7.6	7.6	0.1	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	18.2	19.6
Decachlorobiphenyl	19.1	19.1

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269144	2.4
Hexabromobiphenyl	382688	394293	3.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1105624	2.2
Hexabromobiphenyl	1006687	1026320	2.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.927	0.001	4017	49.2	1	6.779	0.001	29114	52.9	
Aroclor-1016	2	7.314	0.001	13768	47.4	2	7.400	0.002	59787	52.0	
Aroclor-1016	3	7.461	0.001	5293	48.3	3	7.600	0.002	24285	52.5	
Aroclor-1016	4	8.268	0.000	4277	47.5	4	7.769	0.002	14729	50.9	
Total CollAve (4 peaks):				48.1	Total Col2Ave (4 peaks):				52.1	RPD = 8	
Corrected Ave (3 peaks):				47.8	Corrected Ave (3 peaks):				51.8	RPD = 8	
CalAmt %D:				-3.8	CalAmt %D:				4.2		
Aroclor-1260	1	10.764	0.000	8802	48.3	1	10.795	0.001	33695	52.2	
Aroclor-1260	2	11.080	0.000	8200	47.0	2	11.233	-0.000	33955	52.1	
Aroclor-1260	3	11.449	-0.000	20220	45.6	3	11.510	-0.002	81504	49.9	
Aroclor-1260	4	11.849	0.000	9129	45.7	4	12.023	0.001	25987	51.1	
Aroclor-1260	5	11.966	0.001	4451	47.0	NS	---			----	
Total CollAve (5 peaks):				46.7	Total Col2Ave (4 peaks):				51.3	RPD = 9	
Corrected Ave (4 peaks):				46.3	Corrected Ave (3 peaks):				51.0	RPD = 10	
CalAmt %D:				-6.5	CalAmt %D:				2.6		

Total PCB Area Coll (5.441 - 13.514) = 223134 Coll Total PCB = 0.1 ppm*

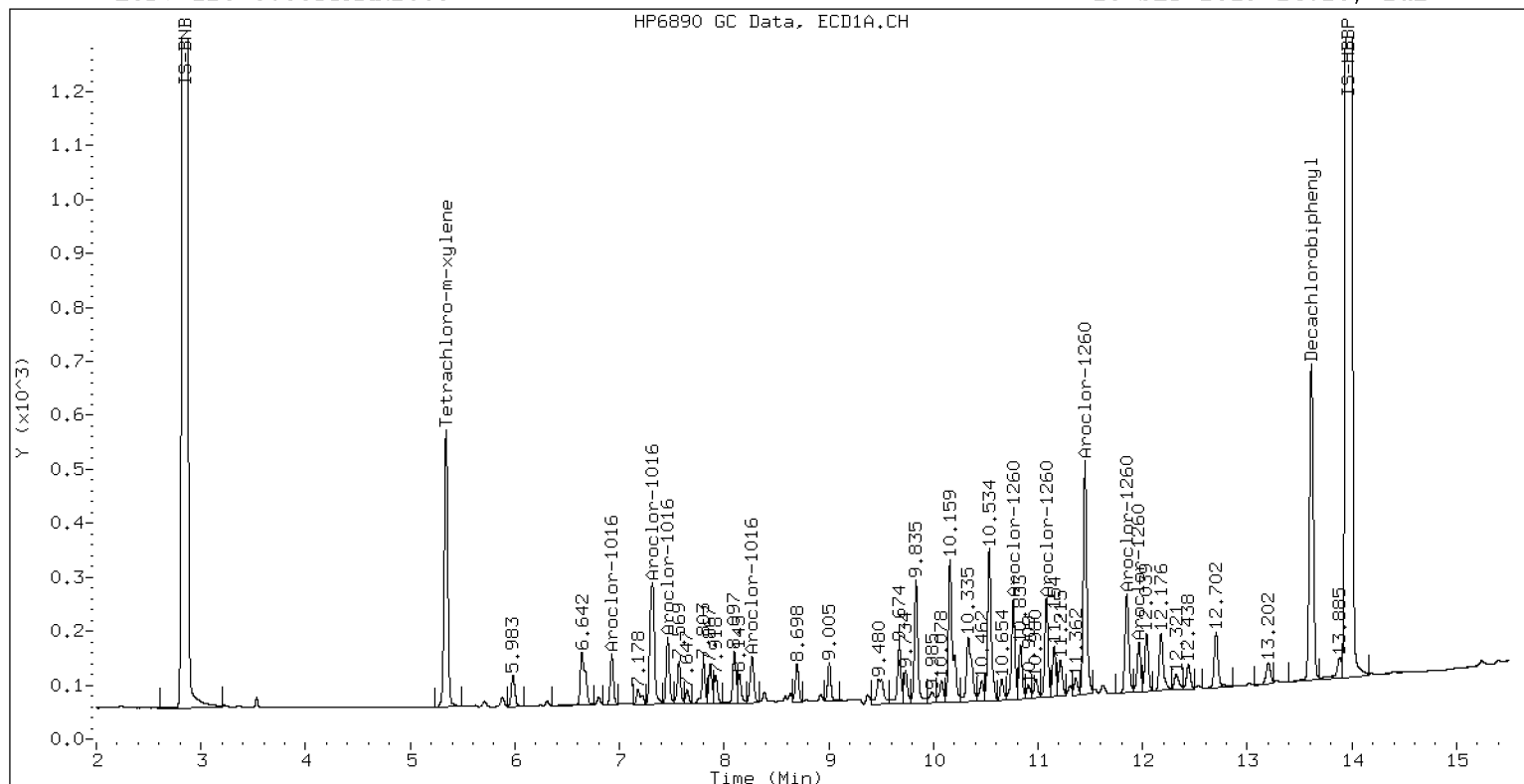
Total PCB Area Col2 (5.441 - 13.514) = 897380 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 0.05PPMAR1660

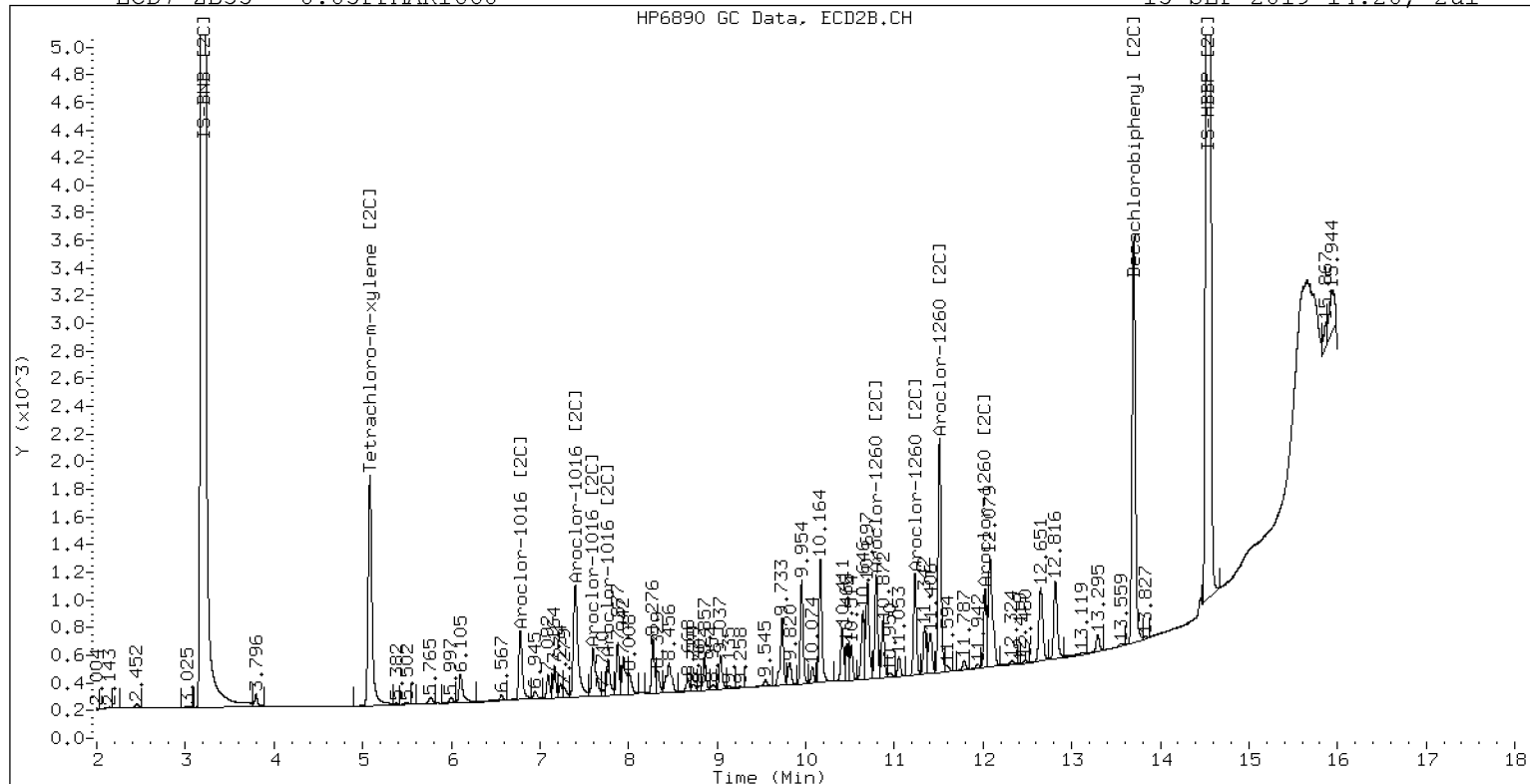
15-SEP-2019 14:20, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 0.05PPMAR1660

15-SEP-2019 14:20, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091508ECD7.D ARI ID: 1PPMAR1660
Data file 2: /20190915.b/20190915.b/19091508ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 14:41
Compound Sublist: AR1660.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.339	-0.001	566141	5.080	0.001	2145374	171.9	168.0	2.3	Tetrachloro-m-xylene
13.614	0.001	636203	13.714	0.012	3682799	161.8	183.9	12.8	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	429.7	420.0
Decachlorobiphenyl	404.5	459.8

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	265871	1.1
Hexabromobiphenyl	382688	388584	1.5

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1075102	-0.6
Hexabromobiphenyl	1006687	1043818	3.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.925	-0.001	79588	986.6	1	6.778	-0.001	435097	813.6
Aroclor-1016	2	7.313	0.000	294144	1025.3	2	7.398	-0.000	1011124	905.2
Aroclor-1016	3	7.459	-0.000	109222	1009.4	3	7.597	-0.001	397715	883.4
Aroclor-1016	4	8.267	-0.001	93763	1055.2	4	7.766	-0.001	260387	926.2
Total CollAve (4 peaks):				1019.1		Total Col2Ave (4 peaks):				882.1 RPD = 14
Corrected Ave (3 peaks):				1007.1		Corrected Ave (3 peaks):				867.4 RPD = 15

CalAmt %D: 1.9

CalAmt %D: -11.8

Aroclor-1260	1	10.764	0.000	182595	1017.5	1	10.795	0.000	608497	926.6
Aroclor-1260	2	11.080	0.000	182146	1058.7	2	11.233	0.000	617920	931.5
Aroclor-1260	3	11.449	-0.000	463339	1061.0	3	11.513	0.001	1767672	1063.5
Aroclor-1260	4	11.849	0.001	218785	1110.4	4	12.023	0.001	497498	961.7
Aroclor-1260	5	11.966	0.000	101481	1087.9	NS	---			----
Total CollAve (5 peaks):				1067.1		Total Col2Ave (4 peaks):				970.8 RPD = 9
Corrected Ave (4 peaks):				1056.3		Corrected Ave (3 peaks):				939.9 RPD = 12

CalAmt %D: 6.7

CalAmt %D: -2.9

Total PCB Area Coll (5.441 - 13.514) = 4570560 Coll Total PCB = 2.0 ppm*

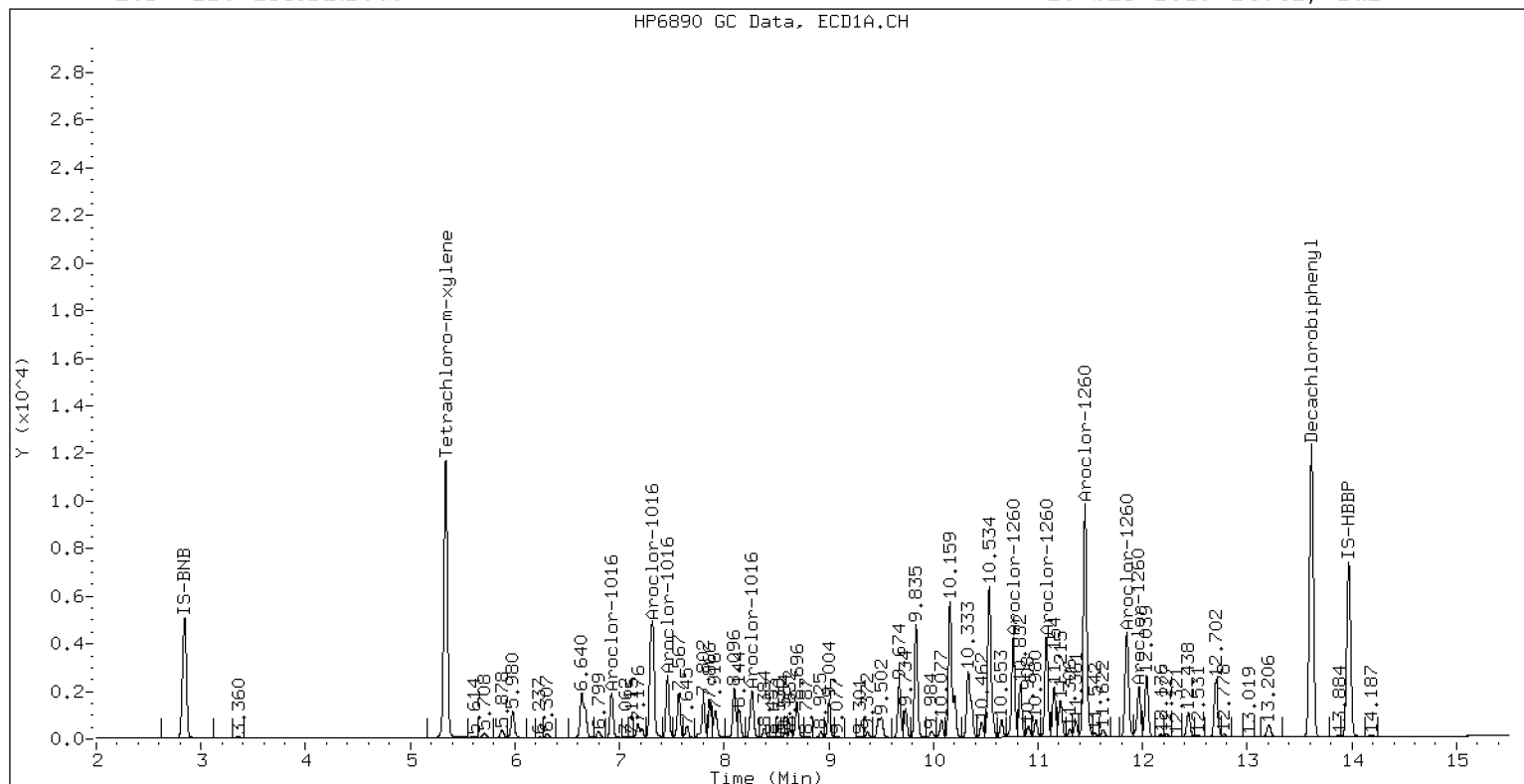
Total PCB Area Col2 (5.441 - 13.514) = 15664627 Col2 Total PCB = 1.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 1PPMAR1660

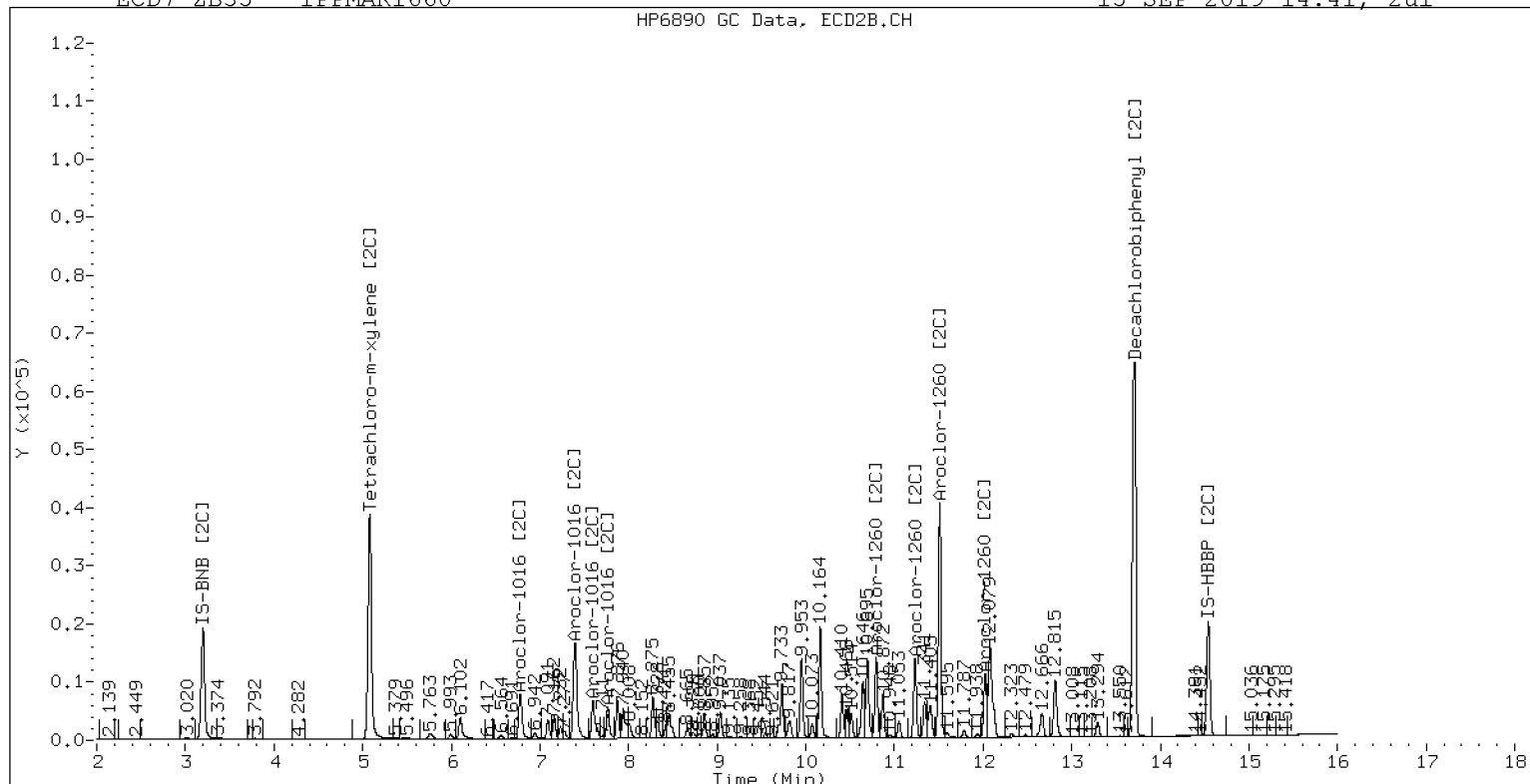
15-SEP-2019 14:41, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 1PPMAR1660

15-SEP-2019 14:41, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091509ECD7.D ARI ID: 0.1PPMAR1660
Data file 2: /20190915.b/20190915.b/19091509ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 15:02
Compound Sublist: AR1660.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.001	53938	5.082	0.002	214447	16.0	16.0	0.0	Tetrachloro-m-xylene
13.614	0.000	65175	13.700	-0.002	312668	15.9	15.2	4.9	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	40.0	39.9
Decachlorobiphenyl	39.9	37.9

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	272424	3.6
Hexabromobiphenyl	382688	403993	5.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1129696	4.4
Hexabromobiphenyl	1006687	1073897	6.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.927	0.001	8102	98.0	1	6.779	0.000	56470	100.5
Aroclor-1016	2	7.315	0.002	29277	99.6	2	7.399	0.001	119848	102.1
Aroclor-1016	3	7.461	0.001	10930	98.6	3	7.599	0.001	48310	102.1
Aroclor-1016	4	8.267	0.000	8828	97.0	4	7.768	0.001	29658	100.4
Total CollAve (4 peaks):				98.3	Total Col2Ave (4 peaks):				101.3	RPD = 3
Corrected Ave (3 peaks):				97.9	Corrected Ave (3 peaks):				101.0	RPD = 3

CalAmt %D: -1.7

CalAmt %D: 1.3

Aroclor-1260	1	10.764	0.000	17520	93.9	1	10.794	-0.000	68622	101.6
Aroclor-1260	2	11.080	0.000	16981	94.9	2	11.233	-0.001	69269	101.5
Aroclor-1260	3	11.449	-0.000	43863	96.6	3	11.510	-0.002	168645	98.6
Aroclor-1260	4	11.848	0.000	19920	97.2	4	12.023	0.001	53676	100.9
Aroclor-1260	5	11.965	-0.000	9491	97.9	NS	---			----
Total CollAve (5 peaks):				96.1	Total Col2Ave (4 peaks):				100.6	RPD = 5
Corrected Ave (4 peaks):				95.7	Corrected Ave (3 peaks):				100.3	RPD = 5

CalAmt %D: -3.9

CalAmt %D: 0.6

Total PCB Area Coll (5.441 - 13.514) = 443991 Coll Total PCB = 0.2 ppm*

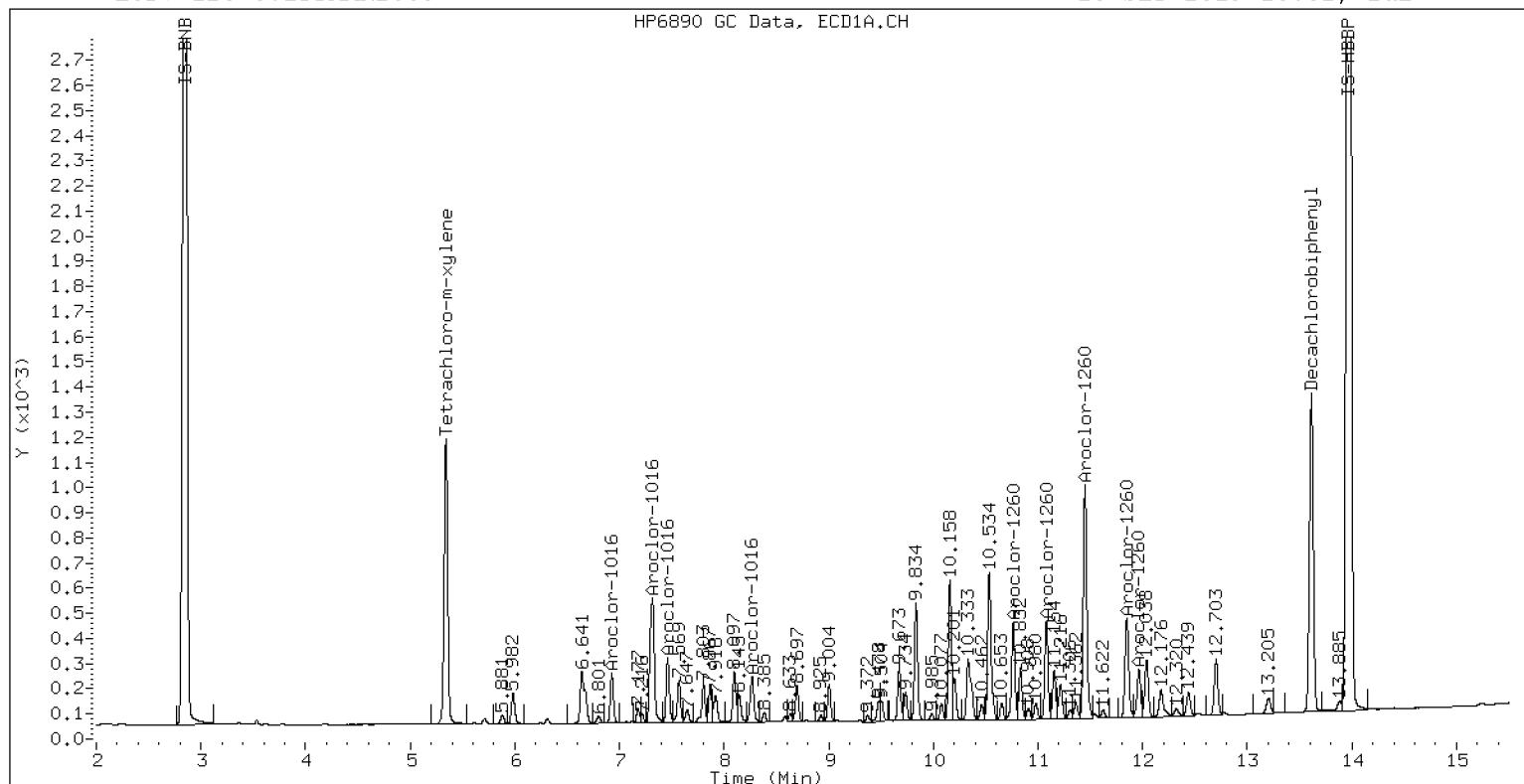
Total PCB Area Col2 (5.441 - 13.514) = 1784841 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 0.1PPMAR1660

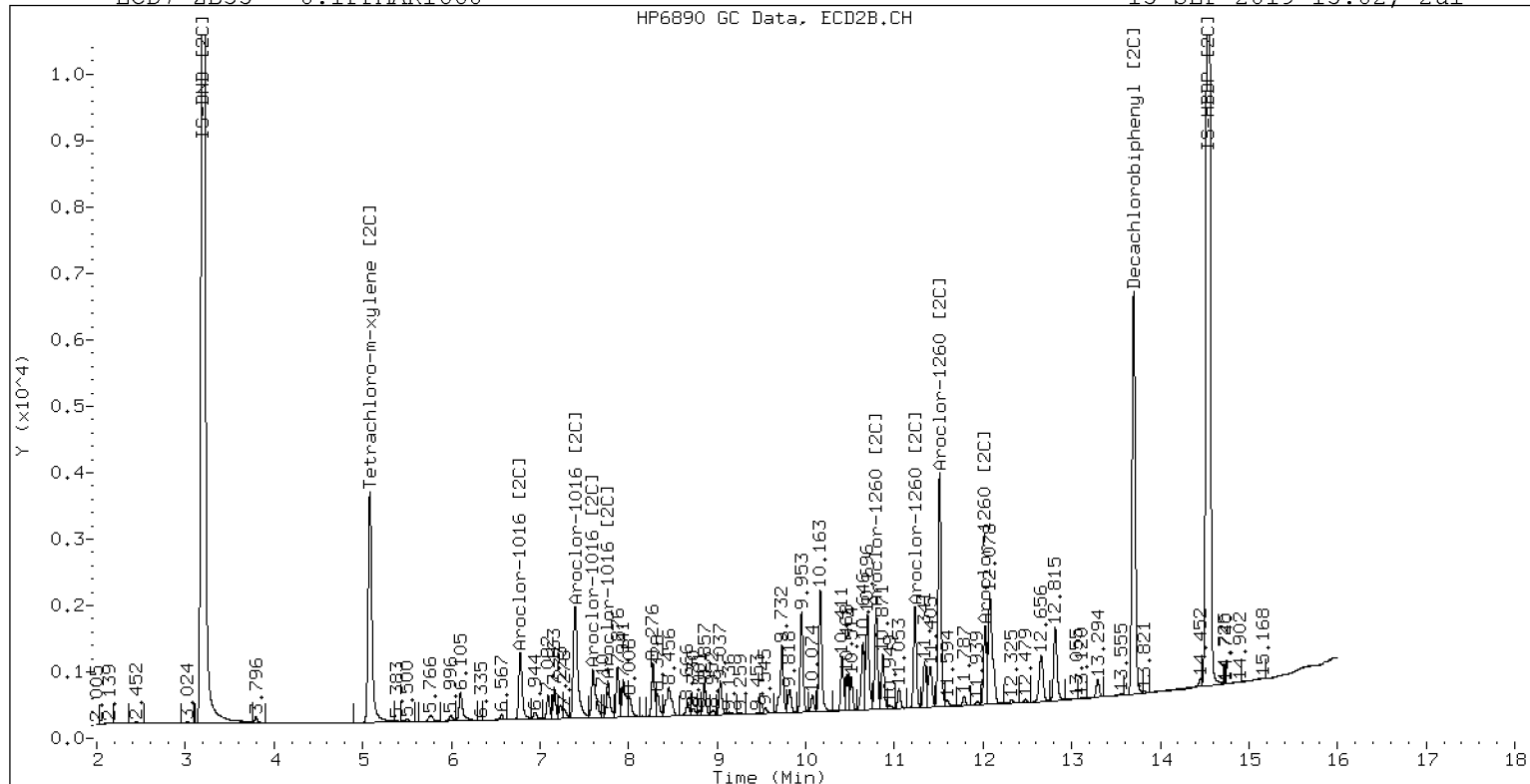
15-SEP-2019 15:02, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 0.1PPMAR1660

15-SEP-2019 15:02, 2u1



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091510ECD7.D ARI ID: 0.5PPMAR1660
Data file 2: /20190915.b/20190915.b/19091510ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 15:23
Compound Sublist: AR1660.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.001	293287	5.084	0.004	1056342	85.9	77.9	9.8	Tetrachloro-m-xylene
13.614	0.000	335899	13.704	0.002	1707377	80.9	81.0	0.1	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	214.8	194.7
Decachlorobiphenyl	202.3	202.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	275515	4.8
Hexabromobiphenyl	382688	410307	7.2

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1141696	5.5
Hexabromobiphenyl	1006687	1098297	9.1

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.926	0.000	41823	500.3	1	6.778	0.000	245531	432.3
Aroclor-1016	2	7.313	0.000	154739	520.5	2	7.398	0.000	546487	460.7
Aroclor-1016	3	7.460	0.000	56742	506.0	3	7.598	0.000	218828	457.7
Aroclor-1016	4	8.267	0.000	46911	509.5	4	7.767	0.000	140738	471.4
Total CollAve (4 peaks):				509.1	Total Col2Ave (4 peaks):				455.5	RPD = 11
Corrected Ave (3 peaks):				505.3	Corrected Ave (3 peaks):				450.3	RPD = 12

CalAmt %D: 1.8

CalAmt %D: -8.9

Aroclor-1260	1	10.764	0.000	93198	491.8	1	10.795	0.000	321938	465.9
Aroclor-1260	2	11.080	0.000	92438	508.8	2	11.233	0.000	326652	468.0
Aroclor-1260	3	11.450	0.000	251165	544.7	3	11.512	0.000	846506	484.0
Aroclor-1260	4	11.848	0.000	110806	532.6	4	12.023	0.000	266535	489.7
Aroclor-1260	5	11.965	0.000	50584	513.6	NS	---			----
Total CollAve (5 peaks):				518.3	Total Col2Ave (4 peaks):				476.9	RPD = 8
Corrected Ave (4 peaks):				511.7	Corrected Ave (3 peaks):				472.6	RPD = 8

CalAmt %D: 3.7

CalAmt %D: -4.6

Total PCB Area Coll (5.441 - 13.514) = 2356970 Coll Total PCB = 1.0 ppm*

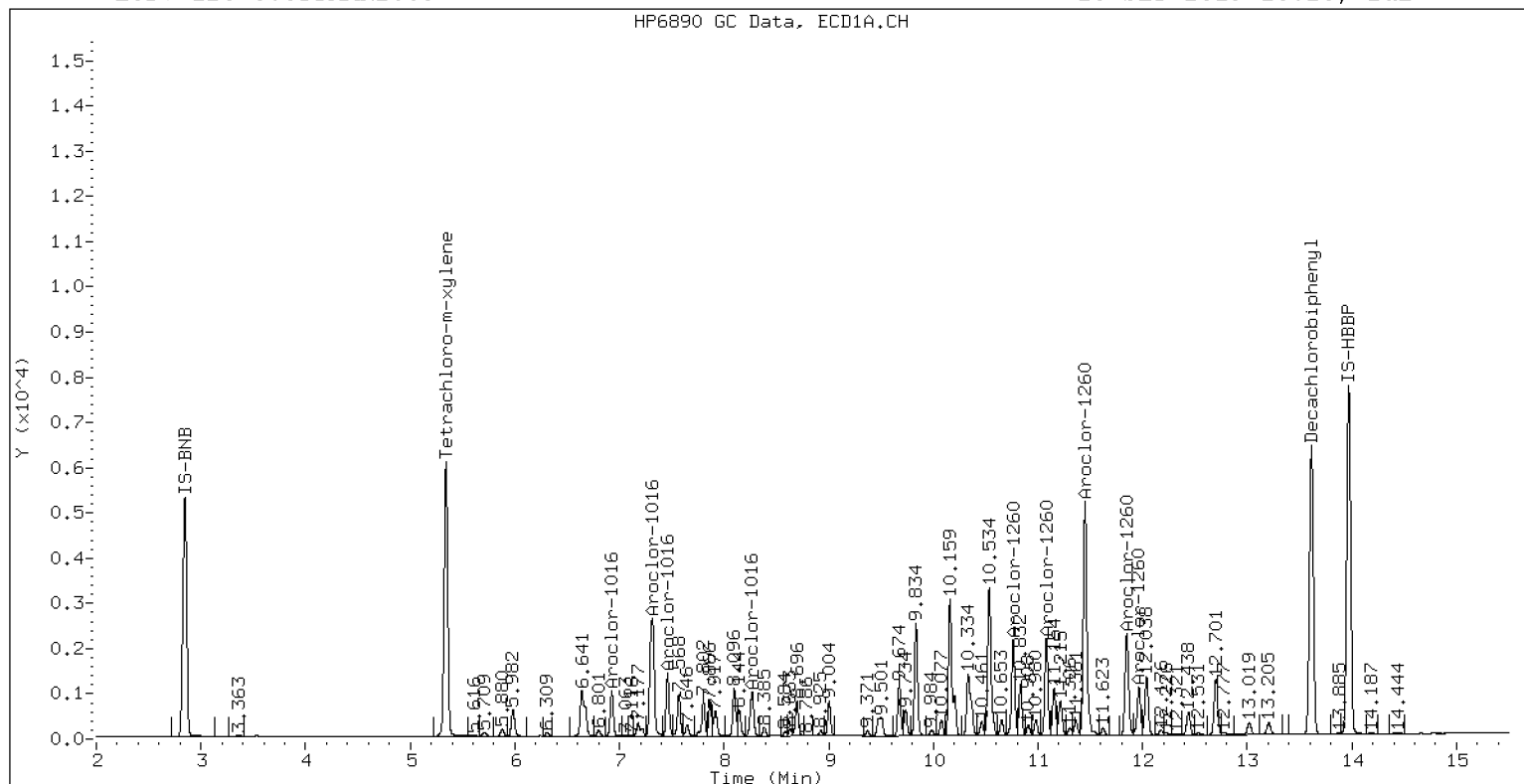
Total PCB Area Col2 (5.441 - 13.514) = 8349101 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 0.5PPMAR1660

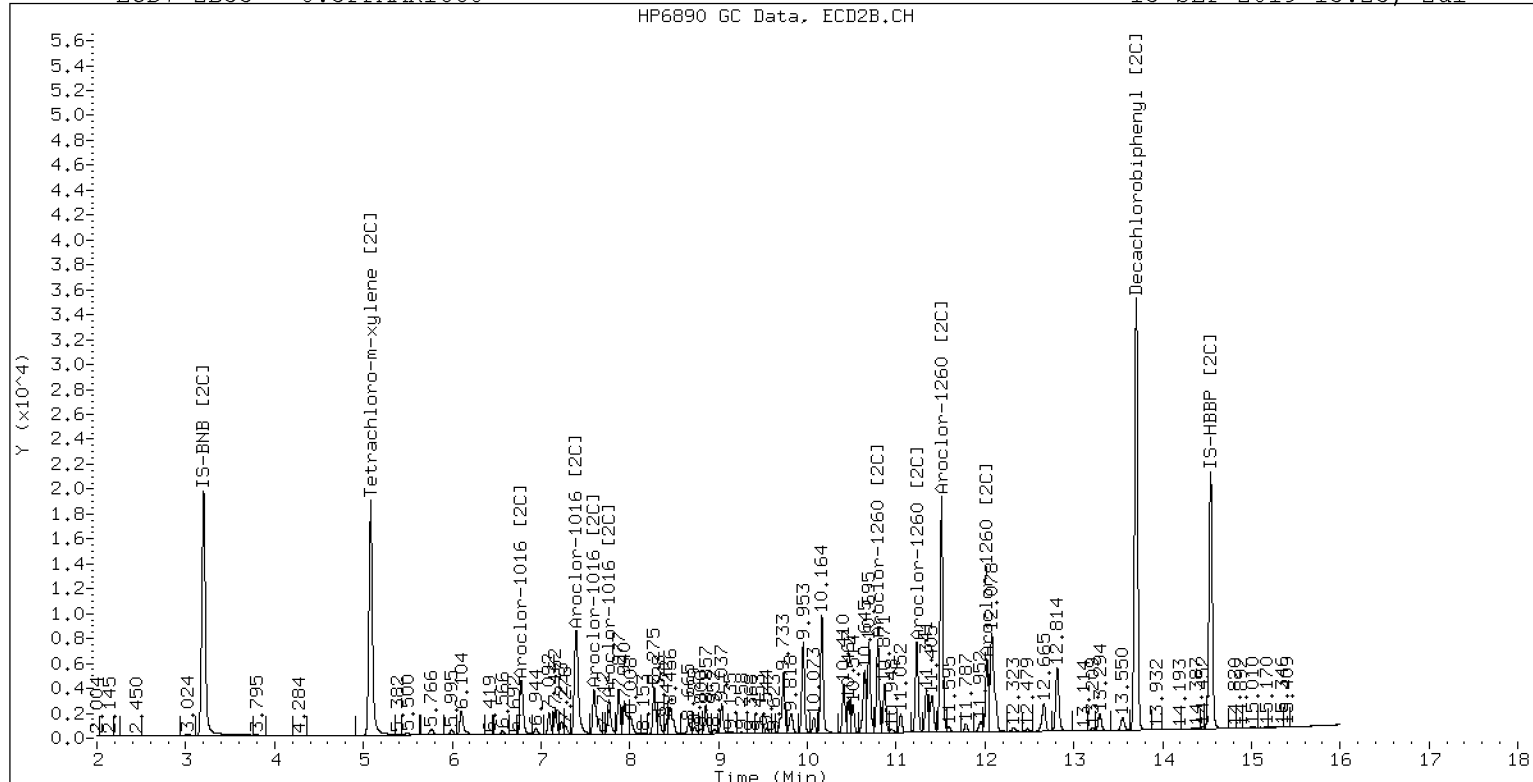
15-SEP-2019 15:23, 2u1



ZB-5 Manual Integration: NO

ECD7-ZB35 0.5PPMAR1660

15-SEP-2019 15:23, 2u1



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091511ECD7.D ARI ID: AR1242
Data file 2: /20190915.b/20190915.b/19091511ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 15:44
Compound Sublist: AR1242.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.342	0.001 143435	5.081 0.001 525613	42.7	39.3	8.1	Tetrachloro-m-xylene
13.614	0.000 161560	13.701 -0.000 747597	40.0	36.2	10.0	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	106.7	98.4
Decachlorobiphenyl	100.1	90.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	271375	3.2
Hexabromobiphenyl	382688	398948	4.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1124638	3.9
Hexabromobiphenyl	1006687	1075563	6.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 15-SEP-2019
<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1242	1	6.926	0.000	16693	250.0	1	6.778	0.000	106589	250.0	
Aroclor-1242	2	7.314	0.000	60328	250.0	2	7.398	0.000	230178	250.0	
Aroclor-1242	3	8.632	0.000	19888	250.0	3	7.767	0.000	58679	250.0	
Aroclor-1242	4	8.920	0.000	21207	250.0	4	8.801	0.000	72999	250.0	
Total CollAve (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 Coll (5.441 - 13.514) = 412830 Coll Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 1643430 Col2 Total PCB = 0.2 ppm*

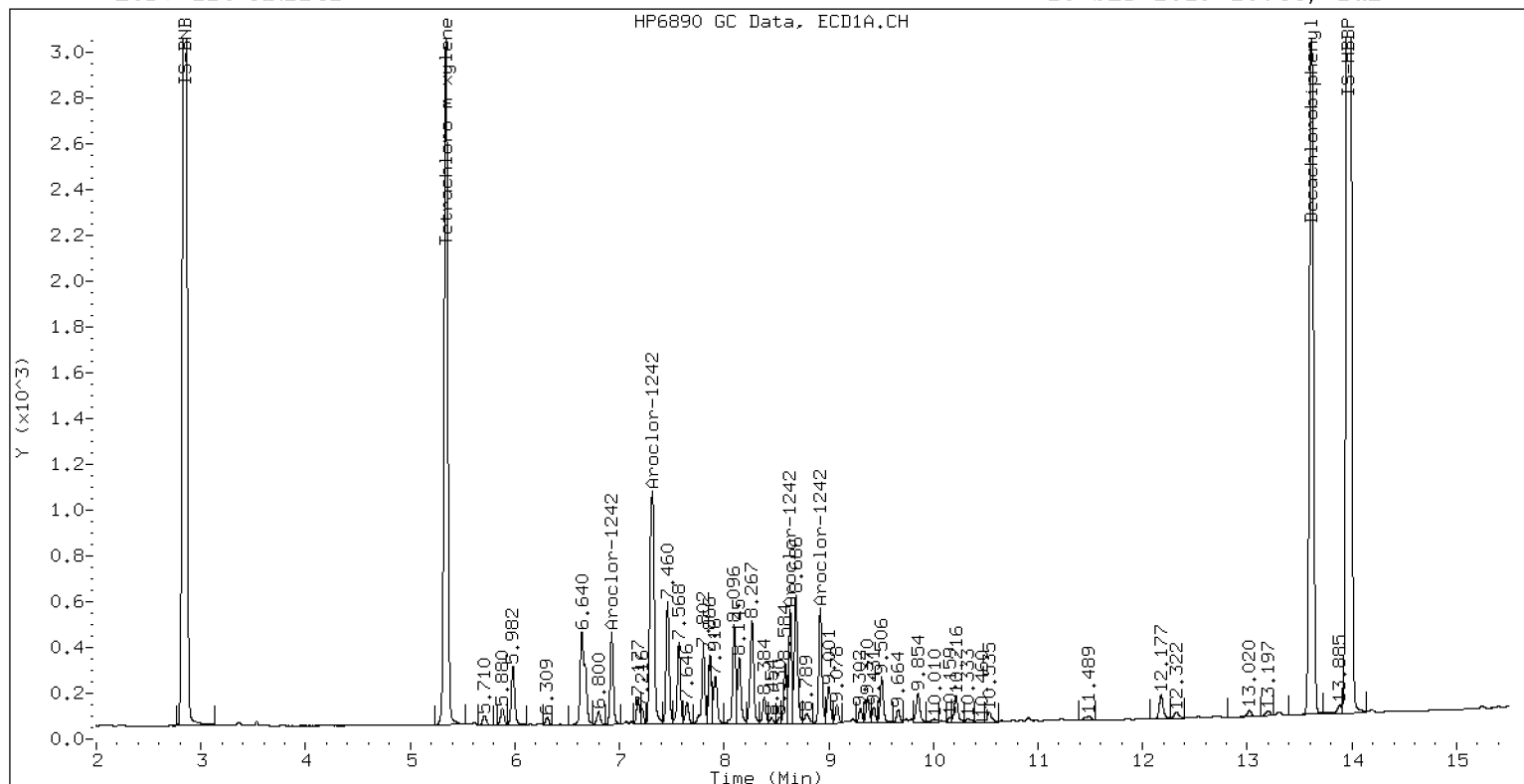
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1242

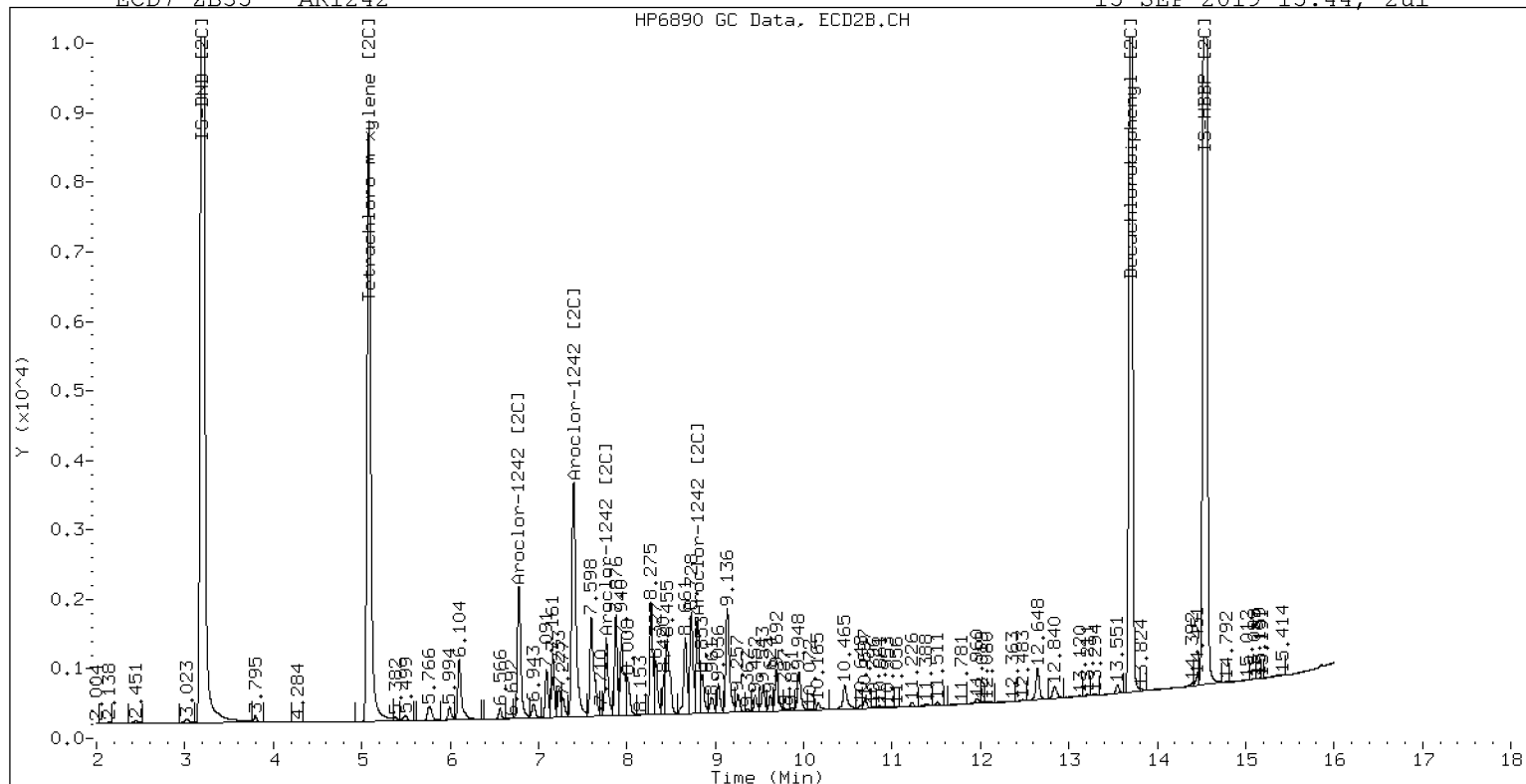
15-SEP-2019 15:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242

15-SEP-2019 15:44, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091512ECD7.D ARI ID: AR1248
Data file 2: /20190915.b/20190915.b/19091512ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 16:05
Compound Sublist: AR1248.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.001	144294	5.080	0.001	529679	42.5	39.4	7.6	Tetrachloro-m-xylene
13.613	-0.000	160734	13.701	-0.001	753806	39.2	36.2	7.7	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	106.2	98.4
Decachlorobiphenyl	97.9	90.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	274306	4.3
Hexabromobiphenyl	382688	405673	6.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1132839	4.7
Hexabromobiphenyl	1006687	1084043	7.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1248	1	8.097	0.000	30821	250.0	1	7.396	0.000	153983	250.0
Aroclor-1248	2	8.632	0.000	38360	250.0	2	8.275	0.000	116115	250.0
Aroclor-1248	3	8.920	0.000	35701	250.0	3	8.801	0.000	116977	250.0
Aroclor-1248	4	9.506	0.000	22921	250.0	4	9.135	0.000	151331	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 (5.441 - 13.514) = 533309 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2031816 Col2 Total PCB = 0.2 ppm*

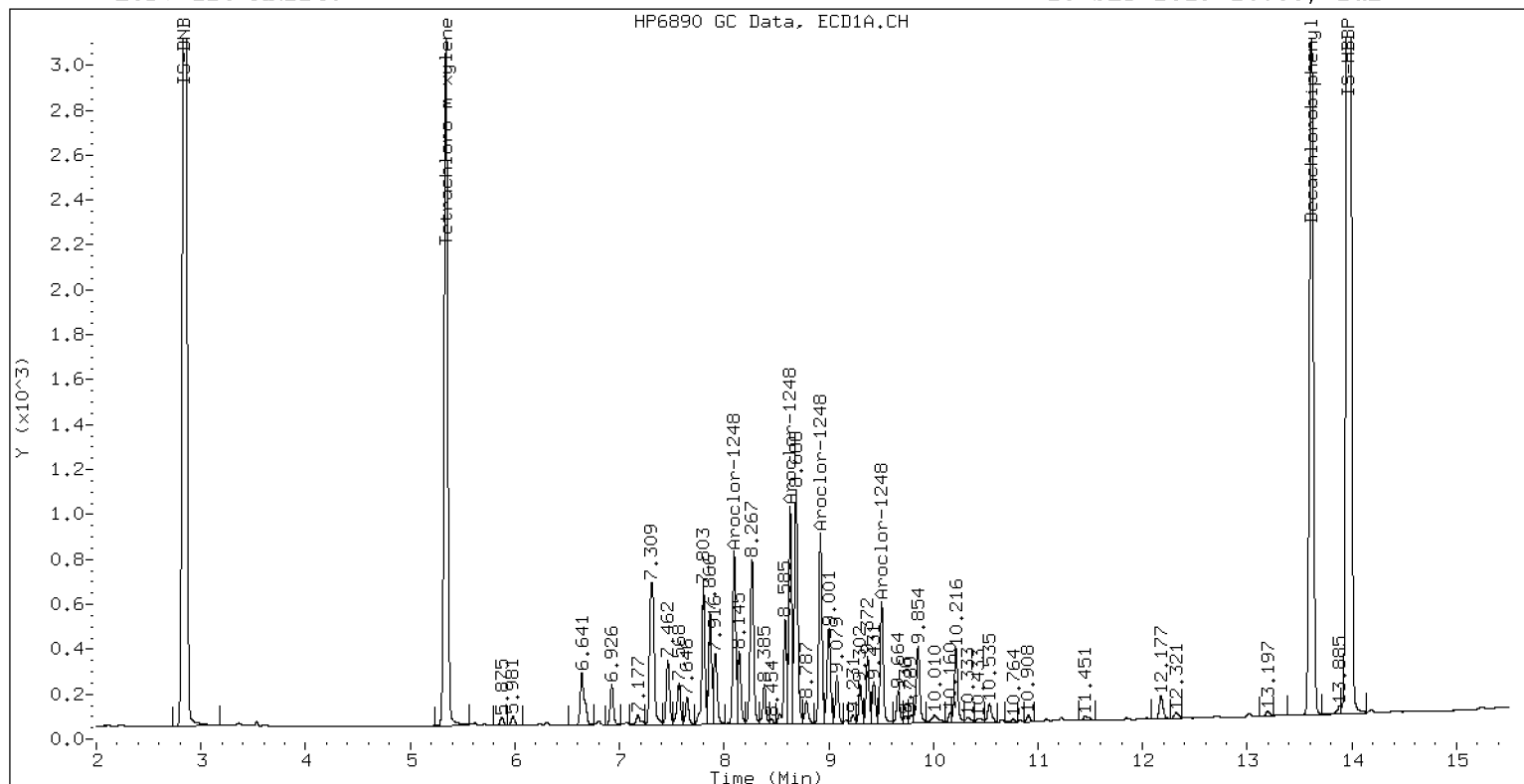
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1248

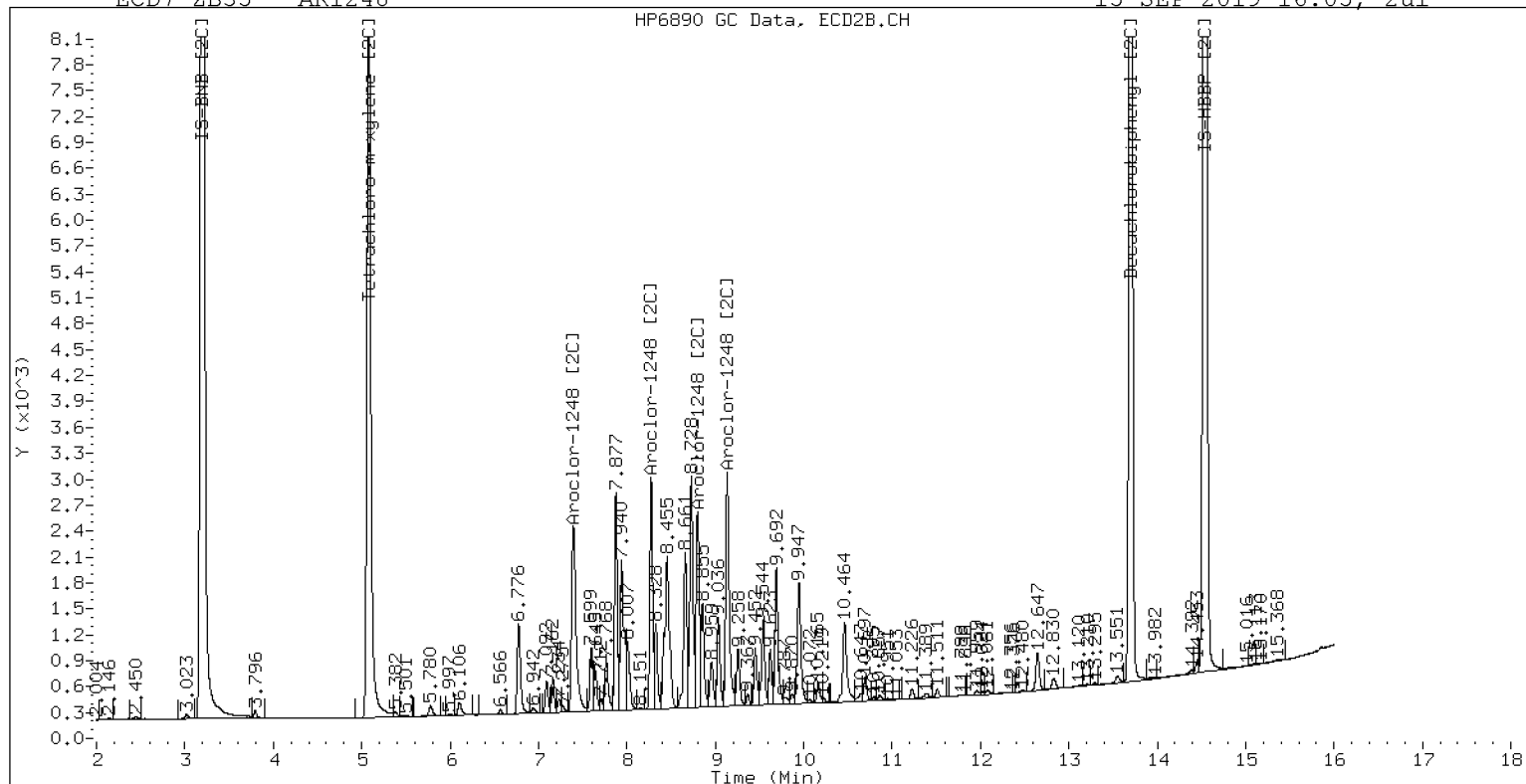
15-SEP-2019 16:05, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248

15-SEP-2019 16:05, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091513ECD7.D ARI ID: AR1254
Data file 2: /20190915.b/20190915.b/19091513ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 16:26
Compound Sublist: AR1254.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.340	-0.000	141536	5.080	-0.000	519684	40.8	37.9	7.2	Tetrachloro-m-xylene
13.613	-0.000	155853	13.701	-0.001	730898	36.8	34.3	7.1	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	101.9	94.8
Decachlorobiphenyl	92.0	85.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	280268	6.6
Hexabromobiphenyl	382688	418567	9.4

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1153676	6.6
Hexabromobiphenyl	1006687	1111379	10.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1254	1	9.002	0.000	59038	250.0	1	9.037	0.000	159819	250.0
Aroclor-1254	2	9.078	0.000	18200	250.0	2	9.127	0.000	81300	250.0
Aroclor-1254	3	9.371	0.000	33962	250.0	3	9.543	0.000	125317	250.0
Aroclor-1254	4	9.505	0.000	72710	250.0	4	9.691	0.000	250672	250.0
Aroclor-1254	5	10.211	0.000	48529	250.0	5	10.464	0.000	154886	250.0
Total CollAve (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 Coll (5.441 - 13.514) = 689571 Coll Total PCB = 0.3 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2524679 Col2 Total PCB = 0.3 ppm*

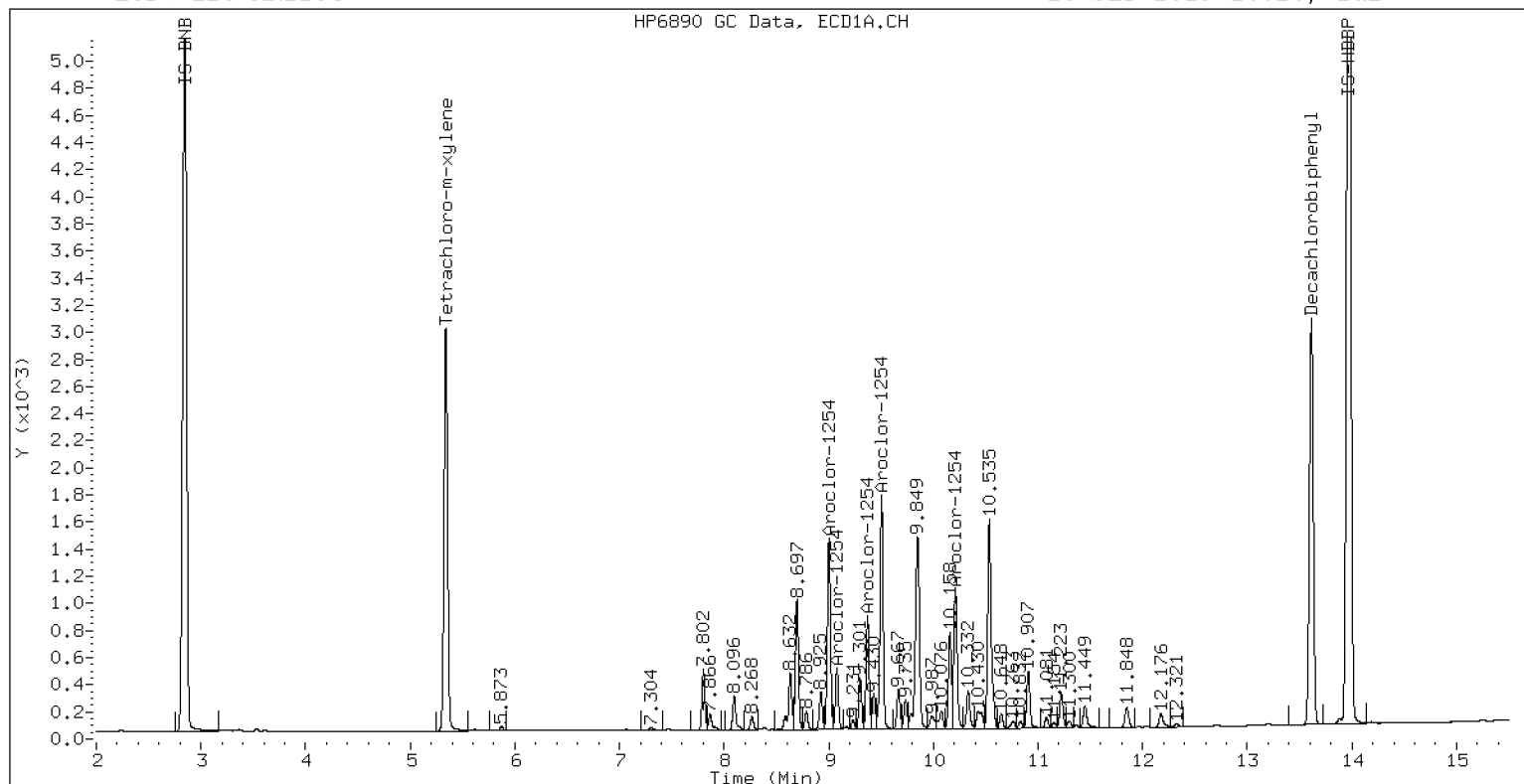
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1254

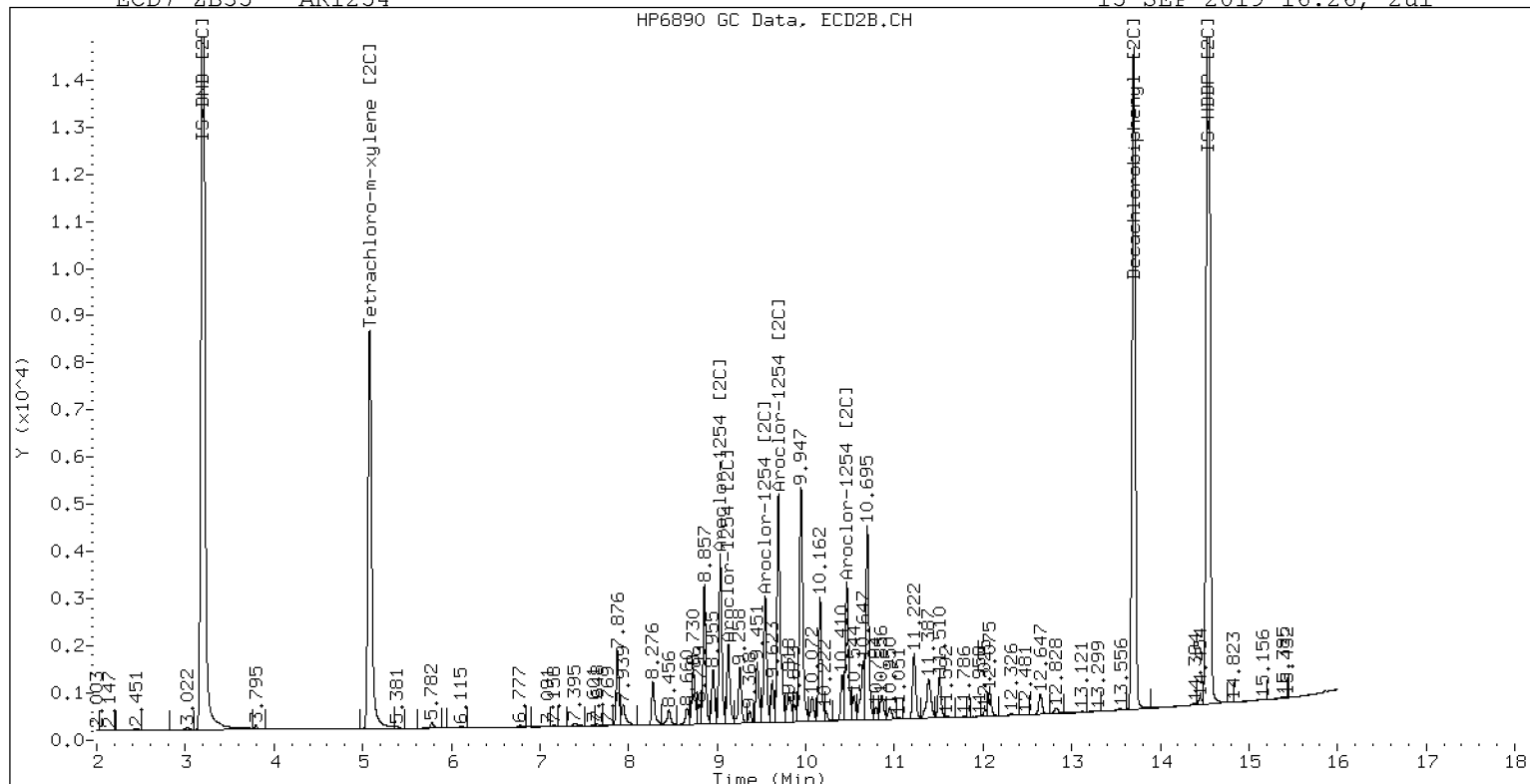
15-SEP-2019 16:26, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254

15-SEP-2019 16:26, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091514ECD7.D ARI ID: AR2162
Data file 2: /20190915.b/20190915.b/19091514ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 16:47
Compound Sublist: AR2162.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	146495	5.081	0.002	527256	42.6	40.5	4.9	Tetrachloro-m-xylene
13.614	-0.000	153639	13.701	-0.001	729741	36.2	33.9	6.7	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	106.4	101.3
Decachlorobiphenyl	90.5	84.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	277818	5.7
Hexabromobiphenyl	382688	419387	9.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1094943	1.2
Hexabromobiphenyl	1006687	1123270	11.6

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1221	1	4.185	0.000	5084	250.0	1	4.283	0.000	19437	250.0	
Aroclor-1221	2	5.711	0.000	7891	250.0	2	5.758	0.000	40584	250.0	
Aroclor-1221	3	5.983	0.000	20017	250.0	3	6.104	0.000	67909	250.0	
Total Col1Ave (3 peaks):				250.0	Total Col2Ave (3 peaks):				250.0	RPD = 0	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						

Aroclor-1262	1	11.080	0.000	54922	250.0	1	10.795	0.000	243640	250.0	
Aroclor-1262	2	11.449	0.000	135976	250.0	2	11.234	0.000	208348	250.0	
Aroclor-1262	3	11.849	0.000	40377	250.0	3	11.510	0.000	477786	250.0	
Aroclor-1262	4	11.965	0.000	51174	250.0	4	12.024	0.000	233061	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 (5.441 - 13.514) = 901492 Col1 Total PCB = 0.4 ppm*

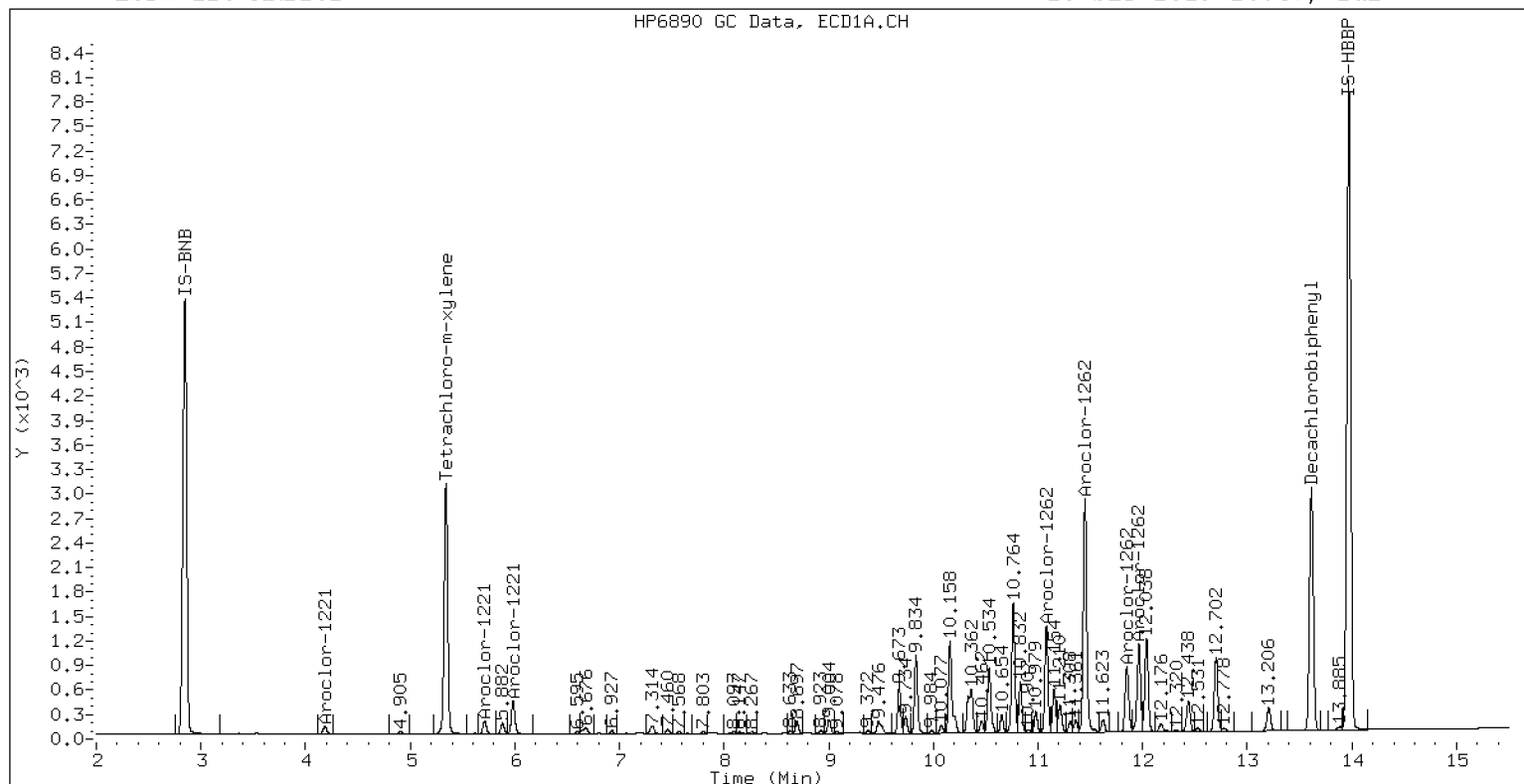
Total PCB Area Col2 (5.441 - 13.514) = 3465627 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR2162

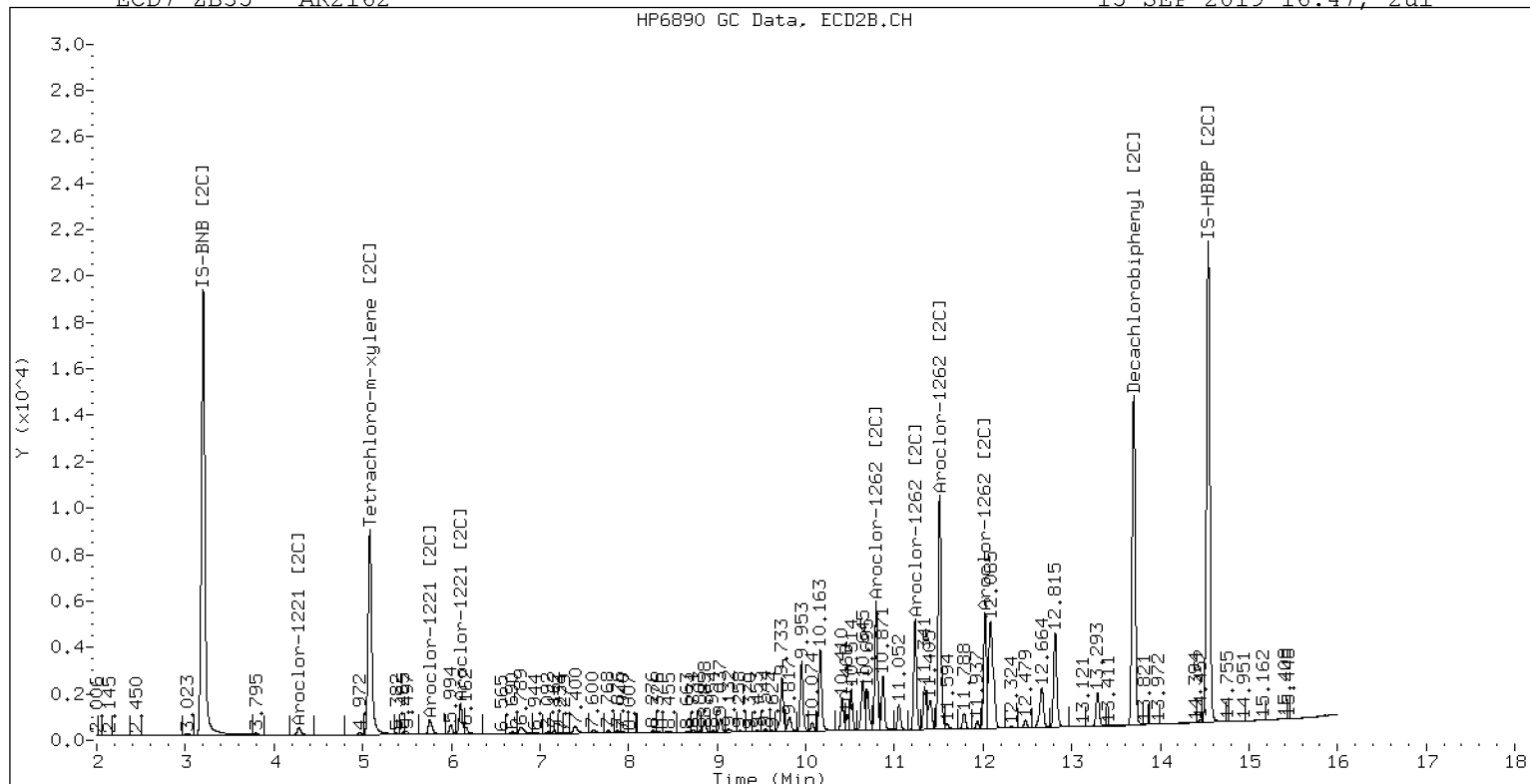
15-SEP-2019 16:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162

15-SEP-2019 16:47, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091515ECD7.D ARI ID: AR3268
Data file 2: /20190915.b/20190915.b/19091515ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 17:08
Compound Sublist: AR3268.sub Report Date: 09/16/2019 11:43
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	145201	5.080	0.000	521977	41.4	38.9	6.2	Tetrachloro-m-xylene
13.614	0.000	243393	13.702	0.000	1150451	57.1	53.0	7.4	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	103.5	97.3
Decachlorobiphenyl	142.6	132.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	283079	7.7
Hexabromobiphenyl	382688	421623	10.2

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1129213	4.4
Hexabromobiphenyl	1006687	1131728	12.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1232	1	4.184	0.000	3048	250.0	1	4.282	0.000	11950	250.0
Aroclor-1232	2	6.925	0.000	8046	250.0	2	6.777	0.000	59481	250.0
Aroclor-1232	3	7.313	0.000	28753	250.0	3	7.397	0.000	118995	250.0
Aroclor-1232	4	7.460	0.000	10781	250.0	4	8.729	0.000	39556	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	11.965	0.000	161993	250.0	1	12.023	0.000	609338	250.0
Aroclor-1268	2	12.036	0.000	146279	250.0	2	12.090	0.000	611522	250.0
Aroclor-1268	3	12.423	0.000	123639	250.0	3	12.481	0.000	554024	250.0
Aroclor-1268	4	13.207	0.000	390898	250.0	4	13.297	0.000	1963983	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 (5.441 - 13.514) = 1250376 Col1 Total PCB = 0.5 ppm*

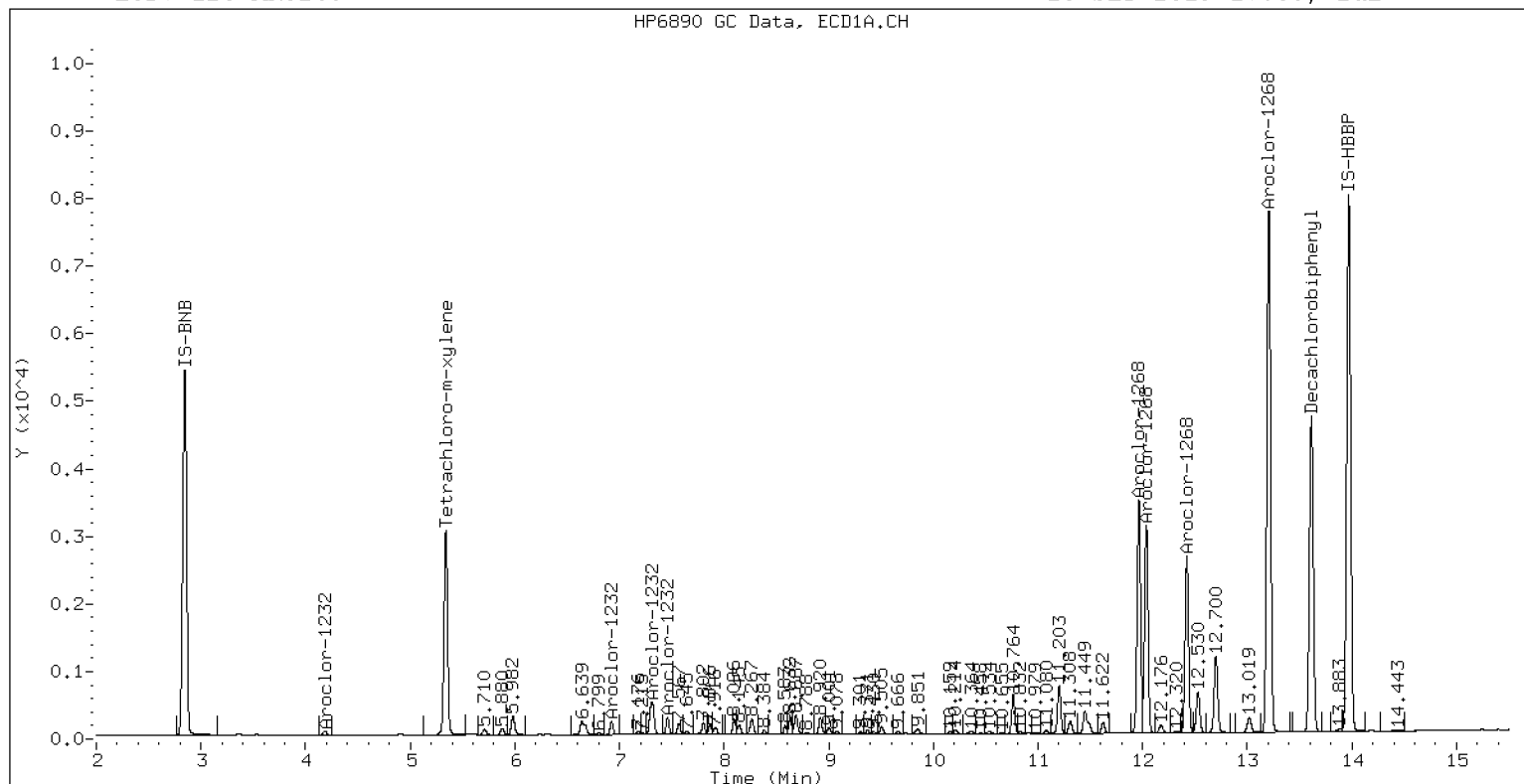
Total PCB Area Col2 (5.441 - 13.514) = 5494071 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR3268

15-SEP-2019 17:08, 2ul



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091516ECD7.D
Data file 2: /20190915.b/20190915.b/19091516ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV1
Client ID:
Injection Date: 15-SEP-2019 17:29
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.340	-0.000	139282	5.079	-0.001	501326	41.8	39.0	6.9	Tetrachloro-m-xylene
13.614	0.000	147529	13.700	-0.002	704171	36.6	34.1	7.0	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	104.5	97.5
Decachlorobiphenyl	91.4	85.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269047	2.3
Hexabromobiphenyl	382688	398753	4.2

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1081674	-0.0
Hexabromobiphenyl	1006687	1076917	7.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.925	-0.001	20670	253.2	1	6.777	-0.001	131932	245.2
Aroclor-1016	2	7.313	-0.000	75492	260.0	2	7.398	-0.000	284758	253.4
Aroclor-1016	3	7.459	-0.001	27940	255.2	3	7.598	0.001	114982	253.9
Aroclor-1016	4	8.267	-0.001	25628	285.0	4	7.766	-0.001	72012	254.6
Total CollAve (4 peaks):				263.4	Total Col2Ave (4 peaks):				251.8	RPD = 5
Corrected Ave (3 peaks):				256.1	Corrected Ave (3 peaks):				250.8	RPD = 2
Aroclor-1221	1	---			0.0	1	4.281	-0.002	714	9.3
Aroclor-1221	2	5.708	-0.003	2518	82.4	2	5.762	0.004	17203	107.3
Aroclor-1221	3	5.981	-0.002	14494	186.9	3	6.103	-0.001	63127	235.2
CollAve: <3 Quant Peaks					Col2Ave: 117.3					
Aroclor-1232	1	---			0.0	1	4.281	-0.001	714	15.6
Aroclor-1232	2	6.925	0.000	20670	675.7	2	6.777	0.000	131932	578.9
Aroclor-1232	3	7.313	0.000	75492	690.6	3	7.398	0.001	284758	624.5
Aroclor-1232	4	7.459	-0.000	27940	681.7	4	8.728	-0.001	16488	108.8
Total CollAve (3 peaks):				682.7	Total Col2Ave (4 peaks):				332.0	RPD = 69*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				234.4	
Aroclor-1242	1	6.925	-0.000	20670	312.2	1	6.777	-0.001	131932	321.7
Aroclor-1242	2	7.313	-0.001	75492	315.5	2	7.398	0.000	284758	321.6
Aroclor-1242	3	8.632	0.000	3823	48.5	3	7.766	-0.001	72012	319.0
Aroclor-1242	4	8.924	0.005	1968	23.4	4	8.799	-0.001	10146	36.1
Total CollAve (4 peaks):				174.9	Total Col2Ave (4 peaks):				249.6	RPD = 35
Corrected Ave (3 peaks):				128.0	Corrected Ave (3 peaks):				225.6	RPD = 55*
Aroclor-1248	1	8.096	-0.001	20862	172.5	1	7.398	0.003	284758	484.2
Aroclor-1248	2	8.632	0.000	3823	25.4	2	8.275	-0.000	86975	196.1
Aroclor-1248	3	8.924	0.004	1968	14.1	3	8.799	-0.001	10146	22.7
Aroclor-1248	4	9.478	-0.028	15140	168.4	4	9.135	-0.000	5011	8.7
Total CollAve (4 peaks):				95.1	Total Col2Ave (4 peaks):				177.9	RPD = 61*
Corrected Ave (3 peaks):				69.3	Corrected Ave (3 peaks):				75.8	RPD = 9
Aroclor-1254	1	9.004	0.002	13997	61.7	1	9.036	-0.000	52182	87.1
Aroclor-1254	2	---			0.0	2	9.135	0.008	5011	16.4
Aroclor-1254	3	9.372	0.001	2241	17.2	3	9.544	0.001	8366	17.8
Aroclor-1254	4	9.478	-0.027	15140	54.2	4	9.732	0.041	121876	129.6
Aroclor-1254	5	10.158	-0.053	79007	424.0	5	10.467	0.003	54907	94.5
Total CollAve (4 peaks):				139.3	Total Col2Ave (5 peaks):				69.1	RPD = 67*
Corrected Ave (3 peaks):				44.4	Corrected Ave (4 peaks):				54.0	RPD = 19
Aroclor-1260	1	10.763	-0.000	47502	257.9	1	10.793	-0.001	173400	255.9
Aroclor-1260	2	11.079	-0.001	47459	268.8	2	11.232	-0.001	175778	256.8
Aroclor-1260	3	11.449	-0.000	124200	277.2	3	11.510	-0.002	444580	259.2
Aroclor-1260	4	11.849	0.000	56510	279.5	4	12.023	0.000	135226	253.4
Aroclor-1260	5	11.965	-0.000	23732	247.9	NS	---			----
Total CollAve (5 peaks):				266.3	Total Col2Ave (4 peaks):				256.3	RPD = 4
Corrected Ave (4 peaks):				263.0	Corrected Ave (3 peaks):				255.4	RPD = 3
Aroclor-1262	1	11.079	-0.001	47459	227.2	1	10.793	-0.001	173400	185.6
Aroclor-1262	2	11.449	-0.000	124200	240.2	2	11.232	-0.002	175778	220.0
Aroclor-1262	3	11.849	-0.001	56510	368.0	3	11.510	-0.001	444580	242.6
Aroclor-1262	4	11.965	-0.000	23732	121.9	4	12.023	-0.001	135226	151.3
Total CollAve (4 peaks):				239.3	Total Col2Ave (4 peaks):				199.9	RPD = 18
Corrected Ave (3 peaks):				196.4	Corrected Ave (3 peaks):				185.6	RPD = 6
Aroclor-1268	1	11.965	-0.000	23732	38.7	1	12.023	-0.001	135226	58.3
Aroclor-1268	2	12.038	0.002	29014	52.4	2	12.078	-0.013	289317	124.3
Aroclor-1268	3	12.438	0.015	12219	26.1	3	12.479	-0.002	4945	2.3
Aroclor-1268	4	13.205	-0.002	5597	3.8	4	13.293	-0.004	26676	3.6
Total CollAve (4 peaks):				30.3	Total Col2Ave (4 peaks):				47.1	RPD = 44*
Corrected Ave (3 peaks):				22.9	Corrected Ave (3peaks):				21.4	RPD = 7

Total PCB Area Col1 (5.441 - 13.514) = 1171435 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 4394557 Col2 Total PCB = 0.5 ppm*

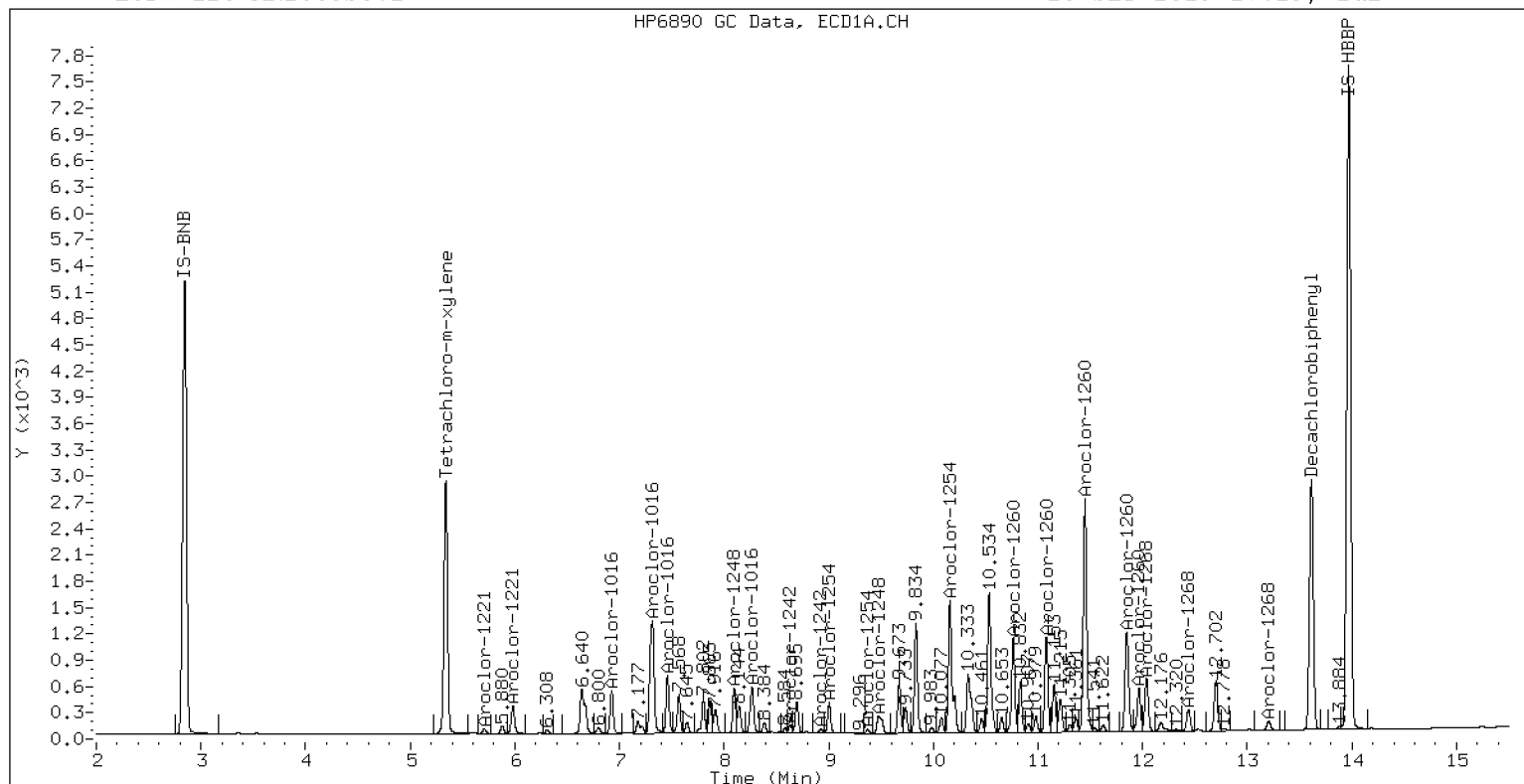
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV1

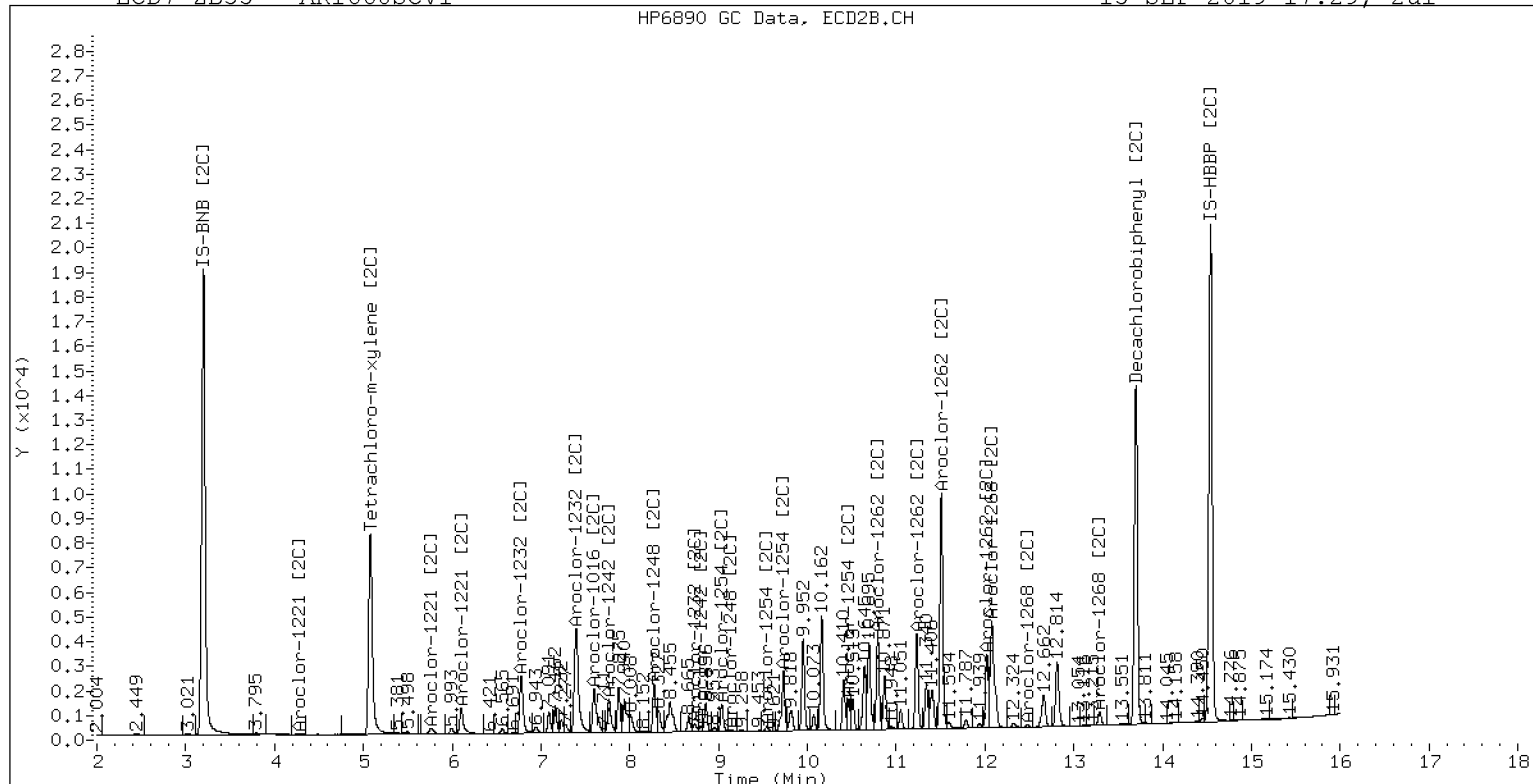
15-SEP-2019 17:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV1

15-SEP-2019 17:29, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091517ECD7.D
Data file 2: /20190915.b/20190915.b/19091517ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV2
Client ID:
Injection Date: 15-SEP-2019 17:50
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response	RT	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000 141558	5.080	0.000 512417	41.3	38.1	8.1	Tetrachloro-m-xylene
13.614	0.000 154315	13.701	-0.000 730054	36.7	33.8	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	103.3	95.3
Decachlorobiphenyl	91.7	84.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	276605	-36.0
Hexabromobiphenyl	517563	415898	-19.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1131917	-24.4
Hexabromobiphenyl	1404015	1125325	-19.8

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.925	-0.000	16898	201.3	1	6.778	-0.001	106681	189.5	
Aroclor-1016	2	7.313	-0.000	60035	201.1	2	7.398	0.000	229278	195.0	
Aroclor-1016	3	7.460	0.000	22476	199.7	3	7.598	0.000	92364	194.9	
Aroclor-1016	4	8.267	-0.001	22168	239.8	4	7.767	-0.000	57828	195.4	
Total CollAve (4 peaks):				210.5	Total Col2Ave (4 peaks):				193.7	RPD = 8	
Corrected Ave (3 peaks):				200.7	Corrected Ave (3 peaks):				193.1	RPD = 4	
Aroclor-1221	1	---			0.0	1	4.287	0.003	465	5.8	
Aroclor-1221	2	5.709	-0.003	1988	63.3	2	5.768	0.010	14831	88.4	
Aroclor-1221	3	5.981	-0.002	11461	143.8	3	6.104	-0.000	51036	181.7	
CollAve: <3 Quant Peaks					Col2Ave:				92.0		
Aroclor-1232	1	---			0.0	1	4.287	0.005	465	9.7	
Aroclor-1232	2	6.925	0.000	16898	537.3	2	6.778	0.001	106681	447.3	
Aroclor-1232	3	7.313	0.000	60035	534.2	3	7.398	0.001	229278	480.5	
Aroclor-1232	4	7.460	0.000	22476	533.4	4	8.729	-0.000	71208	449.0	
Total CollAve (3 peaks):				535.0	Total Col2Ave (4 peaks):				346.6	RPD = 43*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				302.0		
Aroclor-1242	1	6.925	-0.000	16898	248.3	1	6.778	-0.000	106681	248.6	
Aroclor-1242	2	7.313	-0.001	60035	244.1	2	7.398	0.000	229278	247.4	
Aroclor-1242	3	8.632	0.000	19399	239.2	3	7.767	-0.001	57828	244.8	
Aroclor-1242	4	8.920	0.000	20377	235.7	4	8.801	0.000	68184	232.0	
Total CollAve (4 peaks):				241.8	Total Col2Ave (4 peaks):				243.2	RPD = 1	
Corrected Ave (3 peaks):				239.7	Corrected Ave (3 peaks):				241.4	RPD = 1	
Aroclor-1248	1	8.096	-0.001	17908	144.1	1	7.398	0.003	229278	372.5	
Aroclor-1248	2	8.632	0.000	19399	125.4	2	8.275	0.000	73096	157.5	
Aroclor-1248	3	8.920	-0.000	20377	141.5	3	8.801	0.000	68184	145.8	
Aroclor-1248	4	9.506	-0.000	11216	121.3	4	9.136	0.001	86440	142.9	
Total CollAve (4 peaks):				133.1	Total Col2Ave (4 peaks):				204.7	RPD = 42*	
Corrected Ave (3 peaks):				129.4	Corrected Ave (3 peaks):				148.8	RPD = 14	
Aroclor-1254	1	9.001	-0.001	9693	41.6	1	9.036	-0.001	25152	40.1	
Aroclor-1254	2	9.078	-0.000	4295	59.8	2	9.136	0.009	86440	270.9	
Aroclor-1254	3	9.371	0.000	5872	43.8	3	9.543	-0.000	23570	47.9	
Aroclor-1254	4	9.506	0.001	11216	39.1	4	9.691	-0.000	37432	38.0	
Aroclor-1254	5	10.215	0.005	7428	38.8	5	10.465	0.002	27749	45.7	
Total CollAve (5 peaks):				44.6	Total Col2Ave (5 peaks):				88.5	RPD = 66*	
Corrected Ave (4 peaks):				40.8	Corrected Ave (4 peaks):				42.9	RPD = 5	
Aroclor-1260	1	---			0.0	1	10.795	0.000	925	1.3	
Aroclor-1260	2	---			0.0	2	11.225	-0.008	5685	7.9	
Aroclor-1260	3	---			0.0	3	11.512	-0.000	3227	1.8	
Aroclor-1260	4	---			0.0	4	12.077	0.054	2320	4.2	
Aroclor-1260	5	---			0.0	NS	---			----	
CollAve: <3 Quant Peaks					Col2Ave:				3.8		
Aroclor-1262	1	---			0.0	1	10.795	0.000	925	0.9	
Aroclor-1262	2	---			0.0	2	11.225	-0.010	5685	6.8	
Aroclor-1262	3	---			0.0	3	11.512	0.001	3227	1.7	
Aroclor-1262	4	---			0.0	4	12.077	0.053	2320	2.5	
CollAve: <3 Quant Peaks					Col2Ave:				3.0		
Aroclor-1268	1	---			0.0	1	12.077	0.054	2320	1.0	
Aroclor-1268	2	---			0.0	2	---			0.0	
Aroclor-1268	3	---			0.0	3	12.484	0.003	1021	0.5	
Aroclor-1268	4	---			0.0	4	13.300	0.003	911	0.1	
CollAve: <3 Quant Peaks					Col2Ave:				0.5		

Total PCB Area Col1 (5.441 - 13.514) = 432451 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 1684066 Col2 Total PCB = 0.2 ppm*

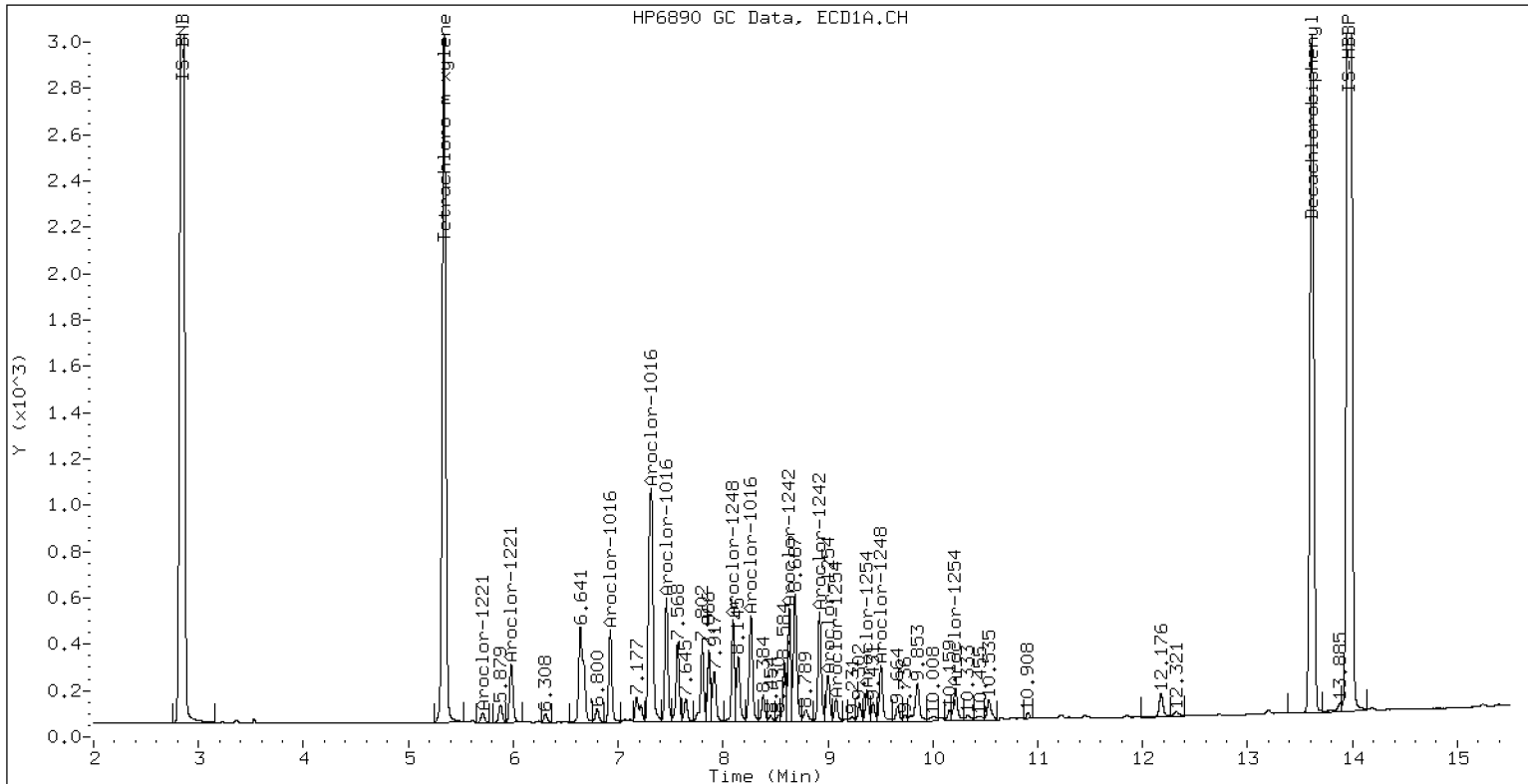
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV2

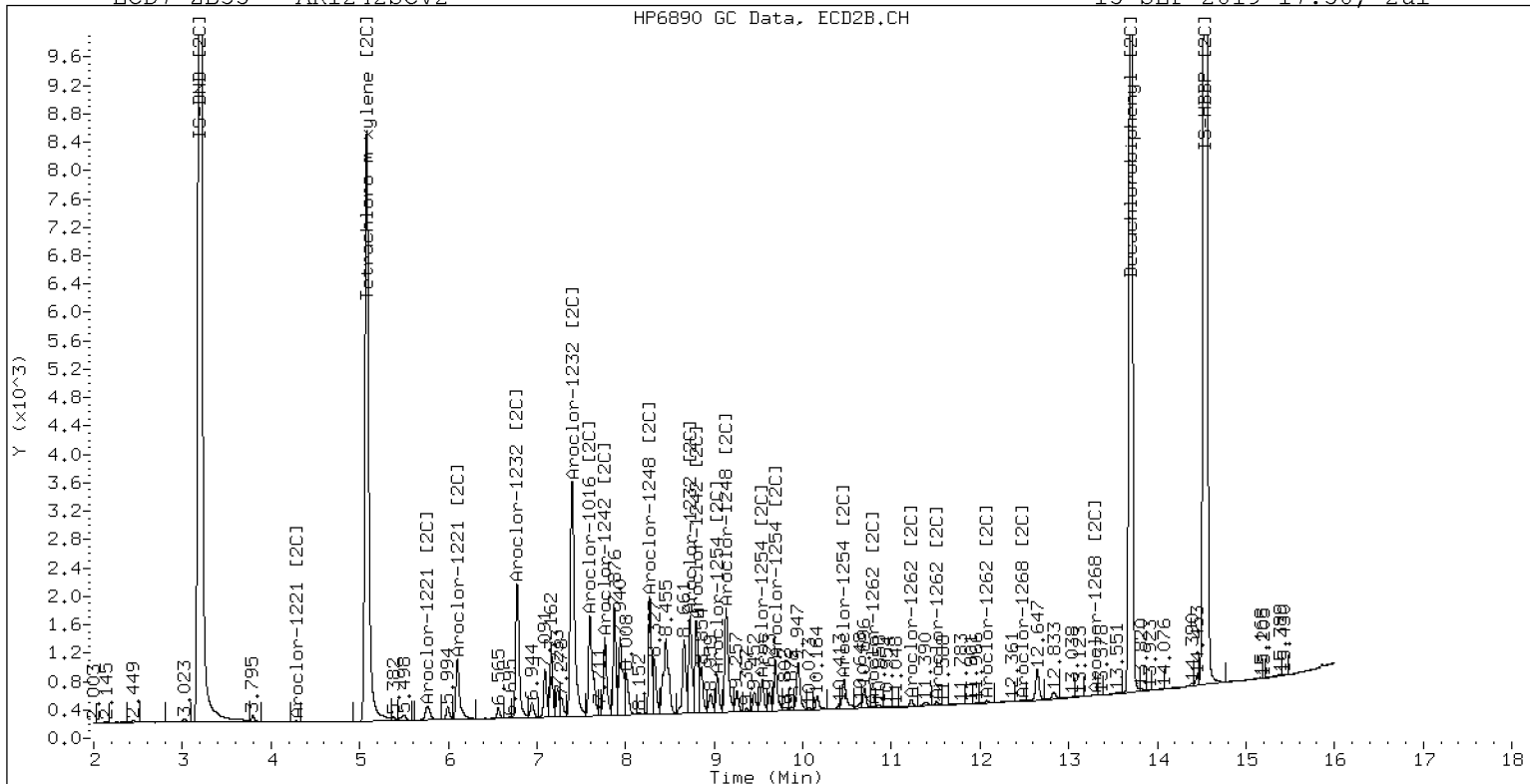
15-SEP-2019 17:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV2

15-SEP-2019 17:50, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091518ECD7.D
Data file 2: /20190915.b/20190915.b/19091518ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV3
Client ID:
Injection Date: 15-SEP-2019 18:11
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000	144337	5.081	0.001	525429	41.1	38.2	7.2	Tetrachloro-m-xylene
13.613	-0.000	155898	13.702	-0.000	747902	36.1	33.8	6.4	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	102.6	95.5
Decachlorobiphenyl	90.2	84.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283776	-34.4
Hexabromobiphenyl	517563	427022	-17.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1157339	-22.7
Hexabromobiphenyl	1404015	1151947	-18.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.926	-0.000	8301	96.4	1	6.777	-0.002	59820	103.9	
Aroclor-1016	2	7.309	-0.004	40510	132.3	2	7.397	-0.001	161655	134.4	
Aroclor-1016	3	7.462	0.002	13575	117.5	3	7.599	0.001	36509	75.3	
Aroclor-1016	4	8.267	-0.000	35033	369.4	4	7.768	0.001	33959	112.2	
Total CollAve (4 peaks):				178.9	Total Col2Ave (4 peaks):				106.5	RPD = 51*	
Corrected Ave (3 peaks):				115.4	Corrected Ave (3 peaks):				97.1	RPD = 17	
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	5.617	-0.095	1004	31.1	2	5.780	0.022	7736	45.1	
Aroclor-1221	3	5.981	-0.002	2454	30.0	3	6.105	0.001	12052	42.0	
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	6.926	0.001	8301	257.3	2	6.777	-0.000	59820	245.3	
Aroclor-1232	3	7.309	-0.003	40510	351.4	3	7.397	-0.000	161655	331.4	
Aroclor-1232	4	7.462	0.002	13575	314.0	4	8.729	-0.001	134716	830.7	
Total CollAve (3 peaks):				307.6	Total Col2Ave (3 peaks):				469.1	RPD = 42*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1242	1	6.926	-0.000	8301	118.9	1	6.777	-0.001	59820	136.3	
Aroclor-1242	2	7.309	-0.005	40510	160.5	2	7.397	-0.001	161655	170.6	
Aroclor-1242	3	8.632	0.001	38513	463.0	3	7.768	0.000	33959	140.6	
Aroclor-1242	4	8.920	0.001	35533	400.6	4	8.801	0.000	118313	393.7	
Total CollAve (4 peaks):				285.7	Total Col2Ave (4 peaks):				210.3	RPD = 30	
Corrected Ave (3 peaks):				226.7	Corrected Ave (3 peaks):				149.2	RPD = 41*	
Aroclor-1248	1	8.096	-0.000	31009	243.1	1	7.397	0.002	161655	256.9	
Aroclor-1248	2	8.632	0.000	38513	242.6	2	8.275	0.000	119193	251.2	
Aroclor-1248	3	8.920	-0.000	35533	240.5	3	8.801	0.000	118313	247.5	
Aroclor-1248	4	9.506	-0.000	23308	245.7	4	9.135	-0.000	153684	248.5	
Total CollAve (4 peaks):				243.0	Total Col2Ave (4 peaks):				251.0	RPD = 3	
Corrected Ave (3 peaks):				242.1	Corrected Ave (3 peaks):				249.1	RPD = 3	
Aroclor-1254	1	9.001	-0.002	20497	85.7	1	9.037	-0.000	49764	77.6	
Aroclor-1254	2	9.078	0.000	9115	123.7	2	9.135	0.008	153684	471.1	
Aroclor-1254	3	9.371	-0.000	12774	92.9	3	9.543	-0.000	49122	97.7	
Aroclor-1254	4	9.506	0.001	23308	79.1	4	9.691	-0.000	81623	81.1	
Aroclor-1254	5	10.216	0.005	15329	78.0	5	10.463	-0.000	61571	99.1	
Total CollAve (5 peaks):				91.9	Total Col2Ave (5 peaks):				165.3	RPD = 57*	
Corrected Ave (4 peaks):				83.9	Corrected Ave (4 peaks):				88.9	RPD = 6	
Aroclor-1260	1	10.764	-0.000	1211	6.1	1	10.795	0.001	2983	4.1	
Aroclor-1260	2	---			0.0	2	11.226	-0.007	6906	9.4	
Aroclor-1260	3	11.449	-0.000	1232	2.6	3	11.510	-0.002	6245	3.4	
Aroclor-1260	4	---			0.0	4	12.024	0.001	3247	5.7	
Aroclor-1260	5	---			0.0	NS	---			----	
CollAve: <3 Quant Peaks						Col2Ave: 5.7					
Aroclor-1262	1	---			0.0	1	10.795	0.001	2983	3.0	
Aroclor-1262	2	---			0.0	2	11.226	-0.008	6906	8.1	
Aroclor-1262	3	---			0.0	3	11.510	-0.000	6245	3.2	
Aroclor-1262	4	---			0.0	4	12.024	0.000	3247	3.4	
CollAve: <3 Quant Peaks						Col2Ave: 4.4					
Aroclor-1268	1	---			0.0	1	12.024	0.001	3247	1.3	
Aroclor-1268	2	---			0.0	2	12.082	-0.008	4066	1.6	
Aroclor-1268	3	---			0.0	3	12.487	0.006	1630	0.7	
Aroclor-1268	4	---			0.0	4	13.295	-0.003	2205	0.3	
CollAve: <3 Quant Peaks						Col2Ave: 1.0					

Total PCB Area Col1 (5.441 - 13.514) = 543228 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2103769 Col2 Total PCB = 0.2 ppm*

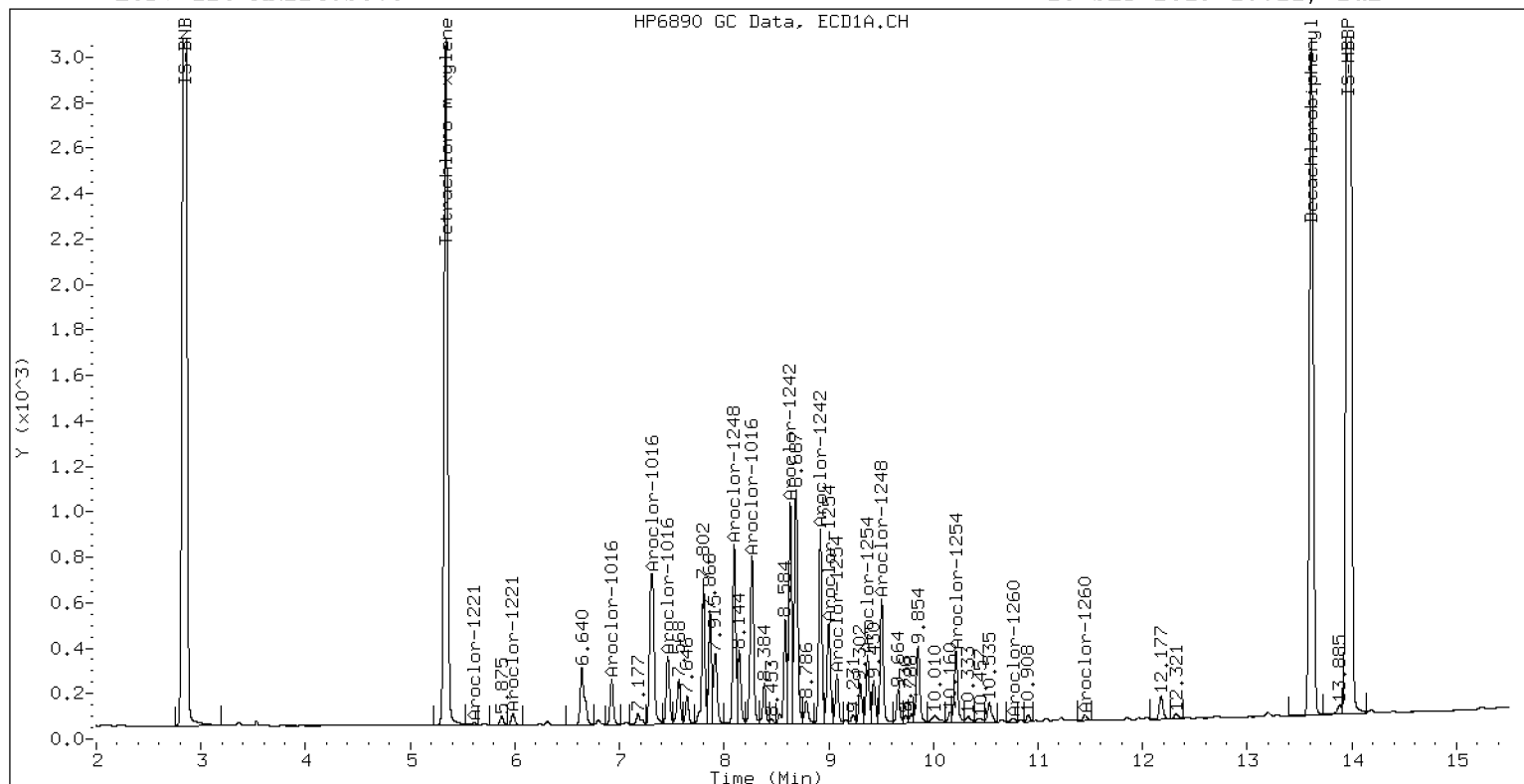
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV3

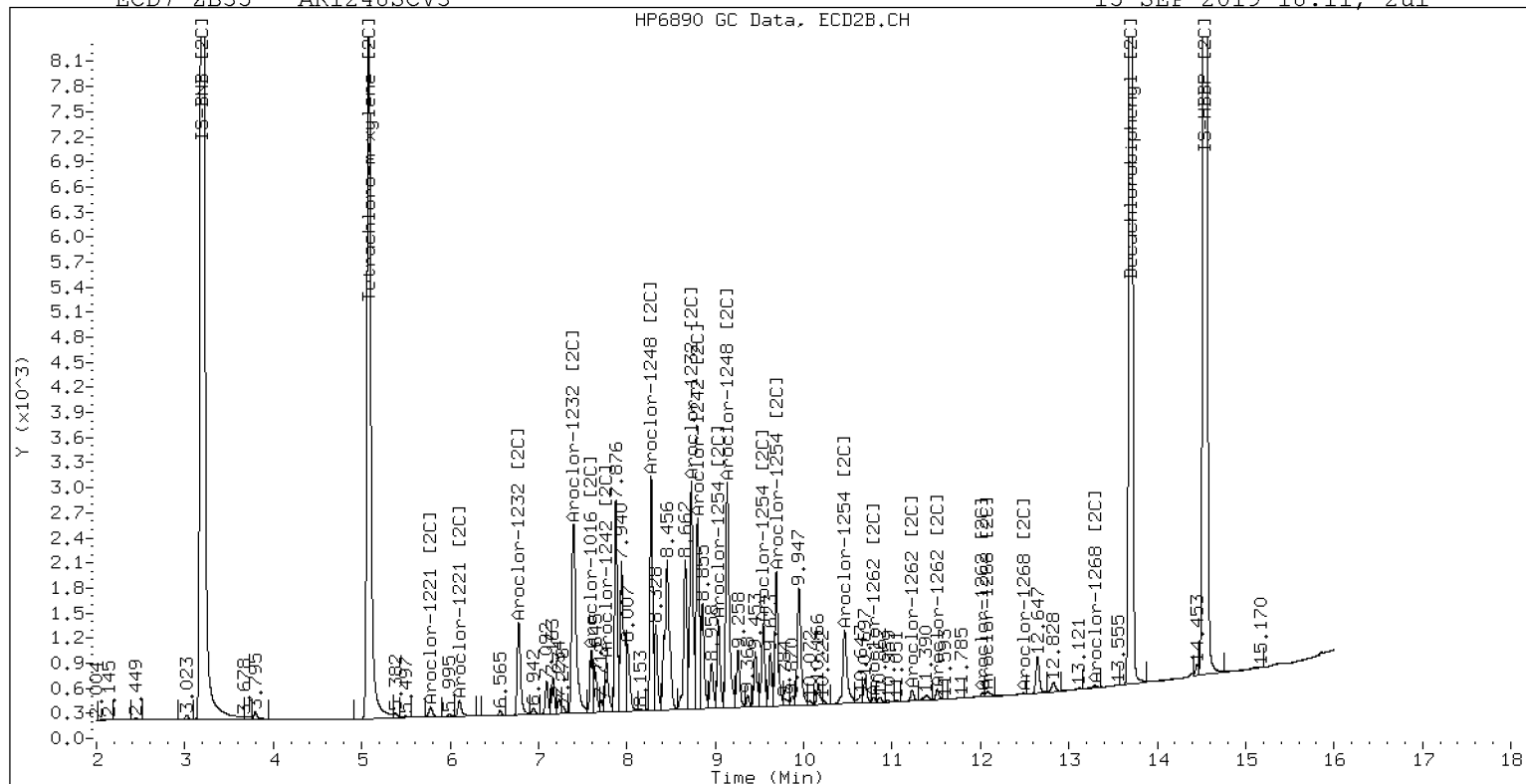
15-SEP-2019 18:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV3

15-SEP-2019 18:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091519ECD7.D
Data file 2: /20190915.b/20190915.b/19091519ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV4
Client ID:
Injection Date: 15-SEP-2019 18:32
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.001	142065	5.081	0.001	516612	40.3	37.6	7.0	Tetrachloro-m-xylene
13.614	-0.000	156661	13.701	-0.001	753354	36.4	33.9	7.1	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	100.8	94.0
Decachlorobiphenyl	90.9	84.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	284555	-34.2
Hexabromobiphenyl	517563	425678	-17.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1156822	-22.7
Hexabromobiphenyl	1404015	1159232	-17.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	---			0.0	1	6.778	-0.000	1021	1.8	
Aroclor-1016	2	7.304	-0.009	1001	3.3	2	7.394	-0.004	4515	3.8	
Aroclor-1016	3	---			0.0	3	7.602	0.004	728	1.5	
Aroclor-1016	4	8.267	-0.000	4386	46.1	4	7.769	0.002	531	1.8	
CollAve: <3 Quant Peaks						Col2Ave: 2.2					
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	5.782	0.024	6140	35.8	
Aroclor-1221	3	---			0.0	3	6.116	0.012	1797	6.3	
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	6.778	0.001	1021	4.2	
Aroclor-1232	3	---			0.0	3	7.394	-0.003	4515	9.3	
Aroclor-1232	4	---			0.0	4	8.729	0.000	65407	403.5	
CollAve: <3 Quant Peaks						Col2Ave: 139.0					
Aroclor-1242	1	---			0.0	1	6.778	-0.000	1021	2.3	
Aroclor-1242	2	7.304	-0.010	1001	4.0	2	7.394	-0.004	4515	4.8	
Aroclor-1242	3	8.632	0.001	20852	250.0	3	7.769	0.002	531	2.2	
Aroclor-1242	4	8.925	0.005	11451	128.7	4	8.799	-0.002	20564	68.5	
Total CollAve (3 peaks):				127.6	Total Col2Ave (4 peaks):				19.4	RPD = 147*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				3.1		
Aroclor-1248	1	8.096	-0.000	11047	86.4	1	7.394	-0.001	4515	7.2	
Aroclor-1248	2	8.632	0.001	20852	131.0	2	8.275	0.000	45204	95.3	
Aroclor-1248	3	8.925	0.005	11451	77.3	3	8.799	-0.002	20564	43.0	
Aroclor-1248	4	9.505	-0.001	73680	774.7	4	9.126	-0.009	84230	136.3	
Total CollAve (4 peaks):				267.3	Total Col2Ave (4 peaks):				70.4	RPD = 117*	
Corrected Ave (3 peaks):				98.2	Corrected Ave (3 peaks):				48.5	RPD = 68*	
Aroclor-1254	1	9.002	-0.000	59931	250.0	1	9.036	-0.001	163998	255.8	
Aroclor-1254	2	9.078	0.000	18717	253.2	2	9.126	-0.001	84230	258.3	
Aroclor-1254	3	9.371	-0.000	35086	254.4	3	9.543	-0.000	130701	260.0	
Aroclor-1254	4	9.505	0.000	73680	249.5	4	9.691	-0.001	256589	255.2	
Aroclor-1254	5	10.211	0.001	49421	250.8	5	10.465	0.001	161017	259.2	
Total CollAve (5 peaks):				251.6	Total Col2Ave (5 peaks):				257.7	RPD = 2	
Corrected Ave (4 peaks):				250.9	Corrected Ave (4 peaks):				257.1	RPD = 2	
Aroclor-1260	1	10.762	-0.002	2944	15.0	1	10.793	-0.001	12381	17.0	
Aroclor-1260	2	11.081	0.001	3390	18.0	2	11.222	-0.011	72596	98.5	
Aroclor-1260	3	11.449	-0.000	7822	16.4	3	11.509	-0.003	45240	24.5	
Aroclor-1260	4	11.848	-0.000	7534	34.9	4	12.024	0.001	5827	10.1	
Aroclor-1260	5	---			0.0	NS	---			----	
Total CollAve (4 peaks):				21.1	Total Col2Ave (4 peaks):				37.5	RPD = 56*	
Corrected Ave (3 peaks):				16.4	Corrected Ave (3 peaks):				17.2	RPD = 5	
Aroclor-1262	1	11.081	0.001	3390	15.2	1	10.793	-0.001	12381	12.3	
Aroclor-1262	2	11.449	-0.000	7822	14.2	2	11.222	-0.012	72596	84.4	
Aroclor-1262	3	11.848	-0.001	7534	46.0	3	11.509	-0.001	45240	22.9	
Aroclor-1262	4	---			0.0	4	12.024	0.000	5827	6.1	
Total CollAve (3 peaks):				25.1	Total Col2Ave (4 peaks):				31.4	RPD = 22	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				13.8		
Aroclor-1268	1	---			0.0	1	12.024	0.001	5827	2.3	
Aroclor-1268	2	---			0.0	2	12.074	-0.016	29049	11.6	
Aroclor-1268	3	---			0.0	3	12.483	0.003	858	0.4	
Aroclor-1268	4	---			0.0	4	13.296	-0.002	1169	0.1	
CollAve: <3 Quant Peaks						Col2Ave: 3.6					

Total PCB Area Col1 (5.441 - 13.514) = 702105 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2618424 Col2 Total PCB = 0.3 ppm*

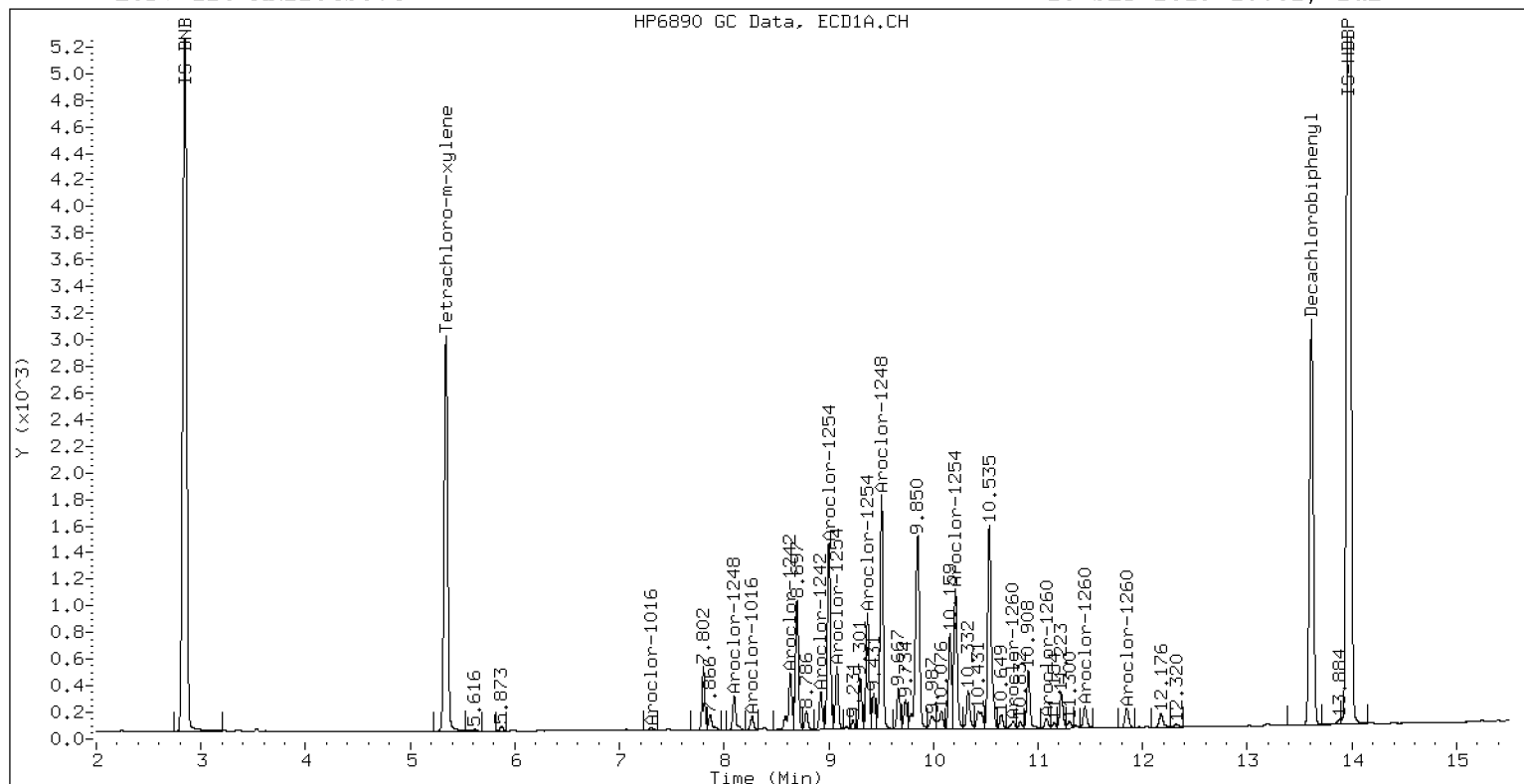
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV4

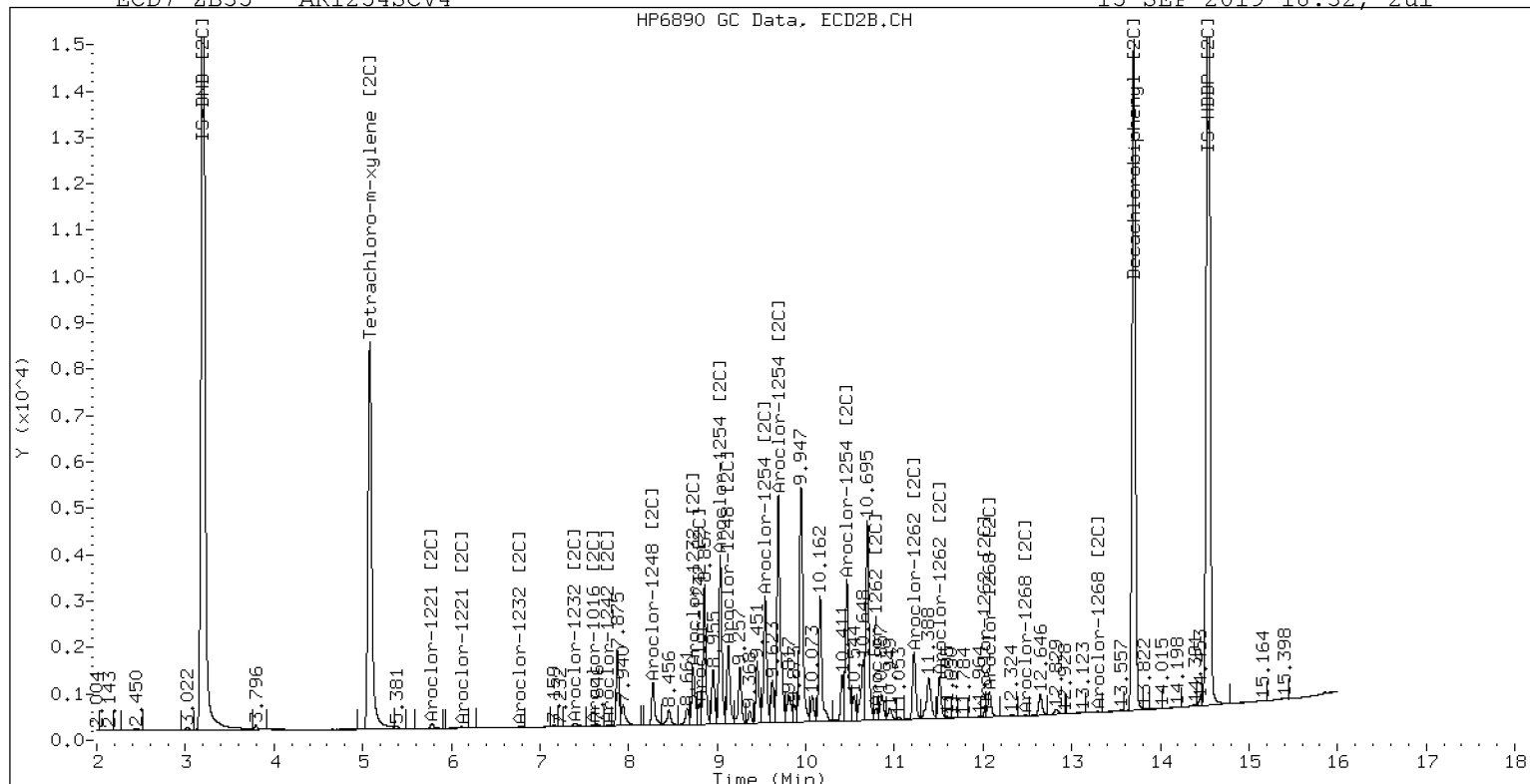
15-SEP-2019 18:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV4

15-SEP-2019 18:32, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091520ECD7.D
Data file 2: /20190915.b/20190915.b/19091520ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV5
Client ID:
Injection Date: 15-SEP-2019 18:53
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.001	146719	5.081	0.001	519721	41.9	39.8	5.2	Tetrachloro-m-xylene
13.614	-0.000	152896	13.700	-0.001	742387	35.9	33.8	6.0	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	104.8	99.5
Decachlorobiphenyl	89.7	84.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	282463	-34.7
Hexabromobiphenyl	517563	421281	-18.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1099699	-26.6
Hexabromobiphenyl	1404015	1145810	-18.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.926	0.000	1872	21.8	1	6.789	0.010	25015	45.7	
Aroclor-1016	2	7.315	0.002	5616	18.4	2	7.400	0.002	25838	22.6	
Aroclor-1016	3	7.460	-0.000	2502	21.8	3	7.600	0.003	12141	26.4	
Aroclor-1016	4	8.268	0.000	1039	11.0	4	7.768	0.002	6755	23.5	
Total CollAve (4 peaks):				18.3	Total Col2Ave (4 peaks):				29.5	RPD = 47*	
Corrected Ave (3 peaks):				17.1	Corrected Ave (3 peaks):				24.2	RPD = 34	
Aroclor-1221	1	4.185	0.001	5406	261.5	1	4.283	-0.000	20980	268.7	
Aroclor-1221	2	5.711	-0.000	8273	257.8	2	5.758	-0.000	43022	263.9	
Aroclor-1221	3	5.982	-0.001	21050	258.6	3	6.104	-0.001	72399	265.4	
Total CollAve (3 peaks):				259.3	Total Col2Ave (3 peaks):				266.0	RPD = 3	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.185	0.001	5406	444.4	1	4.283	0.001	20980	450.7	
Aroclor-1232	2	6.926	0.001	1872	58.3	2	6.789	0.012	25015	108.0	
Aroclor-1232	3	7.315	0.002	5616	48.9	3	7.400	0.003	25838	55.7	
Aroclor-1232	4	7.460	0.000	2502	58.1	4	8.730	0.001	6692	43.4	
Total CollAve (4 peaks):				152.4	Total Col2Ave (4 peaks):				164.5	RPD = 8	
Corrected Ave (3 peaks):				55.1	Corrected Ave (3 peaks):				69.0	RPD = 22	
Aroclor-1242	1	6.926	0.000	1872	26.9	1	6.789	0.011	25015	60.0	
Aroclor-1242	2	7.315	0.001	5616	22.4	2	7.400	0.002	25838	28.7	
Aroclor-1242	3	8.634	0.002	1386	16.7	3	7.768	0.001	6755	29.4	
Aroclor-1242	4	8.923	0.004	1556	17.6	4	8.802	0.002	3724	13.0	
Total CollAve (4 peaks):				20.9	Total Col2Ave (4 peaks):				32.8	RPD = 44*	
Corrected Ave (3 peaks):				18.9	Corrected Ave (3 peaks):				23.7	RPD = 23	
Aroclor-1248	1	8.097	0.000	1229	9.7	1	7.400	0.005	25838	43.2	
Aroclor-1248	2	8.634	0.002	1386	8.8	2	8.276	0.001	5926	13.1	
Aroclor-1248	3	8.923	0.003	1556	10.6	3	8.802	0.002	3724	8.2	
Aroclor-1248	4	9.476	-0.030	10150	107.5	4	9.133	-0.003	8590	14.6	
Total CollAve (4 peaks):				34.1	Total Col2Ave (4 peaks):				19.8	RPD = 53*	
Corrected Ave (3 peaks):				9.7	Corrected Ave (3 peaks):				12.0	RPD = 21	
Aroclor-1254	1	9.004	0.002	7447	31.3	1	9.037	0.001	28859	47.4	
Aroclor-1254	2	---			0.0	2	9.133	0.006	8590	27.7	
Aroclor-1254	3	9.372	0.001	1574	11.5	3	9.544	0.000	7347	15.4	
Aroclor-1254	4	9.476	-0.029	10150	34.6	4	9.733	0.041	117247	122.7	
Aroclor-1254	5	10.158	-0.052	57397	293.4	5	10.468	0.004	28744	48.7	
Total CollAve (4 peaks):				92.7	Total Col2Ave (5 peaks):				52.4	RPD = 56*	
Corrected Ave (3 peaks):				25.8	Corrected Ave (4 peaks):				34.8	RPD = 30	
Aroclor-1260	1	10.764	0.001	72353	371.9	1	10.794	-0.000	265507	368.3	
Aroclor-1260	2	11.080	0.000	59517	319.1	2	11.234	0.001	228474	313.8	
Aroclor-1260	3	11.450	0.000	141816	299.5	3	11.510	-0.002	510965	280.0	
Aroclor-1260	4	11.849	0.000	43028	201.4	4	12.024	0.001	256630	451.9	
Aroclor-1260	5	11.966	0.000	55865	552.4	NS	---			----	
Total CollAve (5 peaks):				348.9	Total Col2Ave (4 peaks):				353.5	RPD = 1	
Corrected Ave (4 peaks):				298.0	Corrected Ave (3 peaks):				320.7	RPD = 7	
Aroclor-1262	1	11.080	0.000	59517	269.7	1	10.794	-0.000	265507	267.1	
Aroclor-1262	2	11.450	0.000	141816	259.6	2	11.234	-0.001	228474	268.8	
Aroclor-1262	3	11.849	-0.001	43028	265.2	3	11.510	-0.000	510965	262.1	
Aroclor-1262	4	11.966	0.000	55865	271.7	4	12.024	-0.000	256630	269.9	
Total CollAve (4 peaks):				266.5	Total Col2Ave (4 peaks):				267.0	RPD = 0	
Corrected Ave (3 peaks):				264.8	Corrected Ave (3 peaks):				266.0	RPD = 0	
Aroclor-1268	1	11.966	0.000	55865	86.3	1	12.024	0.000	256630	104.0	
Aroclor-1268	2	12.038	0.002	57038	97.6	2	12.085	-0.005	364662	147.2	
Aroclor-1268	3	12.438	0.015	20392	41.3	3	12.478	-0.002	16839	7.5	
Aroclor-1268	4	13.206	-0.001	16188	10.4	4	13.294	-0.004	80522	10.1	
Total CollAve (4 peaks):				58.9	Total Col2Ave (4 peaks):				67.2	RPD = 13	

Corrected Ave (3 peaks): 46.0 Corrected Ave (3 peaks): 40.5 RPD = 13

Total PCB Area Col1 (5.441 - 13.514) = 953031 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 3754639 Col2 Total PCB = 0.4 ppm*

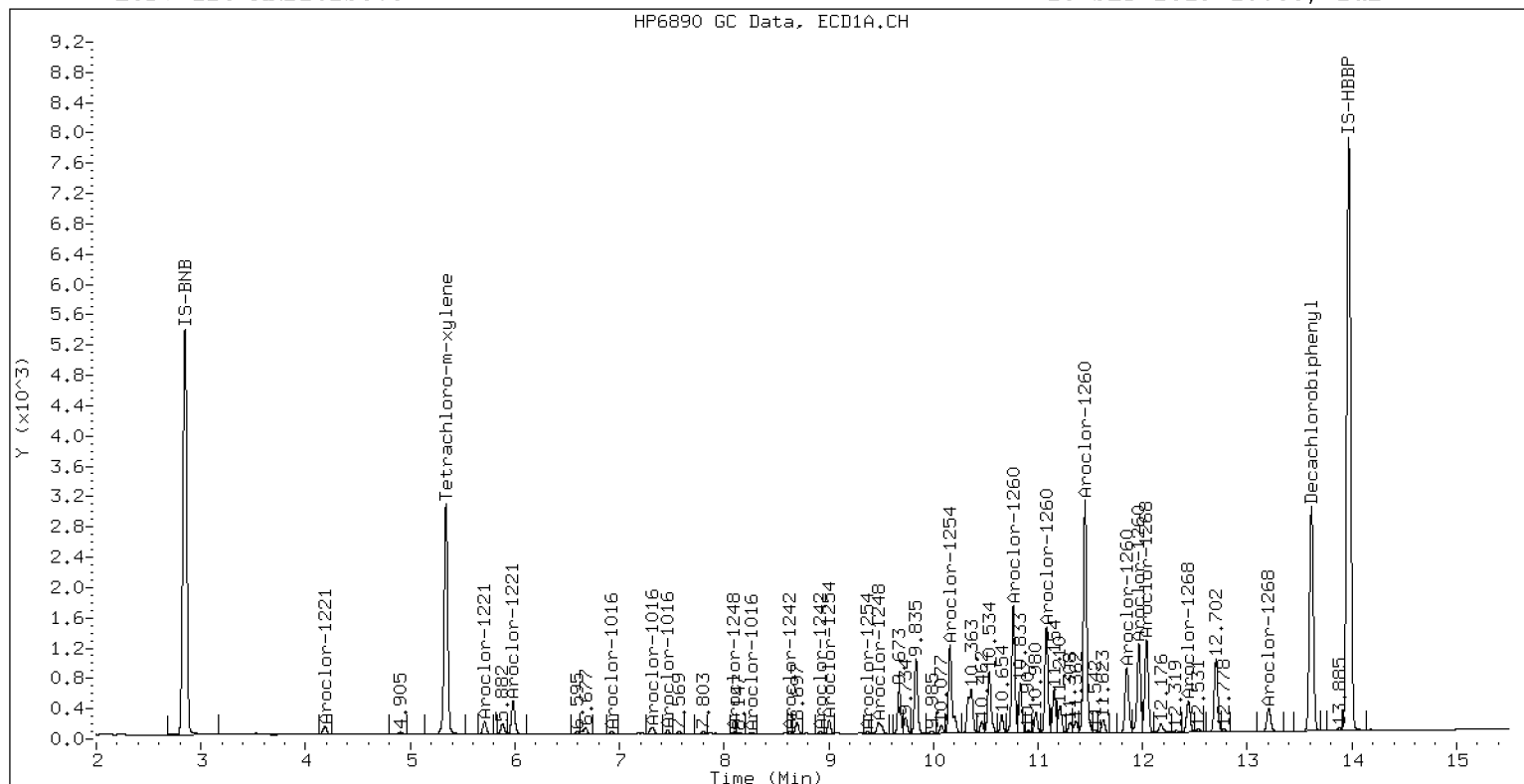
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV5

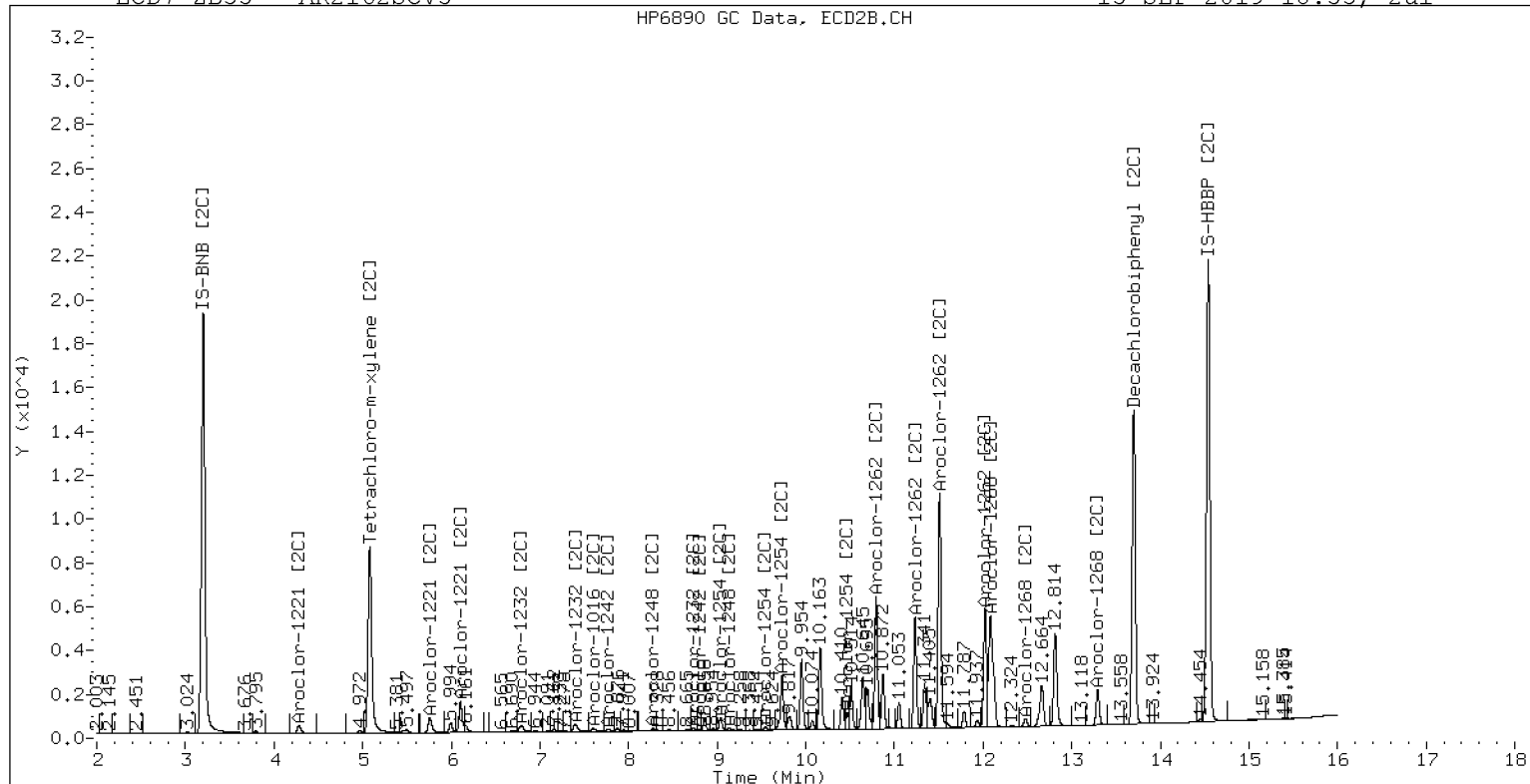
15-SEP-2019 18:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV5

15-SEP-2019 18:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091521ECD7.D
Data file 2: /20190915.b/20190915.b/19091521ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV6
Client ID:
Injection Date: 15-SEP-2019 19:14
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	141373	5.081	0.001	505294	40.3	37.8	6.4	Tetrachloro-m-xylene
13.614	0.000	214658	13.702	-0.000	1059666	50.0	47.8	4.4	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	100.7	94.4
Decachlorobiphenyl	125.0	119.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283260	-34.5
Hexabromobiphenyl	517563	424464	-18.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1126107	-24.8
Hexabromobiphenyl	1404015	1155245	-17.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.926	-0.000	9622	112.0	1	6.779	0.000	68458	122.2
Aroclor-1016	2	7.314	0.001	33292	108.9	2	7.399	0.001	134510	115.0
Aroclor-1016	3	7.460	0.000	12616	109.4	3	7.599	0.001	54238	115.0
Aroclor-1016	4	8.268	0.000	10808	114.2	4	7.767	0.000	34263	116.3
Total CollAve (4 peaks):				111.1	Total Col2Ave (4 peaks):				117.1	RPD = 5
Corrected Ave (3 peaks):				110.1	Corrected Ave (3 peaks):				115.4	RPD = 5
Aroclor-1221	1	4.185	0.000	3178	153.3	1	4.283	-0.001	12766	159.7
Aroclor-1221	2	5.711	-0.001	4834	150.2	2	5.760	0.002	27761	166.3
Aroclor-1221	3	5.982	-0.001	16410	201.0	3	6.104	-0.000	70670	253.0
Total CollAve (3 peaks):				168.2	Total Col2Ave (3 peaks):				193.0	RPD = 14
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks					
Aroclor-1232	1	4.185	0.001	3178	260.5	1	4.283	0.001	12766	267.8
Aroclor-1232	2	6.926	0.001	9622	298.8	2	6.779	0.002	68458	288.5
Aroclor-1232	3	7.314	0.001	33292	289.3	3	7.399	0.002	134510	283.4
Aroclor-1232	4	7.460	0.000	12616	292.4	4	8.729	0.000	37553	238.0
Total CollAve (4 peaks):				285.2	Total Col2Ave (4 peaks):				269.4	RPD = 6
Corrected Ave (3 peaks):				280.7	Corrected Ave (3 peaks):				263.1	RPD = 6
Aroclor-1242	1	6.926	0.000	9622	138.1	1	6.779	0.001	68458	160.4
Aroclor-1242	2	7.314	-0.000	33292	132.2	2	7.399	0.001	134510	145.9
Aroclor-1242	3	8.632	0.001	9671	116.5	3	7.767	0.000	34263	145.8
Aroclor-1242	4	8.920	0.001	10040	113.4	4	8.802	0.001	37955	129.8
Total CollAve (4 peaks):				125.0	Total Col2Ave (4 peaks):				145.5	RPD = 15
Corrected Ave (3 peaks):				120.7	Corrected Ave (3 peaks):				140.5	RPD = 15
Aroclor-1248	1	8.096	-0.000	9055	71.1	1	7.399	0.004	134510	219.7
Aroclor-1248	2	8.632	0.000	9671	61.0	2	8.275	0.000	39058	84.6
Aroclor-1248	3	8.920	0.000	10040	68.1	3	8.802	0.001	37955	81.6
Aroclor-1248	4	9.506	0.000	3395	35.9	4	9.138	0.003	44105	73.3
Total CollAve (4 peaks):				59.0	Total Col2Ave (4 peaks):				114.8	RPD = 64*
Corrected Ave (3 peaks):				55.0	Corrected Ave (3 peaks):				79.8	RPD = 37
Aroclor-1254	1	9.001	-0.001	3344	14.0	1	9.038	0.001	8654	13.9
Aroclor-1254	2	9.078	0.000	1342	18.2	2	9.138	0.011	44105	138.9
Aroclor-1254	3	9.372	0.001	1692	12.3	3	9.544	0.001	7982	16.3
Aroclor-1254	4	9.506	0.001	3395	11.5	4	9.692	0.001	13501	13.8
Aroclor-1254	5	10.215	0.004	2260	11.5	5	10.468	0.004	5584	9.2
Total CollAve (5 peaks):				13.5	Total Col2Ave (5 peaks):				38.4	RPD = 96*
Corrected Ave (4 peaks):				12.4	Corrected Ave (4 peaks):				13.3	RPD = 7
Aroclor-1260	1	10.764	0.000	36154	184.4	1	10.794	-0.000	139310	191.7
Aroclor-1260	2	11.080	-0.000	3230	17.2	2	11.237	0.004	167894	228.7
Aroclor-1260	3	11.449	-0.001	22521	47.2	3	11.510	-0.002	92070	50.0
Aroclor-1260	4	---			0.0	4	12.023	0.001	671734	1173.3
Aroclor-1260	5	11.966	0.001	178894	1755.7	NS	---			----
Total CollAve (4 peaks):				501.1	Total Col2Ave (4 peaks):				410.9	RPD = 20
Corrected Ave (3 peaks):				82.9	Corrected Ave (3 peaks):				156.8	RPD = 62*
Aroclor-1262	1	11.080	-0.000	3230	14.5	1	10.794	-0.000	139310	139.0
Aroclor-1262	2	11.449	-0.000	22521	40.9	2	11.237	0.003	167894	195.9
Aroclor-1262	3	---			0.0	3	11.510	-0.001	92070	46.8
Aroclor-1262	4	11.966	0.001	178894	863.5	4	12.023	-0.000	671734	700.6
Total CollAve (3 peaks):				306.3	Total Col2Ave (4 peaks):				270.6	RPD = 12
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				127.2	
Aroclor-1268	1	11.966	0.001	178894	274.2	1	12.023	0.000	671734	270.0
Aroclor-1268	2	12.037	0.001	179024	303.9	2	12.090	0.000	760106	304.4
Aroclor-1268	3	12.424	0.001	121349	243.7	3	12.480	-0.000	546687	241.7
Aroclor-1268	4	13.207	0.000	359555	228.4	4	13.297	0.000	1841105	229.6
Total CollAve (4 peaks):				262.6	Total Col2Ave (4 peaks):				261.4	RPD = 0

Corrected Ave (3 peaks): 248.8 Corrected Ave (3 peaks): 247.1 RPD = 1

Total PCB Area Col1 (5.441 - 13.514) = 1291499 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5756571 Col2 Total PCB = 0.6 ppm*

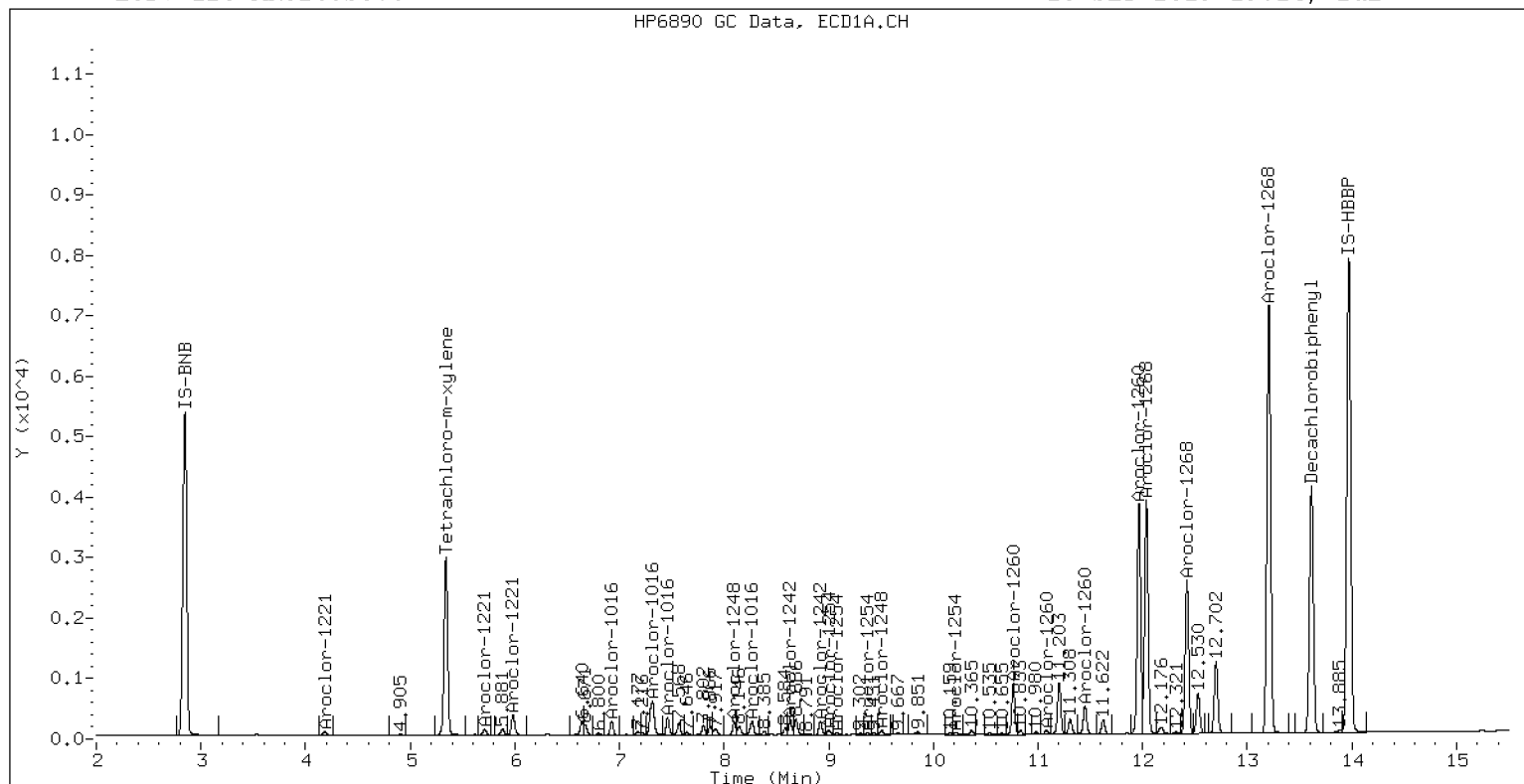
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV6

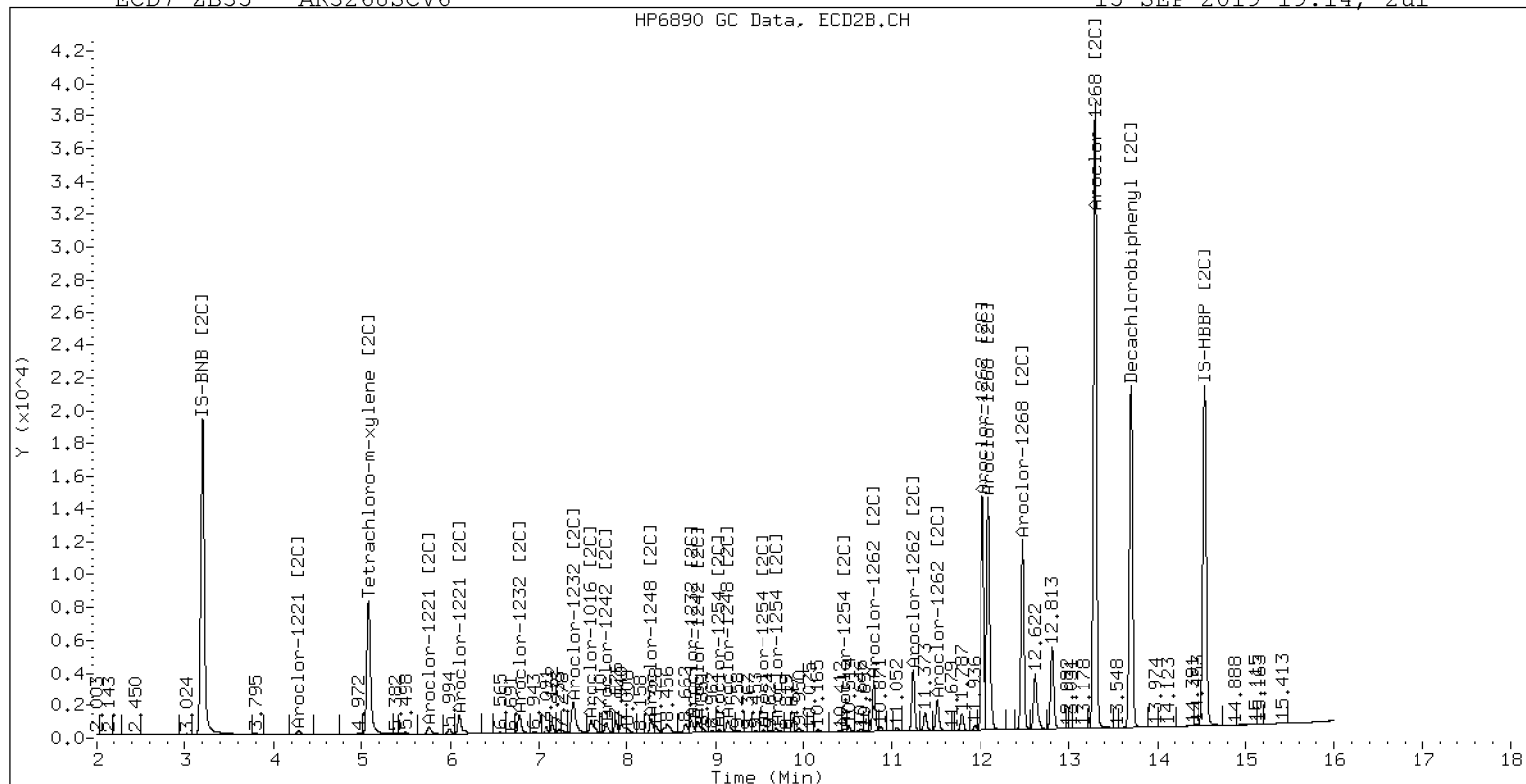
15-SEP-2019 19:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV6

15-SEP-2019 19:14, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /20190915.b/19091522ECD7.D

ARI ID: 0.1 PPM DDTs

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
8.970	0.000	395765	9.507	0.000	2862423	0.100	0.100	0.0	2,4-DDE
10.017	0.000	449432	10.254	0.000	4084188	0.100	0.200#	66.7*	2,4-DDT
9.394	0.000	704657	9.789	0.000	1497198	0.100	0.100	0.0	4,4-DDE
9.962	0.000	644061	10.254	0.000	4084188	0.100	0.200#	66.7*	4,4-DDD

Indicates value is from co-eluting peaks

* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /20190915.b/19091523ECD7.D

ARI ID: DDT BD

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
0.000	-8.970	0	9.513	0.007	9914	0.000	0.000	----	2,4-DDE
0.000	-10.017	0	10.261	0.006	140848	0.000	0.010#	----	2,4-DDT
9.401	0.007	1870	9.881	0.092	1712	0.000	0.000	82.2*	4,4-DDE
9.970	0.008	30501	10.261	0.006	140848	0.007	0.010#	34.1	4,4-DDD

Indicates value is from co-eluting peaks

* Indicates RPD > 40%



SECOND-SOURCE CALIBRATION VERIFICATION EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Calibration: CI00052

Laboratory ID: SHI0216-SCV1

Sequence: SHI0216

Sequence Name: AR1660SCV1

Standard ID: H004289

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1016	250.00	263	5.3	20.00
Aroclor 1016 [2C]	250.00	252	0.7	20.00
Aroclor 1260	250.00	266	6.5	20.00
Aroclor 1260 [2C]	250.00	256	2.5	20.00
Decachlorobiphenyl	40.000	36.6	-8.6	20.00
Tetrachlorometaxylene	40.000	41.8	4.5	20.00
Decachlorobiphenyl [2C]	40.000	34.1	-14.8	20.00
Tetrachlorometaxylene [2C]	40.000	39.0	-2.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091516ECD7.D
Data file 2: /20190915.b/20190915.b/19091516ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV1
Client ID:
Injection Date: 15-SEP-2019 17:29
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.340	-0.000	139282	5.079	-0.001	501326	41.8	39.0	6.9	Tetrachloro-m-xylene
13.614	0.000	147529	13.700	-0.002	704171	36.6	34.1	7.0	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	104.5	97.5
Decachlorobiphenyl	91.4	85.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	269047	2.3
Hexabromobiphenyl	382688	398753	4.2

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1081674	-0.0
Hexabromobiphenyl	1006687	1076917	7.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.925	-0.001	20670	253.2	1	6.777	-0.001	131932	245.2
Aroclor-1016	2	7.313	-0.000	75492	260.0	2	7.398	-0.000	284758	253.4
Aroclor-1016	3	7.459	-0.001	27940	255.2	3	7.598	0.001	114982	253.9
Aroclor-1016	4	8.267	-0.001	25628	285.0	4	7.766	-0.001	72012	254.6
Total CollAve (4 peaks):				263.4	Total Col2Ave (4 peaks):				251.8	RPD = 5
Corrected Ave (3 peaks):				256.1	Corrected Ave (3 peaks):				250.8	RPD = 2
Aroclor-1221	1	---			0.0	1	4.281	-0.002	714	9.3
Aroclor-1221	2	5.708	-0.003	2518	82.4	2	5.762	0.004	17203	107.3
Aroclor-1221	3	5.981	-0.002	14494	186.9	3	6.103	-0.001	63127	235.2
CollAve: <3 Quant Peaks					Col2Ave: 117.3					
Aroclor-1232	1	---			0.0	1	4.281	-0.001	714	15.6
Aroclor-1232	2	6.925	0.000	20670	675.7	2	6.777	0.000	131932	578.9
Aroclor-1232	3	7.313	0.000	75492	690.6	3	7.398	0.001	284758	624.5
Aroclor-1232	4	7.459	-0.000	27940	681.7	4	8.728	-0.001	16488	108.8
Total CollAve (3 peaks):				682.7	Total Col2Ave (4 peaks):				332.0	RPD = 69*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				234.4	
Aroclor-1242	1	6.925	-0.000	20670	312.2	1	6.777	-0.001	131932	321.7
Aroclor-1242	2	7.313	-0.001	75492	315.5	2	7.398	0.000	284758	321.6
Aroclor-1242	3	8.632	0.000	3823	48.5	3	7.766	-0.001	72012	319.0
Aroclor-1242	4	8.924	0.005	1968	23.4	4	8.799	-0.001	10146	36.1
Total CollAve (4 peaks):				174.9	Total Col2Ave (4 peaks):				249.6	RPD = 35
Corrected Ave (3 peaks):				128.0	Corrected Ave (3 peaks):				225.6	RPD = 55*
Aroclor-1248	1	8.096	-0.001	20862	172.5	1	7.398	0.003	284758	484.2
Aroclor-1248	2	8.632	0.000	3823	25.4	2	8.275	-0.000	86975	196.1
Aroclor-1248	3	8.924	0.004	1968	14.1	3	8.799	-0.001	10146	22.7
Aroclor-1248	4	9.478	-0.028	15140	168.4	4	9.135	-0.000	5011	8.7
Total CollAve (4 peaks):				95.1	Total Col2Ave (4 peaks):				177.9	RPD = 61*
Corrected Ave (3 peaks):				69.3	Corrected Ave (3 peaks):				75.8	RPD = 9
Aroclor-1254	1	9.004	0.002	13997	61.7	1	9.036	-0.000	52182	87.1
Aroclor-1254	2	---			0.0	2	9.135	0.008	5011	16.4
Aroclor-1254	3	9.372	0.001	2241	17.2	3	9.544	0.001	8366	17.8
Aroclor-1254	4	9.478	-0.027	15140	54.2	4	9.732	0.041	121876	129.6
Aroclor-1254	5	10.158	-0.053	79007	424.0	5	10.467	0.003	54907	94.5
Total CollAve (4 peaks):				139.3	Total Col2Ave (5 peaks):				69.1	RPD = 67*
Corrected Ave (3 peaks):				44.4	Corrected Ave (4 peaks):				54.0	RPD = 19
Aroclor-1260	1	10.763	-0.000	47502	257.9	1	10.793	-0.001	173400	255.9
Aroclor-1260	2	11.079	-0.001	47459	268.8	2	11.232	-0.001	175778	256.8
Aroclor-1260	3	11.449	-0.000	124200	277.2	3	11.510	-0.002	444580	259.2
Aroclor-1260	4	11.849	0.000	56510	279.5	4	12.023	0.000	135226	253.4
Aroclor-1260	5	11.965	-0.000	23732	247.9	NS	---			----
Total CollAve (5 peaks):				266.3	Total Col2Ave (4 peaks):				256.3	RPD = 4
Corrected Ave (4 peaks):				263.0	Corrected Ave (3 peaks):				255.4	RPD = 3
Aroclor-1262	1	11.079	-0.001	47459	227.2	1	10.793	-0.001	173400	185.6
Aroclor-1262	2	11.449	-0.000	124200	240.2	2	11.232	-0.002	175778	220.0
Aroclor-1262	3	11.849	-0.001	56510	368.0	3	11.510	-0.001	444580	242.6
Aroclor-1262	4	11.965	-0.000	23732	121.9	4	12.023	-0.001	135226	151.3
Total CollAve (4 peaks):				239.3	Total Col2Ave (4 peaks):				199.9	RPD = 18
Corrected Ave (3 peaks):				196.4	Corrected Ave (3 peaks):				185.6	RPD = 6
Aroclor-1268	1	11.965	-0.000	23732	38.7	1	12.023	-0.001	135226	58.3
Aroclor-1268	2	12.038	0.002	29014	52.4	2	12.078	-0.013	289317	124.3
Aroclor-1268	3	12.438	0.015	12219	26.1	3	12.479	-0.002	4945	2.3
Aroclor-1268	4	13.205	-0.002	5597	3.8	4	13.293	-0.004	26676	3.6
Total CollAve (4 peaks):				30.3	Total Col2Ave (4 peaks):				47.1	RPD = 44*
Corrected Ave (3 peaks):				22.9	Corrected Ave (3 peaks):				21.4	RPD = 7

Total PCB Area Col1 (5.441 - 13.514) = 1171435 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 4394557 Col2 Total PCB = 0.5 ppm*

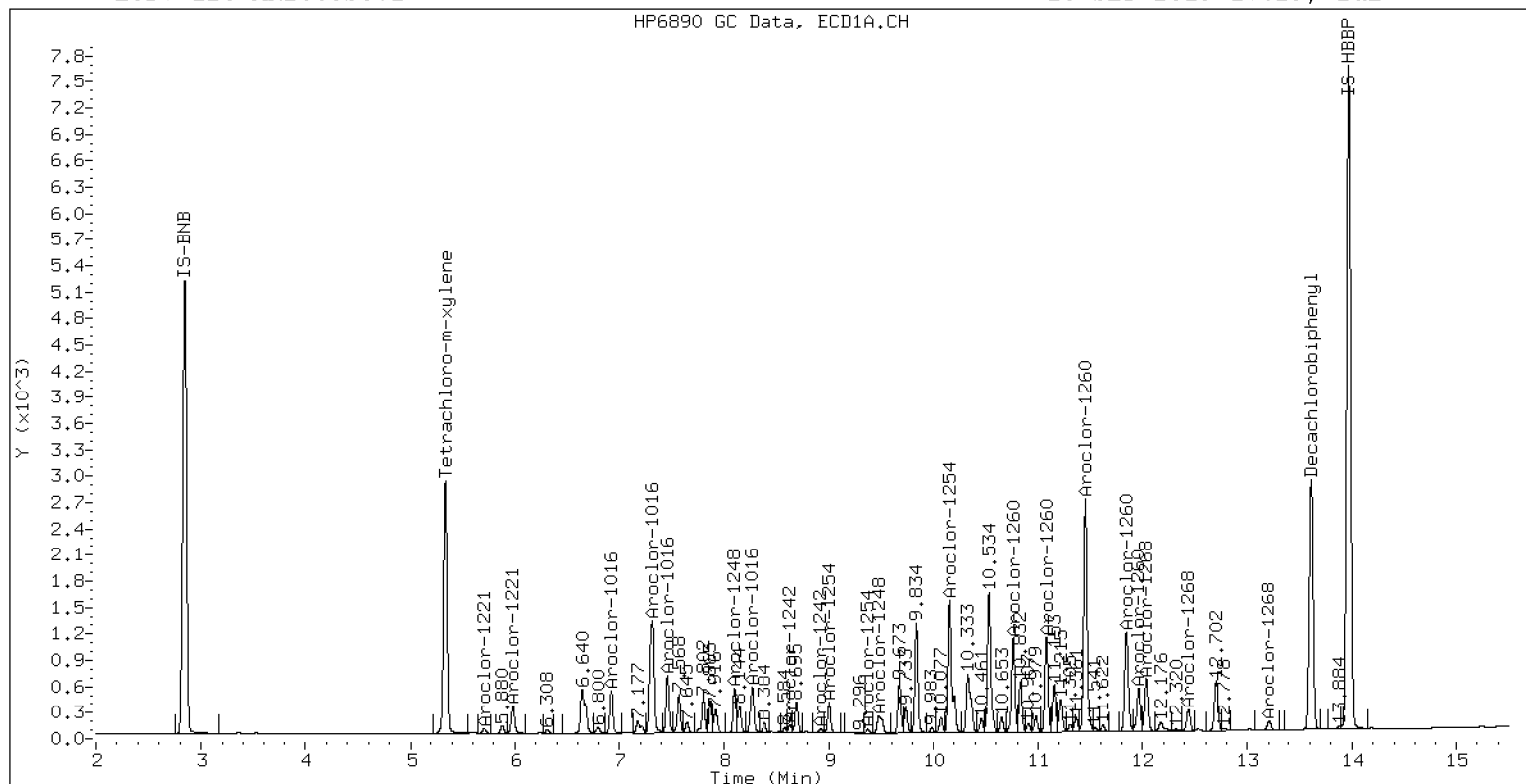
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV1

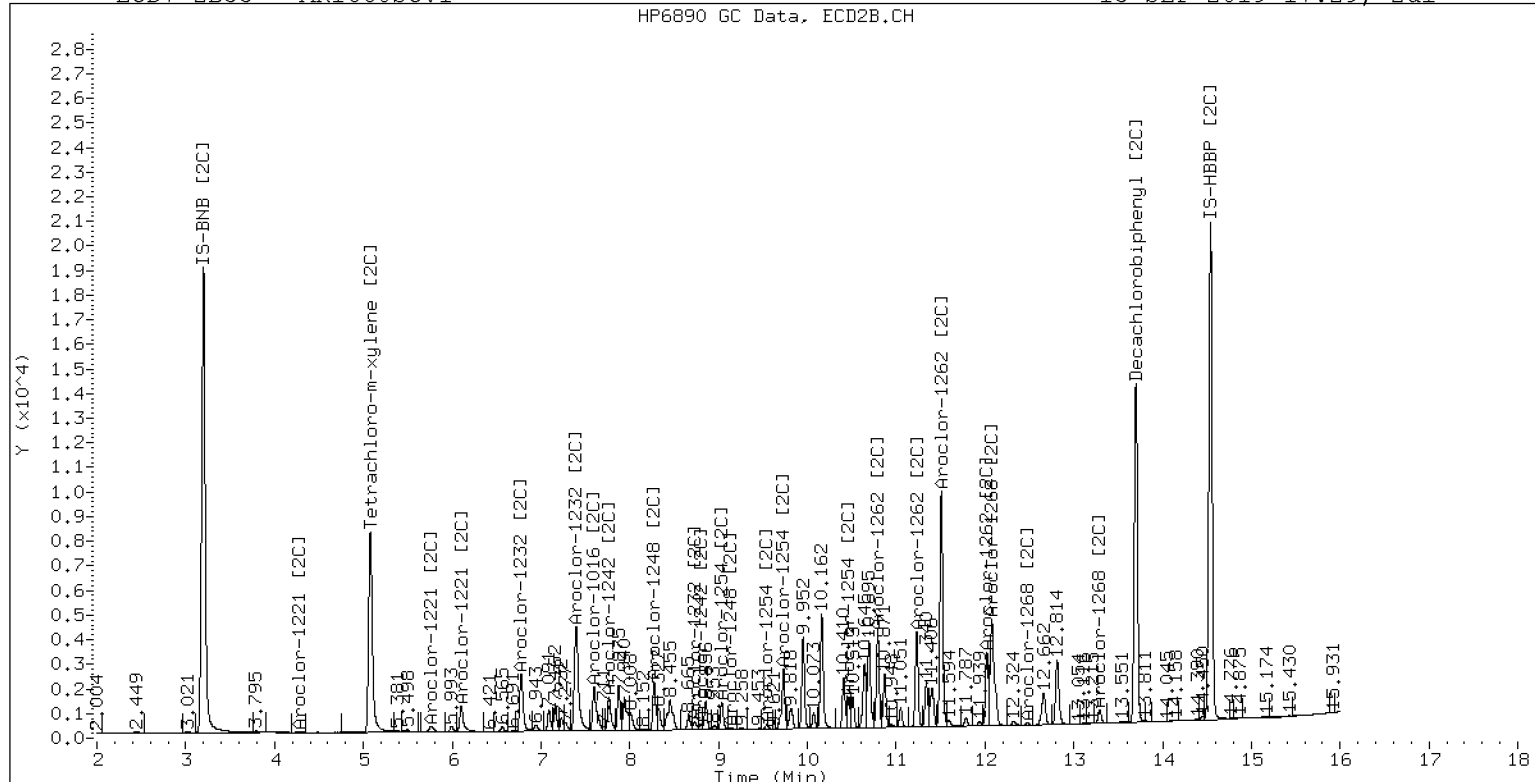
15-SEP-2019 17:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV1

15-SEP-2019 17:29, 2ul



ZB-35 Manual Integration: NO



SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Calibration: CI00052

Laboratory ID: SHI0216-SCV2

Sequence: SHI0216

Sequence Name: AR1242SCV2

Standard ID: H004290

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1242	250.00	242	-3.3	20.00
Aroclor 1242 [2C]	250.00	243	-2.7	20.00
Decachlorobiphenyl	40.000	36.7	-8.3	20.00
Tetrachlorometaxylene	40.000	41.3	3.3	20.00
Decachlorobiphenyl [2C]	40.000	33.8	-15.5	20.00
Tetrachlorometaxylene [2C]	40.000	38.1	-4.7	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091517ECD7.D
Data file 2: /20190915.b/20190915.b/19091517ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV2
Client ID:
Injection Date: 15-SEP-2019 17:50
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.000 141558	5.080 0.000 512417	41.3	38.1	8.1	Tetrachloro-m-xylene
13.614	0.000 154315	13.701 -0.000 730054	36.7	33.8	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	103.3	95.3
Decachlorobiphenyl	91.7	84.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	276605	-36.0
Hexabromobiphenyl	517563	415898	-19.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1131917	-24.4
Hexabromobiphenyl	1404015	1125325	-19.8

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.925	-0.000	16898	201.3	1	6.778	-0.001	106681	189.5
Aroclor-1016	2	7.313	-0.000	60035	201.1	2	7.398	0.000	229278	195.0
Aroclor-1016	3	7.460	0.000	22476	199.7	3	7.598	0.000	92364	194.9
Aroclor-1016	4	8.267	-0.001	22168	239.8	4	7.767	-0.000	57828	195.4
Total CollAve (4 peaks):				210.5	Total Col2Ave (4 peaks):				193.7	RPD = 8
Corrected Ave (3 peaks):				200.7	Corrected Ave (3 peaks):				193.1	RPD = 4
Aroclor-1221	1	---			0.0	1	4.287	0.003	465	5.8
Aroclor-1221	2	5.709	-0.003	1988	63.3	2	5.768	0.010	14831	88.4
Aroclor-1221	3	5.981	-0.002	11461	143.8	3	6.104	-0.000	51036	181.7
CollAve: <3 Quant Peaks					Col2Ave:				92.0	
Aroclor-1232	1	---			0.0	1	4.287	0.005	465	9.7
Aroclor-1232	2	6.925	0.000	16898	537.3	2	6.778	0.001	106681	447.3
Aroclor-1232	3	7.313	0.000	60035	534.2	3	7.398	0.001	229278	480.5
Aroclor-1232	4	7.460	0.000	22476	533.4	4	8.729	-0.000	71208	449.0
Total CollAve (3 peaks):				535.0	Total Col2Ave (4 peaks):				346.6	RPD = 43*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				302.0	
Aroclor-1242	1	6.925	-0.000	16898	248.3	1	6.778	-0.000	106681	248.6
Aroclor-1242	2	7.313	-0.001	60035	244.1	2	7.398	0.000	229278	247.4
Aroclor-1242	3	8.632	0.000	19399	239.2	3	7.767	-0.001	57828	244.8
Aroclor-1242	4	8.920	0.000	20377	235.7	4	8.801	0.000	68184	232.0
Total CollAve (4 peaks):				241.8	Total Col2Ave (4 peaks):				243.2	RPD = 1
Corrected Ave (3 peaks):				239.7	Corrected Ave (3 peaks):				241.4	RPD = 1
Aroclor-1248	1	8.096	-0.001	17908	144.1	1	7.398	0.003	229278	372.5
Aroclor-1248	2	8.632	0.000	19399	125.4	2	8.275	0.000	73096	157.5
Aroclor-1248	3	8.920	-0.000	20377	141.5	3	8.801	0.000	68184	145.8
Aroclor-1248	4	9.506	-0.000	11216	121.3	4	9.136	0.001	86440	142.9
Total CollAve (4 peaks):				133.1	Total Col2Ave (4 peaks):				204.7	RPD = 42*
Corrected Ave (3 peaks):				129.4	Corrected Ave (3 peaks):				148.8	RPD = 14
Aroclor-1254	1	9.001	-0.001	9693	41.6	1	9.036	-0.001	25152	40.1
Aroclor-1254	2	9.078	-0.000	4295	59.8	2	9.136	0.009	86440	270.9
Aroclor-1254	3	9.371	0.000	5872	43.8	3	9.543	-0.000	23570	47.9
Aroclor-1254	4	9.506	0.001	11216	39.1	4	9.691	-0.000	37432	38.0
Aroclor-1254	5	10.215	0.005	7428	38.8	5	10.465	0.002	27749	45.7
Total CollAve (5 peaks):				44.6	Total Col2Ave (5 peaks):				88.5	RPD = 66*
Corrected Ave (4 peaks):				40.8	Corrected Ave (4 peaks):				42.9	RPD = 5
Aroclor-1260	1	---			0.0	1	10.795	0.000	925	1.3
Aroclor-1260	2	---			0.0	2	11.225	-0.008	5685	7.9
Aroclor-1260	3	---			0.0	3	11.512	-0.000	3227	1.8
Aroclor-1260	4	---			0.0	4	12.077	0.054	2320	4.2
Aroclor-1260	5	---			0.0	NS	---			----
CollAve: <3 Quant Peaks					Col2Ave:				3.8	
Aroclor-1262	1	---			0.0	1	10.795	0.000	925	0.9
Aroclor-1262	2	---			0.0	2	11.225	-0.010	5685	6.8
Aroclor-1262	3	---			0.0	3	11.512	0.001	3227	1.7
Aroclor-1262	4	---			0.0	4	12.077	0.053	2320	2.5
CollAve: <3 Quant Peaks					Col2Ave:				3.0	
Aroclor-1268	1	---			0.0	1	12.077	0.054	2320	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.484	0.003	1021	0.5
Aroclor-1268	4	---			0.0	4	13.300	0.003	911	0.1
CollAve: <3 Quant Peaks					Col2Ave:				0.5	

Total PCB Area Col1 (5.441 - 13.514) = 432451 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 1684066 Col2 Total PCB = 0.2 ppm*

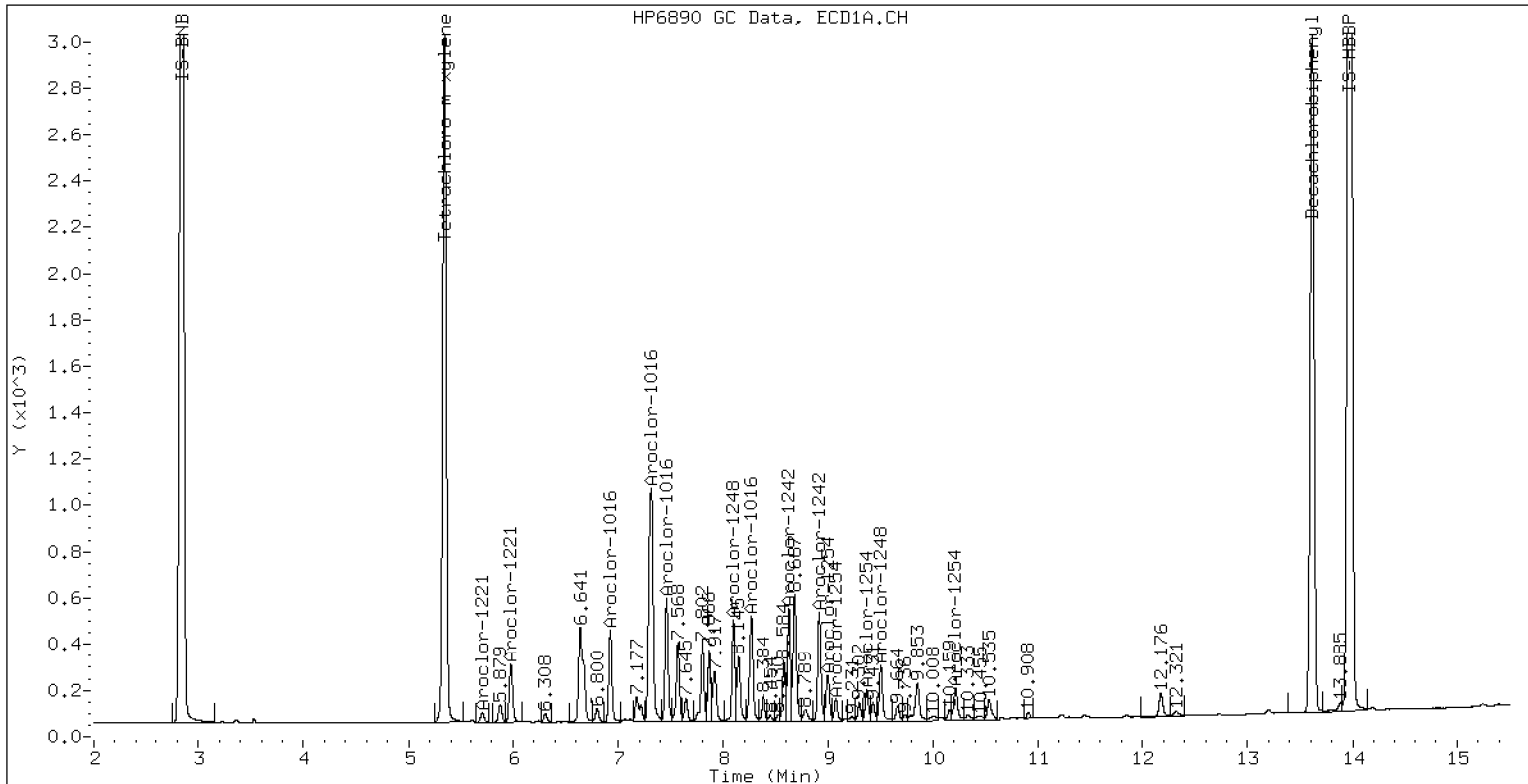
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV2

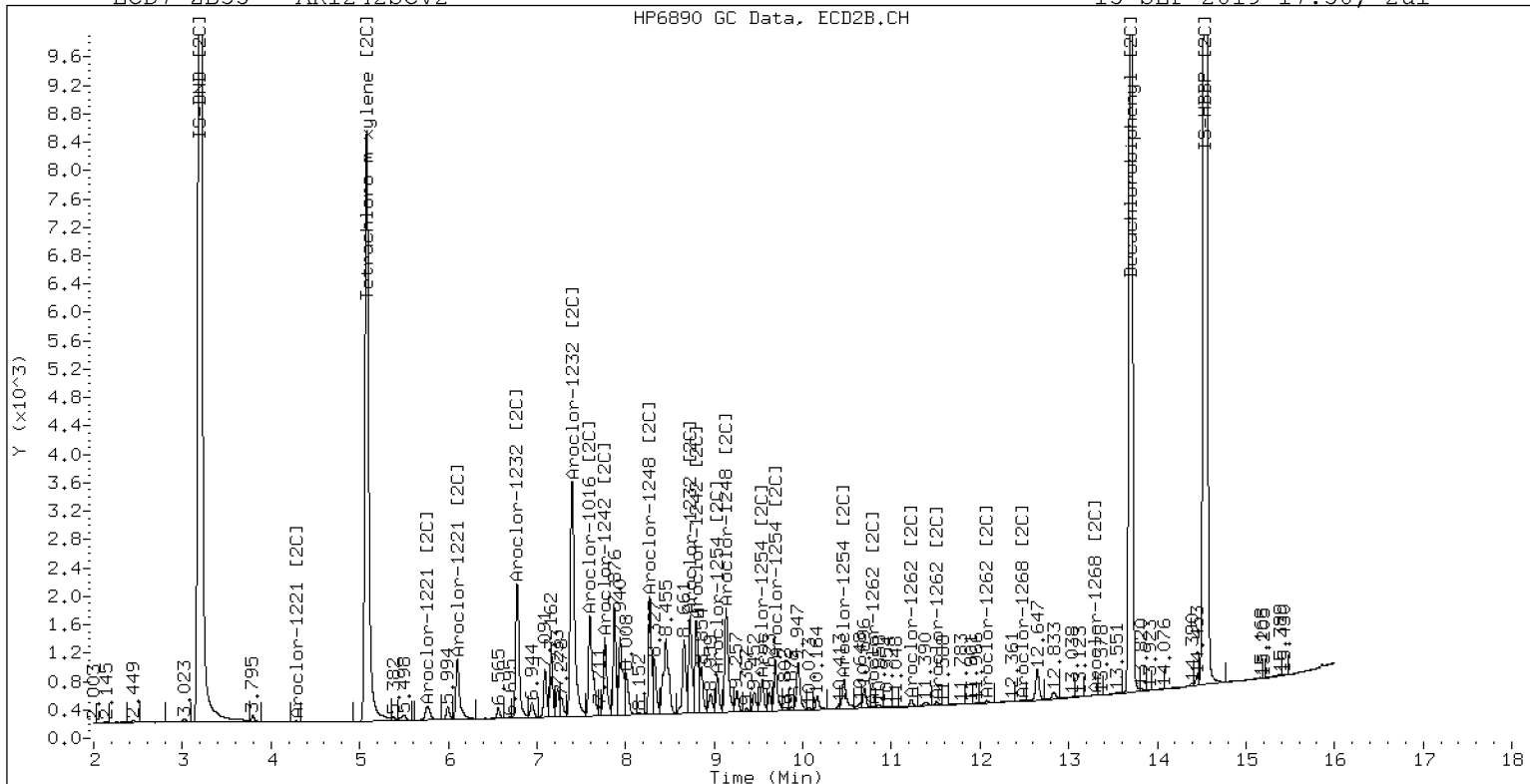
15-SEP-2019 17:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV2

15-SEP-2019 17:50, 2ul



ZB-35 Manual Integration: NO



SECOND-SOURCE CALIBRATION VERIFICATION EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Calibration: CI00052

Laboratory ID: SHI0216-SCV3

Sequence: SHI0216

Sequence Name: AR1248SCV3

Standard ID: H004291

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1248	250.00	243	-2.8	20.00
Aroclor 1248 [2C]	250.00	251	0.4	20.00
Decachlorobiphenyl	40.000	36.1	-9.8	20.00
Tetrachlorometaxylene	40.000	41.1	2.6	20.00
Decachlorobiphenyl [2C]	40.000	33.8	-15.4	20.00
Tetrachlorometaxylene [2C]	40.000	38.2	-4.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091518ECD7.D
Data file 2: /20190915.b/20190915.b/19091518ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV3
Client ID:
Injection Date: 15-SEP-2019 18:11
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.000	144337	5.081	0.001	525429	41.1	38.2	7.2	Tetrachloro-m-xylene
13.613	-0.000	155898	13.702	-0.000	747902	36.1	33.8	6.4	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	102.6	95.5
Decachlorobiphenyl	90.2	84.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283776	-34.4
Hexabromobiphenyl	517563	427022	-17.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1157339	-22.7
Hexabromobiphenyl	1404015	1151947	-18.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.926	-0.000	8301	96.4	1	6.777	-0.002	59820	103.9	
Aroclor-1016	2	7.309	-0.004	40510	132.3	2	7.397	-0.001	161655	134.4	
Aroclor-1016	3	7.462	0.002	13575	117.5	3	7.599	0.001	36509	75.3	
Aroclor-1016	4	8.267	-0.000	35033	369.4	4	7.768	0.001	33959	112.2	
Total CollAve (4 peaks):				178.9	Total Col2Ave (4 peaks):				106.5	RPD = 51*	
Corrected Ave (3 peaks):				115.4	Corrected Ave (3 peaks):				97.1	RPD = 17	
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	5.617	-0.095	1004	31.1	2	5.780	0.022	7736	45.1	
Aroclor-1221	3	5.981	-0.002	2454	30.0	3	6.105	0.001	12052	42.0	
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	6.926	0.001	8301	257.3	2	6.777	-0.000	59820	245.3	
Aroclor-1232	3	7.309	-0.003	40510	351.4	3	7.397	-0.000	161655	331.4	
Aroclor-1232	4	7.462	0.002	13575	314.0	4	8.729	-0.001	134716	830.7	
Total CollAve (3 peaks):				307.6	Total Col2Ave (3 peaks):				469.1	RPD = 42*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1242	1	6.926	-0.000	8301	118.9	1	6.777	-0.001	59820	136.3	
Aroclor-1242	2	7.309	-0.005	40510	160.5	2	7.397	-0.001	161655	170.6	
Aroclor-1242	3	8.632	0.001	38513	463.0	3	7.768	0.000	33959	140.6	
Aroclor-1242	4	8.920	0.001	35533	400.6	4	8.801	0.000	118313	393.7	
Total CollAve (4 peaks):				285.7	Total Col2Ave (4 peaks):				210.3	RPD = 30	
Corrected Ave (3 peaks):				226.7	Corrected Ave (3 peaks):				149.2	RPD = 41*	
Aroclor-1248	1	8.096	-0.000	31009	243.1	1	7.397	0.002	161655	256.9	
Aroclor-1248	2	8.632	0.000	38513	242.6	2	8.275	0.000	119193	251.2	
Aroclor-1248	3	8.920	-0.000	35533	240.5	3	8.801	0.000	118313	247.5	
Aroclor-1248	4	9.506	-0.000	23308	245.7	4	9.135	-0.000	153684	248.5	
Total CollAve (4 peaks):				243.0	Total Col2Ave (4 peaks):				251.0	RPD = 3	
Corrected Ave (3 peaks):				242.1	Corrected Ave (3 peaks):				249.1	RPD = 3	
Aroclor-1254	1	9.001	-0.002	20497	85.7	1	9.037	-0.000	49764	77.6	
Aroclor-1254	2	9.078	0.000	9115	123.7	2	9.135	0.008	153684	471.1	
Aroclor-1254	3	9.371	-0.000	12774	92.9	3	9.543	-0.000	49122	97.7	
Aroclor-1254	4	9.506	0.001	23308	79.1	4	9.691	-0.000	81623	81.1	
Aroclor-1254	5	10.216	0.005	15329	78.0	5	10.463	-0.000	61571	99.1	
Total CollAve (5 peaks):				91.9	Total Col2Ave (5 peaks):				165.3	RPD = 57*	
Corrected Ave (4 peaks):				83.9	Corrected Ave (4 peaks):				88.9	RPD = 6	
Aroclor-1260	1	10.764	-0.000	1211	6.1	1	10.795	0.001	2983	4.1	
Aroclor-1260	2	---			0.0	2	11.226	-0.007	6906	9.4	
Aroclor-1260	3	11.449	-0.000	1232	2.6	3	11.510	-0.002	6245	3.4	
Aroclor-1260	4	---			0.0	4	12.024	0.001	3247	5.7	
Aroclor-1260	5	---			0.0	NS	---			----	
CollAve: <3 Quant Peaks						Col2Ave: 5.7					
Aroclor-1262	1	---			0.0	1	10.795	0.001	2983	3.0	
Aroclor-1262	2	---			0.0	2	11.226	-0.008	6906	8.1	
Aroclor-1262	3	---			0.0	3	11.510	-0.000	6245	3.2	
Aroclor-1262	4	---			0.0	4	12.024	0.000	3247	3.4	
CollAve: <3 Quant Peaks						Col2Ave: 4.4					
Aroclor-1268	1	---			0.0	1	12.024	0.001	3247	1.3	
Aroclor-1268	2	---			0.0	2	12.082	-0.008	4066	1.6	
Aroclor-1268	3	---			0.0	3	12.487	0.006	1630	0.7	
Aroclor-1268	4	---			0.0	4	13.295	-0.003	2205	0.3	
CollAve: <3 Quant Peaks						Col2Ave: 1.0					

Total PCB Area Col1 (5.441 - 13.514) = 543228 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2103769 Col2 Total PCB = 0.2 ppm*

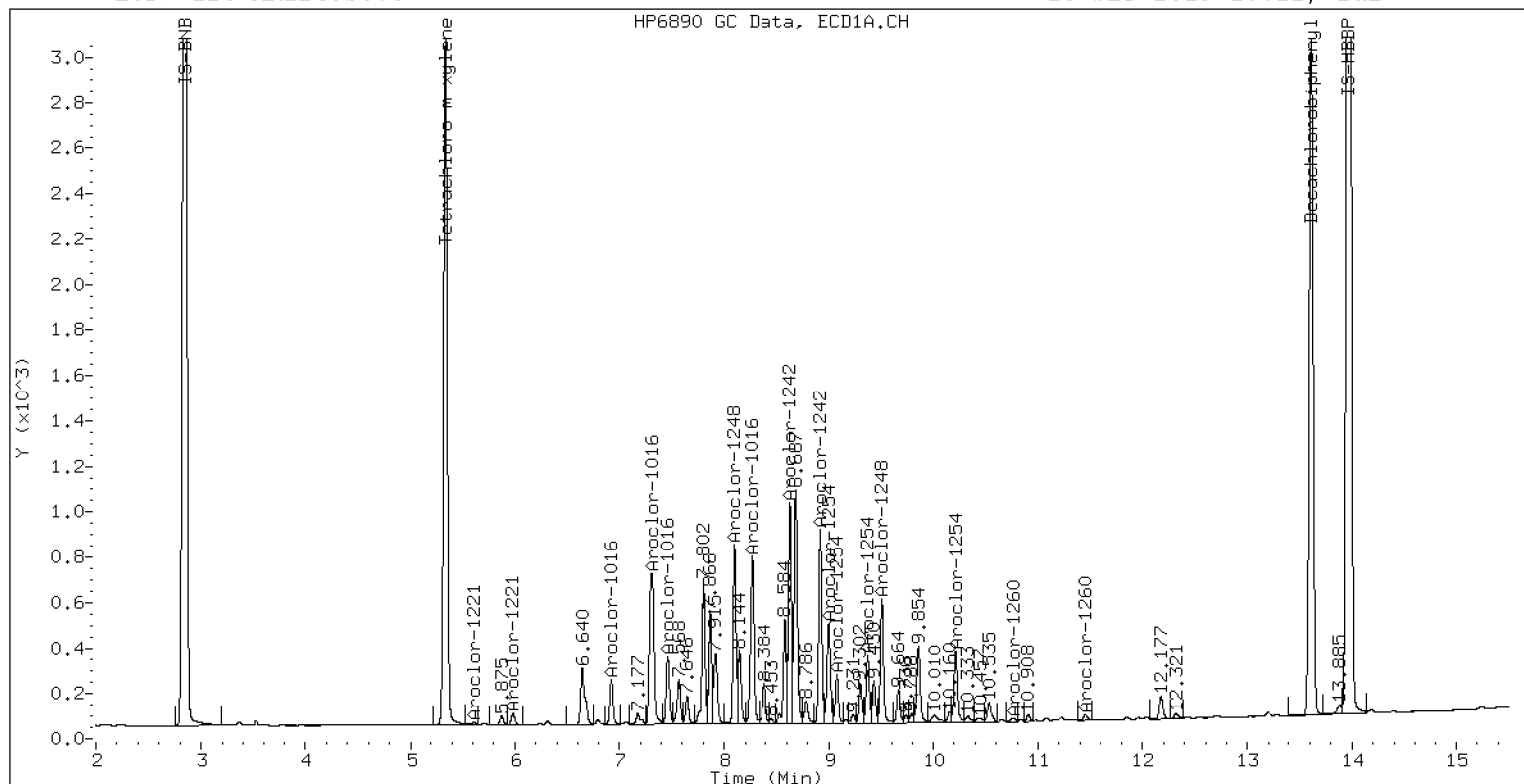
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV3

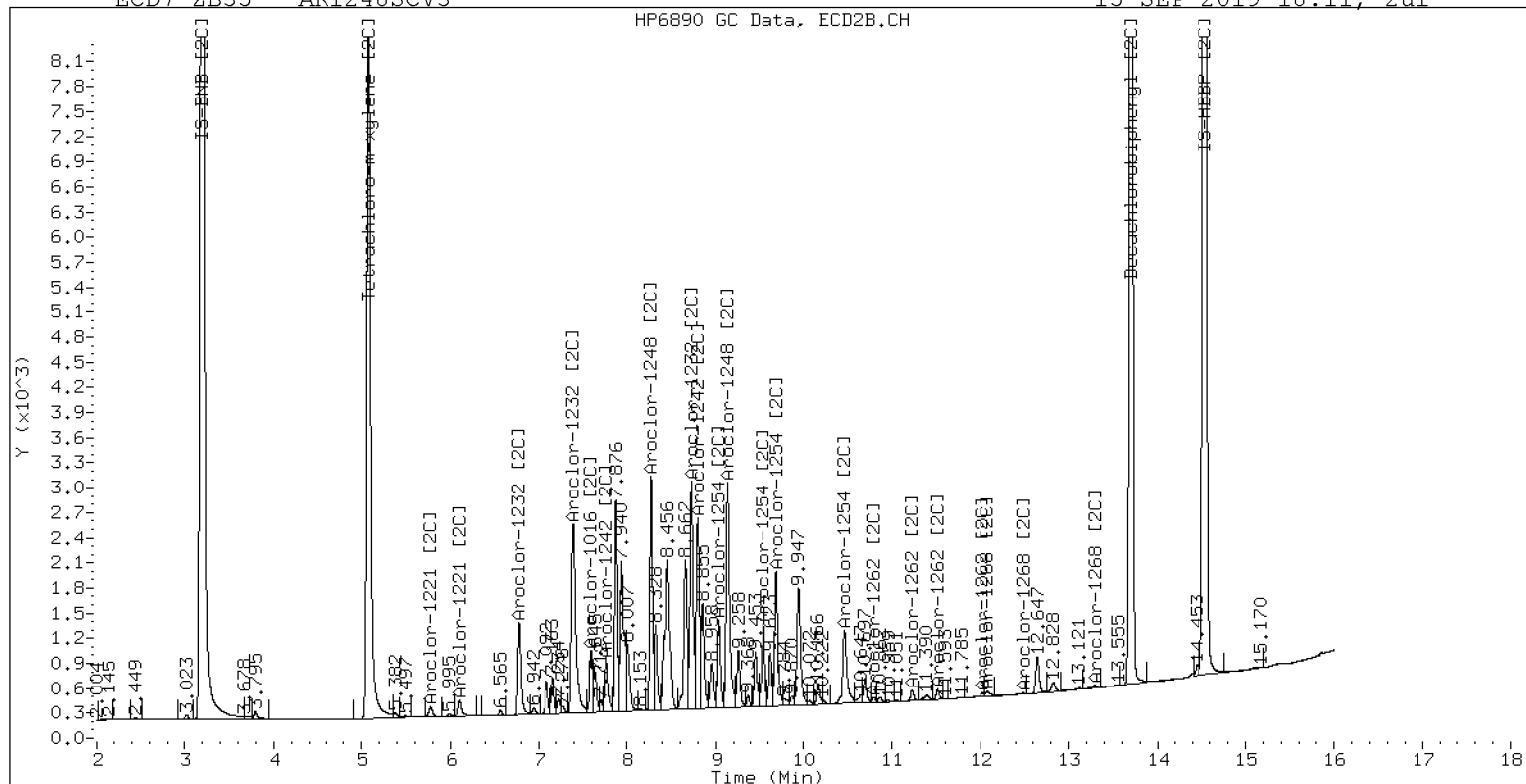
15-SEP-2019 18:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV3

15-SEP-2019 18:11, 2ul



ZB-35 Manual Integration: NO



SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Calibration: CI00052

Laboratory ID: SHI0216-SCV4

Sequence: SHI0216

Sequence Name: AR1254SCV4

Standard ID: H004292

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1254	250.00	252	0.6	20.00
Aroclor 1254 [2C]	250.00	258	3.1	20.00
Decachlorobiphenyl	40.000	36.4	-9.1	20.00
Tetrachlorometaxylene	40.000	40.3	0.8	20.00
Decachlorobiphenyl [2C]	40.000	33.9	-15.3	20.00
Tetrachlorometaxylene [2C]	40.000	37.6	-6.0	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091519ECD7.D
Data file 2: /20190915.b/20190915.b/19091519ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254SCV4
Client ID:
Injection Date: 15-SEP-2019 18:32
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.001	142065	5.081	0.001	516612	40.3	37.6	7.0	Tetrachloro-m-xylene
13.614	-0.000	156661	13.701	-0.001	753354	36.4	33.9	7.1	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	100.8	94.0
Decachlorobiphenyl	90.9	84.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	284555	-34.2
Hexabromobiphenyl	517563	425678	-17.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1156822	-22.7
Hexabromobiphenyl	1404015	1159232	-17.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	---			0.0	1	6.778	-0.000	1021	1.8	
Aroclor-1016	2	7.304	-0.009	1001	3.3	2	7.394	-0.004	4515	3.8	
Aroclor-1016	3	---			0.0	3	7.602	0.004	728	1.5	
Aroclor-1016	4	8.267	-0.000	4386	46.1	4	7.769	0.002	531	1.8	
CollAve: <3 Quant Peaks						Col2Ave: 2.2					
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	5.782	0.024	6140	35.8	
Aroclor-1221	3	---			0.0	3	6.116	0.012	1797	6.3	
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	6.778	0.001	1021	4.2	
Aroclor-1232	3	---			0.0	3	7.394	-0.003	4515	9.3	
Aroclor-1232	4	---			0.0	4	8.729	0.000	65407	403.5	
CollAve: <3 Quant Peaks						Col2Ave: 139.0					
Aroclor-1242	1	---			0.0	1	6.778	-0.000	1021	2.3	
Aroclor-1242	2	7.304	-0.010	1001	4.0	2	7.394	-0.004	4515	4.8	
Aroclor-1242	3	8.632	0.001	20852	250.0	3	7.769	0.002	531	2.2	
Aroclor-1242	4	8.925	0.005	11451	128.7	4	8.799	-0.002	20564	68.5	
Total CollAve (3 peaks):				127.6	Total Col2Ave (4 peaks):				19.4	RPD = 147*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				3.1		
Aroclor-1248	1	8.096	-0.000	11047	86.4	1	7.394	-0.001	4515	7.2	
Aroclor-1248	2	8.632	0.001	20852	131.0	2	8.275	0.000	45204	95.3	
Aroclor-1248	3	8.925	0.005	11451	77.3	3	8.799	-0.002	20564	43.0	
Aroclor-1248	4	9.505	-0.001	73680	774.7	4	9.126	-0.009	84230	136.3	
Total CollAve (4 peaks):				267.3	Total Col2Ave (4 peaks):				70.4	RPD = 117*	
Corrected Ave (3 peaks):				98.2	Corrected Ave (3 peaks):				48.5	RPD = 68*	
Aroclor-1254	1	9.002	-0.000	59931	250.0	1	9.036	-0.001	163998	255.8	
Aroclor-1254	2	9.078	0.000	18717	253.2	2	9.126	-0.001	84230	258.3	
Aroclor-1254	3	9.371	-0.000	35086	254.4	3	9.543	-0.000	130701	260.0	
Aroclor-1254	4	9.505	0.000	73680	249.5	4	9.691	-0.001	256589	255.2	
Aroclor-1254	5	10.211	0.001	49421	250.8	5	10.465	0.001	161017	259.2	
Total CollAve (5 peaks):				251.6	Total Col2Ave (5 peaks):				257.7	RPD = 2	
Corrected Ave (4 peaks):				250.9	Corrected Ave (4 peaks):				257.1	RPD = 2	
Aroclor-1260	1	10.762	-0.002	2944	15.0	1	10.793	-0.001	12381	17.0	
Aroclor-1260	2	11.081	0.001	3390	18.0	2	11.222	-0.011	72596	98.5	
Aroclor-1260	3	11.449	-0.000	7822	16.4	3	11.509	-0.003	45240	24.5	
Aroclor-1260	4	11.848	-0.000	7534	34.9	4	12.024	0.001	5827	10.1	
Aroclor-1260	5	---			0.0	NS	---			----	
Total CollAve (4 peaks):				21.1	Total Col2Ave (4 peaks):				37.5	RPD = 56*	
Corrected Ave (3 peaks):				16.4	Corrected Ave (3 peaks):				17.2	RPD = 5	
Aroclor-1262	1	11.081	0.001	3390	15.2	1	10.793	-0.001	12381	12.3	
Aroclor-1262	2	11.449	-0.000	7822	14.2	2	11.222	-0.012	72596	84.4	
Aroclor-1262	3	11.848	-0.001	7534	46.0	3	11.509	-0.001	45240	22.9	
Aroclor-1262	4	---			0.0	4	12.024	0.000	5827	6.1	
Total CollAve (3 peaks):				25.1	Total Col2Ave (4 peaks):				31.4	RPD = 22	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				13.8		
Aroclor-1268	1	---			0.0	1	12.024	0.001	5827	2.3	
Aroclor-1268	2	---			0.0	2	12.074	-0.016	29049	11.6	
Aroclor-1268	3	---			0.0	3	12.483	0.003	858	0.4	
Aroclor-1268	4	---			0.0	4	13.296	-0.002	1169	0.1	
CollAve: <3 Quant Peaks						Col2Ave: 3.6					

Total PCB Area Col1 (5.441 - 13.514) = 702105 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2618424 Col2 Total PCB = 0.3 ppm*

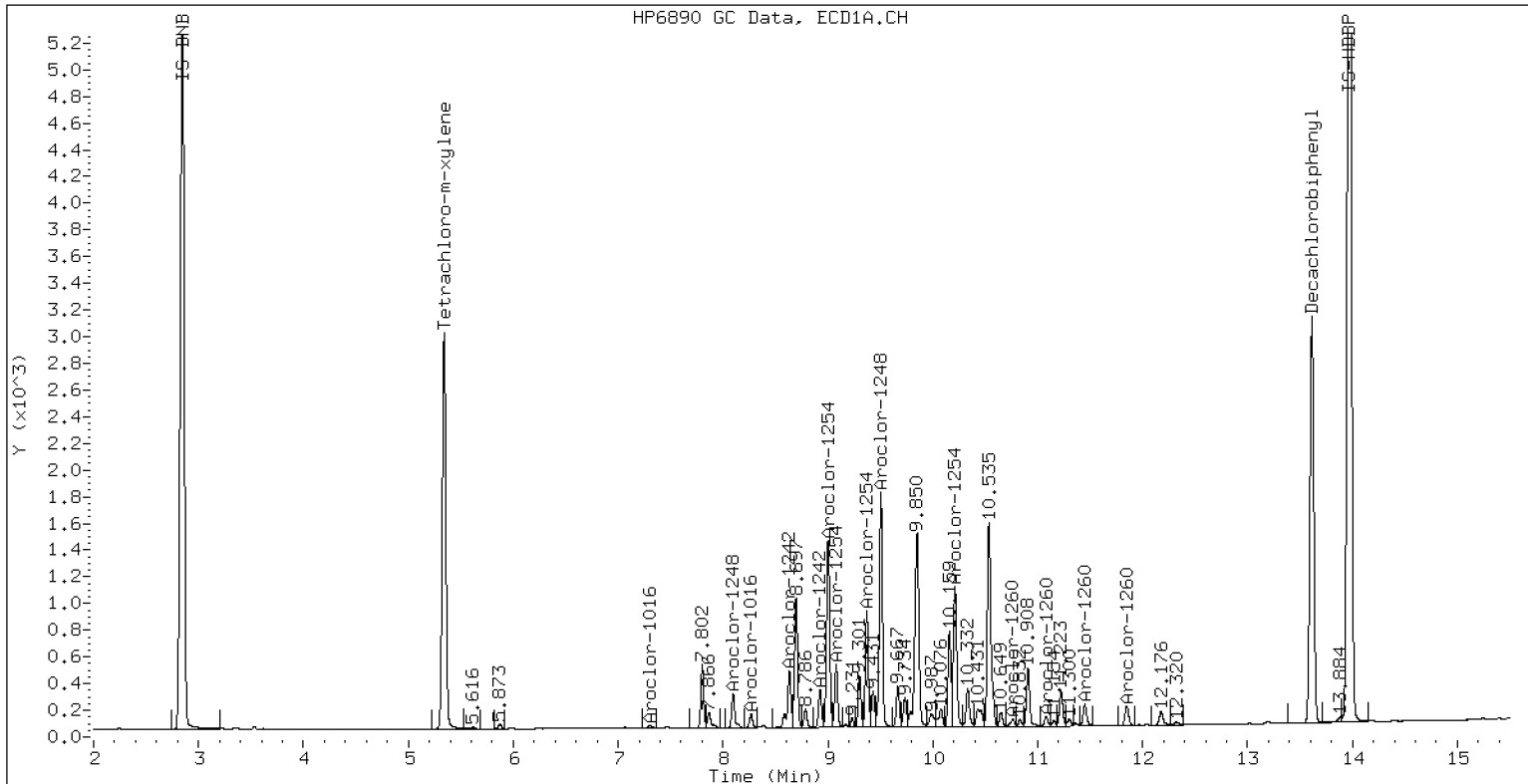
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV4

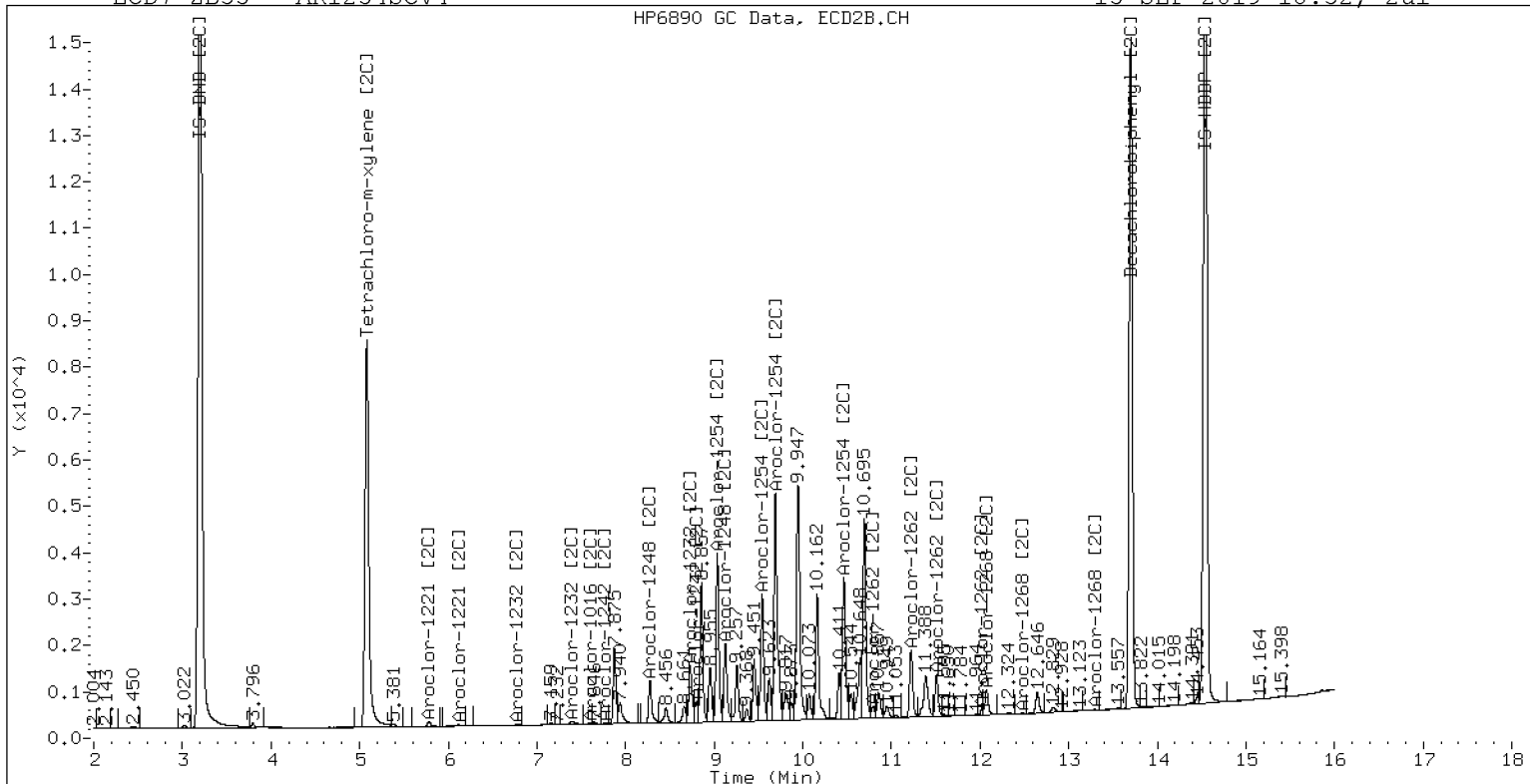
15-SEP-2019 18:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV4

15-SEP-2019 18:32, 2ul



ZB-35 Manual Integration: NO



SECOND-SOURCE CALIBRATION VERIFICATION EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Calibration: CI00052

Laboratory ID: SHI0216-SCV5

Sequence: SHI0216

Sequence Name: AR2162SCV5

Standard ID: H004293

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1221	250.00	259	3.7	20.00
Aroclor 1221 [2C]	250.00	266	6.4	20.00
Aroclor 1262	250.00	267	6.6	20.00
Aroclor 1262 [2C]	250.00	267	6.8	20.00
Decachlorobiphenyl	40.000	35.9	-10.3	20.00
Tetrachlorometaxylene	40.000	41.9	4.8	20.00
Decachlorobiphenyl [2C]	40.000	33.8	-15.6	20.00
Tetrachlorometaxylene [2C]	40.000	39.8	-0.5	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091520ECD7.D
Data file 2: /20190915.b/20190915.b/19091520ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV5
Client ID:
Injection Date: 15-SEP-2019 18:53
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.001	146719	5.081	0.001	519721	41.9	39.8	5.2	Tetrachloro-m-xylene
13.614	-0.000	152896	13.700	-0.001	742387	35.9	33.8	6.0	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	104.8	99.5
Decachlorobiphenyl	89.7	84.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	282463	-34.7
Hexabromobiphenyl	517563	421281	-18.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1099699	-26.6
Hexabromobiphenyl	1404015	1145810	-18.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.926	0.000	1872	21.8	1	6.789	0.010	25015	45.7
Aroclor-1016	2	7.315	0.002	5616	18.4	2	7.400	0.002	25838	22.6
Aroclor-1016	3	7.460	-0.000	2502	21.8	3	7.600	0.003	12141	26.4
Aroclor-1016	4	8.268	0.000	1039	11.0	4	7.768	0.002	6755	23.5
Total CollAve (4 peaks):				18.3	Total Col2Ave (4 peaks):				29.5	RPD = 47*
Corrected Ave (3 peaks):				17.1	Corrected Ave (3 peaks):				24.2	RPD = 34
Aroclor-1221	1	4.185	0.001	5406	261.5	1	4.283	-0.000	20980	268.7
Aroclor-1221	2	5.711	-0.000	8273	257.8	2	5.758	-0.000	43022	263.9
Aroclor-1221	3	5.982	-0.001	21050	258.6	3	6.104	-0.001	72399	265.4
Total CollAve (3 peaks):				259.3	Total Col2Ave (3 peaks):				266.0	RPD = 3
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks					
Aroclor-1232	1	4.185	0.001	5406	444.4	1	4.283	0.001	20980	450.7
Aroclor-1232	2	6.926	0.001	1872	58.3	2	6.789	0.012	25015	108.0
Aroclor-1232	3	7.315	0.002	5616	48.9	3	7.400	0.003	25838	55.7
Aroclor-1232	4	7.460	0.000	2502	58.1	4	8.730	0.001	6692	43.4
Total CollAve (4 peaks):				152.4	Total Col2Ave (4 peaks):				164.5	RPD = 8
Corrected Ave (3 peaks):				55.1	Corrected Ave (3 peaks):				69.0	RPD = 22
Aroclor-1242	1	6.926	0.000	1872	26.9	1	6.789	0.011	25015	60.0
Aroclor-1242	2	7.315	0.001	5616	22.4	2	7.400	0.002	25838	28.7
Aroclor-1242	3	8.634	0.002	1386	16.7	3	7.768	0.001	6755	29.4
Aroclor-1242	4	8.923	0.004	1556	17.6	4	8.802	0.002	3724	13.0
Total CollAve (4 peaks):				20.9	Total Col2Ave (4 peaks):				32.8	RPD = 44*
Corrected Ave (3 peaks):				18.9	Corrected Ave (3 peaks):				23.7	RPD = 23
Aroclor-1248	1	8.097	0.000	1229	9.7	1	7.400	0.005	25838	43.2
Aroclor-1248	2	8.634	0.002	1386	8.8	2	8.276	0.001	5926	13.1
Aroclor-1248	3	8.923	0.003	1556	10.6	3	8.802	0.002	3724	8.2
Aroclor-1248	4	9.476	-0.030	10150	107.5	4	9.133	-0.003	8590	14.6
Total CollAve (4 peaks):				34.1	Total Col2Ave (4 peaks):				19.8	RPD = 53*
Corrected Ave (3 peaks):				9.7	Corrected Ave (3 peaks):				12.0	RPD = 21
Aroclor-1254	1	9.004	0.002	7447	31.3	1	9.037	0.001	28859	47.4
Aroclor-1254	2	---			0.0	2	9.133	0.006	8590	27.7
Aroclor-1254	3	9.372	0.001	1574	11.5	3	9.544	0.000	7347	15.4
Aroclor-1254	4	9.476	-0.029	10150	34.6	4	9.733	0.041	117247	122.7
Aroclor-1254	5	10.158	-0.052	57397	293.4	5	10.468	0.004	28744	48.7
Total CollAve (4 peaks):				92.7	Total Col2Ave (5 peaks):				52.4	RPD = 56*
Corrected Ave (3 peaks):				25.8	Corrected Ave (4 peaks):				34.8	RPD = 30
Aroclor-1260	1	10.764	0.001	72353	371.9	1	10.794	-0.000	265507	368.3
Aroclor-1260	2	11.080	0.000	59517	319.1	2	11.234	0.001	228474	313.8
Aroclor-1260	3	11.450	0.000	141816	299.5	3	11.510	-0.002	510965	280.0
Aroclor-1260	4	11.849	0.000	43028	201.4	4	12.024	0.001	256630	451.9
Aroclor-1260	5	11.966	0.000	55865	552.4	NS	---			----
Total CollAve (5 peaks):				348.9	Total Col2Ave (4 peaks):				353.5	RPD = 1
Corrected Ave (4 peaks):				298.0	Corrected Ave (3 peaks):				320.7	RPD = 7
Aroclor-1262	1	11.080	0.000	59517	269.7	1	10.794	-0.000	265507	267.1
Aroclor-1262	2	11.450	0.000	141816	259.6	2	11.234	-0.001	228474	268.8
Aroclor-1262	3	11.849	-0.001	43028	265.2	3	11.510	-0.000	510965	262.1
Aroclor-1262	4	11.966	0.000	55865	271.7	4	12.024	-0.000	256630	269.9
Total CollAve (4 peaks):				266.5	Total Col2Ave (4 peaks):				267.0	RPD = 0
Corrected Ave (3 peaks):				264.8	Corrected Ave (3 peaks):				266.0	RPD = 0
Aroclor-1268	1	11.966	0.000	55865	86.3	1	12.024	0.000	256630	104.0
Aroclor-1268	2	12.038	0.002	57038	97.6	2	12.085	-0.005	364662	147.2
Aroclor-1268	3	12.438	0.015	20392	41.3	3	12.478	-0.002	16839	7.5
Aroclor-1268	4	13.206	-0.001	16188	10.4	4	13.294	-0.004	80522	10.1
Total CollAve (4 peaks):				58.9	Total Col2Ave (4 peaks):				67.2	RPD = 13

Corrected Ave (3 peaks): 46.0 Corrected Ave (3 peaks): 40.5 RPD = 13

Total PCB Area Col1 (5.441 - 13.514) = 953031 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 3754639 Col2 Total PCB = 0.4 ppm*

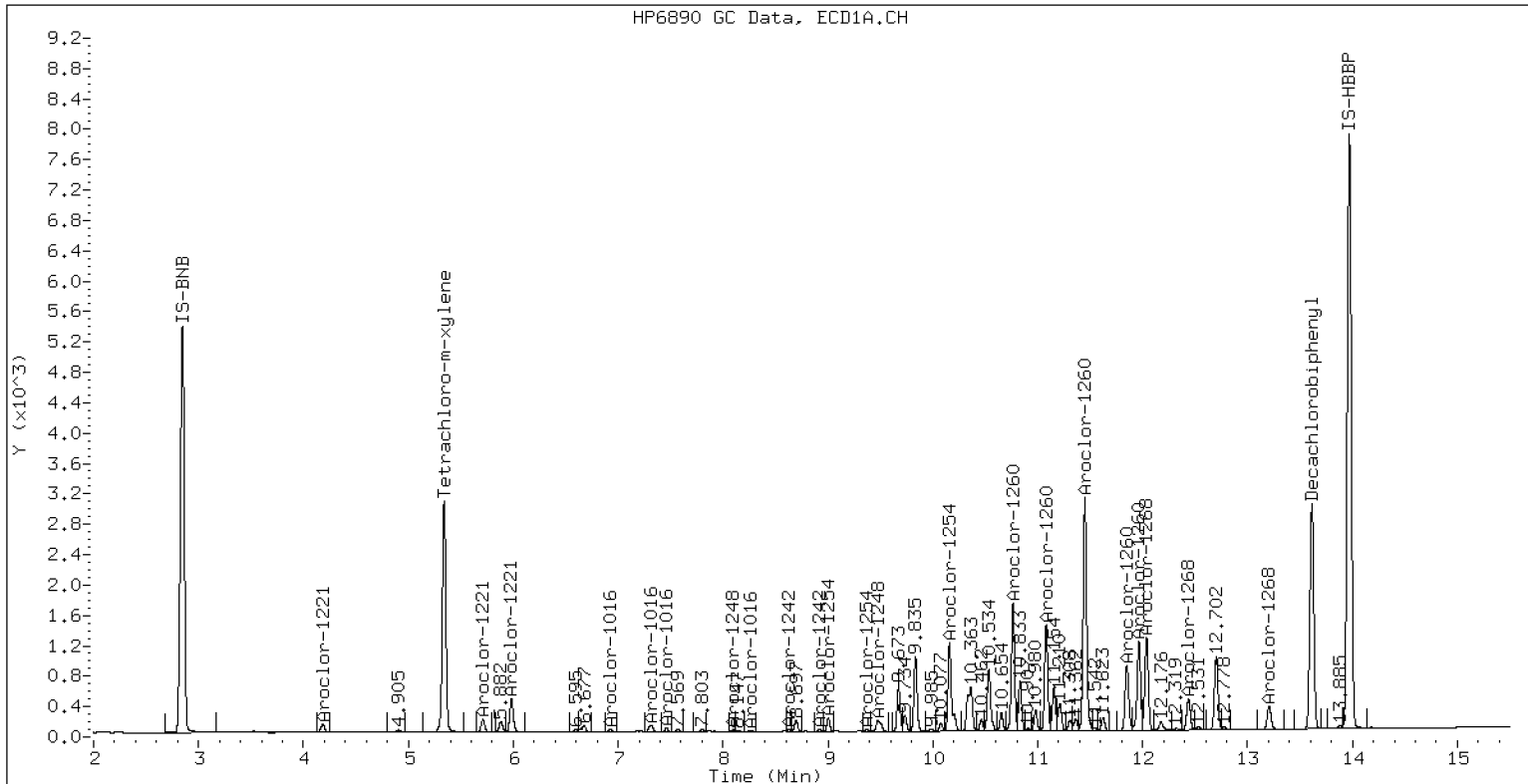
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV5

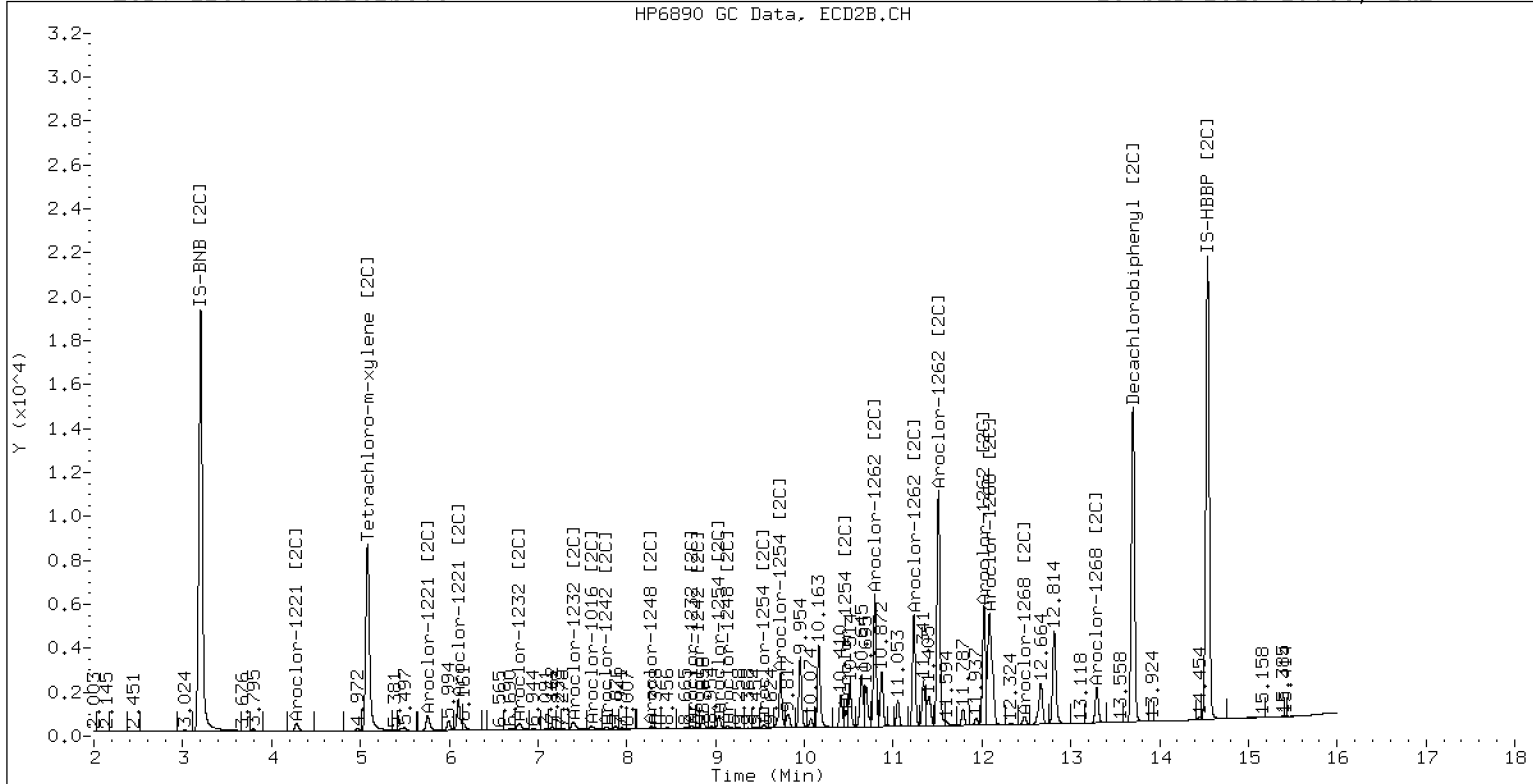
15-SEP-2019 18:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV5

15-SEP-2019 18:53, 2ul



ZB-35 Manual Integration: NO



SECOND-SOURCE CALIBRATION VERIFICATION EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Calibration: CI00052

Laboratory ID: SHI0216-SCV6

Sequence: SHI0216

Sequence Name: AR3268SCV6

Standard ID: H004294

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1232	250.00	285	14.1	20.00
Aroclor 1232 [2C]	250.00	269	7.8	20.00
Aroclor 1268	250.00	263	5.0	20.00
Aroclor 1268 [2C]	250.00	261	4.6	20.00
Decachlorobiphenyl	40.000	50.0	25.0	20.00
Tetrachlorometaxylene	40.000	40.3	0.7	20.00
Decachlorobiphenyl [2C]	40.000	47.8	19.5	20.00
Tetrachlorometaxylene [2C]	40.000	37.8	-5.6	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091521ECD7.D
Data file 2: /20190915.b/20190915.b/19091521ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV6
Client ID:
Injection Date: 15-SEP-2019 19:14
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	141373	5.081	0.001	505294	40.3	37.8	6.4	Tetrachloro-m-xylene
13.614	0.000	214658	13.702	-0.000	1059666	50.0	47.8	4.4	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	100.7	94.4
Decachlorobiphenyl	125.0	119.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283260	-34.5
Hexabromobiphenyl	517563	424464	-18.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1126107	-24.8
Hexabromobiphenyl	1404015	1155245	-17.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.926	-0.000	9622	112.0	1	6.779	0.000	68458	122.2
Aroclor-1016	2	7.314	0.001	33292	108.9	2	7.399	0.001	134510	115.0
Aroclor-1016	3	7.460	0.000	12616	109.4	3	7.599	0.001	54238	115.0
Aroclor-1016	4	8.268	0.000	10808	114.2	4	7.767	0.000	34263	116.3
Total CollAve (4 peaks):				111.1	Total Col2Ave (4 peaks):				117.1	RPD = 5
Corrected Ave (3 peaks):				110.1	Corrected Ave (3 peaks):				115.4	RPD = 5
Aroclor-1221	1	4.185	0.000	3178	153.3	1	4.283	-0.001	12766	159.7
Aroclor-1221	2	5.711	-0.001	4834	150.2	2	5.760	0.002	27761	166.3
Aroclor-1221	3	5.982	-0.001	16410	201.0	3	6.104	-0.000	70670	253.0
Total CollAve (3 peaks):				168.2	Total Col2Ave (3 peaks):				193.0	RPD = 14
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks					
Aroclor-1232	1	4.185	0.001	3178	260.5	1	4.283	0.001	12766	267.8
Aroclor-1232	2	6.926	0.001	9622	298.8	2	6.779	0.002	68458	288.5
Aroclor-1232	3	7.314	0.001	33292	289.3	3	7.399	0.002	134510	283.4
Aroclor-1232	4	7.460	0.000	12616	292.4	4	8.729	0.000	37553	238.0
Total CollAve (4 peaks):				285.2	Total Col2Ave (4 peaks):				269.4	RPD = 6
Corrected Ave (3 peaks):				280.7	Corrected Ave (3 peaks):				263.1	RPD = 6
Aroclor-1242	1	6.926	0.000	9622	138.1	1	6.779	0.001	68458	160.4
Aroclor-1242	2	7.314	-0.000	33292	132.2	2	7.399	0.001	134510	145.9
Aroclor-1242	3	8.632	0.001	9671	116.5	3	7.767	0.000	34263	145.8
Aroclor-1242	4	8.920	0.001	10040	113.4	4	8.802	0.001	37955	129.8
Total CollAve (4 peaks):				125.0	Total Col2Ave (4 peaks):				145.5	RPD = 15
Corrected Ave (3 peaks):				120.7	Corrected Ave (3 peaks):				140.5	RPD = 15
Aroclor-1248	1	8.096	-0.000	9055	71.1	1	7.399	0.004	134510	219.7
Aroclor-1248	2	8.632	0.000	9671	61.0	2	8.275	0.000	39058	84.6
Aroclor-1248	3	8.920	0.000	10040	68.1	3	8.802	0.001	37955	81.6
Aroclor-1248	4	9.506	0.000	3395	35.9	4	9.138	0.003	44105	73.3
Total CollAve (4 peaks):				59.0	Total Col2Ave (4 peaks):				114.8	RPD = 64*
Corrected Ave (3 peaks):				55.0	Corrected Ave (3 peaks):				79.8	RPD = 37
Aroclor-1254	1	9.001	-0.001	3344	14.0	1	9.038	0.001	8654	13.9
Aroclor-1254	2	9.078	0.000	1342	18.2	2	9.138	0.011	44105	138.9
Aroclor-1254	3	9.372	0.001	1692	12.3	3	9.544	0.001	7982	16.3
Aroclor-1254	4	9.506	0.001	3395	11.5	4	9.692	0.001	13501	13.8
Aroclor-1254	5	10.215	0.004	2260	11.5	5	10.468	0.004	5584	9.2
Total CollAve (5 peaks):				13.5	Total Col2Ave (5 peaks):				38.4	RPD = 96*
Corrected Ave (4 peaks):				12.4	Corrected Ave (4 peaks):				13.3	RPD = 7
Aroclor-1260	1	10.764	0.000	36154	184.4	1	10.794	-0.000	139310	191.7
Aroclor-1260	2	11.080	-0.000	3230	17.2	2	11.237	0.004	167894	228.7
Aroclor-1260	3	11.449	-0.001	22521	47.2	3	11.510	-0.002	92070	50.0
Aroclor-1260	4	---			0.0	4	12.023	0.001	671734	1173.3
Aroclor-1260	5	11.966	0.001	178894	1755.7	NS	---			----
Total CollAve (4 peaks):				501.1	Total Col2Ave (4 peaks):				410.9	RPD = 20
Corrected Ave (3 peaks):				82.9	Corrected Ave (3 peaks):				156.8	RPD = 62*
Aroclor-1262	1	11.080	-0.000	3230	14.5	1	10.794	-0.000	139310	139.0
Aroclor-1262	2	11.449	-0.000	22521	40.9	2	11.237	0.003	167894	195.9
Aroclor-1262	3	---			0.0	3	11.510	-0.001	92070	46.8
Aroclor-1262	4	11.966	0.001	178894	863.5	4	12.023	-0.000	671734	700.6
Total CollAve (3 peaks):				306.3	Total Col2Ave (4 peaks):				270.6	RPD = 12
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				127.2	
Aroclor-1268	1	11.966	0.001	178894	274.2	1	12.023	0.000	671734	270.0
Aroclor-1268	2	12.037	0.001	179024	303.9	2	12.090	0.000	760106	304.4
Aroclor-1268	3	12.424	0.001	121349	243.7	3	12.480	-0.000	546687	241.7
Aroclor-1268	4	13.207	0.000	359555	228.4	4	13.297	0.000	1841105	229.6
Total CollAve (4 peaks):				262.6	Total Col2Ave (4 peaks):				261.4	RPD = 0

Corrected Ave (3 peaks): 248.8 Corrected Ave (3 peaks): 247.1 RPD = 1

Total PCB Area Col1 (5.441 - 13.514) = 1291499 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5756571 Col2 Total PCB = 0.6 ppm*

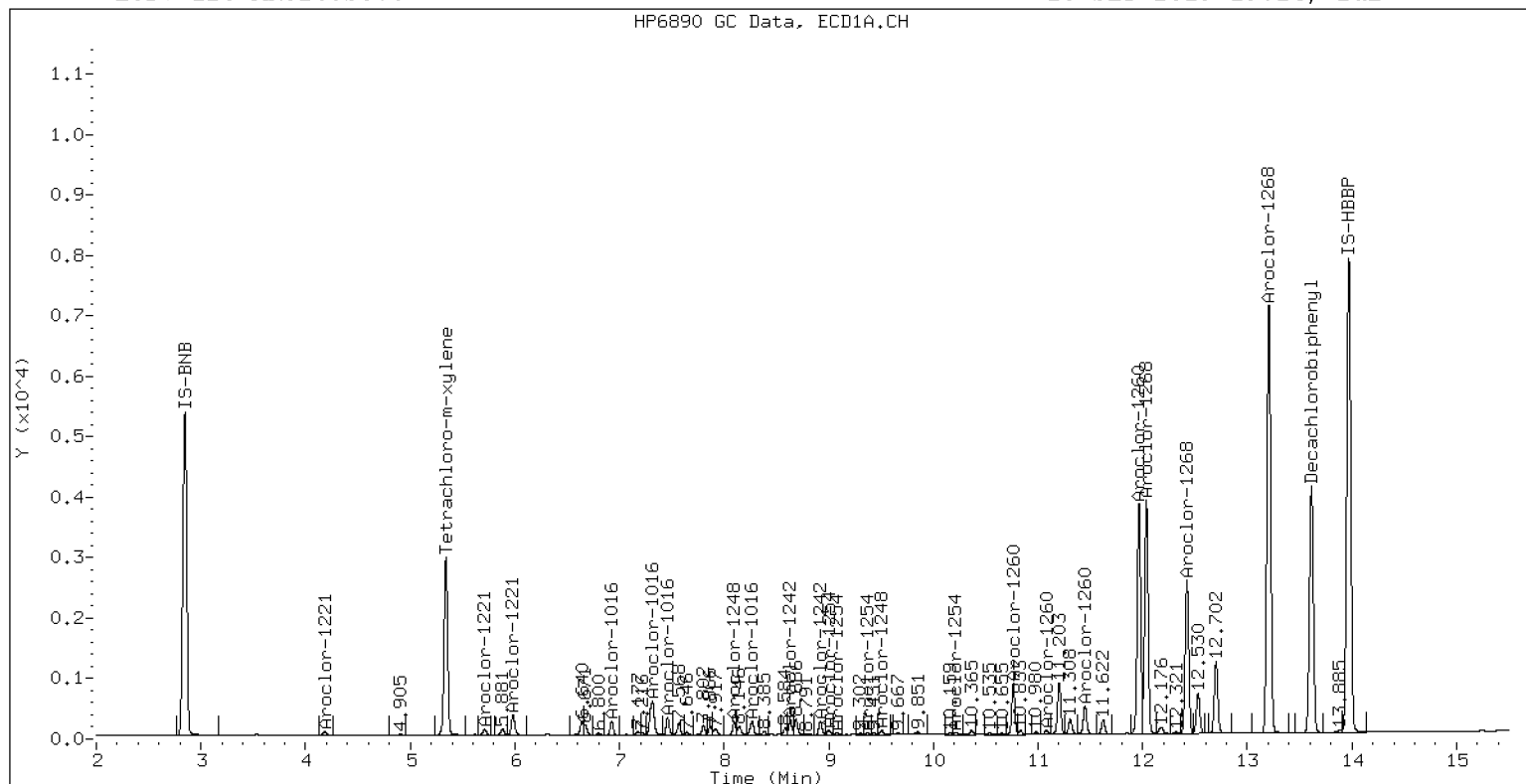
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV6

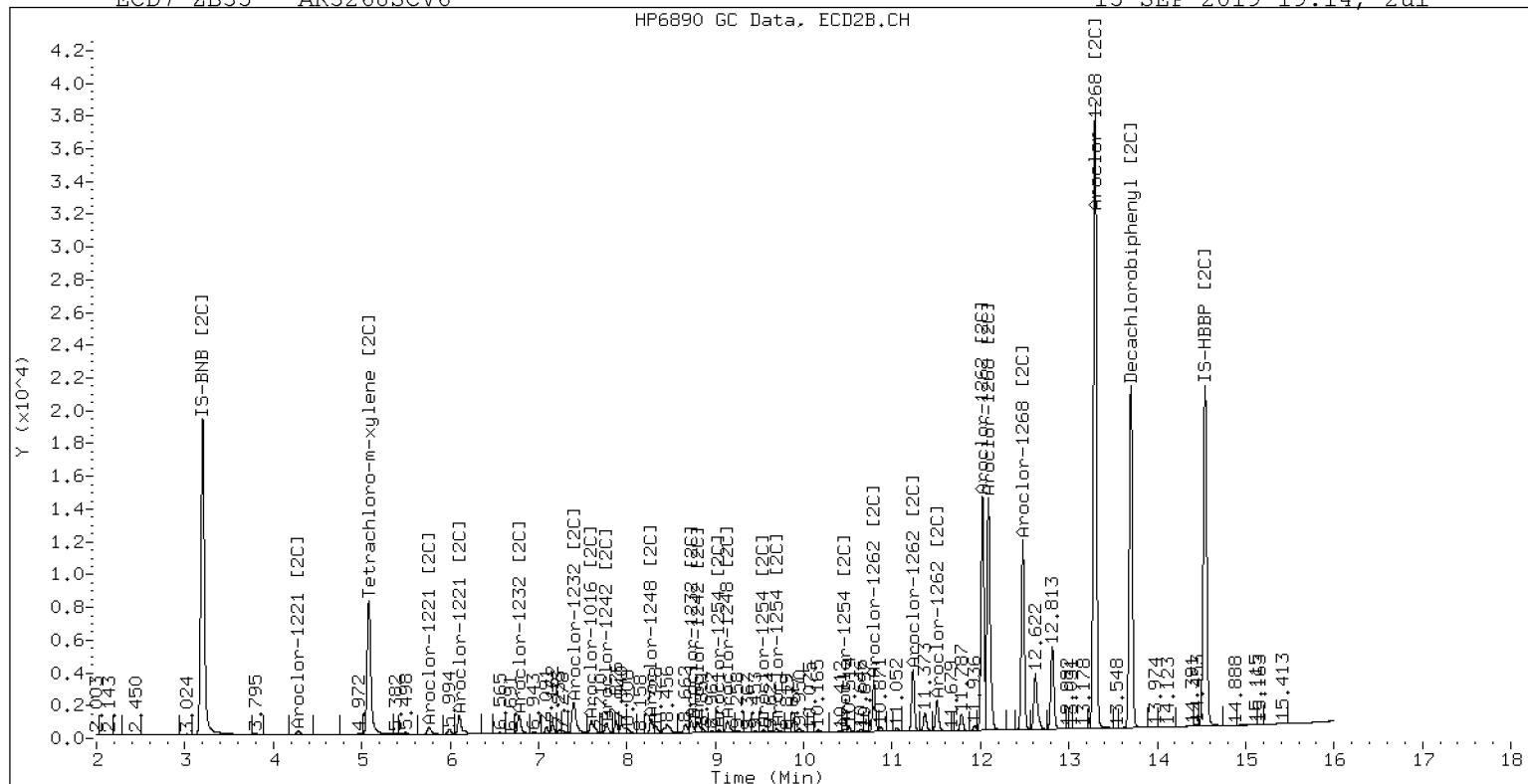
15-SEP-2019 19:14, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR3268SCV6

15-SEP-2019 19:14, 2ul



ZB-35 Manual Integration: NO



INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: C100052
Lab File ID: 19101106ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHJ0236 Injection Date: 10/11/19
Lab Sample ID: SHJ0236-ICV1 Injection Time: 17:40
Sequence Name: AR1254ICV1

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	248	0.0530781	0.0529743		-1.0	
Aroclor 1254 [2C]	A	250.00	265	0.0428263	0.0460351		5.8	
Decachlorobiphenyl	A	40.000	43.5	0.8094199	0.8796186		8.8	
Tetrachlorometaxylene	A	40.000	43.8	0.9910571	1.0847260		9.5	
Decachlorobiphenyl [2C]	A	40.000	44.0	1.5347890	1.6898710		10.0	
Tetrachlorometaxylene [2C]	A	40.000	42.1	0.9503239	1.0006450		5.3	

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101106ECD7.D ARI ID: AR1254ICV1
Data file 2: /20191011.b/20191011.b/19101106ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m Injection Date: 11-OCT-2019 17:40
Compound Sublist: AR1254.sub Report Date: 10/15/2019 06:10
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.338	-0.002	137630	43.8	42.1	3.9	Tetrachloro-m-xylene
13.614	0.000	165670	43.5	44.0	1.3	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	109.5	105.3
Decachlorobiphenyl	108.7	110.1

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	253760	-3.5
Hexabromobiphenyl	382688	376686	-1.6

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1160432	7.3
Hexabromobiphenyl	1006687	1096454	8.9

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1254	1	9.003	0.000	52869	247.3	1	9.026	0.000	172798	268.7
Aroclor-1254	2	9.079	0.001	15016	227.8	2	9.117	0.000	80789	247.0
Aroclor-1254	3	9.371	0.000	32661	265.5	3	9.534	0.000	130358	258.5
Aroclor-1254	4	9.506	0.001	66814	253.7	4	9.682	0.000	284154	281.7
Aroclor-1254	5	10.212	0.002	42683	242.9	5	10.456	0.000	166597	267.3
Total CollAve (5 peaks):				247.4	Total Col2Ave (5 peaks):				264.7	RPD = 7
Corrected Ave (4 peaks):				242.9	Corrected Ave (4 peaks):				260.4	RPD = 7
CalAmt %D:				-1.0	CalAmt %D:				5.9	

Total PCB Area Coll (5.441 - 13.514) = 641751 Coll Total PCB = 0.3 ppm*

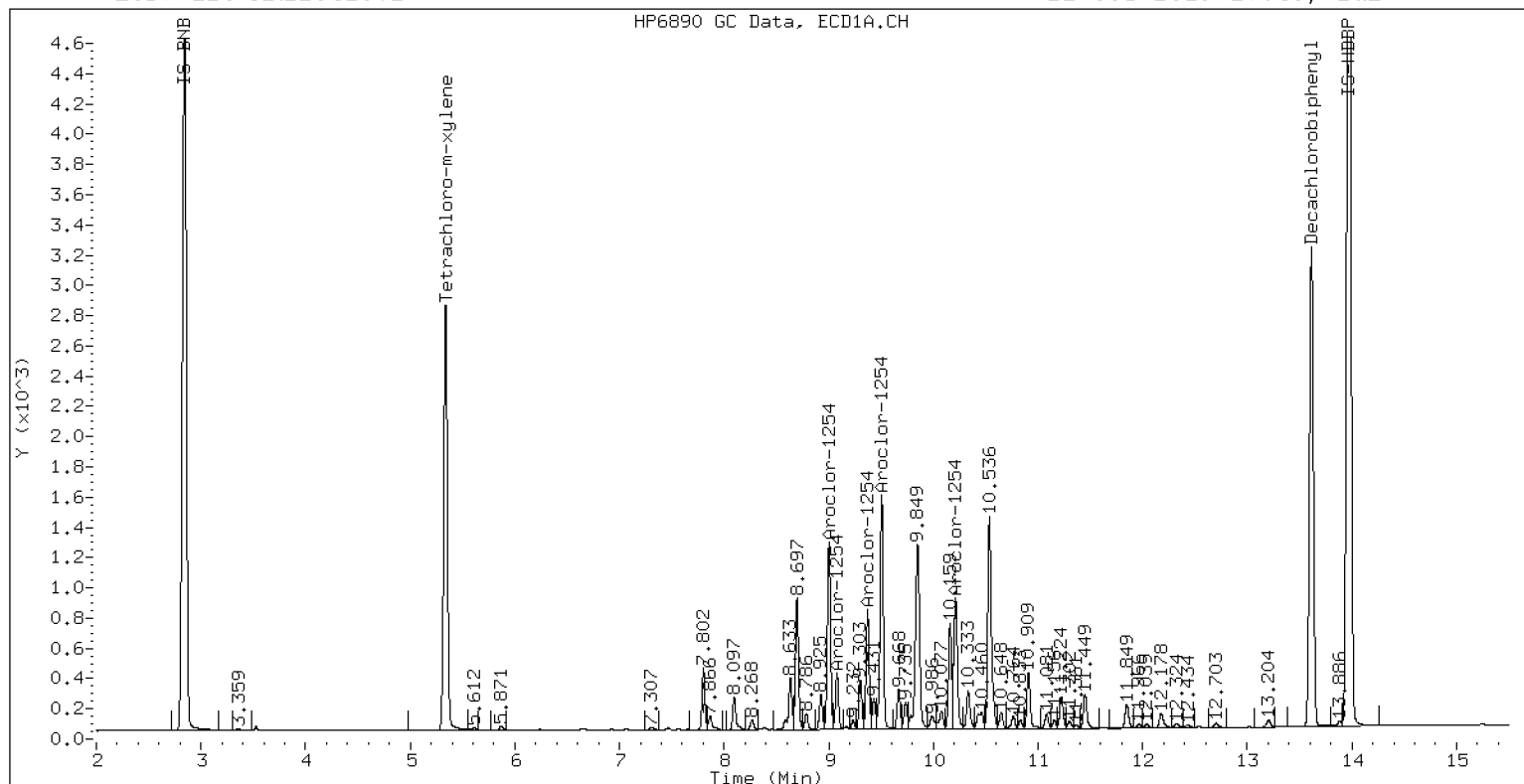
Total PCB Area Col2 (5.441 - 13.514) = 2888679 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1

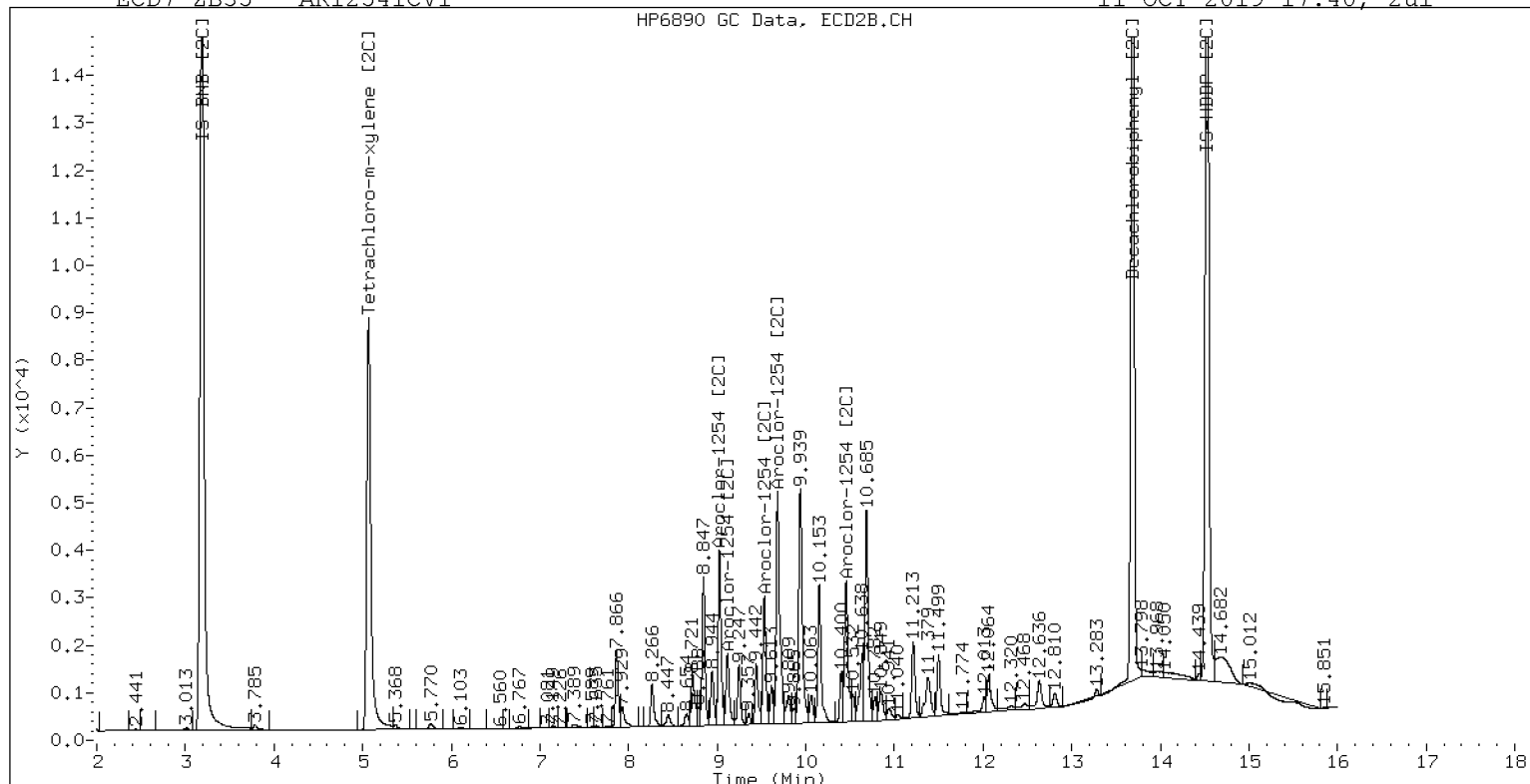
11-OCT-2019 17:40, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1

11-OCT-2019 17:40, 2ul



ZB-35 Manual Integration: YES



INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19101107ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHJ0236 Injection Date: 10/11/19
Lab Sample ID: SHJ0236-ICV2 Injection Time: 18:01
Sequence Name: AR1660ICV2

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	282	0.0424735	0.0483287		12.9	
Aroclor 1016 [2C]	A	250.00	274	0.0443328	0.0485441		9.7	
Aroclor 1260	A	250.00	275	0.0444075	0.0498114		10.0	
Aroclor 1260 [2C]	A	250.00	285	0.0670532	0.0766091		13.9	
Decachlorobiphenyl	A	40.000	47.1	0.8094199	0.9526742		17.8	
Tetrachlorometaxylene	A	40.000	47.8	0.9910571	1.1841200		19.5	
Decachlorobiphenyl [2C]	A	40.000	47.2	1.5347890	1.8093650		18.0	
Tetrachlorometaxylene [2C]	A	40.000	44.8	0.9503239	1.0637550		12.0	

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101107ECD7.D ARI ID: AR1660ICV2
Data file 2: /20191011.b/20191011.b/19101107ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m Injection Date: 11-OCT-2019 18:01
Compound Sublist: AR1660.sub Report Date: 10/15/2019 06:10
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.338	-0.002	146330	5.068	0.011	610193	47.8	44.8	6.5	Tetrachloro-m-xylene
13.614	0.000	169576	13.690	-0.003	978532	47.1	47.2	0.2	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	119.5	111.9
Decachlorobiphenyl	117.7	117.9

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	247154	-6.0
Hexabromobiphenyl	382688	356000	-7.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1147244	6.0
Hexabromobiphenyl	1006687	1081630	7.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.924	-0.001	20900	278.7	1	6.766	0.007	140513	246.2
Aroclor-1016	2	7.314	0.001	76974	288.6	2	7.388	0.006	332559	279.0
Aroclor-1016	3	7.459	-0.001	28394	282.3	3	7.588	0.007	136516	284.2
Aroclor-1016	4	8.267	-0.001	23040	278.9	4	7.757	0.006	86561	288.5
Total CollAve (4 peaks):				282.1	Total Col2Ave (4 peaks):				274.5	RPD = 3
Corrected Ave (3 peaks):				280.0	Corrected Ave (3 peaks):				269.8	RPD = 4

CalAmt %D: 12.9

CalAmt %D: 9.8

Aroclor-1260	1	10.765	0.001	41359	251.6	1	10.784	0.004	191644	281.6
Aroclor-1260	2	11.081	0.001	43106	273.5	2	11.221	0.003	204297	297.2
Aroclor-1260	3	11.449	-0.000	113743	284.3	3	11.499	0.003	493648	286.6
Aroclor-1260	4	11.849	0.001	57929	320.9	4	12.012	0.002	146194	272.7
Aroclor-1260	5	11.966	0.001	20939	245.0	NS	---			----
Total CollAve (5 peaks):				275.1	Total Col2Ave (4 peaks):				284.5	RPD = 3
Corrected Ave (4 peaks):				263.6	Corrected Ave (3 peaks):				280.3	RPD = 6

CalAmt %D: 10.0

CalAmt %D: 13.8

Total PCB Area Coll (5.441 - 13.514) = 1181799 Coll Total PCB = 0.6 ppm*

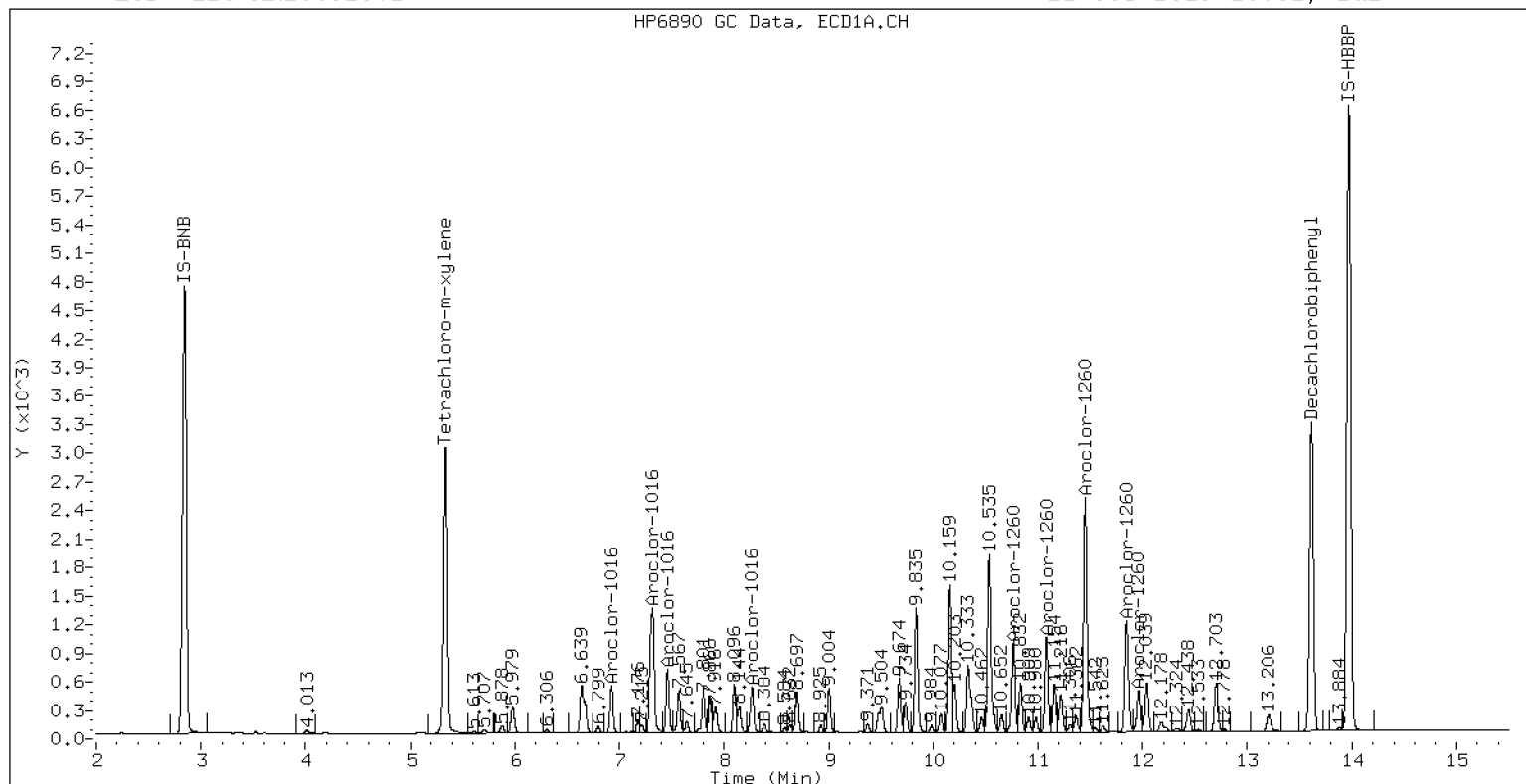
Total PCB Area Col2 (5.441 - 13.514) = 5403180 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2

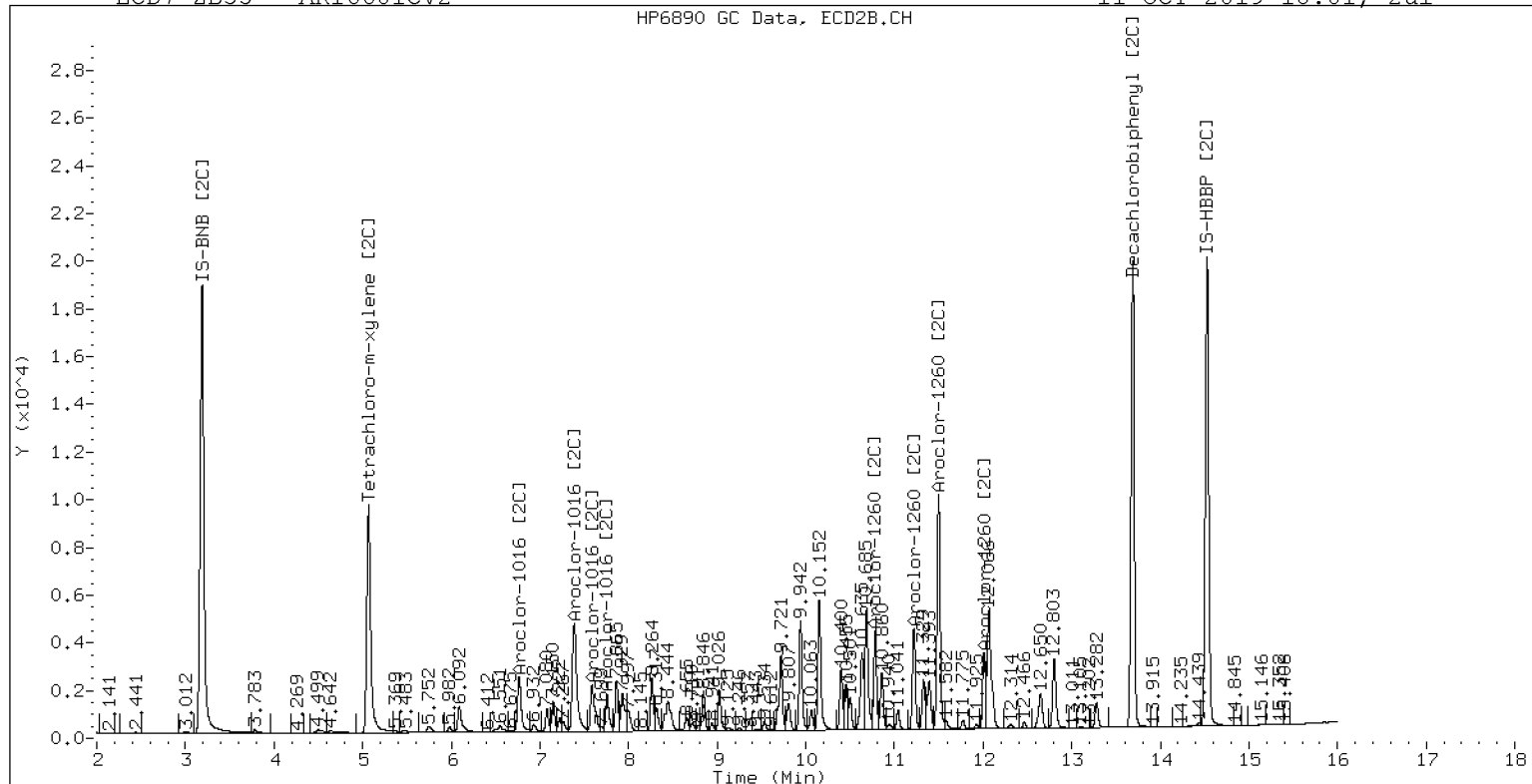
11-OCT-2019 18:01, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2

11-OCT-2019 18:01, 2ul



ZB-35 Manual Integration: NO



**SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A**

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19091516ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHI0216 Injection Date: 09/15/19
Lab Sample ID: SHI0216-SCV1 Injection Time: 17:29
Sequence Name: AR1660SCV1

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	263	0.0424735	0.0445216		5.3	20
Aroclor 1016 [2C]	A	250.00	252	0.0443328	0.0446481		0.7	20
Aroclor 1260	A	250.00	266	0.0444075	0.0480543		6.5	20
Aroclor 1260 [2C]	A	250.00	256	0.0670532	0.0690106		2.5	20
Decachlorobiphenyl	A	40.000	36.6	0.8094199	0.7399518		-8.6	20
Tetrachlorometaxylene	A	40.000	41.8	0.9910571	1.0353730		4.5	20
Decachlorobiphenyl [2C]	A	40.000	34.1	1.5347890	1.3077540		-14.8	20
Tetrachlorometaxylene [2C]	A	40.000	39.0	0.9503239	0.9269447		-2.5	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091516ECD7.D
Data file 2: /20190915.b/20190915.b/19091516ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660SCV1
Client ID:
Injection Date: 15-SEP-2019 17:29
Report Date: 09/16/2019 11:43
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.340	-0.000	139282	5.079	-0.001	501326	41.8	39.0	6.9	Tetrachloro-m-xylene
13.614	0.000	147529	13.700	-0.002	704171	36.6	34.1	7.0	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	104.5	97.5
Decachlorobiphenyl	91.4	85.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	269047	2.3
Hexabromobiphenyl	382688	398753	4.2

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1081674	-0.0
Hexabromobiphenyl	1006687	1076917	7.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.925	-0.001	20670	253.2	1	6.777	-0.001	131932	245.2
Aroclor-1016	2	7.313	-0.000	75492	260.0	2	7.398	-0.000	284758	253.4
Aroclor-1016	3	7.459	-0.001	27940	255.2	3	7.598	0.001	114982	253.9
Aroclor-1016	4	8.267	-0.001	25628	285.0	4	7.766	-0.001	72012	254.6
Total CollAve (4 peaks):				263.4	Total Col2Ave (4 peaks):				251.8	RPD = 5
Corrected Ave (3 peaks):				256.1	Corrected Ave (3 peaks):				250.8	RPD = 2
Aroclor-1221	1	---			0.0	1	4.281	-0.002	714	9.3
Aroclor-1221	2	5.708	-0.003	2518	82.4	2	5.762	0.004	17203	107.3
Aroclor-1221	3	5.981	-0.002	14494	186.9	3	6.103	-0.001	63127	235.2
CollAve: <3 Quant Peaks					Col2Ave: 117.3					
Aroclor-1232	1	---			0.0	1	4.281	-0.001	714	15.6
Aroclor-1232	2	6.925	0.000	20670	675.7	2	6.777	0.000	131932	578.9
Aroclor-1232	3	7.313	0.000	75492	690.6	3	7.398	0.001	284758	624.5
Aroclor-1232	4	7.459	-0.000	27940	681.7	4	8.728	-0.001	16488	108.8
Total CollAve (3 peaks):				682.7	Total Col2Ave (4 peaks):				332.0	RPD = 69*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				234.4	
Aroclor-1242	1	6.925	-0.000	20670	312.2	1	6.777	-0.001	131932	321.7
Aroclor-1242	2	7.313	-0.001	75492	315.5	2	7.398	0.000	284758	321.6
Aroclor-1242	3	8.632	0.000	3823	48.5	3	7.766	-0.001	72012	319.0
Aroclor-1242	4	8.924	0.005	1968	23.4	4	8.799	-0.001	10146	36.1
Total CollAve (4 peaks):				174.9	Total Col2Ave (4 peaks):				249.6	RPD = 35
Corrected Ave (3 peaks):				128.0	Corrected Ave (3 peaks):				225.6	RPD = 55*
Aroclor-1248	1	8.096	-0.001	20862	172.5	1	7.398	0.003	284758	484.2
Aroclor-1248	2	8.632	0.000	3823	25.4	2	8.275	-0.000	86975	196.1
Aroclor-1248	3	8.924	0.004	1968	14.1	3	8.799	-0.001	10146	22.7
Aroclor-1248	4	9.478	-0.028	15140	168.4	4	9.135	-0.000	5011	8.7
Total CollAve (4 peaks):				95.1	Total Col2Ave (4 peaks):				177.9	RPD = 61*
Corrected Ave (3 peaks):				69.3	Corrected Ave (3 peaks):				75.8	RPD = 9
Aroclor-1254	1	9.004	0.002	13997	61.7	1	9.036	-0.000	52182	87.1
Aroclor-1254	2	---			0.0	2	9.135	0.008	5011	16.4
Aroclor-1254	3	9.372	0.001	2241	17.2	3	9.544	0.001	8366	17.8
Aroclor-1254	4	9.478	-0.027	15140	54.2	4	9.732	0.041	121876	129.6
Aroclor-1254	5	10.158	-0.053	79007	424.0	5	10.467	0.003	54907	94.5
Total CollAve (4 peaks):				139.3	Total Col2Ave (5 peaks):				69.1	RPD = 67*
Corrected Ave (3 peaks):				44.4	Corrected Ave (4 peaks):				54.0	RPD = 19
Aroclor-1260	1	10.763	-0.000	47502	257.9	1	10.793	-0.001	173400	255.9
Aroclor-1260	2	11.079	-0.001	47459	268.8	2	11.232	-0.001	175778	256.8
Aroclor-1260	3	11.449	-0.000	124200	277.2	3	11.510	-0.002	444580	259.2
Aroclor-1260	4	11.849	0.000	56510	279.5	4	12.023	0.000	135226	253.4
Aroclor-1260	5	11.965	-0.000	23732	247.9	NS	---			----
Total CollAve (5 peaks):				266.3	Total Col2Ave (4 peaks):				256.3	RPD = 4
Corrected Ave (4 peaks):				263.0	Corrected Ave (3 peaks):				255.4	RPD = 3
Aroclor-1262	1	11.079	-0.001	47459	227.2	1	10.793	-0.001	173400	185.6
Aroclor-1262	2	11.449	-0.000	124200	240.2	2	11.232	-0.002	175778	220.0
Aroclor-1262	3	11.849	-0.001	56510	368.0	3	11.510	-0.001	444580	242.6
Aroclor-1262	4	11.965	-0.000	23732	121.9	4	12.023	-0.001	135226	151.3
Total CollAve (4 peaks):				239.3	Total Col2Ave (4 peaks):				199.9	RPD = 18
Corrected Ave (3 peaks):				196.4	Corrected Ave (3 peaks):				185.6	RPD = 6
Aroclor-1268	1	11.965	-0.000	23732	38.7	1	12.023	-0.001	135226	58.3
Aroclor-1268	2	12.038	0.002	29014	52.4	2	12.078	-0.013	289317	124.3
Aroclor-1268	3	12.438	0.015	12219	26.1	3	12.479	-0.002	4945	2.3
Aroclor-1268	4	13.205	-0.002	5597	3.8	4	13.293	-0.004	26676	3.6
Total CollAve (4 peaks):				30.3	Total Col2Ave (4 peaks):				47.1	RPD = 44*
Corrected Ave (3 peaks):				22.9	Corrected Ave (3 peaks):				21.4	RPD = 7

Total PCB Area Col1 (5.441 - 13.514) = 1171435 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 4394557 Col2 Total PCB = 0.5 ppm*

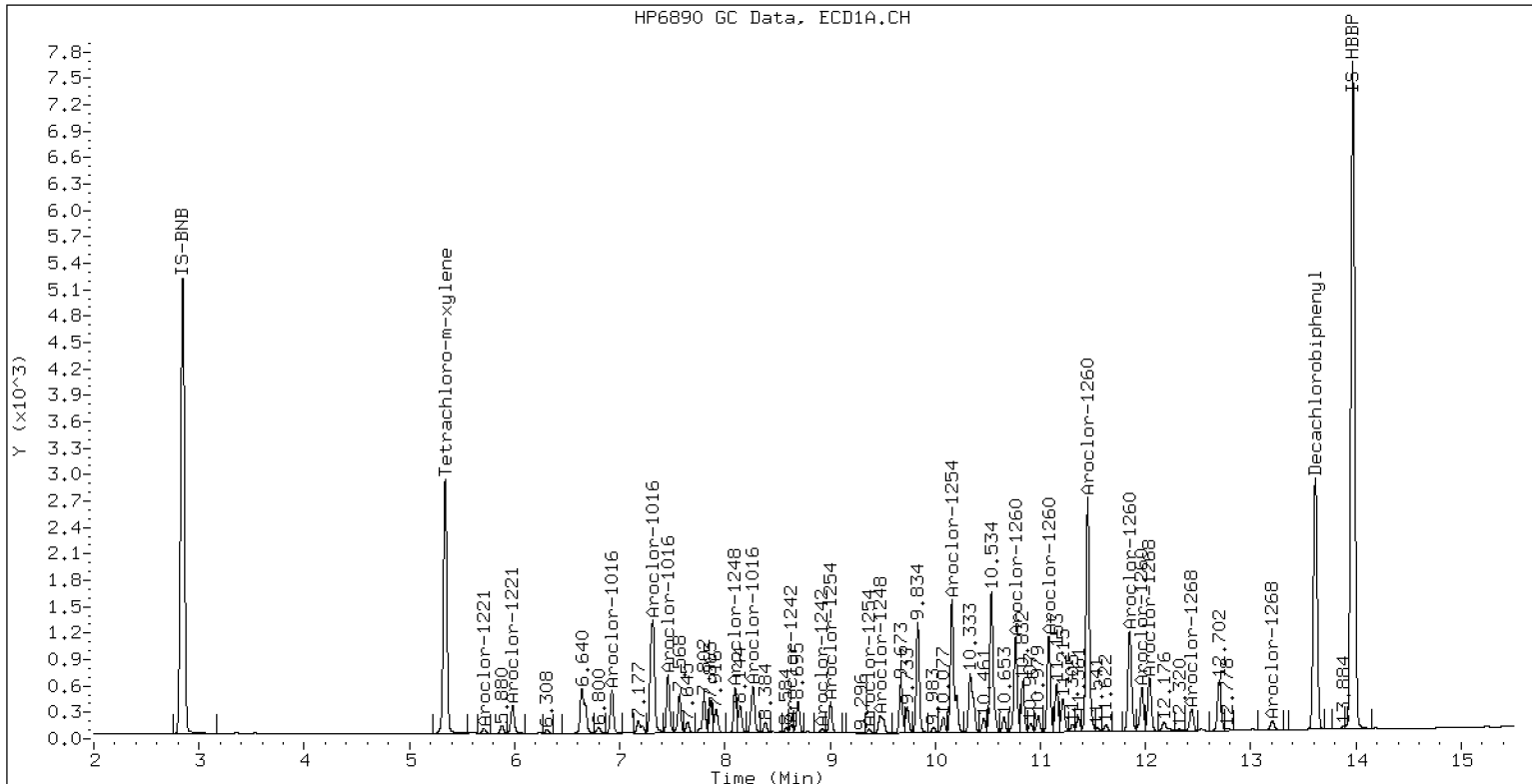
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660SCV1

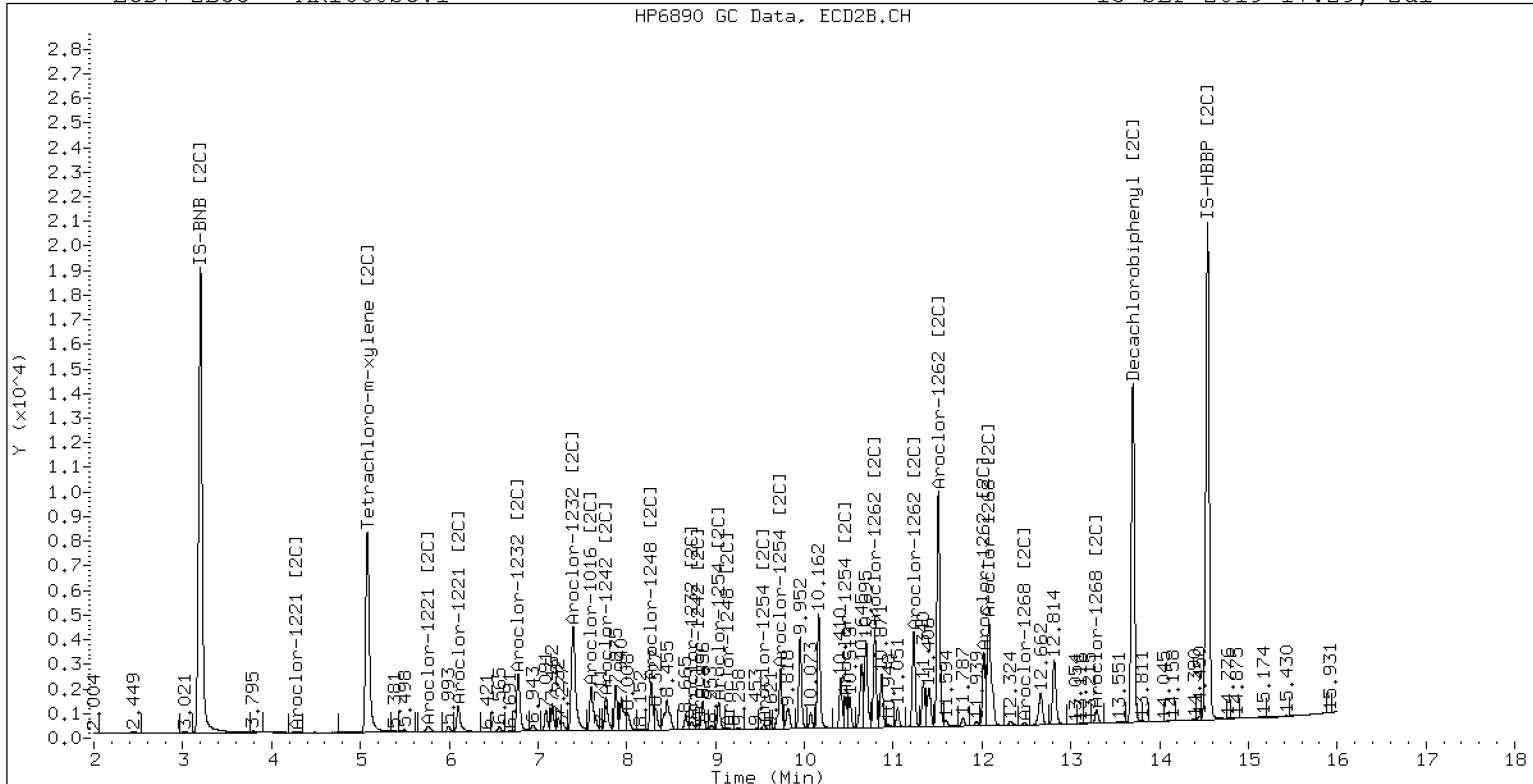
15-SEP-2019 17:29, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660SCV1

15-SEP-2019 17:29, 2ul



ZB-35 Manual Integration: NO



**SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A**

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19091517ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHI0216 Injection Date: 09/15/19
Lab Sample ID: SHI0216-SCV2 Injection Time: 17:50
Sequence Name: AR1242SCV2

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	242	0.0348200	0.0337547		-3.3	20
Aroclor 1242 [2C]	A	250.00	243	0.0333224	0.0326505		-2.7	20
Decachlorobiphenyl	A	40.000	36.7	0.8094199	0.7420810		-8.3	20
Tetrachlorometaxylene	A	40.000	41.3	0.9910571	1.0235390		3.3	20
Decachlorobiphenyl [2C]	A	40.000	33.8	1.5347890	1.2974990		-15.5	20
Tetrachlorometaxylene [2C]	A	40.000	38.1	0.9503239	0.9053968		-4.7	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091517ECD7.D
Data file 2: /20190915.b/20190915.b/19091517ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242SCV2
Client ID:
Injection Date: 15-SEP-2019 17:50
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.000	141558	5.080	0.000	512417	41.3	38.1	8.1	Tetrachloro-m-xylene
13.614	0.000	154315	13.701	-0.000	730054	36.7	33.8	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	103.3	95.3
Decachlorobiphenyl	91.7	84.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	276605	-36.0
Hexabromobiphenyl	517563	415898	-19.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1131917	-24.4
Hexabromobiphenyl	1404015	1125325	-19.8

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.925	-0.000	16898	201.3	1	6.778	-0.001	106681	189.5
Aroclor-1016	2	7.313	-0.000	60035	201.1	2	7.398	0.000	229278	195.0
Aroclor-1016	3	7.460	0.000	22476	199.7	3	7.598	0.000	92364	194.9
Aroclor-1016	4	8.267	-0.001	22168	239.8	4	7.767	-0.000	57828	195.4
Total CollAve (4 peaks):				210.5	Total Col2Ave (4 peaks):				193.7	RPD = 8
Corrected Ave (3 peaks):				200.7	Corrected Ave (3 peaks):				193.1	RPD = 4
Aroclor-1221	1	---			0.0	1	4.287	0.003	465	5.8
Aroclor-1221	2	5.709	-0.003	1988	63.3	2	5.768	0.010	14831	88.4
Aroclor-1221	3	5.981	-0.002	11461	143.8	3	6.104	-0.000	51036	181.7
CollAve: <3 Quant Peaks					Col2Ave:				92.0	
Aroclor-1232	1	---			0.0	1	4.287	0.005	465	9.7
Aroclor-1232	2	6.925	0.000	16898	537.3	2	6.778	0.001	106681	447.3
Aroclor-1232	3	7.313	0.000	60035	534.2	3	7.398	0.001	229278	480.5
Aroclor-1232	4	7.460	0.000	22476	533.4	4	8.729	-0.000	71208	449.0
Total CollAve (3 peaks):				535.0	Total Col2Ave (4 peaks):				346.6	RPD = 43*
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				302.0	
Aroclor-1242	1	6.925	-0.000	16898	248.3	1	6.778	-0.000	106681	248.6
Aroclor-1242	2	7.313	-0.001	60035	244.1	2	7.398	0.000	229278	247.4
Aroclor-1242	3	8.632	0.000	19399	239.2	3	7.767	-0.001	57828	244.8
Aroclor-1242	4	8.920	0.000	20377	235.7	4	8.801	0.000	68184	232.0
Total CollAve (4 peaks):				241.8	Total Col2Ave (4 peaks):				243.2	RPD = 1
Corrected Ave (3 peaks):				239.7	Corrected Ave (3 peaks):				241.4	RPD = 1
Aroclor-1248	1	8.096	-0.001	17908	144.1	1	7.398	0.003	229278	372.5
Aroclor-1248	2	8.632	0.000	19399	125.4	2	8.275	0.000	73096	157.5
Aroclor-1248	3	8.920	-0.000	20377	141.5	3	8.801	0.000	68184	145.8
Aroclor-1248	4	9.506	-0.000	11216	121.3	4	9.136	0.001	86440	142.9
Total CollAve (4 peaks):				133.1	Total Col2Ave (4 peaks):				204.7	RPD = 42*
Corrected Ave (3 peaks):				129.4	Corrected Ave (3 peaks):				148.8	RPD = 14
Aroclor-1254	1	9.001	-0.001	9693	41.6	1	9.036	-0.001	25152	40.1
Aroclor-1254	2	9.078	-0.000	4295	59.8	2	9.136	0.009	86440	270.9
Aroclor-1254	3	9.371	0.000	5872	43.8	3	9.543	-0.000	23570	47.9
Aroclor-1254	4	9.506	0.001	11216	39.1	4	9.691	-0.000	37432	38.0
Aroclor-1254	5	10.215	0.005	7428	38.8	5	10.465	0.002	27749	45.7
Total CollAve (5 peaks):				44.6	Total Col2Ave (5 peaks):				88.5	RPD = 66*
Corrected Ave (4 peaks):				40.8	Corrected Ave (4 peaks):				42.9	RPD = 5
Aroclor-1260	1	---			0.0	1	10.795	0.000	925	1.3
Aroclor-1260	2	---			0.0	2	11.225	-0.008	5685	7.9
Aroclor-1260	3	---			0.0	3	11.512	-0.000	3227	1.8
Aroclor-1260	4	---			0.0	4	12.077	0.054	2320	4.2
Aroclor-1260	5	---			0.0	NS	---			----
CollAve: <3 Quant Peaks					Col2Ave:				3.8	
Aroclor-1262	1	---			0.0	1	10.795	0.000	925	0.9
Aroclor-1262	2	---			0.0	2	11.225	-0.010	5685	6.8
Aroclor-1262	3	---			0.0	3	11.512	0.001	3227	1.7
Aroclor-1262	4	---			0.0	4	12.077	0.053	2320	2.5
CollAve: <3 Quant Peaks					Col2Ave:				3.0	
Aroclor-1268	1	---			0.0	1	12.077	0.054	2320	1.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	12.484	0.003	1021	0.5
Aroclor-1268	4	---			0.0	4	13.300	0.003	911	0.1
CollAve: <3 Quant Peaks					Col2Ave:				0.5	

Total PCB Area Col1 (5.441 - 13.514) = 432451 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 1684066 Col2 Total PCB = 0.2 ppm*

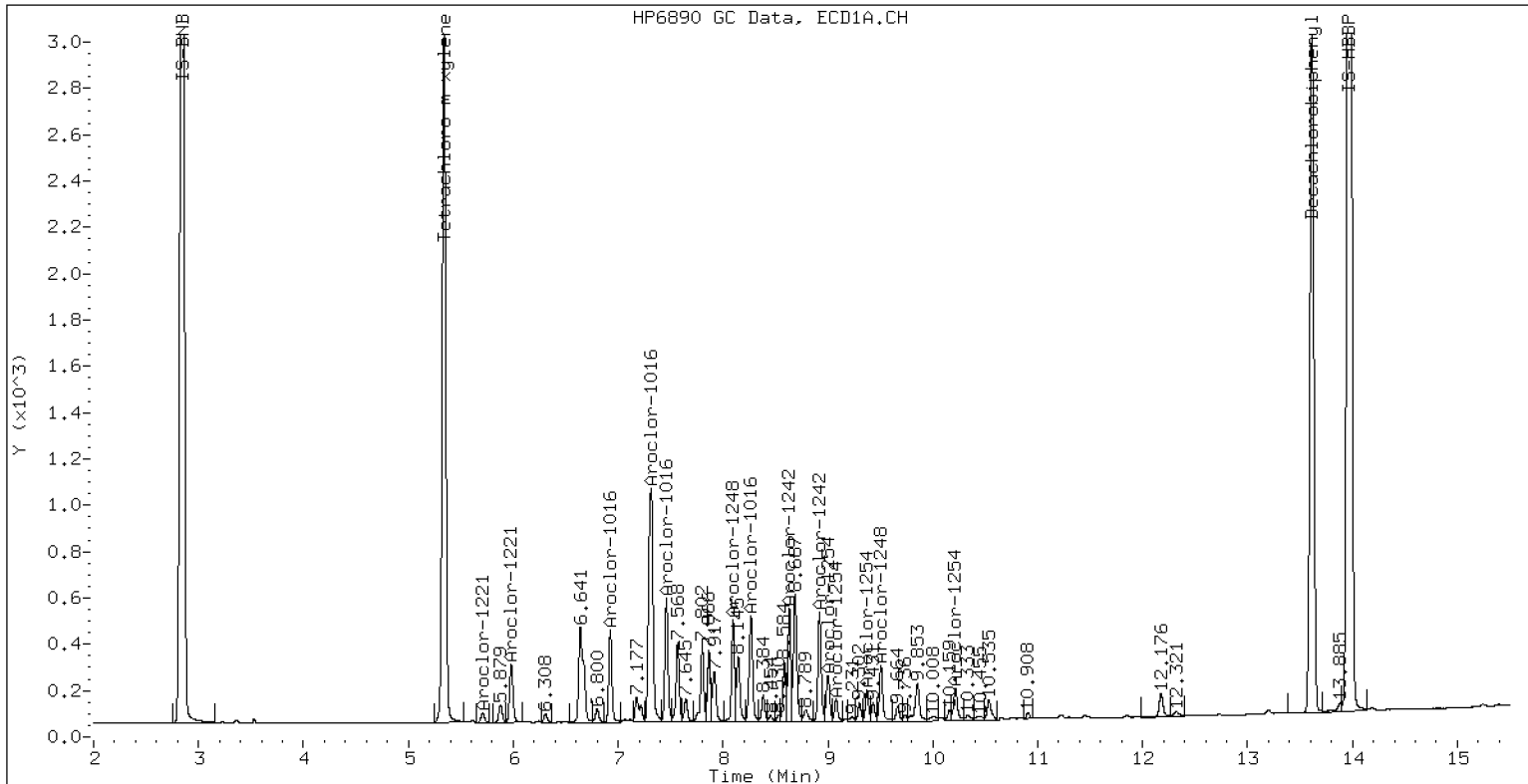
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1242SCV2

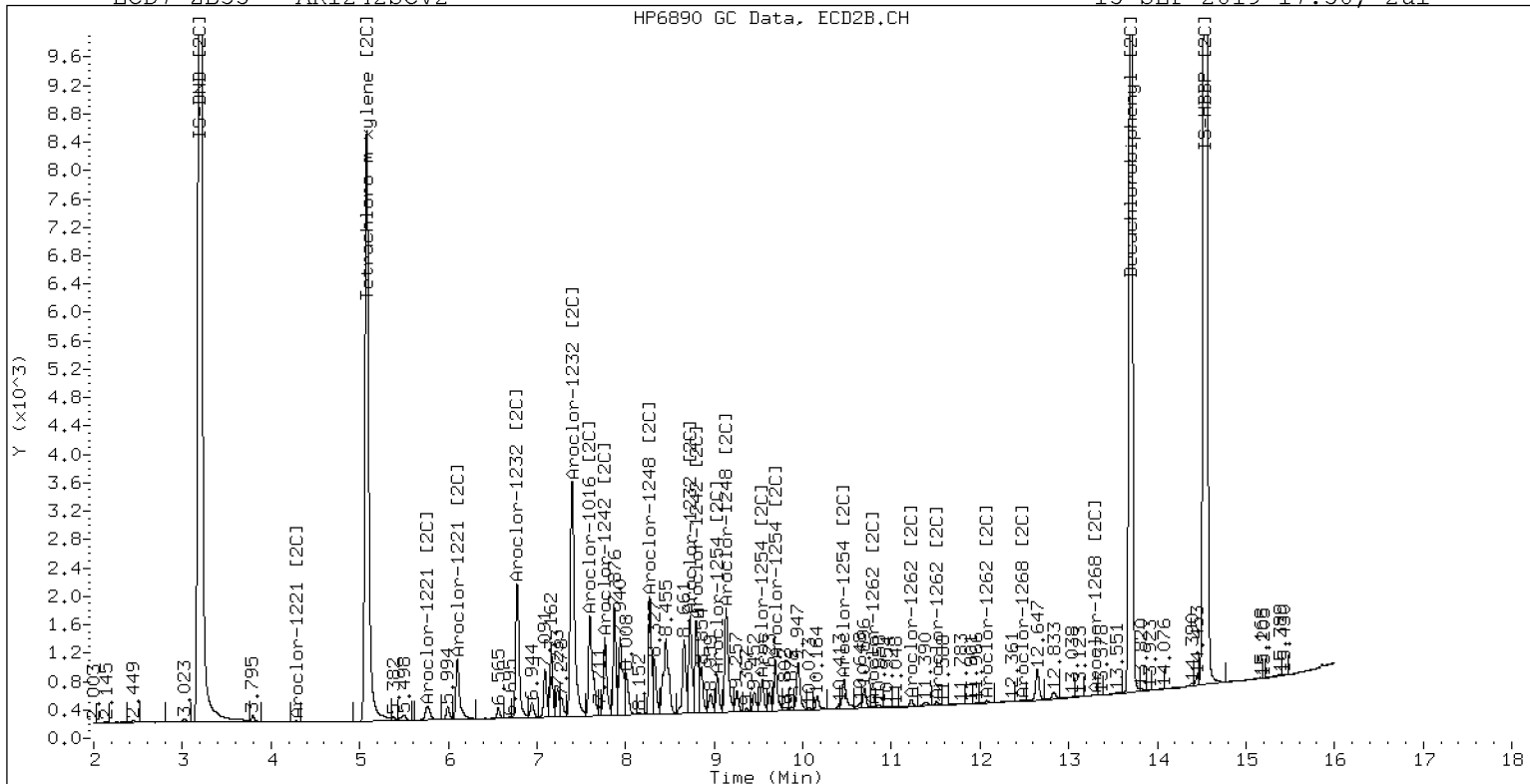
15-SEP-2019 17:50, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1242SCV2

15-SEP-2019 17:50, 2ul



ZB-35 Manual Integration: NO



**SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A**

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19091518ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHI0216 Injection Date: 09/15/19
Lab Sample ID: SHI0216-SCV3 Injection Time: 18:11
Sequence Name: AR1248SCV3

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	243	0.0372731	0.0361871		-2.8	20
Aroclor 1248 [2C]	A	250.00	251	0.0380217	0.0382149		0.4	20
Decachlorobiphenyl	A	40.000	36.1	0.8094199	0.7301638		-9.8	20
Tetrachlorometaxylene	A	40.000	41.1	0.9910571	1.0172600		2.6	20
Decachlorobiphenyl [2C]	A	40.000	33.8	1.5347890	1.2985010		-15.4	20
Tetrachlorometaxylene [2C]	A	40.000	38.2	0.9503239	0.9079950		-4.5	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091518ECD7.D
Data file 2: /20190915.b/20190915.b/19091518ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248SCV3
Client ID:
Injection Date: 15-SEP-2019 18:11
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.000	144337	5.081	0.001	525429	41.1	38.2	7.2	Tetrachloro-m-xylene
13.613	-0.000	155898	13.702	-0.000	747902	36.1	33.8	6.4	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	102.6	95.5
Decachlorobiphenyl	90.2	84.6

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283776	-34.4
Hexabromobiphenyl	517563	427022	-17.5

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1157339	-22.7
Hexabromobiphenyl	1404015	1151947	-18.0

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.926	-0.000	8301	96.4	1	6.777	-0.002	59820	103.9	
Aroclor-1016	2	7.309	-0.004	40510	132.3	2	7.397	-0.001	161655	134.4	
Aroclor-1016	3	7.462	0.002	13575	117.5	3	7.599	0.001	36509	75.3	
Aroclor-1016	4	8.267	-0.000	35033	369.4	4	7.768	0.001	33959	112.2	
Total CollAve (4 peaks):				178.9	Total Col2Ave (4 peaks):				106.5	RPD = 51*	
Corrected Ave (3 peaks):				115.4	Corrected Ave (3 peaks):				97.1	RPD = 17	
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	5.617	-0.095	1004	31.1	2	5.780	0.022	7736	45.1	
Aroclor-1221	3	5.981	-0.002	2454	30.0	3	6.105	0.001	12052	42.0	
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	6.926	0.001	8301	257.3	2	6.777	-0.000	59820	245.3	
Aroclor-1232	3	7.309	-0.003	40510	351.4	3	7.397	-0.000	161655	331.4	
Aroclor-1232	4	7.462	0.002	13575	314.0	4	8.729	-0.001	134716	830.7	
Total CollAve (3 peaks):				307.6	Total Col2Ave (3 peaks):				469.1	RPD = 42*	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1242	1	6.926	-0.000	8301	118.9	1	6.777	-0.001	59820	136.3	
Aroclor-1242	2	7.309	-0.005	40510	160.5	2	7.397	-0.001	161655	170.6	
Aroclor-1242	3	8.632	0.001	38513	463.0	3	7.768	0.000	33959	140.6	
Aroclor-1242	4	8.920	0.001	35533	400.6	4	8.801	0.000	118313	393.7	
Total CollAve (4 peaks):				285.7	Total Col2Ave (4 peaks):				210.3	RPD = 30	
Corrected Ave (3 peaks):				226.7	Corrected Ave (3 peaks):				149.2	RPD = 41*	
Aroclor-1248	1	8.096	-0.000	31009	243.1	1	7.397	0.002	161655	256.9	
Aroclor-1248	2	8.632	0.000	38513	242.6	2	8.275	0.000	119193	251.2	
Aroclor-1248	3	8.920	-0.000	35533	240.5	3	8.801	0.000	118313	247.5	
Aroclor-1248	4	9.506	-0.000	23308	245.7	4	9.135	-0.000	153684	248.5	
Total CollAve (4 peaks):				243.0	Total Col2Ave (4 peaks):				251.0	RPD = 3	
Corrected Ave (3 peaks):				242.1	Corrected Ave (3 peaks):				249.1	RPD = 3	
Aroclor-1254	1	9.001	-0.002	20497	85.7	1	9.037	-0.000	49764	77.6	
Aroclor-1254	2	9.078	0.000	9115	123.7	2	9.135	0.008	153684	471.1	
Aroclor-1254	3	9.371	-0.000	12774	92.9	3	9.543	-0.000	49122	97.7	
Aroclor-1254	4	9.506	0.001	23308	79.1	4	9.691	-0.000	81623	81.1	
Aroclor-1254	5	10.216	0.005	15329	78.0	5	10.463	-0.000	61571	99.1	
Total CollAve (5 peaks):				91.9	Total Col2Ave (5 peaks):				165.3	RPD = 57*	
Corrected Ave (4 peaks):				83.9	Corrected Ave (4 peaks):				88.9	RPD = 6	
Aroclor-1260	1	10.764	-0.000	1211	6.1	1	10.795	0.001	2983	4.1	
Aroclor-1260	2	---			0.0	2	11.226	-0.007	6906	9.4	
Aroclor-1260	3	11.449	-0.000	1232	2.6	3	11.510	-0.002	6245	3.4	
Aroclor-1260	4	---			0.0	4	12.024	0.001	3247	5.7	
Aroclor-1260	5	---			0.0	NS	---			----	
CollAve: <3 Quant Peaks						Col2Ave: 5.7					
Aroclor-1262	1	---			0.0	1	10.795	0.001	2983	3.0	
Aroclor-1262	2	---			0.0	2	11.226	-0.008	6906	8.1	
Aroclor-1262	3	---			0.0	3	11.510	-0.000	6245	3.2	
Aroclor-1262	4	---			0.0	4	12.024	0.000	3247	3.4	
CollAve: <3 Quant Peaks						Col2Ave: 4.4					
Aroclor-1268	1	---			0.0	1	12.024	0.001	3247	1.3	
Aroclor-1268	2	---			0.0	2	12.082	-0.008	4066	1.6	
Aroclor-1268	3	---			0.0	3	12.487	0.006	1630	0.7	
Aroclor-1268	4	---			0.0	4	13.295	-0.003	2205	0.3	
CollAve: <3 Quant Peaks						Col2Ave: 1.0					

Total PCB Area Col1 (5.441 - 13.514) = 543228 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2103769 Col2 Total PCB = 0.2 ppm*

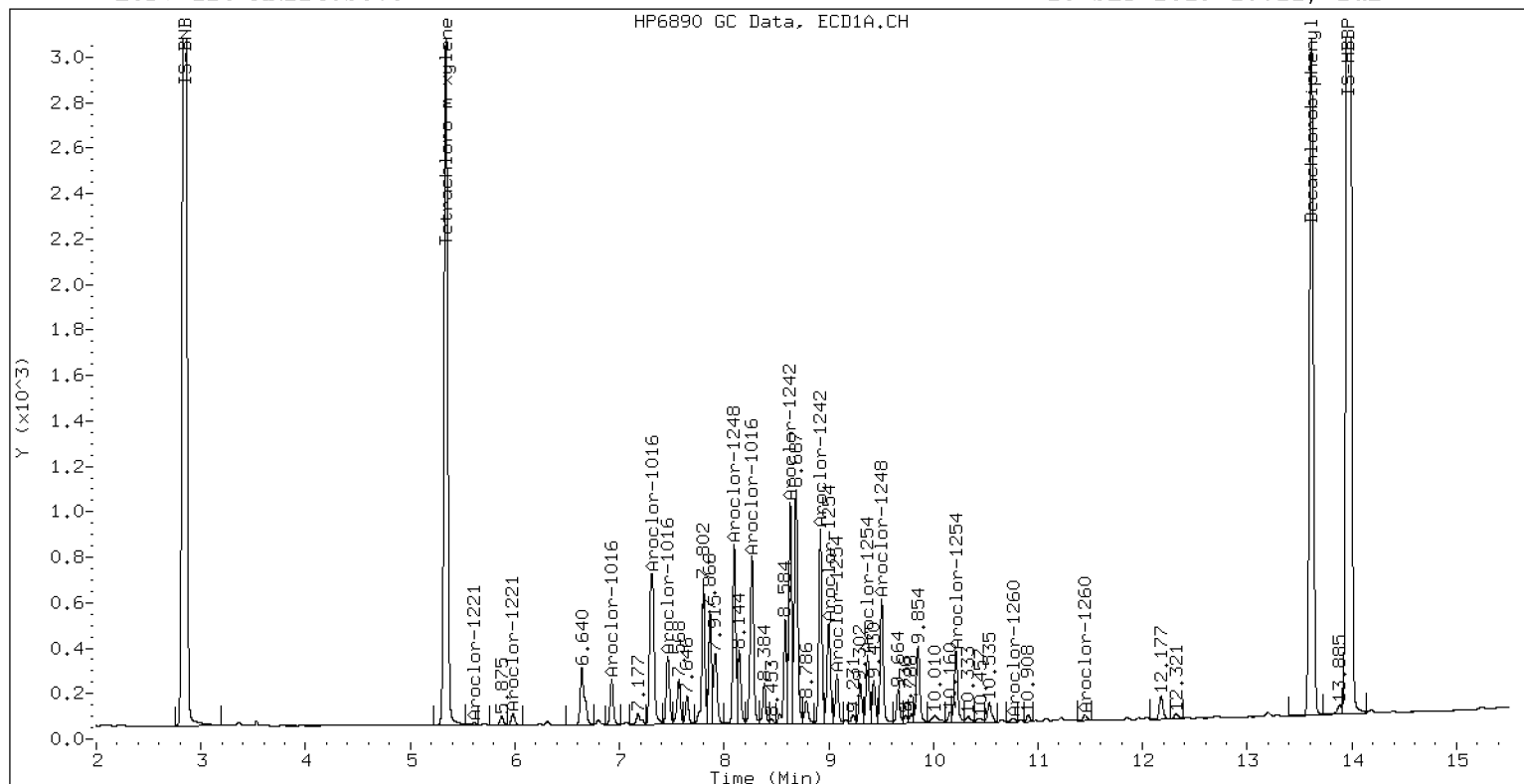
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1248SCV3

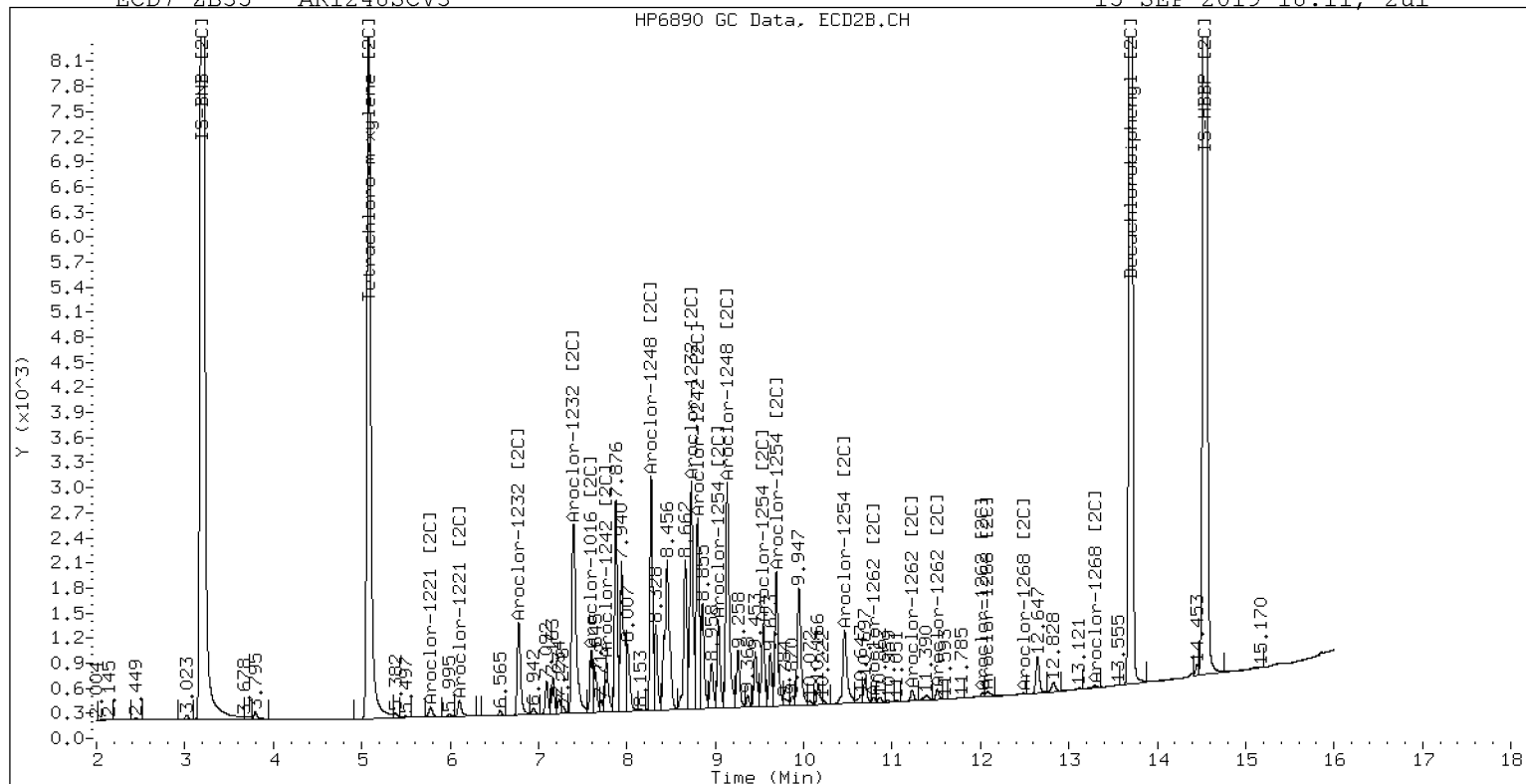
15-SEP-2019 18:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248SCV3

15-SEP-2019 18:11, 2ul



ZB-35 Manual Integration: NO



**SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A**

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19091519ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHI0216 Injection Date: 09/15/19
Lab Sample ID: SHI0216-SCV4 Injection Time: 18:32
Sequence Name: AR1254SCV4

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	252	0.0530781	0.0532672		0.6	20
Aroclor 1254 [2C]	A	250.00	258	0.0428263	0.0440675		3.1	20
Decachlorobiphenyl	A	40.000	36.4	0.8094199	0.7360540		-9.1	20
Tetrachlorometaxylene	A	40.000	40.3	0.9910571	0.9985064		0.8	20
Decachlorobiphenyl [2C]	A	40.000	33.9	1.5347890	1.2997470		-15.3	20
Tetrachlorometaxylene [2C]	A	40.000	37.6	0.9503239	0.8931573		-6.0	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091519ECD7.D ARI ID: AR1254SCV4
Data file 2: /20190915.b/20190915.b/19091519ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m Injection Date: 15-SEP-2019 18:32
Compound Sublist: PCB.sub Report Date: 09/16/2019 11:41
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	142065	5.081	0.001	516612	40.3	37.6	7.0	Tetrachloro-m-xylene
13.614	-0.000	156661	13.701	-0.001	753354	36.4	33.9	7.1	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	100.8	94.0
Decachlorobiphenyl	90.9	84.7

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	284555	-34.2
Hexabromobiphenyl	517563	425678	-17.8

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1156822	-22.7
Hexabromobiphenyl	1404015	1159232	-17.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	---			0.0	1	6.778	-0.000	1021	1.8	
Aroclor-1016	2	7.304	-0.009	1001	3.3	2	7.394	-0.004	4515	3.8	
Aroclor-1016	3	---			0.0	3	7.602	0.004	728	1.5	
Aroclor-1016	4	8.267	-0.000	4386	46.1	4	7.769	0.002	531	1.8	
CollAve: <3 Quant Peaks						Col2Ave: 2.2					
Aroclor-1221	1	---			0.0	1	---			0.0	
Aroclor-1221	2	---			0.0	2	5.782	0.024	6140	35.8	
Aroclor-1221	3	---			0.0	3	6.116	0.012	1797	6.3	
CollAve: <3 Quant Peaks						Col2Ave: <3 Quant Peaks					
Aroclor-1232	1	---			0.0	1	---			0.0	
Aroclor-1232	2	---			0.0	2	6.778	0.001	1021	4.2	
Aroclor-1232	3	---			0.0	3	7.394	-0.003	4515	9.3	
Aroclor-1232	4	---			0.0	4	8.729	0.000	65407	403.5	
CollAve: <3 Quant Peaks						Col2Ave: 139.0					
Aroclor-1242	1	---			0.0	1	6.778	-0.000	1021	2.3	
Aroclor-1242	2	7.304	-0.010	1001	4.0	2	7.394	-0.004	4515	4.8	
Aroclor-1242	3	8.632	0.001	20852	250.0	3	7.769	0.002	531	2.2	
Aroclor-1242	4	8.925	0.005	11451	128.7	4	8.799	-0.002	20564	68.5	
Total CollAve (3 peaks):				127.6	Total Col2Ave (4 peaks):				19.4	RPD = 147*	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				3.1		
Aroclor-1248	1	8.096	-0.000	11047	86.4	1	7.394	-0.001	4515	7.2	
Aroclor-1248	2	8.632	0.001	20852	131.0	2	8.275	0.000	45204	95.3	
Aroclor-1248	3	8.925	0.005	11451	77.3	3	8.799	-0.002	20564	43.0	
Aroclor-1248	4	9.505	-0.001	73680	774.7	4	9.126	-0.009	84230	136.3	
Total CollAve (4 peaks):				267.3	Total Col2Ave (4 peaks):				70.4	RPD = 117*	
Corrected Ave (3 peaks):				98.2	Corrected Ave (3 peaks):				48.5	RPD = 68*	
Aroclor-1254	1	9.002	-0.000	59931	250.0	1	9.036	-0.001	163998	255.8	
Aroclor-1254	2	9.078	0.000	18717	253.2	2	9.126	-0.001	84230	258.3	
Aroclor-1254	3	9.371	-0.000	35086	254.4	3	9.543	-0.000	130701	260.0	
Aroclor-1254	4	9.505	0.000	73680	249.5	4	9.691	-0.001	256589	255.2	
Aroclor-1254	5	10.211	0.001	49421	250.8	5	10.465	0.001	161017	259.2	
Total CollAve (5 peaks):				251.6	Total Col2Ave (5 peaks):				257.7	RPD = 2	
Corrected Ave (4 peaks):				250.9	Corrected Ave (4 peaks):				257.1	RPD = 2	
Aroclor-1260	1	10.762	-0.002	2944	15.0	1	10.793	-0.001	12381	17.0	
Aroclor-1260	2	11.081	0.001	3390	18.0	2	11.222	-0.011	72596	98.5	
Aroclor-1260	3	11.449	-0.000	7822	16.4	3	11.509	-0.003	45240	24.5	
Aroclor-1260	4	11.848	-0.000	7534	34.9	4	12.024	0.001	5827	10.1	
Aroclor-1260	5	---			0.0	NS	---			----	
Total CollAve (4 peaks):				21.1	Total Col2Ave (4 peaks):				37.5	RPD = 56*	
Corrected Ave (3 peaks):				16.4	Corrected Ave (3 peaks):				17.2	RPD = 5	
Aroclor-1262	1	11.081	0.001	3390	15.2	1	10.793	-0.001	12381	12.3	
Aroclor-1262	2	11.449	-0.000	7822	14.2	2	11.222	-0.012	72596	84.4	
Aroclor-1262	3	11.848	-0.001	7534	46.0	3	11.509	-0.001	45240	22.9	
Aroclor-1262	4	---			0.0	4	12.024	0.000	5827	6.1	
Total CollAve (3 peaks):				25.1	Total Col2Ave (4 peaks):				31.4	RPD = 22	
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				13.8		
Aroclor-1268	1	---			0.0	1	12.024	0.001	5827	2.3	
Aroclor-1268	2	---			0.0	2	12.074	-0.016	29049	11.6	
Aroclor-1268	3	---			0.0	3	12.483	0.003	858	0.4	
Aroclor-1268	4	---			0.0	4	13.296	-0.002	1169	0.1	
CollAve: <3 Quant Peaks						Col2Ave: 3.6					

Total PCB Area Col1 (5.441 - 13.514) = 702105 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 2618424 Col2 Total PCB = 0.3 ppm*

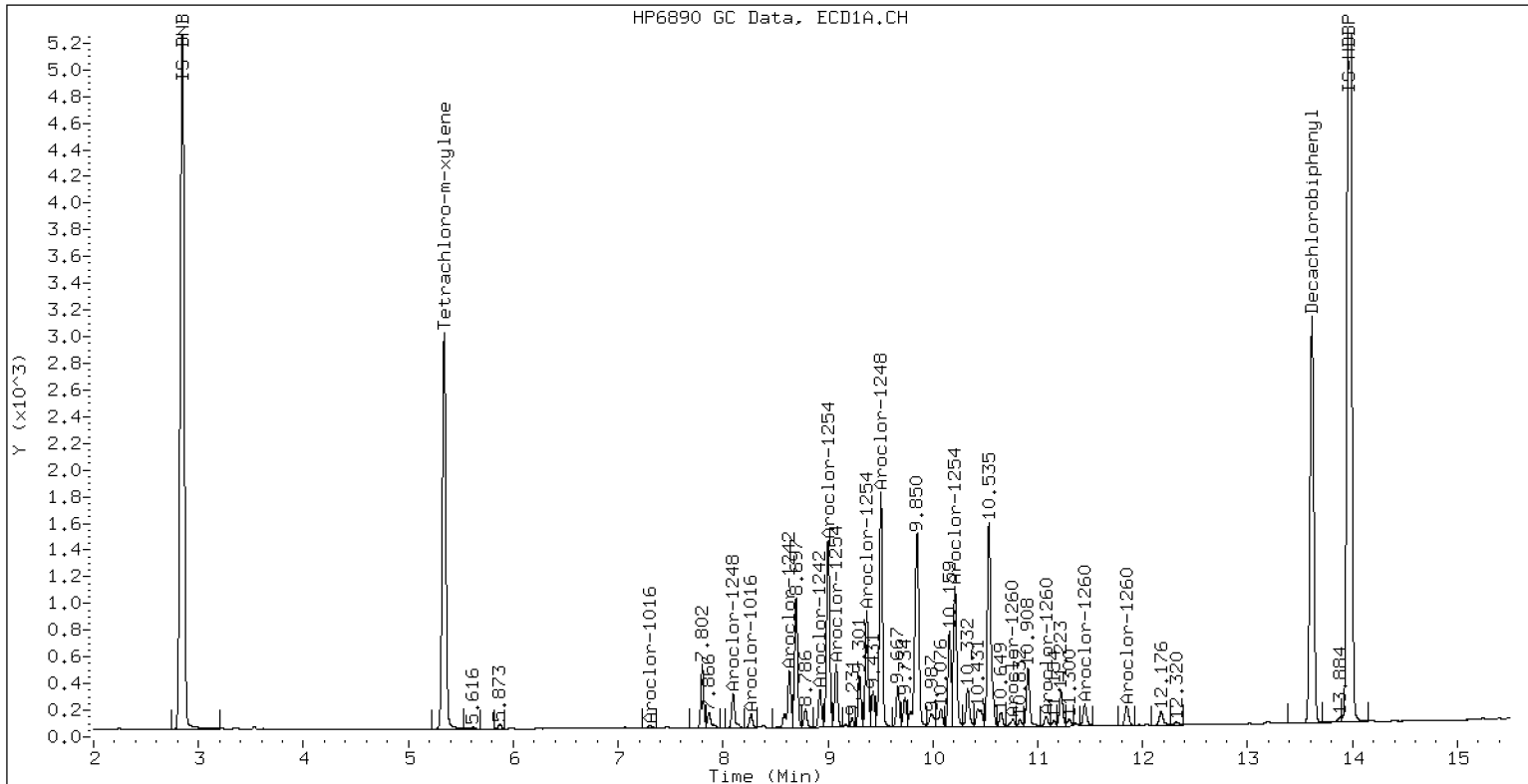
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR1254SCV4

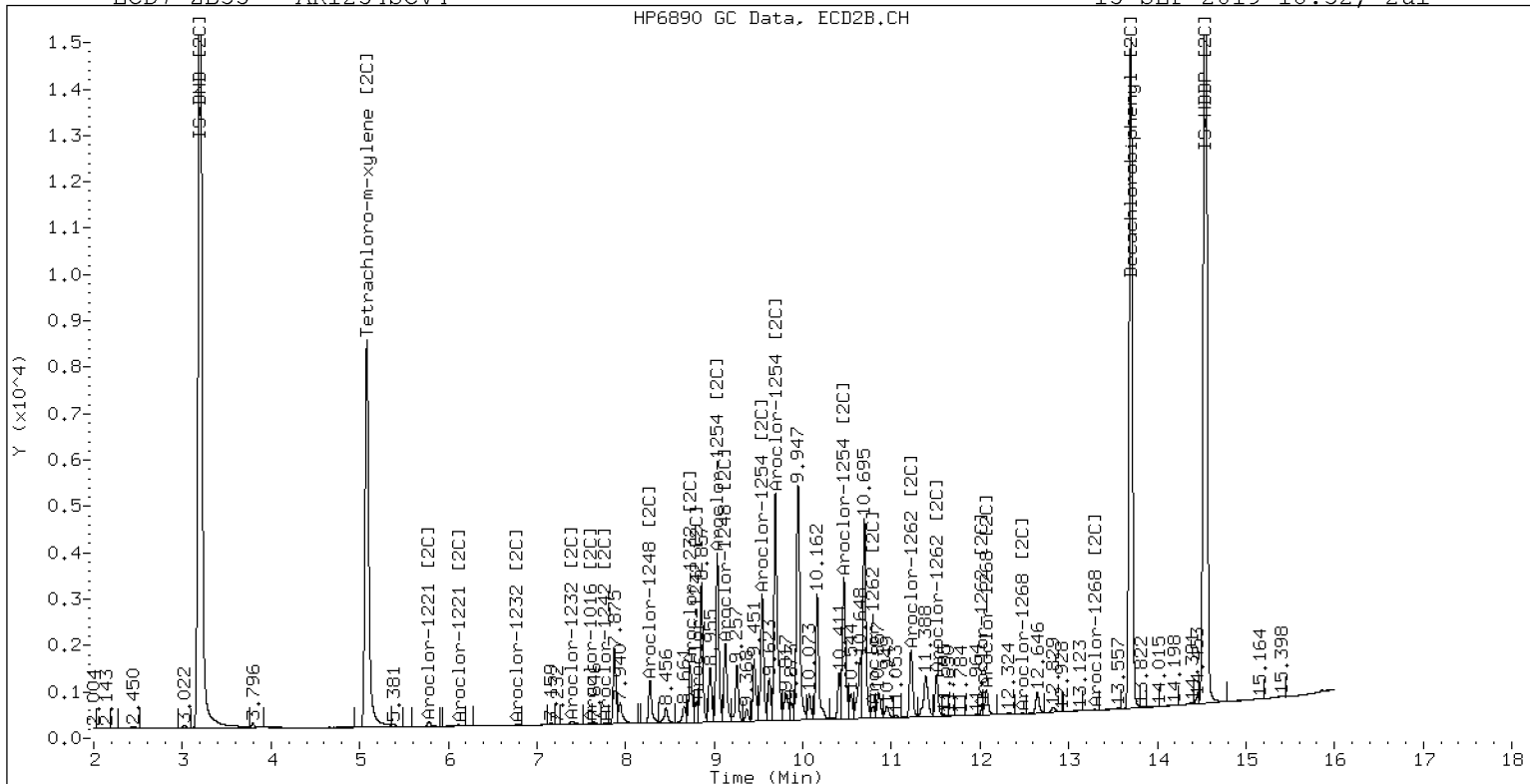
15-SEP-2019 18:32, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254SCV4

15-SEP-2019 18:32, 2ul



ZB-35 Manual Integration: NO



**SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A**

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19091520ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHI0216 Injection Date: 09/15/19
Lab Sample ID: SHI0216-SCV5 Injection Time: 18:53
Sequence Name: AR2162SCV5

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1221	A	250.00	259	0.0126671	0.0131147		3.7	20
Aroclor 1221 [2C]	A	250.00	266	0.0124626	0.0132304		6.4	20
Aroclor 1262	A	250.00	267	0.0538785	0.0570120		6.6	20
Aroclor 1262 [2C]	A	250.00	267	0.0828179	0.0880827		6.8	20
Decachlorobiphenyl	A	40.000	35.9	0.8094199	0.7258623		-10.3	20
Tetrachlorometaxylene	A	40.000	41.9	0.9910571	1.0388550		4.8	20
Decachlorobiphenyl [2C]	A	40.000	33.8	1.5347890	1.2958290		-15.6	20
Tetrachlorometaxylene [2C]	A	40.000	39.8	0.9503239	0.9452059		-0.5	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091520ECD7.D
Data file 2: /20190915.b/20190915.b/19091520ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162SCV5
Client ID:
Injection Date: 15-SEP-2019 18:53
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
5.341	0.001	146719	5.081	0.001	519721	41.9	39.8	5.2	Tetrachloro-m-xylene
13.614	-0.000	152896	13.700	-0.001	742387	35.9	33.8	6.0	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	104.8	99.5
Decachlorobiphenyl	89.7	84.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	282463	-34.7
Hexabromobiphenyl	517563	421281	-18.6

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1099699	-26.6
Hexabromobiphenyl	1404015	1145810	-18.4

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
=====											
Aroclor-1016	1	6.926	0.000	1872	21.8	1	6.789	0.010	25015	45.7	
Aroclor-1016	2	7.315	0.002	5616	18.4	2	7.400	0.002	25838	22.6	
Aroclor-1016	3	7.460	-0.000	2502	21.8	3	7.600	0.003	12141	26.4	
Aroclor-1016	4	8.268	0.000	1039	11.0	4	7.768	0.002	6755	23.5	
Total CollAve (4 peaks):				18.3	Total Col2Ave (4 peaks):				29.5	RPD = 47*	
Corrected Ave (3 peaks):				17.1	Corrected Ave (3 peaks):				24.2	RPD = 34	
Aroclor-1221	1	4.185	0.001	5406	261.5	1	4.283	-0.000	20980	268.7	
Aroclor-1221	2	5.711	-0.000	8273	257.8	2	5.758	-0.000	43022	263.9	
Aroclor-1221	3	5.982	-0.001	21050	258.6	3	6.104	-0.001	72399	265.4	
Total CollAve (3 peaks):				259.3	Total Col2Ave (3 peaks):				266.0	RPD = 3	
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks						
Aroclor-1232	1	4.185	0.001	5406	444.4	1	4.283	0.001	20980	450.7	
Aroclor-1232	2	6.926	0.001	1872	58.3	2	6.789	0.012	25015	108.0	
Aroclor-1232	3	7.315	0.002	5616	48.9	3	7.400	0.003	25838	55.7	
Aroclor-1232	4	7.460	0.000	2502	58.1	4	8.730	0.001	6692	43.4	
Total CollAve (4 peaks):				152.4	Total Col2Ave (4 peaks):				164.5	RPD = 8	
Corrected Ave (3 peaks):				55.1	Corrected Ave (3 peaks):				69.0	RPD = 22	
Aroclor-1242	1	6.926	0.000	1872	26.9	1	6.789	0.011	25015	60.0	
Aroclor-1242	2	7.315	0.001	5616	22.4	2	7.400	0.002	25838	28.7	
Aroclor-1242	3	8.634	0.002	1386	16.7	3	7.768	0.001	6755	29.4	
Aroclor-1242	4	8.923	0.004	1556	17.6	4	8.802	0.002	3724	13.0	
Total CollAve (4 peaks):				20.9	Total Col2Ave (4 peaks):				32.8	RPD = 44*	
Corrected Ave (3 peaks):				18.9	Corrected Ave (3 peaks):				23.7	RPD = 23	
Aroclor-1248	1	8.097	0.000	1229	9.7	1	7.400	0.005	25838	43.2	
Aroclor-1248	2	8.634	0.002	1386	8.8	2	8.276	0.001	5926	13.1	
Aroclor-1248	3	8.923	0.003	1556	10.6	3	8.802	0.002	3724	8.2	
Aroclor-1248	4	9.476	-0.030	10150	107.5	4	9.133	-0.003	8590	14.6	
Total CollAve (4 peaks):				34.1	Total Col2Ave (4 peaks):				19.8	RPD = 53*	
Corrected Ave (3 peaks):				9.7	Corrected Ave (3 peaks):				12.0	RPD = 21	
Aroclor-1254	1	9.004	0.002	7447	31.3	1	9.037	0.001	28859	47.4	
Aroclor-1254	2	---			0.0	2	9.133	0.006	8590	27.7	
Aroclor-1254	3	9.372	0.001	1574	11.5	3	9.544	0.000	7347	15.4	
Aroclor-1254	4	9.476	-0.029	10150	34.6	4	9.733	0.041	117247	122.7	
Aroclor-1254	5	10.158	-0.052	57397	293.4	5	10.468	0.004	28744	48.7	
Total CollAve (4 peaks):				92.7	Total Col2Ave (5 peaks):				52.4	RPD = 56*	
Corrected Ave (3 peaks):				25.8	Corrected Ave (4 peaks):				34.8	RPD = 30	
Aroclor-1260	1	10.764	0.001	72353	371.9	1	10.794	-0.000	265507	368.3	
Aroclor-1260	2	11.080	0.000	59517	319.1	2	11.234	0.001	228474	313.8	
Aroclor-1260	3	11.450	0.000	141816	299.5	3	11.510	-0.002	510965	280.0	
Aroclor-1260	4	11.849	0.000	43028	201.4	4	12.024	0.001	256630	451.9	
Aroclor-1260	5	11.966	0.000	55865	552.4	NS	---			----	
Total CollAve (5 peaks):				348.9	Total Col2Ave (4 peaks):				353.5	RPD = 1	
Corrected Ave (4 peaks):				298.0	Corrected Ave (3 peaks):				320.7	RPD = 7	
Aroclor-1262	1	11.080	0.000	59517	269.7	1	10.794	-0.000	265507	267.1	
Aroclor-1262	2	11.450	0.000	141816	259.6	2	11.234	-0.001	228474	268.8	
Aroclor-1262	3	11.849	-0.001	43028	265.2	3	11.510	-0.000	510965	262.1	
Aroclor-1262	4	11.966	0.000	55865	271.7	4	12.024	-0.000	256630	269.9	
Total CollAve (4 peaks):				266.5	Total Col2Ave (4 peaks):				267.0	RPD = 0	
Corrected Ave (3 peaks):				264.8	Corrected Ave (3 peaks):				266.0	RPD = 0	
Aroclor-1268	1	11.966	0.000	55865	86.3	1	12.024	0.000	256630	104.0	
Aroclor-1268	2	12.038	0.002	57038	97.6	2	12.085	-0.005	364662	147.2	
Aroclor-1268	3	12.438	0.015	20392	41.3	3	12.478	-0.002	16839	7.5	
Aroclor-1268	4	13.206	-0.001	16188	10.4	4	13.294	-0.004	80522	10.1	
Total CollAve (4 peaks):				58.9	Total Col2Ave (4 peaks):				67.2	RPD = 13	

Corrected Ave (3 peaks): 46.0 Corrected Ave (3 peaks): 40.5 RPD = 13

Total PCB Area Col1 (5.441 - 13.514) = 953031 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 3754639 Col2 Total PCB = 0.4 ppm*

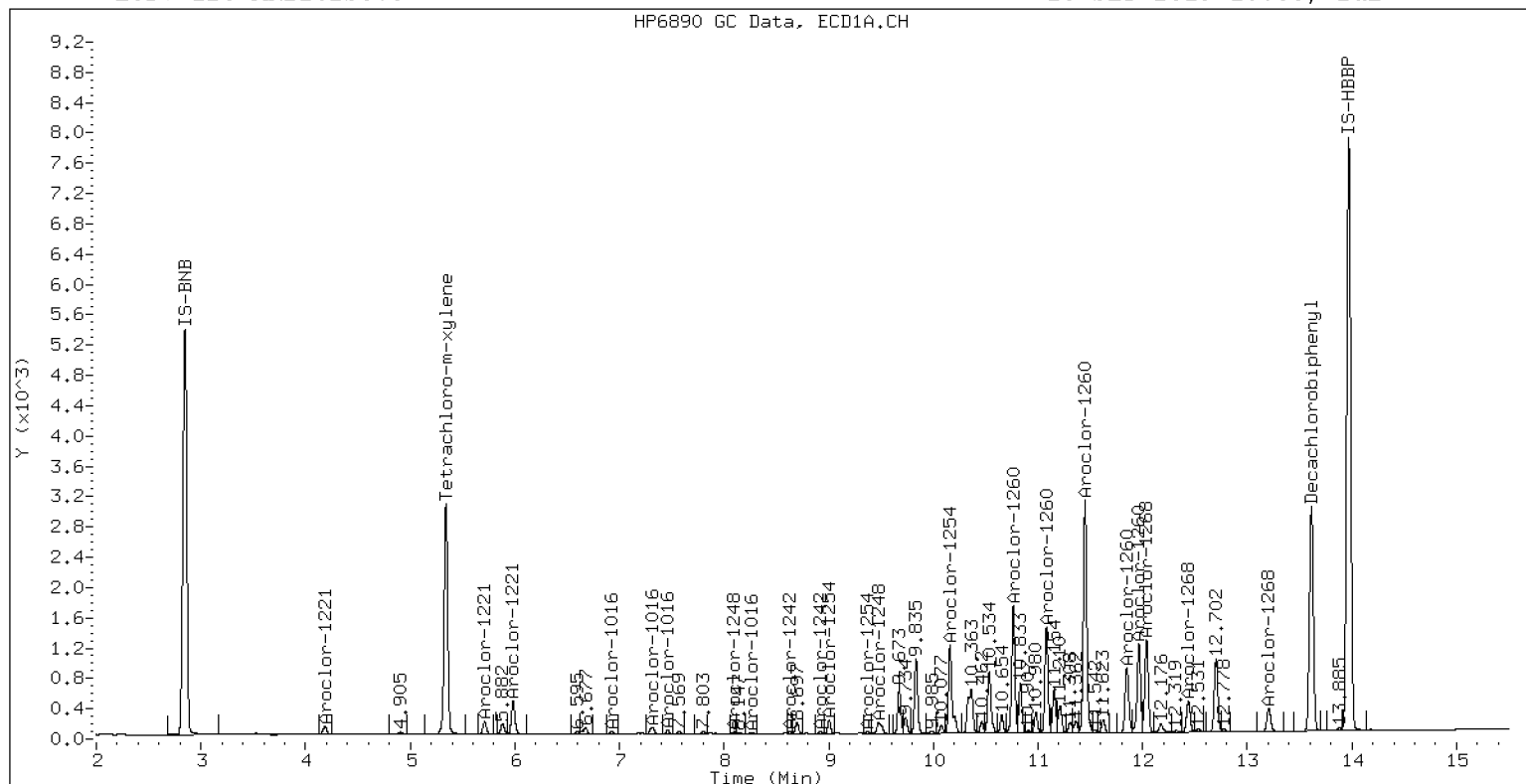
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR2162SCV5

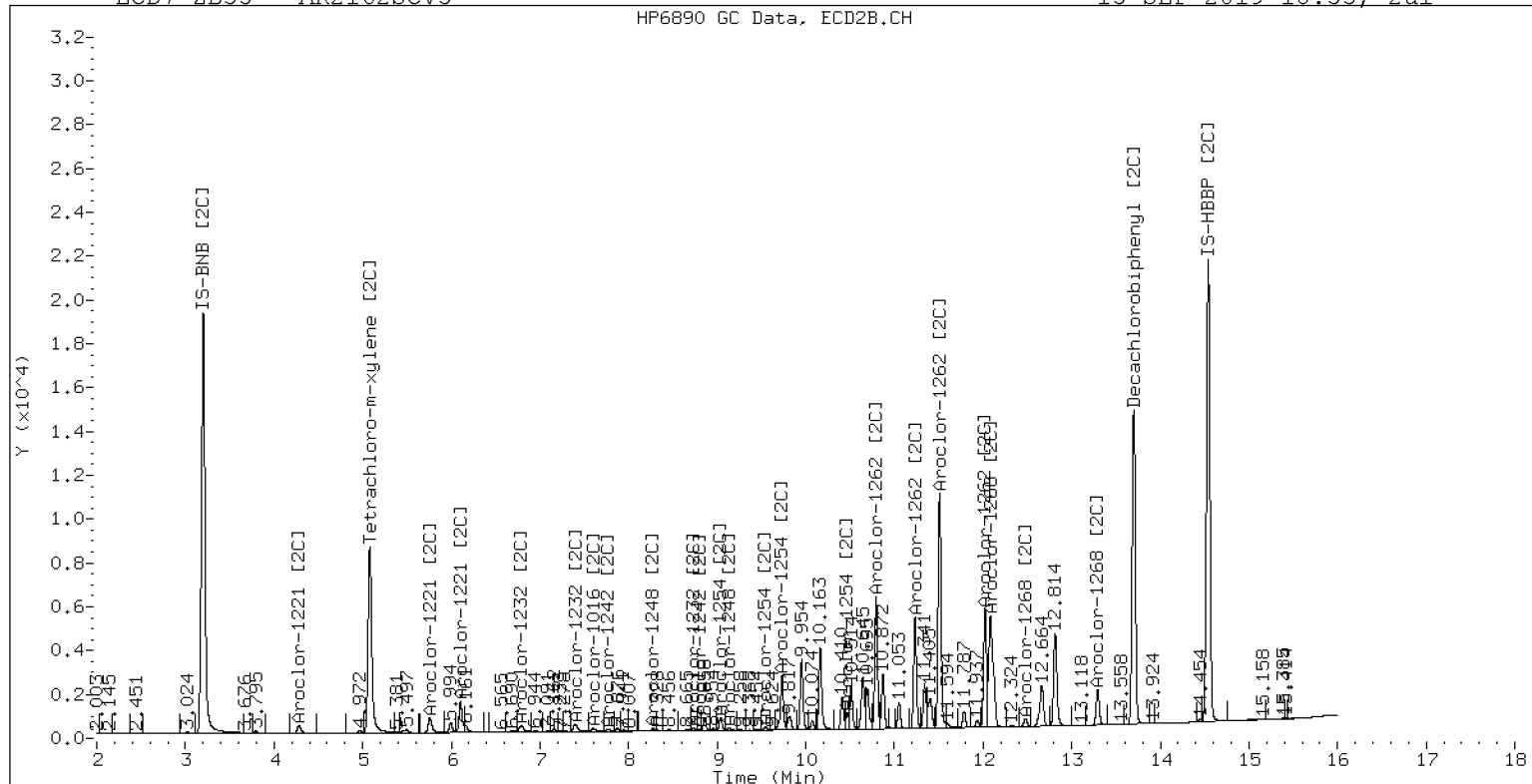
15-SEP-2019 18:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR2162SCV5

15-SEP-2019 18:53, 2ul



ZB-35 Manual Integration: NO



**SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A**

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19091521ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHI0216 Injection Date: 09/15/19
Lab Sample ID: SHI0216-SCV6 Injection Time: 19:14
Sequence Name: AR3268SCV6

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1232	A	250.00	285	0.0143078	0.0165807		14.1	20
Aroclor 1232 [2C]	A	250.00	269	0.0162933	0.0179938		7.8	20
Aroclor 1268	A	250.00	263	0.1561223	0.1580953		5.0	20
Aroclor 1268 [2C]	A	250.00	261	0.2642944	0.2645071		4.6	20
Decachlorobiphenyl	A	40.000	50.0	0.8094199	1.0114310		25.0	20
Tetrachlorometaxylene	A	40.000	40.3	0.9910571	0.9981854		0.7	20
Decachlorobiphenyl [2C]	A	40.000	47.8	1.5347890	1.8345300		19.5	20
Tetrachlorometaxylene [2C]	A	40.000	37.8	0.9503239	0.8974174		-5.6	20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20190915.b/19091521ECD7.D
Data file 2: /20190915.b/20190915.b/19091521ECD7.D
Method: \\target\share\chem4\ecd7.i\20190915.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268SCV6
Client ID:
Injection Date: 15-SEP-2019 19:14
Report Date: 09/16/2019 11:41
Matrix: NONE
Dilution Factor: 1.0

RT	ZB5 Col Shift Response		RT	ZB35 Col Shift Response		ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.341	0.001	141373	5.081	0.001	505294	40.3	37.8	6.4	Tetrachloro-m-xylene
13.614	0.000	214658	13.702	-0.000	1059666	50.0	47.8	4.4	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	100.7	94.4
Decachlorobiphenyl	125.0	119.5

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	432392	283260	-34.5
Hexabromobiphenyl	517563	424464	-18.0

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1497303	1126107	-24.8
Hexabromobiphenyl	1404015	1155245	-17.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col					ZB35 Col					
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.926	-0.000	9622	112.0	1	6.779	0.000	68458	122.2
Aroclor-1016	2	7.314	0.001	33292	108.9	2	7.399	0.001	134510	115.0
Aroclor-1016	3	7.460	0.000	12616	109.4	3	7.599	0.001	54238	115.0
Aroclor-1016	4	8.268	0.000	10808	114.2	4	7.767	0.000	34263	116.3
Total CollAve (4 peaks):				111.1	Total Col2Ave (4 peaks):				117.1	RPD = 5
Corrected Ave (3 peaks):				110.1	Corrected Ave (3 peaks):				115.4	RPD = 5
Aroclor-1221	1	4.185	0.000	3178	153.3	1	4.283	-0.001	12766	159.7
Aroclor-1221	2	5.711	-0.001	4834	150.2	2	5.760	0.002	27761	166.3
Aroclor-1221	3	5.982	-0.001	16410	201.0	3	6.104	-0.000	70670	253.0
Total CollAve (3 peaks):				168.2	Total Col2Ave (3 peaks):				193.0	RPD = 14
Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks					
Aroclor-1232	1	4.185	0.001	3178	260.5	1	4.283	0.001	12766	267.8
Aroclor-1232	2	6.926	0.001	9622	298.8	2	6.779	0.002	68458	288.5
Aroclor-1232	3	7.314	0.001	33292	289.3	3	7.399	0.002	134510	283.4
Aroclor-1232	4	7.460	0.000	12616	292.4	4	8.729	0.000	37553	238.0
Total CollAve (4 peaks):				285.2	Total Col2Ave (4 peaks):				269.4	RPD = 6
Corrected Ave (3 peaks):				280.7	Corrected Ave (3 peaks):				263.1	RPD = 6
Aroclor-1242	1	6.926	0.000	9622	138.1	1	6.779	0.001	68458	160.4
Aroclor-1242	2	7.314	-0.000	33292	132.2	2	7.399	0.001	134510	145.9
Aroclor-1242	3	8.632	0.001	9671	116.5	3	7.767	0.000	34263	145.8
Aroclor-1242	4	8.920	0.001	10040	113.4	4	8.802	0.001	37955	129.8
Total CollAve (4 peaks):				125.0	Total Col2Ave (4 peaks):				145.5	RPD = 15
Corrected Ave (3 peaks):				120.7	Corrected Ave (3 peaks):				140.5	RPD = 15
Aroclor-1248	1	8.096	-0.000	9055	71.1	1	7.399	0.004	134510	219.7
Aroclor-1248	2	8.632	0.000	9671	61.0	2	8.275	0.000	39058	84.6
Aroclor-1248	3	8.920	0.000	10040	68.1	3	8.802	0.001	37955	81.6
Aroclor-1248	4	9.506	0.000	3395	35.9	4	9.138	0.003	44105	73.3
Total CollAve (4 peaks):				59.0	Total Col2Ave (4 peaks):				114.8	RPD = 64*
Corrected Ave (3 peaks):				55.0	Corrected Ave (3 peaks):				79.8	RPD = 37
Aroclor-1254	1	9.001	-0.001	3344	14.0	1	9.038	0.001	8654	13.9
Aroclor-1254	2	9.078	0.000	1342	18.2	2	9.138	0.011	44105	138.9
Aroclor-1254	3	9.372	0.001	1692	12.3	3	9.544	0.001	7982	16.3
Aroclor-1254	4	9.506	0.001	3395	11.5	4	9.692	0.001	13501	13.8
Aroclor-1254	5	10.215	0.004	2260	11.5	5	10.468	0.004	5584	9.2
Total CollAve (5 peaks):				13.5	Total Col2Ave (5 peaks):				38.4	RPD = 96*
Corrected Ave (4 peaks):				12.4	Corrected Ave (4 peaks):				13.3	RPD = 7
Aroclor-1260	1	10.764	0.000	36154	184.4	1	10.794	-0.000	139310	191.7
Aroclor-1260	2	11.080	-0.000	3230	17.2	2	11.237	0.004	167894	228.7
Aroclor-1260	3	11.449	-0.001	22521	47.2	3	11.510	-0.002	92070	50.0
Aroclor-1260	4	---			0.0	4	12.023	0.001	671734	1173.3
Aroclor-1260	5	11.966	0.001	178894	1755.7	NS	---			----
Total CollAve (4 peaks):				501.1	Total Col2Ave (4 peaks):				410.9	RPD = 20
Corrected Ave (3 peaks):				82.9	Corrected Ave (3 peaks):				156.8	RPD = 62*
Aroclor-1262	1	11.080	-0.000	3230	14.5	1	10.794	-0.000	139310	139.0
Aroclor-1262	2	11.449	-0.000	22521	40.9	2	11.237	0.003	167894	195.9
Aroclor-1262	3	---			0.0	3	11.510	-0.001	92070	46.8
Aroclor-1262	4	11.966	0.001	178894	863.5	4	12.023	-0.000	671734	700.6
Total CollAve (3 peaks):				306.3	Total Col2Ave (4 peaks):				270.6	RPD = 12
Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				127.2	
Aroclor-1268	1	11.966	0.001	178894	274.2	1	12.023	0.000	671734	270.0
Aroclor-1268	2	12.037	0.001	179024	303.9	2	12.090	0.000	760106	304.4
Aroclor-1268	3	12.424	0.001	121349	243.7	3	12.480	-0.000	546687	241.7
Aroclor-1268	4	13.207	0.000	359555	228.4	4	13.297	0.000	1841105	229.6
Total CollAve (4 peaks):				262.6	Total Col2Ave (4 peaks):				261.4	RPD = 0

Corrected Ave (3 peaks): 248.8 Corrected Ave (3 peaks): 247.1 RPD = 1

Total PCB Area Col1 (5.441 - 13.514) = 1291499 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (5.441 - 13.514) = 5756571 Col2 Total PCB = 0.6 ppm*

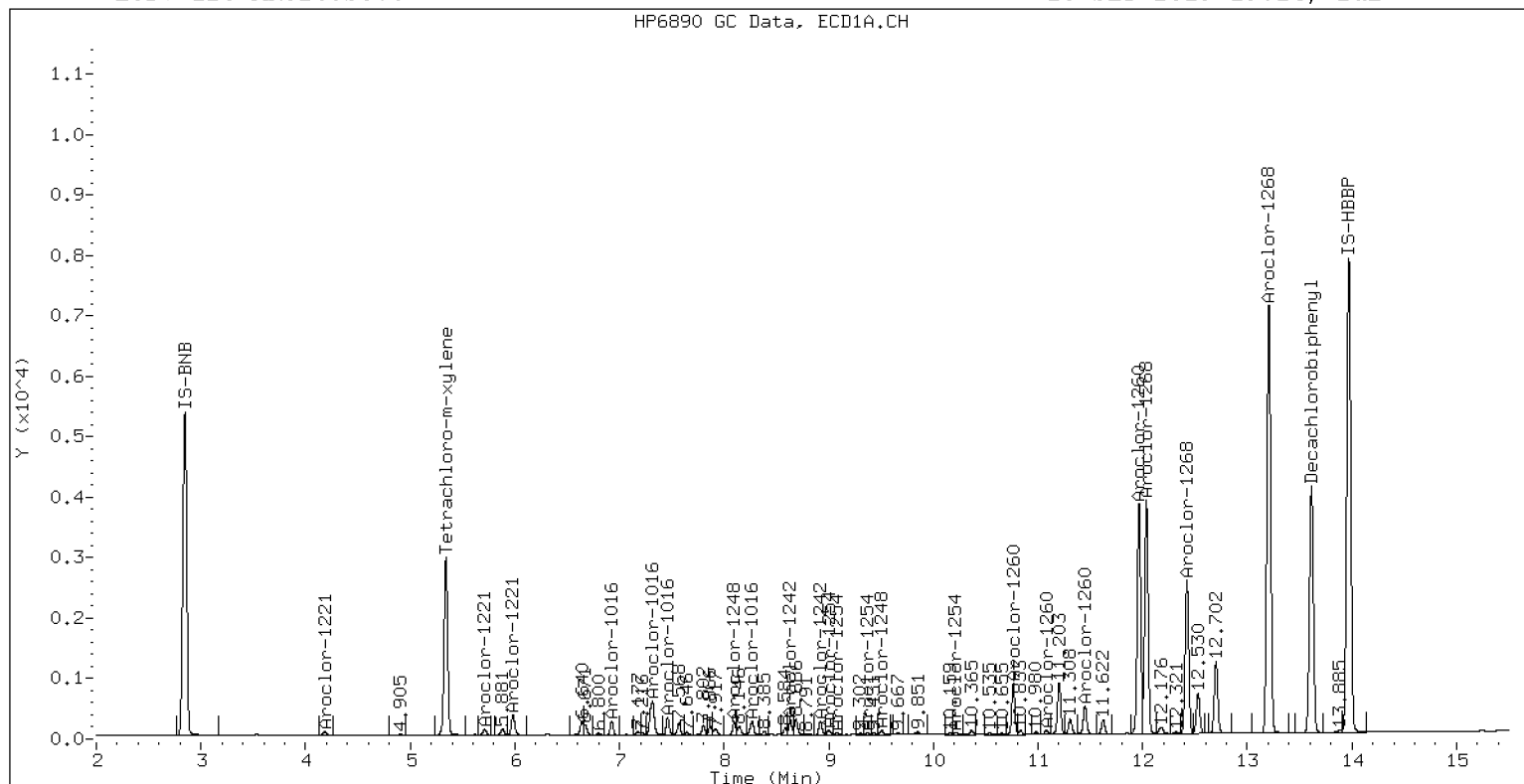
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 AR3268SCV6

15-SEP-2019 19:14, 2ul





CONTINUING CALIBRATION CHECK EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19101123ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHJ0236 Injection Date: 10/11/19
Lab Sample ID: SHJ0236-CCV1 Injection Time: 23:36
Sequence Name: AR1248CCV1

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	246	0.0372731	0.0367443		-1.7	
Aroclor 1248 [2C]	A	250.00	273	0.0380217	0.0415180		9.1	
Decachlorobiphenyl	A	40.000	42.7	0.8094199	0.8635359		6.8	
Tetrachlorometaxylene	A	40.000	43.0	0.9910571	1.0662820		7.5	
Decachlorobiphenyl [2C]	A	40.000	42.8	1.5347890	1.6404820		7.0	
Tetrachlorometaxylene [2C]	A	40.000	41.6	0.9503239	0.9886429		4.0	

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101123ECD7.D ARI ID: AR1248CCV1
Data file 2: /20191011.b/20191011.b/19101123ECD7.D Client ID:
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m Injection Date: 11-OCT-2019 23:36
Compound Sublist: AR1248.sub Report Date: 10/15/2019 06:10
Instrument, Inj. Vol.: ecd7.i, 2ul Matrix: NONE
Quant Method: Internal Std Dilution Factor: 1.0

RT	ZB5 Col Shift Response	ZB35 Col Shift Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.332	-0.009 141205	0.004 625415	43.0	41.6	3.4	Tetrachloro-m-xylene
13.613	-0.001 156803	-0.005 1016362	42.7	42.8	0.2	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	107.6	104.0
Decachlorobiphenyl	106.7	106.9

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	264855	0.7
Hexabromobiphenyl	382688	363165	-5.1

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1265199	16.9
Hexabromobiphenyl	1006687	1239102	23.1

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1248	1	8.092	-0.004	28789	241.9	1	7.384	0.000	181634	264.0
Aroclor-1248	2	8.629	-0.003	36946	249.4	2	8.261	0.000	140408	270.7
Aroclor-1248	3	8.917	-0.003	34399	249.5	3	8.790	0.000	142235	272.2
Aroclor-1248	4	9.504	-0.003	21515	243.0	4	9.123	0.000	192329	284.5
Total CollAve (4 peaks):				245.9	Total Col2Ave (4 peaks):				272.8	RPD = 10
Corrected Ave (3 peaks):				244.8	Corrected Ave (3 peaks):				269.0	RPD = 9
CalAmt %D:				-1.6	CalAmt %D:				9.1	

Total PCB Area Coll (5.441 - 13.514) = 500552 Coll Total PCB = 0.2 ppm*

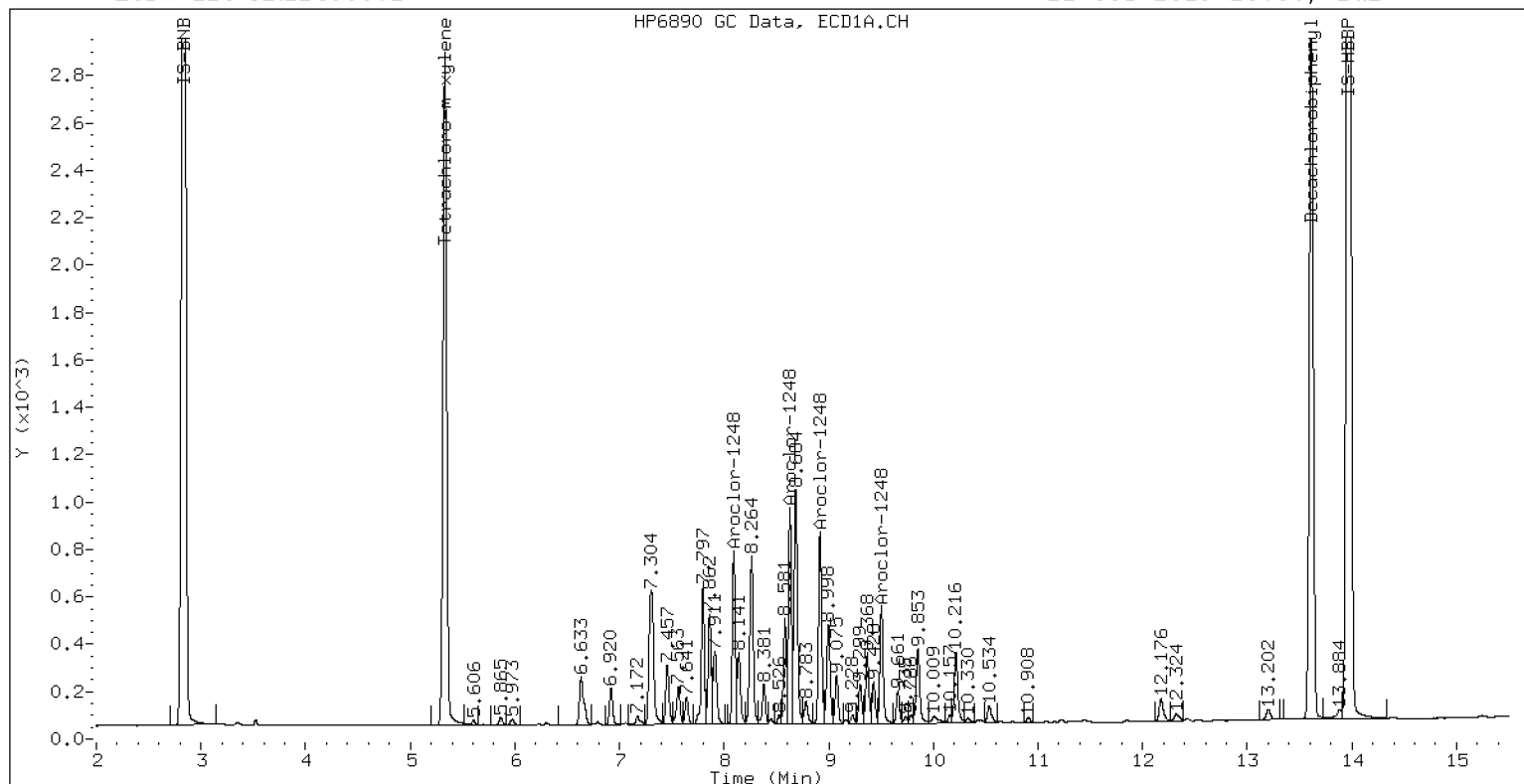
Total PCB Area Col2 (5.441 - 13.514) = 2565346 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1

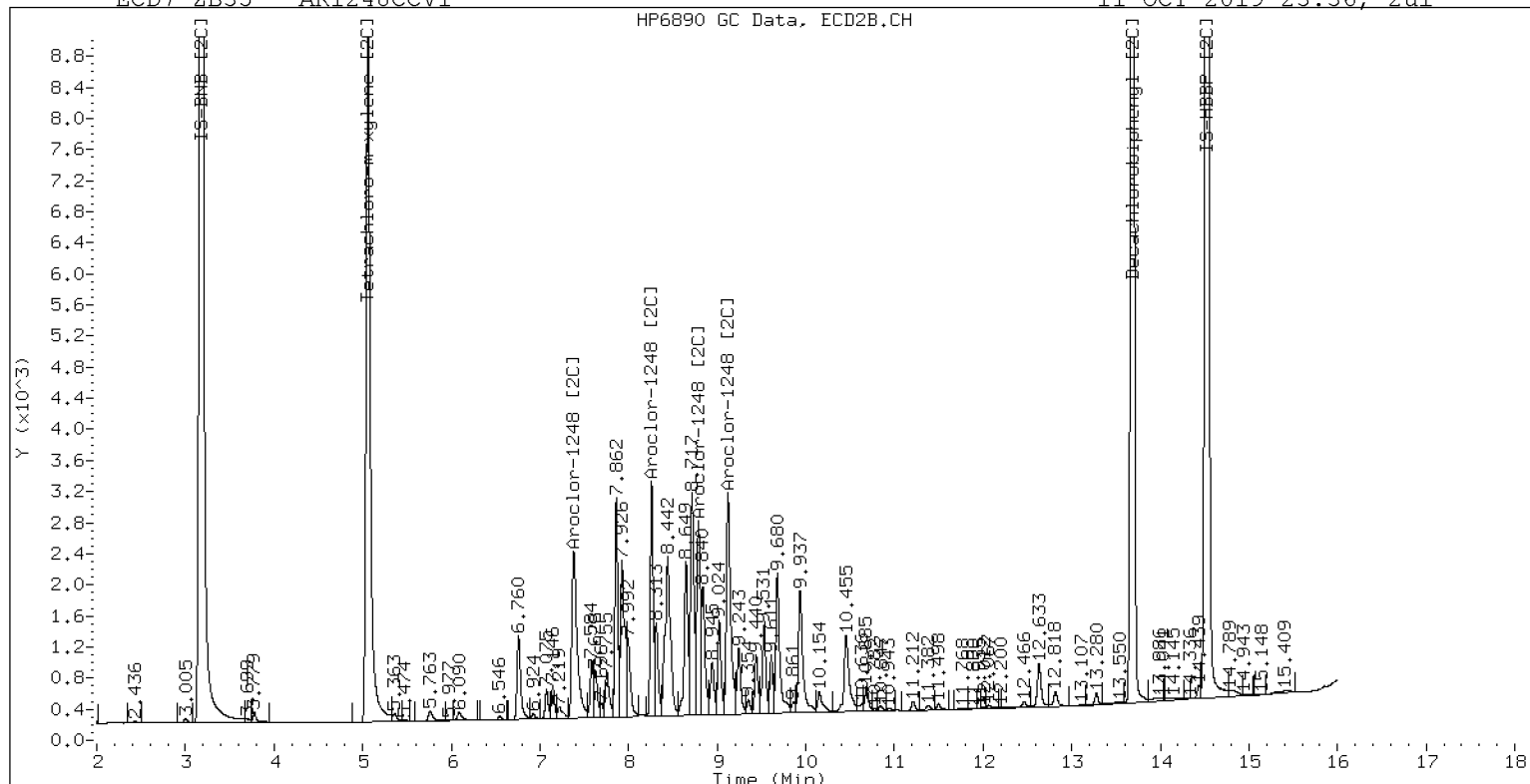
11-OCT-2019 23:36, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1

11-OCT-2019 23:36, 2ul



ZB-35 Manual Integration: NO



CONTINUING CALIBRATION CHECK EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19101124ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHJ0236 Injection Date: 10/11/19
Lab Sample ID: SHJ0236-CCV2 Injection Time: 23:57
Sequence Name: AR1660CCV2

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	278	0.0424735	0.0476626		11.3	
Aroclor 1016 [2C]	A	250.00	277	0.0443328	0.0489250		10.6	
Aroclor 1260	A	250.00	277	0.0444075	0.0502099		10.8	
Aroclor 1260 [2C]	A	250.00	277	0.0670532	0.0744376		10.6	
Decachlorobiphenyl	A	40.000	47.1	0.8094199	0.9525691		17.8	
Tetrachlorometaxylene	A	40.000	47.3	0.9910571	1.1719980		18.3	
Decachlorobiphenyl [2C]	A	40.000	46.9	1.5347890	1.7994290		17.3	
Tetrachlorometaxylene [2C]	A	40.000	44.6	0.9503239	1.0588110		11.5	

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101124ECD7.D
Data file 2: /20191011.b/20191011.b/19101124ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 11-OCT-2019 23:57
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
=====									
5.333	-0.008	154593	5.062	0.005	655728	47.3	44.6	6.0	Tetrachloro-m-xylene
13.613	-0.001	176221	13.687	-0.005	1084140	47.1	46.9	0.4	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	118.3	111.4
Decachlorobiphenyl	117.7	117.2

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	263811	0.3
Hexabromobiphenyl	382688	369991	-3.3

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1238612	14.5
Hexabromobiphenyl	1006687	1204982	19.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1016	1	6.920	-0.005	22001	274.9	1	6.762	0.003	150735	244.6
Aroclor-1016	2	7.310	-0.002	80983	284.5	2	7.385	0.002	363295	282.3
Aroclor-1016	3	7.456	-0.004	29843	278.0	3	7.584	0.003	148815	286.9
Aroclor-1016	4	8.264	-0.003	24347	276.1	4	7.754	0.003	94644	292.2
Total CollAve (4 peaks):				278.4	Total Col2Ave (4 peaks):				276.5	RPD = 1
Corrected Ave (3 peaks):				276.3	Corrected Ave (3 peaks):				271.3	RPD = 2

CalAmt %D: 11.3

CalAmt %D: 10.6

Aroclor-1260	1	10.763	-0.001	43243	253.1	1	10.782	0.002	206079	271.8
Aroclor-1260	2	11.079	-0.002	45271	276.3	2	11.219	0.001	223487	291.8
Aroclor-1260	3	11.448	-0.002	119395	287.2	3	11.497	0.001	534771	278.7
Aroclor-1260	4	11.847	-0.001	60408	322.0	4	12.010	0.001	156863	262.7
Aroclor-1260	5	11.964	-0.001	21952	247.2	NS	---			----
Total CollAve (5 peaks):				277.1	Total Col2Ave (4 peaks):				276.3	RPD = 0
Corrected Ave (4 peaks):				265.9	Corrected Ave (3 peaks):				271.1	RPD = 2

CalAmt %D: 10.9

CalAmt %D: 10.5

Total PCB Area Coll (5.441 - 13.514) = 1240150 Coll Total PCB = 0.6 ppm*

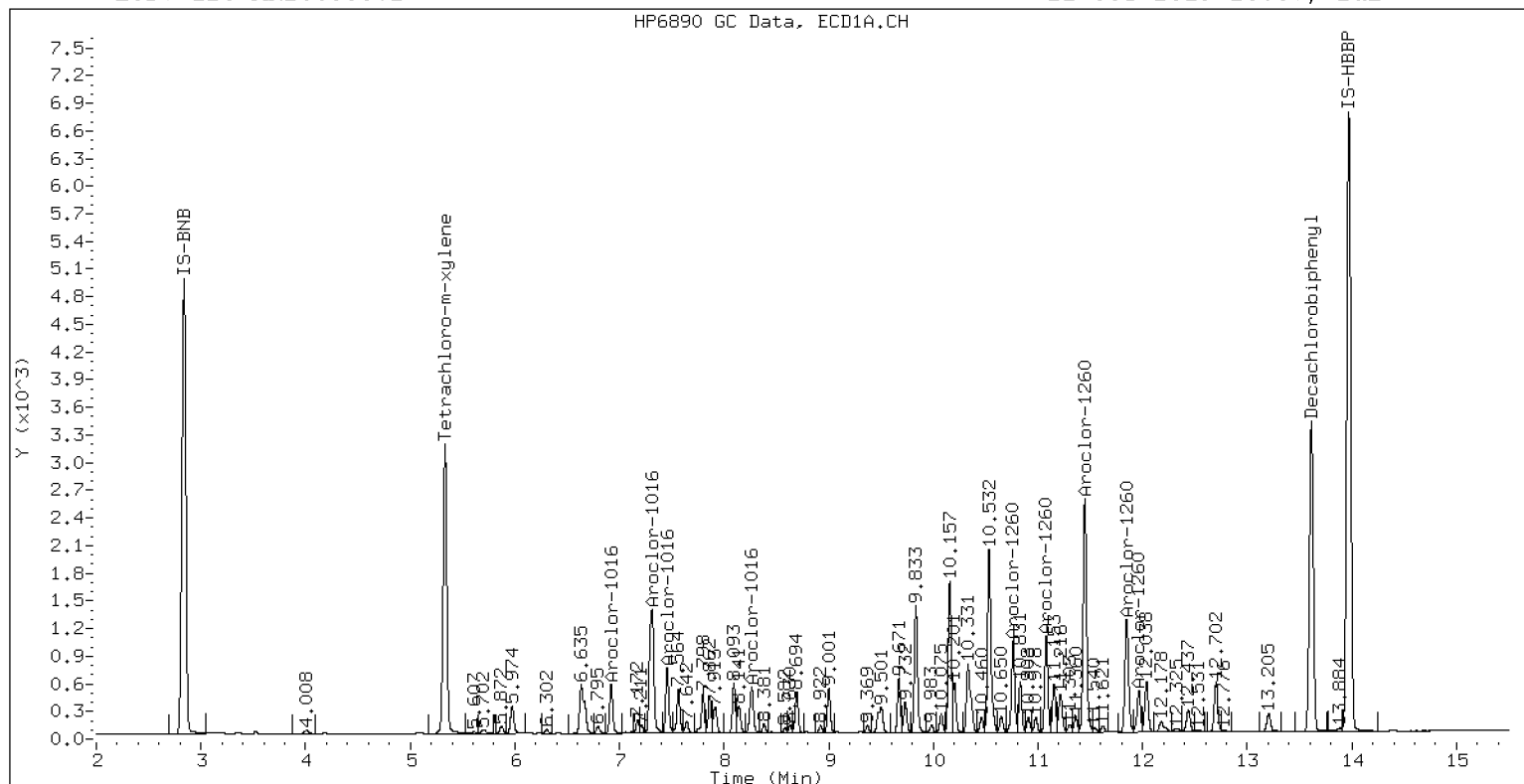
Total PCB Area Col2 (5.441 - 13.514) = 5865262 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2

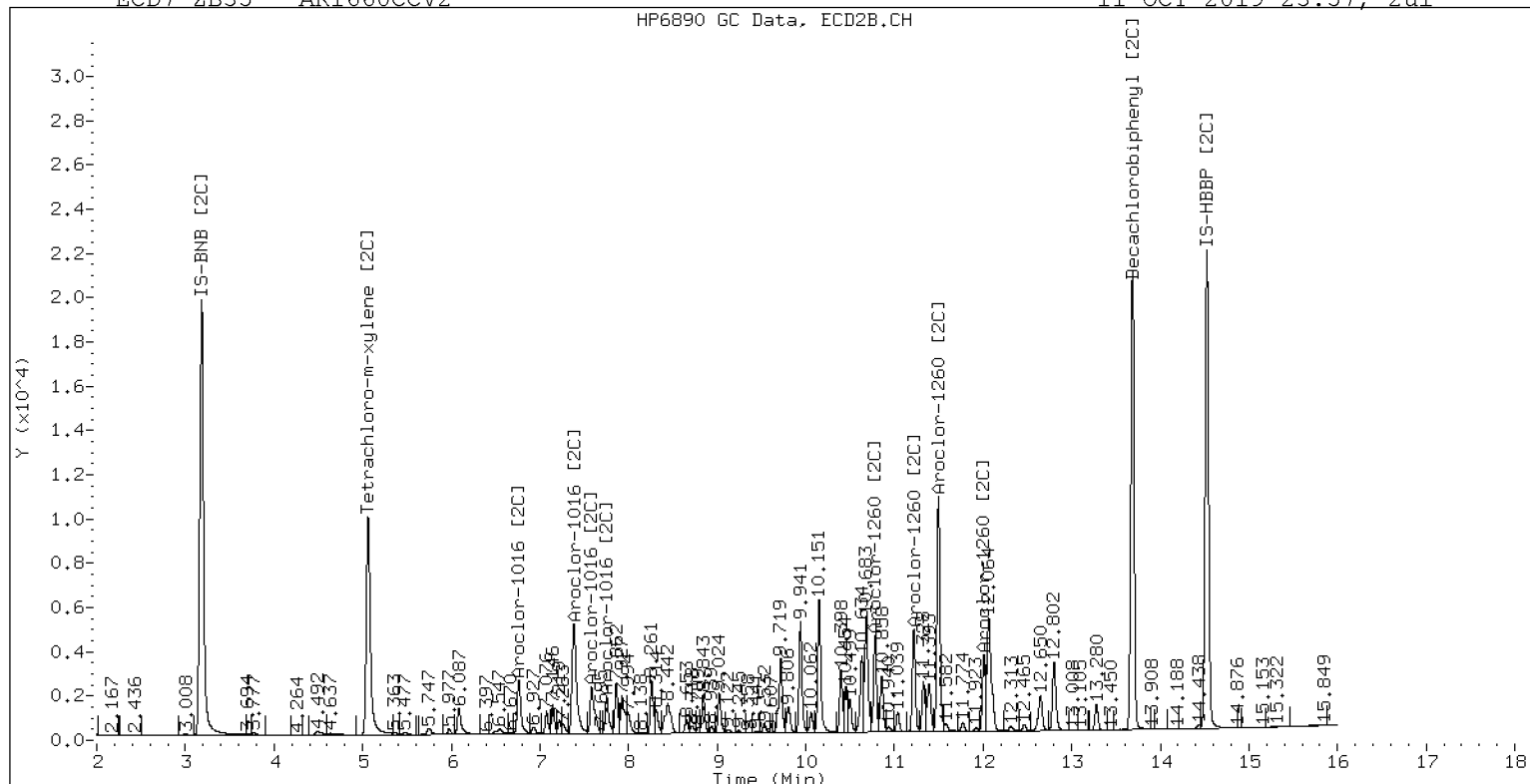
11-OCT-2019 23:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2

11-OCT-2019 23:57, 2ul



ZB-35 Manual Integration: NO



CONTINUING CALIBRATION CHECK EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19101134ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHJ0236 Injection Date: 10/12/19
Lab Sample ID: SHJ0236-CCV3 Injection Time: 03:26
Sequence Name: AR1242CCV3

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	250	0.0348200	0.0349176		-0.2	
Aroclor 1242 [2C]	A	250.00	277	0.0333224	0.0368269		10.7	
Decachlorobiphenyl	A	40.000	42.3	0.8094199	0.8569704		5.8	
Tetrachlorometaxylene	A	40.000	45.6	0.9910571	1.1304400		14.0	
Decachlorobiphenyl [2C]	A	40.000	37.6	1.5347890	1.4419000		-6.0	
Tetrachlorometaxylene [2C]	A	40.000	43.8	0.9503239	1.0397130		9.5	

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101134ECD7.D
Data file 2: /20191011.b/20191011.b/19101134ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: A1R242CCV3
Client ID:
Injection Date: 12-OCT-2019 03:26
Report Date: 10/15/2019 07:37
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
=====									
5.329	0.001	215627	5.058	0.000	932421	45.6	43.8	4.2	Tetrachloro-m-xylene
13.613	-0.000	185238	13.688	0.000	1254790	42.3	37.6	11.9	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	114.1	109.4
Decachlorobiphenyl	105.9	93.9

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	262930	381492	45.1
Hexabromobiphenyl	382688	432309	13.0

Standard Cpnd	Column 2		%D
	Standard Area*	Sample Area	
Bromo-Nitrobenzene	1081928	1793613	65.8
Hexabromobiphenyl	1006687	1740468	72.9

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
=====										
Aroclor-1242	1	6.917	0.000	23662	252.1	1	6.759	0.000	183695	270.2
Aroclor-1242	2	7.308	0.000	85833	253.0	2	7.384	0.000	408037	277.9
Aroclor-1242	3	8.628	0.000	27745	248.1	3	7.752	0.000	108564	290.0
Aroclor-1242	4	8.917	0.000	29270	245.5	4	8.788	0.000	125368	269.2
Total CollAve (4 peaks):				249.7	Total Col2Ave (4 peaks):				276.8	RPD = 10
Corrected Ave (3 peaks):				248.5	Corrected Ave (3 peaks):				272.4	RPD = 9
CalAmt %D:				-0.1	CalAmt %D:				10.7	

Total PCB Area Coll (5.428 - 13.513) = 548319 Coll Total PCB = 0.2 ppm*

Total PCB Area Col2 (5.428 - 13.513) = 3259872 Col2 Total PCB = 0.2 ppm*

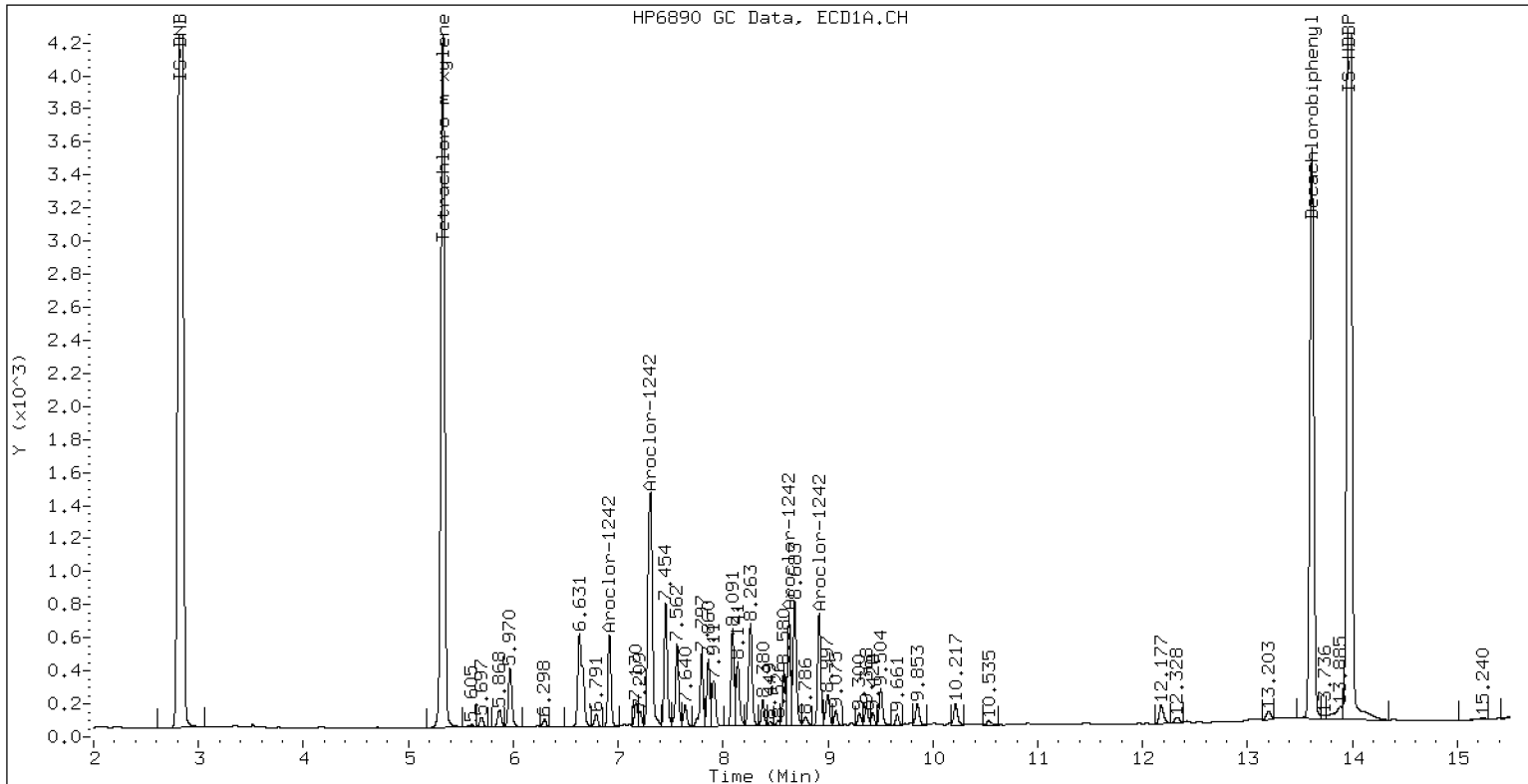
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 A1R242CCV3

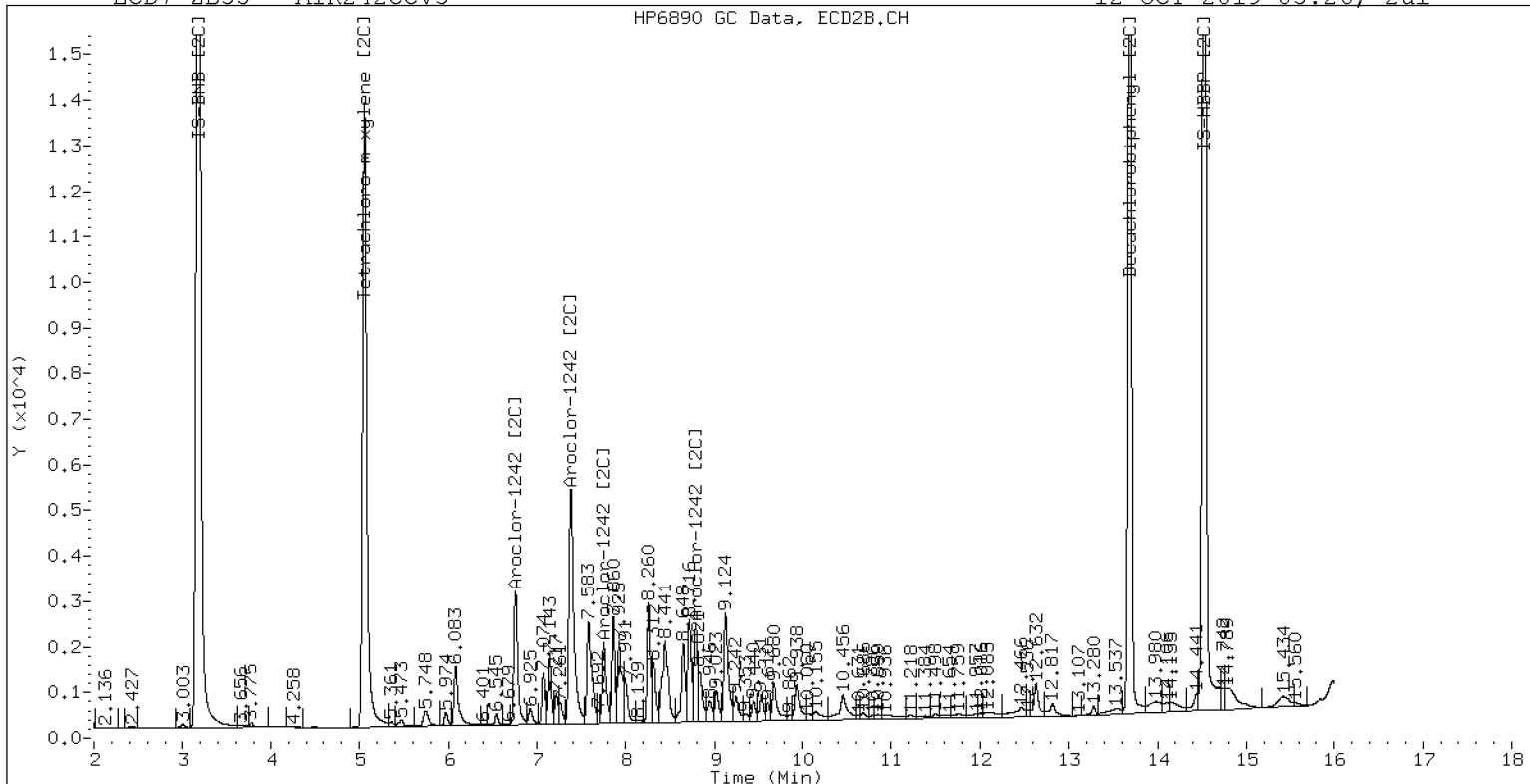
12-OCT-2019 03:26, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 A1R242CCV3

12-OCT-2019 03:26, 2ul

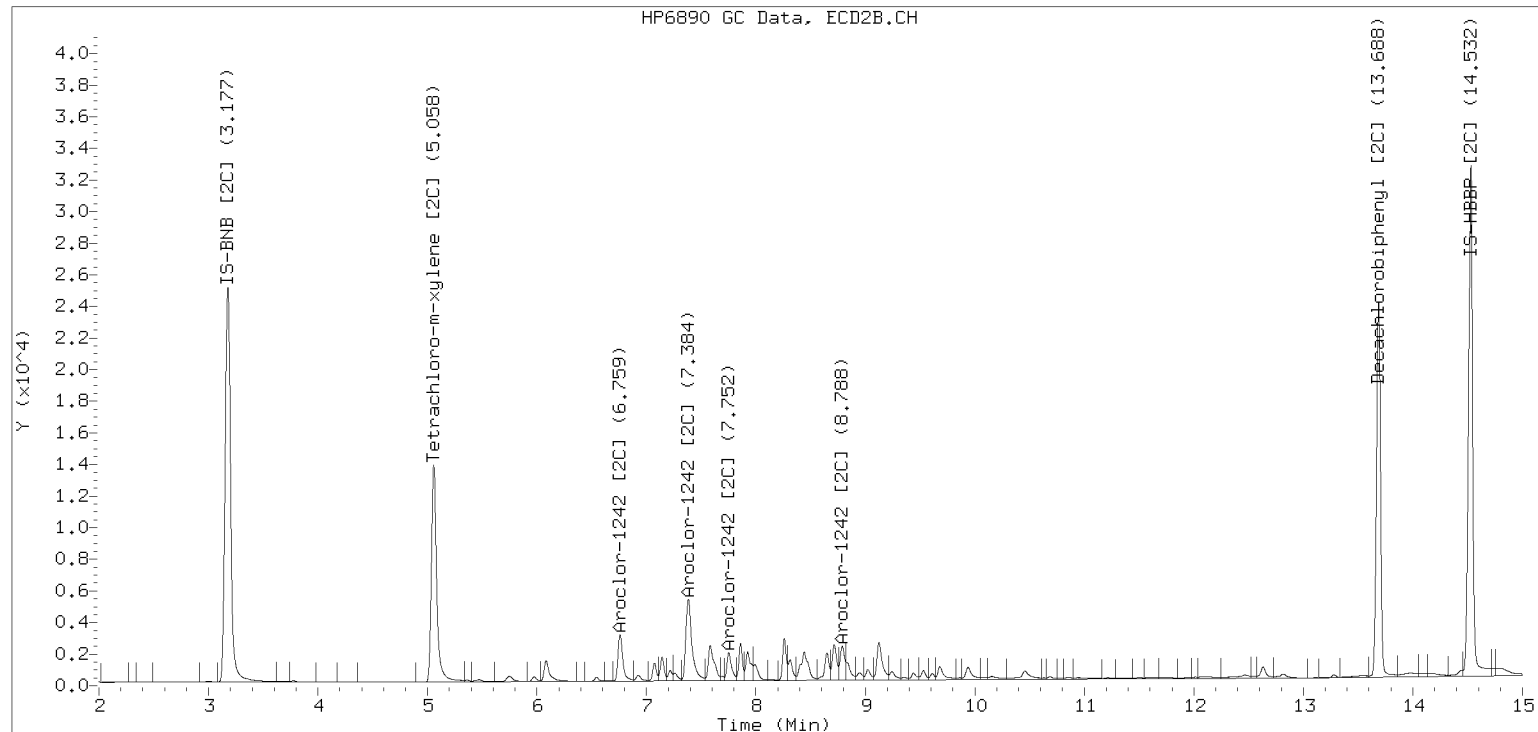


ZB-35 Manual Integration: YES

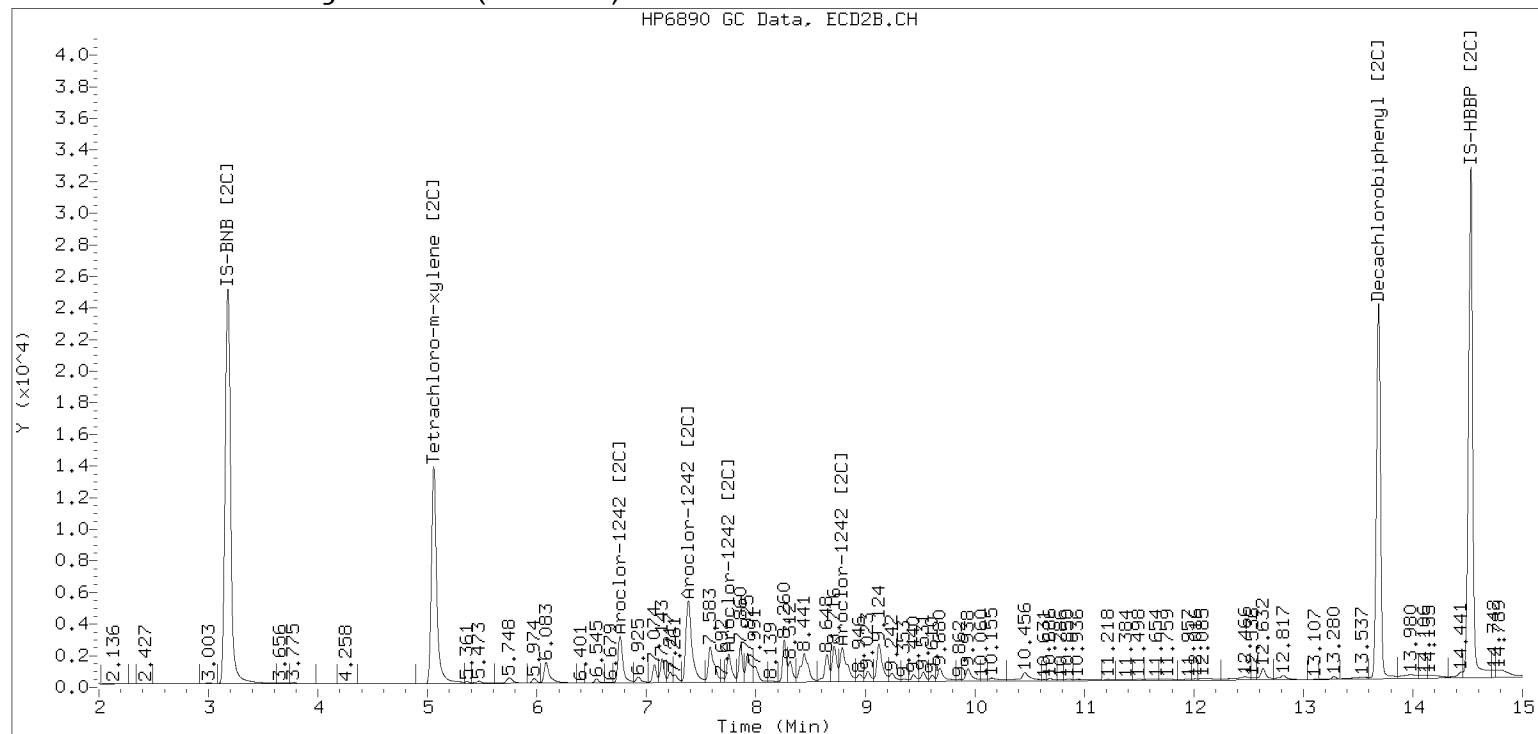
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/20191011.b/20191011.b/19101134ECD7.D Injection Date: 12-OCT-2

Manual Integration (After)



Processed Integration (Before)





CONTINUING CALIBRATION CHECK EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Instrument ID: ECD7 Calibration: CI00052
Lab File ID: 19101135ECD7.D Calibration Date: 09/15/19 00:00
Sequence: SHJ0236 Injection Date: 10/12/19
Lab Sample ID: SHJ0236-CCV4 Injection Time: 03:47
Sequence Name: AR1242CCV4

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	272	0.0424735	0.0465616		8.8	
Aroclor 1016 [2C]	A	250.00	268	0.0443328	0.0473892		7.2	
Aroclor 1260	A	250.00	287	0.0444075	0.0519342		15.0	
Aroclor 1260 [2C]	A	250.00	247	0.0670532	0.0666763		-1.2	
Decachlorobiphenyl	A	40.000	46.5	0.8094199	0.9406087		16.3	
Tetrachlorometaxylene	A	40.000	47.2	0.9910571	1.1707190		18.0	
Decachlorobiphenyl [2C]	A	40.000	44.6	1.5347890	1.7094010		11.5	
Tetrachlorometaxylene [2C]	A	40.000	44.1	0.9503239	1.0471870		10.3	

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /20191011.b/19101135ECD7.D
Data file 2: /20191011.b/20191011.b/19101135ECD7.D
Method: \\target\share\chem4\ecd7.i\20191011.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV4
Client ID:
Injection Date: 12-OCT-2019 03:47
Report Date: 10/15/2019 06:10
Matrix: NONE
Dilution Factor: 1.0

ZB5 Col			ZB35 Col			ZB5	ZB35	RPD	Compound/Flag
RT	Shift	Response	RT	Shift	Response	on col	on col		
=====									
5.328	-0.013	236494	5.057	0.000	981999	47.3	44.1	7.0	Tetrachloro-m-xylene
13.613	-0.000	229208	13.692	0.000	1537458	46.5	44.6	4.2	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	118.1	110.2
Decachlorobiphenyl	116.2	111.4

INTERNAL STANDARD SUMMARY

Standard Cpnd	Column 1		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	262930	404015	53.7
Hexabromobiphenyl	382688	487361	27.4

Standard Cpnd	Column 2		
	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	1081928	1875499	73.3
Hexabromobiphenyl	1006687	1798827	78.7

* Standard Areas taken from Initial Cal Level 3

Initial Calibration Date: 15-SEP-2019

<- Indicates standard response outside Limits (-50 to +100%)

ZB5 Col						ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.917	-0.009	33062	269.7	1	6.758	0.000	218336	234.0
Aroclor-1016	2	7.306	-0.007	121078	277.7	2	7.382	0.000	533888	274.0
Aroclor-1016	3	7.453	-0.007	44782	272.4	3	7.581	0.000	218700	278.5
Aroclor-1016	4	8.262	-0.005	36223	268.3	4	7.751	0.000	140056	285.6
Total CollAve (4 peaks):				272.0		Total Col2Ave (4 peaks):				268.0 RPD = 1
Corrected Ave (3 peaks):				270.1		Corrected Ave (3 peaks):				262.2 RPD = 3

CalAmt %D: 8.8

CalAmt %D: 7.2

Aroclor-1260	1	10.762	-0.002	59762	265.5	1	10.780	0.000	274518	242.6
Aroclor-1260	2	11.079	-0.001	62468	289.5	2	11.218	0.000	298992	261.5
Aroclor-1260	3	11.447	-0.002	161530	294.9	3	11.496	0.000	717152	250.4
Aroclor-1260	4	11.848	-0.001	81917	331.5	4	12.009	0.000	208577	234.0
Aroclor-1260	5	11.964	-0.001	29803	254.7	NS	---			----
Total CollAve (5 peaks):				287.2		Total Col2Ave (4 peaks):				247.1 RPD = 15
Corrected Ave (4 peaks):				276.2		Corrected Ave (3 peaks):				242.3 RPD = 13

CalAmt %D: 14.9

CalAmt %D: -1.2

Total PCB Area Coll (5.441 - 13.514) = 1755737 Coll Total PCB = 0.5 ppm*

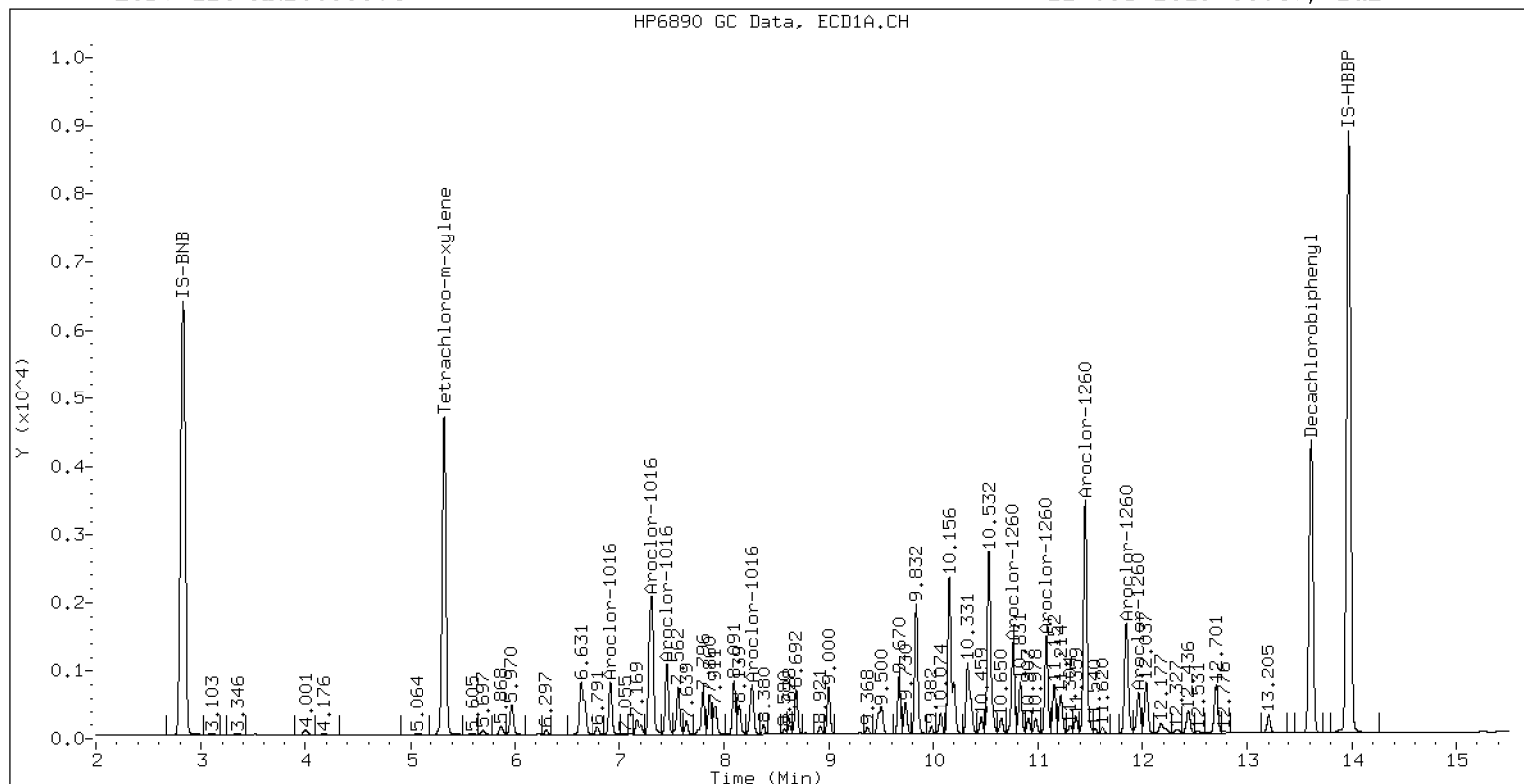
Total PCB Area Col2 (5.441 - 13.514) = 8061817 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV4

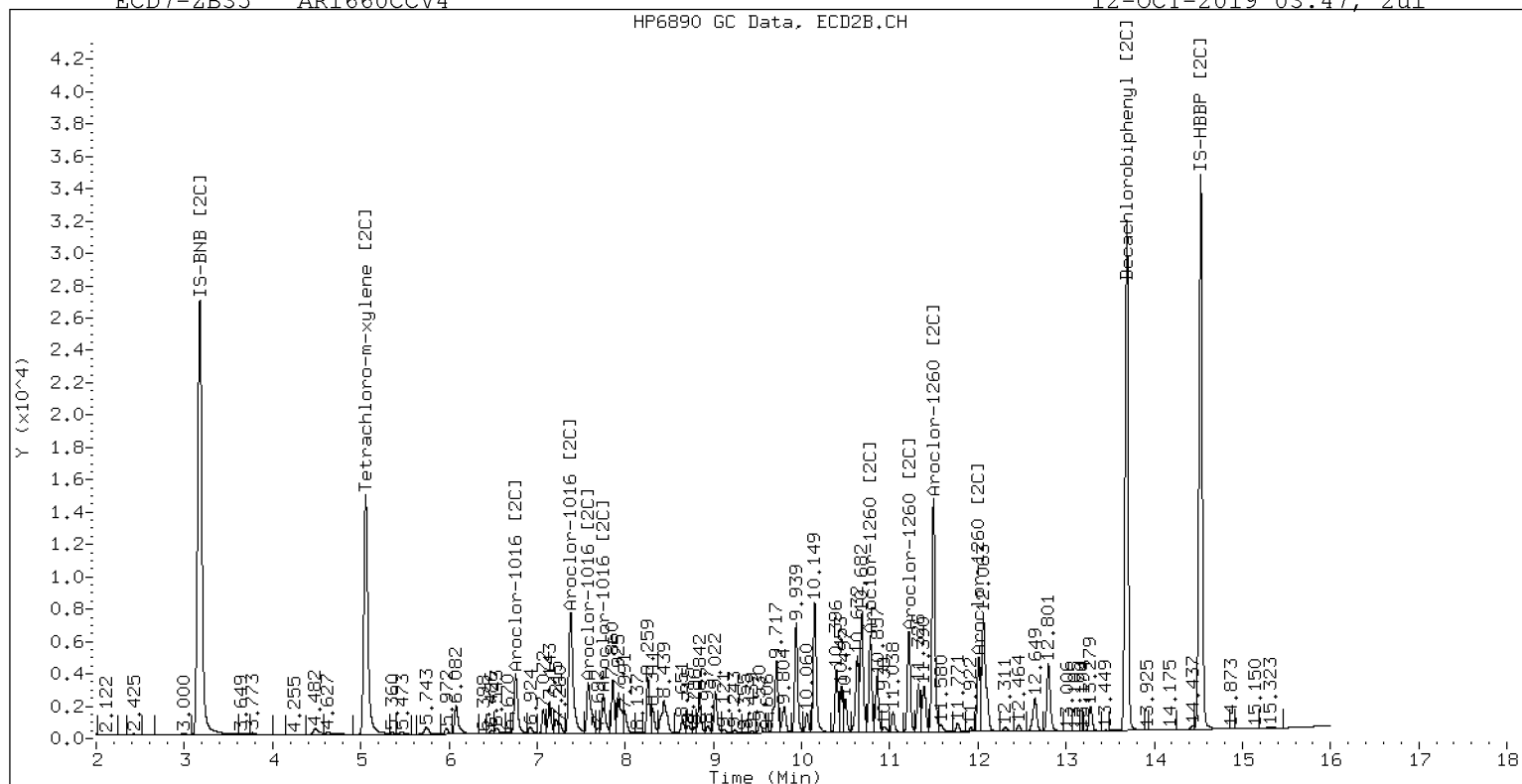
12-OCT-2019 03:47, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV4

12-OCT-2019 03:47, 2ul



ZB-35 Manual Integration: NO



Dual Column
ANALYSIS BATCH (SEQUENCE) SUMMARY
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHI0216

Instrument: ECD7

Calibration: CI00052

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SHI0216-CAL1	19091505ECD7.D	19091505ECD7.D	NA	09/15/19 13:38
Cal Standard	SHI0216-CAL2	19091506ECD7.D	19091506ECD7.D	NA	09/15/19 13:59
Cal Standard	SHI0216-CAL3	19091507ECD7.D	19091507ECD7.D	NA	09/15/19 14:20
Cal Standard	SHI0216-CAL4	19091508ECD7.D	19091508ECD7.D	NA	09/15/19 14:41
Cal Standard	SHI0216-CAL5	19091509ECD7.D	19091509ECD7.D	NA	09/15/19 15:02
Cal Standard	SHI0216-CAL6	19091510ECD7.D	19091510ECD7.D	NA	09/15/19 15:23
Cal Standard	SHI0216-CAL7	19091511ECD7.D	19091511ECD7.D	NA	09/15/19 15:44
Cal Standard	SHI0216-CAL8	19091512ECD7.D	19091512ECD7.D	NA	09/15/19 16:05
Cal Standard	SHI0216-CAL9	19091513ECD7.D	19091513ECD7.D	NA	09/15/19 16:26
Cal Standard	SHI0216-CALA	19091514ECD7.D	19091514ECD7.D	NA	09/15/19 16:47
Cal Standard	SHI0216-CALB	19091515ECD7.D	19091515ECD7.D	NA	09/15/19 17:08
Secondary Cal Check	SHI0216-SCV1	19091516ECD7.D	19091516ECD7.D	NA	09/15/19 17:29
Secondary Cal Check	SHI0216-SCV2	19091517ECD7.D	19091517ECD7.D	NA	09/15/19 17:50
Secondary Cal Check	SHI0216-SCV3	19091518ECD7.D	19091518ECD7.D	NA	09/15/19 18:11
Secondary Cal Check	SHI0216-SCV4	19091519ECD7.D	19091519ECD7.D	NA	09/15/19 18:32
Secondary Cal Check	SHI0216-SCV5	19091520ECD7.D	19091520ECD7.D	NA	09/15/19 18:53
Secondary Cal Check	SHI0216-SCV6	19091521ECD7.D	19091521ECD7.D	NA	09/15/19 19:14



Dual Column
ANALYSIS BATCH (SEQUENCE) SUMMARY
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHJ0236

Instrument: ECD7

Calibration: CI00052

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SHJ0236-ICV1	19101106ECD7.D	19101106ECD7.D	NA	10/11/19 17:40
Initial Cal Check	SHJ0236-ICV2	19101107ECD7.D	19101107ECD7.D	NA	10/11/19 18:01
Blank	BHJ0164-BLK1	19101115ECD7.D	19101115ECD7.D	Solid	10/11/19 20:49
LCS	BHJ0164-BS1	19101116ECD7.D	19101116ECD7.D	Solid	10/11/19 21:10
LCS Dup	BHJ0164-BSD1	19101117ECD7.D	19101117ECD7.D	Solid	10/11/19 21:31
Reference	BHJ0164-SRM1	19101118ECD7.D	19101118ECD7.D	Solid	10/11/19 21:52
L3-SC1b-00to10-82619	19J0044-01	19101119ECD7.D	19101119ECD7.D	Solid	10/11/19 22:13
L3-SC1b-00to10-82619	BHJ0164-MS1	19101120ECD7.D	19101120ECD7.D	Solid	10/11/19 22:33
L3-SC1b-00to10-82619	BHJ0164-MSD1	19101121ECD7.D	19101121ECD7.D	Solid	10/11/19 22:54
L3-SC1b-10to20-82619	19J0044-02	19101122ECD7.D	19101122ECD7.D	Solid	10/11/19 23:15
Calibration Check	SHJ0236-CCV1	19101123ECD7.D	19101123ECD7.D	NA	10/11/19 23:36
Calibration Check	SHJ0236-CCV2	19101124ECD7.D	19101124ECD7.D	NA	10/11/19 23:57
D6-SC1b-10to20-82619	19J0044-03	19101125ECD7.D	19101125ECD7.D	Solid	10/12/19 00:18
J6-SC1b-00to10-82719	19J0044-04	19101126ECD7.D	19101126ECD7.D	Solid	10/12/19 00:39
J6-SC1b-10to20-82719	19J0044-05	19101127ECD7.D	19101127ECD7.D	Solid	10/12/19 01:00
R4-SC1b-10to20-82819	19J0044-06	19101128ECD7.D	19101128ECD7.D	Solid	10/12/19 01:21
H3-SC1b-00to10-82919	19J0044-07	19101129ECD7.D	19101129ECD7.D	Solid	10/12/19 01:42
H3-SC1b-10-20-82919	19J0044-08	19101130ECD7.D	19101130ECD7.D	Solid	10/12/19 02:02
H3-SC1b-10-20-82919	BHJ0164-DUP1	19101131ECD7.D	19101131ECD7.D	Solid	10/12/19 02:23
J5-SC1b-00to10-82719	19J0044-09	19101132ECD7.D	19101132ECD7.D	Solid	10/12/19 02:44
J5-SC1b-10to20-82719	19J0044-10	19101133ECD7.D	19101133ECD7.D	Solid	10/12/19 03:05
Calibration Check	SHJ0236-CCV3	19101134ECD7.D	19101134ECD7.D	NA	10/12/19 03:26
Calibration Check	SHJ0236-CCV4	19101135ECD7.D	19101135ECD7.D	NA	10/12/19 03:47



ANALYSIS SEQUENCE

SHJ0236

Printed: 10/15/2019 7:03:48AM

Instrument: ECD7
Calibration ID: CI00052

Element Column ID: g2294g2295

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHJ0236-ICV1	AR1254ICV1	QC		1	H008891	H010013	
SHJ0236-ICV2	AR1660ICV2	QC		2	H010012	H010013	
BHJ0113-BLK1	Blank	QC		3		H010013	
BHJ0113-BS1	LCS	QC		4		H010013	
BHJ0113-BSD1	LCS Dup	QC		5		H010013	
19J0056-01	EGW075-191002	8082A PCB Water 0.01	A 01	6		H010013	
19J0056-02	FieldBlank-191002	8082A PCB Water 0.01	A 01	7		H010013	
19J0056-03	EGWDUP5-191002	8082A PCB Water 0.01	A 01	8		H010013	
19J0057-01	EGW078-191002	8082A PCB Water 0.01	A 01	9		H010013	
BHJ0164-BLK1	Blank	QC		10		H010013	
BHJ0164-BS1	LCS	QC		11		H010013	
BHJ0164-BSD1	LCS Dup	QC		12		H010013	
BHJ0164-SRM1	Reference	QC		13		H010013	
19J0044-01	L3-SC1b-00to10-82619	8082A PCB Solid 4	A 01	14		H010013	
BHJ0164-MS1	Matrix Spike	QC		15		H010013	
BHJ0164-MSD1	Matrix Spike Dup	QC		16		H010013	
19J0044-02	L3-SC1b-10to20-82619	8082A PCB Solid 4	A 01	17		H010013	
SHJ0236-CCV1	AR1248CCV1	QC		18	H008890	H010013	
SHJ0236-CCV2	AR1660CCV2	QC		19	H010012	H010013	
19J0044-03	D6-SC1b-10to20-82619	8082A PCB Solid 4	A 01	20		H010013	
19J0044-04	J6-SC1b-00to10-82719	8082A PCB Solid 4	A 01	21		H010013	
19J0044-05	J6-SC1b-10to20-82719	8082A PCB Solid 4	A 01	22		H010013	



ANALYSIS SEQUENCE

SHJ0236

Printed: 10/15/2019 7:03:48AM

Instrument: ECD7

Element Column ID: g2294g2295

Calibration ID: CI00052

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
19J0044-06	R4-SC1b-10to20-82819	8082A PCB Solid 4	A 01	23		H010013	
19J0044-08	H3-SC1b-10-20-82919	8082A PCB Solid 4	A 01	24		H010013	
19J0044-07	H3-SC1b-00to10-82919	8082A PCB Solid 4	A 01	25		H010013	
BHJ0164-DUP1	Duplicate	QC		26		H010013	
19J0044-09	J5-SC1b-00to10-82719	8082A PCB Solid 4	A 01	27		H010013	
19J0044-10	J5-SC1b-10to20-82719	8082A PCB Solid 4	A 01	28		H010013	
SHJ0236-CCV3	AR1242CCV3	QC		29	H008889	H010013	
SHJ0236-CCV4	AR1242CCV4	QC		30	H010012	H010013	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191011.b

	Inject Date/Time		Filename	DF	LabID	ClientID
1	11-OCT-2019	15:56	19101101ECD7.D	1	RINSE	
2	11-OCT-2019	16:17	19101102ECD7.D	1	RINSE	
3	11-OCT-2019	16:38	19101103ECD7.D	1	RINSE	
4	11-OCT-2019	16:58	19101104ECD7.D	1	RINSE	
5	11-OCT-2019	17:19	19101105ECD7.D	1	DDTS	
6	11-OCT-2019	17:40	19101106ECD7.D	1	AR1254ICV1	
7	11-OCT-2019	18:01	19101107ECD7.D	1	AR1660ICV2	
8	11-OCT-2019	18:22	19101108ECD7.D	1	BHJ0113-BLK1	
9	11-OCT-2019	18:43	19101109ECD7.D	1	BHJ0113-BS1	
10	11-OCT-2019	19:04	19101110ECD7.D	1	BHJ0113-BSD1	
11	11-OCT-2019	19:25	19101111ECD7.D	1	19J0056-01	
12	11-OCT-2019	19:46	19101112ECD7.D	1	19J0056-02	
13	11-OCT-2019	20:07	19101113ECD7.D	1	19J0056-03	
14	11-OCT-2019	20:28	19101114ECD7.D	1	19J0057-01	
15	11-OCT-2019	20:49	19101115ECD7.D	1	BHJ0164-BLK1	
16	11-OCT-2019	21:10	19101116ECD7.D	1	BHJ0164-BS1	
17	11-OCT-2019	21:31	19101117ECD7.D	1	BHJ0164-BSD1	
18	11-OCT-2019	21:52	19101118ECD7.D	1	BHJ0164-SRM1	
19	11-OCT-2019	22:13	19101119ECD7.D	1	19J0044-01	
20	11-OCT-2019	22:33	19101120ECD7.D	1	BHJ0164-MS1	
21	11-OCT-2019	22:54	19101121ECD7.D	1	BHJ0164-MSD1	
22	11-OCT-2019	23:15	19101122ECD7.D	1	19J0044-02	
23	11-OCT-2019	23:36	19101123ECD7.D	1	AR1248CCV1	
24	11-OCT-2019	23:57	19101124ECD7.D	1	AR1660CCV2	
25	12-OCT-2019	00:18	19101125ECD7.D	10	19J0044-03	
26	12-OCT-2019	00:39	19101126ECD7.D	10	19J0044-04	
27	12-OCT-2019	01:00	19101127ECD7.D	5	19J0044-05	
28	12-OCT-2019	01:21	19101128ECD7.D	5	19J0044-06	
29	12-OCT-2019	01:42	19101129ECD7.D	10	19J0044-07	
30	12-OCT-2019	02:02	19101130ECD7.D	10	19J0044-08	
31	12-OCT-2019	02:23	19101131ECD7.D	10	BHJ0164-DUP1	
32	12-OCT-2019	02:44	19101132ECD7.D	5	19J0044-09	
33	12-OCT-2019	03:05	19101133ECD7.D	10	19J0044-10	
34	12-OCT-2019	03:26	19101134ECD7.D	1	A1R242CCV3	
35	12-OCT-2019	03:47	19101135ECD7.D	1	AR1660CCV4	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191011.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 11-OCT-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds

1556	19101101ECD7.D RINSE			1	NO MANUAL INTEGRATION

1617	19101102ECD7.D RINSE			1	NO MANUAL INTEGRATION

1638	19101103ECD7.D RINSE			1	NO MANUAL INTEGRATION

1658	19101104ECD7.D RINSE			1	NO MANUAL INTEGRATION

1719	19101105ECD7.D DDTs			1	NO MANUAL INTEGRATION

1740	19101106ECD7.D AR1254ICV1			1	NO MANUAL INTEGRATION

1801	19101107ECD7.D AR1660ICV2			1	NO MANUAL INTEGRATION

1822	19101108ECD7.D BHJ0113-BLK1			1	NO MANUAL INTEGRATION

1843	19101109ECD7.D BHJ0113-BS1			1	NO MANUAL INTEGRATION

1904	19101110ECD7.D BHJ0113-BSD1			1	NO MANUAL INTEGRATION

1925	19101111ECD7.D 19J0056-01			1	NO MANUAL INTEGRATION

1946	19101112ECD7.D 19J0056-02			1	NO MANUAL INTEGRATION

2007	19101113ECD7.D 19J0056-03			1	NO MANUAL INTEGRATION

2028	19101114ECD7.D 19J0057-01			1	NO MANUAL INTEGRATION

2049	19101115ECD7.D BHJ0164-BLK1			1	NO MANUAL INTEGRATION

2110	19101116ECD7.D BHJ0164-BS1			1	NO MANUAL INTEGRATION

2131	19101117ECD7.D BHJ0164-BSD1			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191011.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2152	19101118ECD7.D	BHJ0164-SRM1		1	NO MANUAL INTEGRATION
2213	19101119ECD7.D	19J0044-01		1	NO MANUAL INTEGRATION
2233	19101120ECD7.D	BHJ0164-MS1		1	NO MANUAL INTEGRATION
2254	19101121ECD7.D	BHJ0164-MSD1		1	NO MANUAL INTEGRATION
2315	19101122ECD7.D	19J0044-02		1	NO MANUAL INTEGRATION
2336	19101123ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
2357	19101124ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
0018	19101125ECD7.D	19J0044-03		10	NO MANUAL INTEGRATION
0039	19101126ECD7.D	19J0044-04		10	NO MANUAL INTEGRATION
0100	19101127ECD7.D	19J0044-05		5	NO MANUAL INTEGRATION
0121	19101128ECD7.D	19J0044-06		5	NO MANUAL INTEGRATION
0142	19101129ECD7.D	19J0044-07		10	NO MANUAL INTEGRATION
0202	19101130ECD7.D	19J0044-08		10	NO MANUAL INTEGRATION
0223	19101131ECD7.D	BHJ0164-DUP1		10	NO MANUAL INTEGRATION
0244	19101132ECD7.D	19J0044-09		5	NO MANUAL INTEGRATION
0305	19101133ECD7.D	19J0044-10		10	NO MANUAL INTEGRATION
0326	19101134ECD7.D	A1R242CCV3		1	NO MANUAL INTEGRATION
0347	19101135ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191011.b\20191011.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1556	19101101ECD7.D RINSE			1	NO MANUAL INTEGRATION
1617	19101102ECD7.D RINSE			1	NO MANUAL INTEGRATION
1638	19101103ECD7.D RINSE			1	NO MANUAL INTEGRATION
1658	19101104ECD7.D RINSE			1	NO MANUAL INTEGRATION
1719	19101105ECD7.D DDTs			1	NO MANUAL INTEGRATION
1740	19101106ECD7.D AR1254ICV1			1	IS-HBBP [2C], Decachlorobiphenyl [2C],
1801	19101107ECD7.D AR1660ICV2			1	NO MANUAL INTEGRATION
1822	19101108ECD7.D BHJ0113-BLK1			1	NO MANUAL INTEGRATION
1843	19101109ECD7.D BHJ0113-BS1			1	NO MANUAL INTEGRATION
1904	19101110ECD7.D BHJ0113-BSD1			1	NO MANUAL INTEGRATION
1925	19101111ECD7.D 19J0056-01			1	NO MANUAL INTEGRATION
1946	19101112ECD7.D 19J0056-02			1	NO MANUAL INTEGRATION
2007	19101113ECD7.D 19J0056-03			1	NO MANUAL INTEGRATION
2028	19101114ECD7.D 19J0056701			1	NO MANUAL INTEGRATION
2049	19101115ECD7.D BHJ0164-BLK1			1	NO MANUAL INTEGRATION
2110	19101116ECD7.D BHJ0164-BS1			1	NO MANUAL INTEGRATION
2131	19101117ECD7.D BHJ0164-BSD1			1	NO MANUAL INTEGRATION
2152	19101118ECD7.D BHJ0164-SRM1			1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\20191011.b\20191011.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2213	19101119ECD7.D	19J0044-01		1	NO MANUAL INTEGRATION
2233	19101120ECD7.D	BHJ0164-MS1		1	NO MANUAL INTEGRATION
2254	19101121ECD7.D	BHJ0164-MSD1		1	NO MANUAL INTEGRATION
2315	19101122ECD7.D	19J0044-02		1	NO MANUAL INTEGRATION
2336	19101123ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
2357	19101124ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
0018	19101125ECD7.D	19J0044-03		10	NO MANUAL INTEGRATION
0039	19101126ECD7.D	19J0044-04		10	NO MANUAL INTEGRATION
0100	19101127ECD7.D	19J0044-05		5	NO MANUAL INTEGRATION
0121	19101128ECD7.D	19J0044-06		5	NO MANUAL INTEGRATION
0142	19101129ECD7.D	19J0044-07		10	NO MANUAL INTEGRATION
0202	19101130ECD7.D	19J0044-08		10	NO MANUAL INTEGRATION
0223	19101131ECD7.D	BHJ0164-DUP1		10	NO MANUAL INTEGRATION
0244	19101132ECD7.D	19J0044-09		5	NO MANUAL INTEGRATION
0305	19101133ECD7.D	19J0044-10		10	NO MANUAL INTEGRATION
0326	19101134ECD7.D	A1R242CCV3		1	Aroclor-1242 [2C],
0347	19101135ECD7.D	AR1660CCV4		1	NO MANUAL INTEGRATION

Security Status Report

Date: 15-Oct-2019 08:26

19101101ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101102ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101103ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101104ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101105ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101106ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101107ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
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19101112ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101113ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
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19101115ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101116ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101117ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101118ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
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19101121ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101122ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101123ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
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19101126ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101127ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101128ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101129ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101130ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101131ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101132ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101133ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101134ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26
19101135ECD7.D	Data Locked	j rains, 15-Oct-2019 08:26



SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG/WO: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHI0216

Instrument: ECD7

Calibration: CI00052

Calibration Date: 09/15/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHI0216-SCV1 (Water)		Lab File ID: 19091516ECD7.D				Analyzed: 09/15/19 17:29		
Decachlorobiphenyl	40.000	91.4	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	104	80 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	40.000	85.2	80 - 120	13.7	13.70317	-0.0032	N/A	
Tetrachlorometaxylene [2C]	40.000	97.5	80 - 120	5.078	5.081333	-0.0033	N/A	
SHI0216-SCV2 (Water)		Lab File ID: 19091517ECD7.D				Analyzed: 09/15/19 17:50		
Decachlorobiphenyl	40.000	91.7	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	40.000	84.5	80 - 120	13.701	13.70317	-0.0022	N/A	
Tetrachlorometaxylene [2C]	40.000	95.3	80 - 120	5.079	5.081333	-0.0023	N/A	
SHI0216-SCV3 (Water)		Lab File ID: 19091518ECD7.D				Analyzed: 09/15/19 18:11		
Decachlorobiphenyl	40.000	90.2	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.34	5.341167	-0.0012	N/A	
Decachlorobiphenyl [2C]	40.000	84.6	80 - 120	13.701	13.70317	-0.0022	N/A	
Tetrachlorometaxylene [2C]	40.000	95.5	80 - 120	5.08	5.081333	-0.0013	N/A	
SHI0216-SCV4 (Water)		Lab File ID: 19091519ECD7.D				Analyzed: 09/15/19 18:32		
Decachlorobiphenyl	40.000	90.9	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.341	5.341167	-0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	84.7	80 - 120	13.7	13.70317	-0.0032	N/A	
Tetrachlorometaxylene [2C]	40.000	94.0	80 - 120	5.08	5.081333	-0.0013	N/A	
SHI0216-SCV5 (Water)		Lab File ID: 19091520ECD7.D				Analyzed: 09/15/19 18:53		
Decachlorobiphenyl	40.000	89.7	80 - 120	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	105	80 - 120	5.341	5.341167	-0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	84.4	80 - 120	13.7	13.70317	-0.0032	N/A	
Tetrachlorometaxylene [2C]	40.000	99.5	80 - 120	5.08	5.081333	-0.0013	N/A	
SHI0216-SCV6 (Water)		Lab File ID: 19091521ECD7.D				Analyzed: 09/15/19 19:14		
Decachlorobiphenyl	40.000	125	80 - 200	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.341	5.341167	-0.0002	N/A	
Decachlorobiphenyl [2C]	40.000	120	80 - 120	13.701	13.70317	-0.0022	N/A	
Tetrachlorometaxylene [2C]	40.000	94.4	80 - 120	5.08	5.081333	-0.0013	N/A	



SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG/WO: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHJ0236

Instrument: ECD7

Calibration: CI00052

Calibration Date: 09/15/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHJ0236-ICV1 (Water) Lab File ID: 19101106ECD7.D Analyzed: 10/11/19 17:40								
Decachlorobiphenyl	40.000	109	0 - 200	13.614	13.61317	0.0008	N/A	
Tetrachlorometaxylene	40.000	110	0 - 200	5.338	5.341167	-0.0032	N/A	
Decachlorobiphenyl [2C]	40.000	110	0 - 200	13.688	13.70317	-0.0152	N/A	
Tetrachlorometaxylene [2C]	40.000	105	0 - 200	5.067	5.081333	-0.0143	N/A	
SHJ0236-ICV2 (Water) Lab File ID: 19101107ECD7.D Analyzed: 10/11/19 18:01								
Decachlorobiphenyl	40.000	118	0 - 200	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	40.000	120	0 - 200	5.338	5.341167	-0.0032	N/A	
Decachlorobiphenyl [2C]	40.000	118	0 - 200	13.689	13.70317	-0.0142	N/A	
Tetrachlorometaxylene [2C]	40.000	112	0 - 200	5.067	5.081333	-0.0143	N/A	
BHJ0164-BLK1 (Solid) Lab File ID: 19101115ECD7.D Analyzed: 10/11/19 20:49								
Decachlorobiphenyl	8.0000	101	40 - 126	13.612	13.61317	-0.0012	N/A	
Tetrachlorometaxylene	8.0000	90.7	44 - 120	5.335	5.341167	-0.0062	N/A	
Decachlorobiphenyl [2C]	8.0000	105	40 - 126	13.687	13.70317	-0.0162	N/A	
Tetrachlorometaxylene [2C]	8.0000	80.3	44 - 120	5.063	5.081333	-0.0183	N/A	
BHJ0164-BS1 (Solid) Lab File ID: 19101116ECD7.D Analyzed: 10/11/19 21:10								
Decachlorobiphenyl	8.0000	102	40 - 126	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	8.0000	89.1	44 - 120	5.334	5.341167	-0.0072	N/A	
Decachlorobiphenyl [2C]	8.0000	106	40 - 126	13.688	13.70317	-0.0152	N/A	
Tetrachlorometaxylene [2C]	8.0000	81.0	44 - 120	5.063	5.081333	-0.0183	N/A	
BHJ0164-BSD1 (Solid) Lab File ID: 19101117ECD7.D Analyzed: 10/11/19 21:31								
Decachlorobiphenyl	8.0000	118	40 - 126	13.613	13.61317	-0.0002	N/A	
Tetrachlorometaxylene	8.0000	98.7	44 - 120	5.335	5.341167	-0.0062	N/A	
Decachlorobiphenyl [2C]	8.0000	120	40 - 126	13.687	13.70317	-0.0162	N/A	
Tetrachlorometaxylene [2C]	8.0000	87.3	44 - 120	5.063	5.081333	-0.0183	N/A	
BHJ0164-SRM1 (Solid) Lab File ID: 19101118ECD7.D Analyzed: 10/11/19 21:52								
Decachlorobiphenyl	99.010	112	40 - 126	13.612	13.61317	-0.0012	N/A	
Tetrachlorometaxylene	99.010	90.6	44 - 120	5.334	5.341167	-0.0072	N/A	
Decachlorobiphenyl [2C]	99.010	124	40 - 126	13.687	13.70317	-0.0162	N/A	
Tetrachlorometaxylene [2C]	99.010	99.4	44 - 120	5.062	5.081333	-0.0193	N/A	



SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG/WO: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHJ0236

Instrument: ECD7

Calibration: CI00052

Calibration Date: 09/15/2019

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
19J0044-01 (Solid) Lab File ID: 19101119ECD7.D Analyzed: 10/11/19 22:13								
Decachlorobiphenyl	7.9074	119	40 - 126	13.607	13.61317	-0.0062	N/A	
Tetrachlorometaxylene	7.9074	86.4	44 - 120	5.332	5.341167	-0.0092	N/A	
Decachlorobiphenyl [2C]	7.9074	106	40 - 126	13.684	13.70317	-0.0192	N/A	
Tetrachlorometaxylene [2C]	7.9074	83.8	44 - 120	5.06	5.081333	-0.0213	N/A	
BHJ0164-MS1 (Solid) Lab File ID: 19101120ECD7.D Analyzed: 10/11/19 22:33								
Decachlorobiphenyl	7.9024	117	40 - 126	13.607	13.61317	-0.0062	N/A	
Tetrachlorometaxylene	7.9024	84.2	44 - 120	5.332	5.341167	-0.0092	N/A	
Decachlorobiphenyl [2C]	7.9024	102	40 - 126	13.683	13.70317	-0.0202	N/A	
Tetrachlorometaxylene [2C]	7.9024	86.9	44 - 120	5.06	5.081333	-0.0213	N/A	
BHJ0164-MSD1 (Solid) Lab File ID: 19101121ECD7.D Analyzed: 10/11/19 22:54								
Decachlorobiphenyl	7.9024	112	40 - 126	13.608	13.61317	-0.0052	N/A	
Tetrachlorometaxylene	7.9024	81.2	44 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	7.9024	94.2	40 - 126	13.682	13.70317	-0.0212	N/A	
Tetrachlorometaxylene [2C]	7.9024	77.7	44 - 120	5.06	5.081333	-0.0213	N/A	
19J0044-02 (Solid) Lab File ID: 19101122ECD7.D Analyzed: 10/11/19 23:15								
Decachlorobiphenyl	7.9511	117	40 - 126	13.608	13.61317	-0.0052	N/A	
Tetrachlorometaxylene	7.9511	91.1	44 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	7.9511	109	40 - 126	13.684	13.70317	-0.0192	N/A	
Tetrachlorometaxylene [2C]	7.9511	88.9	44 - 120	5.059	5.081333	-0.0223	N/A	
19J0044-03 (Solid) Lab File ID: 19101125ECD7.D Analyzed: 10/12/19 00:18								
Decachlorobiphenyl	7.9381	199	40 - 126	13.605	13.61317	-0.0082	N/A	*
Tetrachlorometaxylene	7.9381	77.2	44 - 120	5.33	5.341167	-0.0112	N/A	
Decachlorobiphenyl [2C]	7.9381	110	40 - 126	13.677	13.70317	-0.0262	N/A	
Tetrachlorometaxylene [2C]	7.9381	95.0	44 - 120	5.057	5.081333	-0.0243	N/A	
19J0044-04 (Solid) Lab File ID: 19101126ECD7.D Analyzed: 10/12/19 00:39								
Decachlorobiphenyl	7.9775	255	40 - 126	13.605	13.61317	-0.0082	N/A	*
Tetrachlorometaxylene	7.9775	83.0	44 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	7.9775	147	40 - 126	13.678	13.70317	-0.0252	N/A	*
Tetrachlorometaxylene [2C]	7.9775	100	44 - 120	5.059	5.081333	-0.0223	N/A	



SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG/WO: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHJ0236

Instrument: ECD7

Calibration: CI00052

Calibration Date: 09/15/2019

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
19J0044-05 (Solid) Lab File ID: 19101127ECD7.D Analyzed: 10/12/19 01:00								
Decachlorobiphenyl	7.9405	160	40 - 126	13.603	13.61317	-0.0102	N/A	*
Tetrachlorometaxylene	7.9405	78.8	44 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	7.9405	103	40 - 126	13.676	13.70317	-0.0272	N/A	
Tetrachlorometaxylene [2C]	7.9405	88.0	44 - 120	5.058	5.081333	-0.0233	N/A	
19J0044-06 (Solid) Lab File ID: 19101128ECD7.D Analyzed: 10/12/19 01:21								
Decachlorobiphenyl	7.9655	151	40 - 126	13.603	13.61317	-0.0102	N/A	*
Tetrachlorometaxylene	7.9655	75.7	44 - 120	5.33	5.341167	-0.0112	N/A	
Decachlorobiphenyl [2C]	7.9655	98.5	40 - 126	13.675	13.70317	-0.0282	N/A	
Tetrachlorometaxylene [2C]	7.9655	88.8	44 - 120	5.057	5.081333	-0.0243	N/A	
19J0044-07 (Solid) Lab File ID: 19101129ECD7.D Analyzed: 10/12/19 01:42								
Decachlorobiphenyl	7.9286	206	40 - 126	13.603	13.61317	-0.0102	N/A	*
Tetrachlorometaxylene	7.9286	72.6	44 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	7.9286	135	40 - 126	13.676	13.70317	-0.0272	N/A	*
Tetrachlorometaxylene [2C]	7.9286	86.6	44 - 120	5.058	5.081333	-0.0233	N/A	
19J0044-08 (Solid) Lab File ID: 19101130ECD7.D Analyzed: 10/12/19 02:02								
Decachlorobiphenyl	7.8843	238	40 - 126	13.603	13.61317	-0.0102	N/A	*
Tetrachlorometaxylene	7.8843	76.5	44 - 120	5.329	5.341167	-0.0122	N/A	
Decachlorobiphenyl [2C]	7.8843	162	40 - 126	13.676	13.70317	-0.0272	N/A	*
Tetrachlorometaxylene [2C]	7.8843	88.6	44 - 120	5.055	5.081333	-0.0263	N/A	
BHJ0164-DUP1 (Solid) Lab File ID: 19101131ECD7.D Analyzed: 10/12/19 02:23								
Decachlorobiphenyl	7.9611	270	40 - 126	13.604	13.61317	-0.0092	N/A	*
Tetrachlorometaxylene	7.9611	75.0	44 - 120	5.329	5.341167	-0.0122	N/A	
Decachlorobiphenyl [2C]	7.9611	184	40 - 126	13.677	13.70317	-0.0262	N/A	*
Tetrachlorometaxylene [2C]	7.9611	90.2	44 - 120	5.056	5.081333	-0.0253	N/A	
19J0044-09 (Solid) Lab File ID: 19101132ECD7.D Analyzed: 10/12/19 02:44								
Decachlorobiphenyl	7.9653	151	40 - 126	13.602	13.61317	-0.0112	N/A	*
Tetrachlorometaxylene	7.9653	79.5	44 - 120	5.331	5.341167	-0.0102	N/A	
Decachlorobiphenyl [2C]	7.9653	100	40 - 126	13.676	13.70317	-0.0272	N/A	
Tetrachlorometaxylene [2C]	7.9653	85.6	44 - 120	5.058	5.081333	-0.0233	N/A	



SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc. SDG/WO: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Sequence: SHJ0236 Instrument: ECD7
Calibration: CI00052 Calibration Date: 09/15/2019

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
19J0044-10 (Solid)		Lab File ID: 19101133ECD7.D				Analyzed: 10/12/19 03:05		
Decachlorobiphenyl	7.9410	179	40 - 126	13.605	13.61317	-0.0082	N/A	*
Tetrachlorometaxylene	7.9410	77.0	44 - 120	5.329	5.341167	-0.0122	N/A	
Decachlorobiphenyl [2C]	7.9410	116	40 - 126	13.677	13.70317	-0.0262	N/A	
Tetrachlorometaxylene [2C]	7.9410	88.0	44 - 120	5.056	5.081333	-0.0253	N/A	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Pacific Groundwater Group
Sequence: SHI0216

SDG: 19J0044
Project: Swan Island Lagoon Sediment Investigation
Instrument: ECD7
Calibration: CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SHI0216-SCV1)		(Water)	Lab File ID: 19091516ECD7.D				Analyzed: 09/15/19 17:29		
1-Bromo-2-Nitrobenzene	269047	2.844	262930	2.847	102	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl	398753	13.97	382688	13.97	104	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1081674	3.201	1081928	3.203	100	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1076917	14.541	1006687	14.542	107	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV2)		(Water)	Lab File ID: 19091517ECD7.D				Analyzed: 09/15/19 17:50		
1-Bromo-2-Nitrobenzene	276605	2.845	262930	2.847	105	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	415898	13.97	382688	13.97	109	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1131917	3.201	1081928	3.203	105	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1125325	14.541	1006687	14.542	112	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV3)		(Water)	Lab File ID: 19091518ECD7.D				Analyzed: 09/15/19 18:11		
1-Bromo-2-Nitrobenzene	283776	2.845	262930	2.847	108	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	427022	13.971	382688	13.97	112	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1157339	3.2	1081928	3.203	107	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1151947	14.541	1006687	14.542	114	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV4)		(Water)	Lab File ID: 19091519ECD7.D				Analyzed: 09/15/19 18:32		
1-Bromo-2-Nitrobenzene	284555	2.845	262930	2.847	108	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	425678	13.971	382688	13.97	111	50 - 200	0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1156822	3.201	1081928	3.203	107	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl [2C]	1159232	14.541	1006687	14.542	115	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV5)		(Water)	Lab File ID: 19091520ECD7.D				Analyzed: 09/15/19 18:53		
1-Bromo-2-Nitrobenzene	282463	2.847	262930	2.847	107	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	421281	13.97	382688	13.97	110	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1099699	3.203	1081928	3.203	102	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1145810	14.541	1006687	14.542	114	50 - 200	-0.001	+/-0.50	
Secondary Cal Check (SHI0216-SCV6)		(Water)	Lab File ID: 19091521ECD7.D				Analyzed: 09/15/19 19:14		
1-Bromo-2-Nitrobenzene	283260	2.846	262930	2.847	108	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl	424464	13.97	382688	13.97	111	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1126107	3.202	1081928	3.203	104	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	1155245	14.541	1006687	14.542	115	50 - 200	-0.001	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Pacific Groundwater Group
Sequence: SHJ0236

SDG: 19J0044
Project: Swan Island Lagoon Sediment Investigation
Instrument: ECD7
Calibration: CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SHJ0236-ICV1)		(Water)	Lab File ID: 19101106ECD7.D				Analyzed: 10/11/19 17:40		
1-Bromo-2-Nitrobenzene	253760	2.843	247154	2.843	103	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	376686	13.971	356000	13.971	106	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1160432	3.19	1147244	3.19	101	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1096454	14.528	1081630	14.528	101	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHJ0236-ICV2)		(Water)	Lab File ID: 19101107ECD7.D				Analyzed: 10/11/19 18:01		
1-Bromo-2-Nitrobenzene	247154	2.843	247154	2.843	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	356000	13.971	356000	13.971	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1147244	3.19	1147244	3.19	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	1081630	14.528	1081630	14.528	100	50 - 200	0.000	+/-0.50	
Blank (BHJ0164-BLK1)		(Solid)	Lab File ID: 19101115ECD7.D				Analyzed: 10/11/19 20:49		
1-Bromo-2-Nitrobenzene	247838	2.84	247154	2.843	100	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl	391442	13.97	356000	13.971	110	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1190318	3.184	1147244	3.19	104	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl [2C]	1225896	14.526	1081630	14.528	113	50 - 200	-0.002	+/-0.50	
LCS (BHJ0164-BS1)		(Solid)	Lab File ID: 19101116ECD7.D				Analyzed: 10/11/19 21:10		
1-Bromo-2-Nitrobenzene	273358	2.839	247154	2.843	111	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	420706	13.971	356000	13.971	118	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1255853	3.185	1147244	3.19	109	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl [2C]	1300385	14.527	1081630	14.528	120	50 - 200	-0.001	+/-0.50	
LCS Dup (BHJ0164-BSD1)		(Solid)	Lab File ID: 19101117ECD7.D				Analyzed: 10/11/19 21:31		
1-Bromo-2-Nitrobenzene	252538	2.841	247154	2.843	102	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	394995	13.971	356000	13.971	111	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1189594	3.187	1147244	3.19	104	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1231386	14.527	1081630	14.528	114	50 - 200	-0.001	+/-0.50	
Reference (BHJ0164-SRM1)		(Solid)	Lab File ID: 19101118ECD7.D				Analyzed: 10/11/19 21:52		
1-Bromo-2-Nitrobenzene	262114	2.841	247154	2.843	106	50 - 200	-0.002	+/-0.50	
Hexabromobiphenyl	399810	13.97	356000	13.971	112	50 - 200	-0.001	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1219123	3.186	1147244	3.19	106	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl [2C]	1262203	14.527	1081630	14.528	117	50 - 200	-0.001	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Pacific Groundwater Group
Sequence: SHJ0236

SDG: 19J0044
Project: Swan Island Lagoon Sediment Investigation
Instrument: ECD7
Calibration: CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
L3-SC1b-00to10-82619 (19J0044-01)		(Solid)	Lab File ID: 19101119ECD7.D				Analyzed: 10/11/19 22:13		
1-Bromo-2-Nitrobenzene	257468	2.838	247154	2.843	104	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	253667	13.966	356000	13.971	71	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1065827	3.184	1147244	3.19	93	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl [2C]	1109743	14.522	1081630	14.528	103	50 - 200	-0.006	+/-0.50	
Matrix Spike (BHJ0164-MS1)		(Solid)	Lab File ID: 19101120ECD7.D				Analyzed: 10/11/19 22:33		
1-Bromo-2-Nitrobenzene	250559	2.838	247154	2.843	101	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	250830	13.965	356000	13.971	70	50 - 200	-0.006	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	935416	3.182	1147244	3.19	82	50 - 200	-0.008	+/-0.50	
Hexabromobiphenyl [2C]	1128908	14.522	1081630	14.528	104	50 - 200	-0.006	+/-0.50	
Matrix Spike Dup (BHJ0164-MSD1)		(Solid)	Lab File ID: 19101121ECD7.D				Analyzed: 10/11/19 22:54		
1-Bromo-2-Nitrobenzene	265183	2.838	247154	2.843	107	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	262432	13.965	356000	13.971	74	50 - 200	-0.006	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1094061	3.185	1147244	3.19	95	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl [2C]	1172285	14.522	1081630	14.528	108	50 - 200	-0.006	+/-0.50	
L3-SC1b-10to20-82619 (19J0044-02)		(Solid)	Lab File ID: 19101122ECD7.D				Analyzed: 10/11/19 23:15		
1-Bromo-2-Nitrobenzene	248558	2.837	247154	2.843	101	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl	263770	13.966	356000	13.971	74	50 - 200	-0.005	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1033415	3.183	1147244	3.19	90	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl [2C]	1099075	14.522	1081630	14.528	102	50 - 200	-0.006	+/-0.50	
D6-SC1b-10to20-82619 (19J0044-03)		(Solid)	Lab File ID: 19101125ECD7.D				Analyzed: 10/12/19 00:18		
1-Bromo-2-Nitrobenzene	243833	2.836	247154	2.843	99	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl	205588	13.963	356000	13.971	58	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	884950	3.18	1147244	3.19	77	50 - 200	-0.010	+/-0.50	
Hexabromobiphenyl [2C]	1121002	14.521	1081630	14.528	104	50 - 200	-0.007	+/-0.50	
J6-SC1b-00to10-82719 (19J0044-04)		(Solid)	Lab File ID: 19101126ECD7.D				Analyzed: 10/12/19 00:39		
1-Bromo-2-Nitrobenzene	246997	2.837	247154	2.843	100	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl	212982	13.963	356000	13.971	60	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	967772	3.181	1147244	3.19	84	50 - 200	-0.009	+/-0.50	
Hexabromobiphenyl [2C]	1156993	14.521	1081630	14.528	107	50 - 200	-0.007	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Pacific Groundwater Group
Sequence: SHJ0236

SDG: 19J0044
Project: Swan Island Lagoon Sediment Investigation
Instrument: ECD7
Calibration: CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
J6-SC1b-10to20-82719 (19J0044-05)		(Solid)	Lab File ID: 19101127ECD7.D				Analyzed: 10/12/19 01:00		
1-Bromo-2-Nitrobenzene	259798	2.838	247154	2.843	105	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl	212805	13.963	356000	13.971	60	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	968271	3.183	1147244	3.19	84	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl [2C]	1057324	14.52	1081630	14.528	98	50 - 200	-0.008	+/-0.50	
R4-SC1b-10to20-82819 (19J0044-06)		(Solid)	Lab File ID: 19101128ECD7.D				Analyzed: 10/12/19 01:21		
1-Bromo-2-Nitrobenzene	261224	2.836	247154	2.843	106	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl	207743	13.962	356000	13.971	58	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	967071	3.18	1147244	3.19	84	50 - 200	-0.010	+/-0.50	
Hexabromobiphenyl [2C]	1043099	14.519	1081630	14.528	96	50 - 200	-0.009	+/-0.50	
H3-SC1b-00to10-82919 (19J0044-07)		(Solid)	Lab File ID: 19101129ECD7.D				Analyzed: 10/12/19 01:42		
1-Bromo-2-Nitrobenzene	247563	2.837	247154	2.843	100	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl	205384	13.962	356000	13.971	58	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	960836	3.181	1147244	3.19	84	50 - 200	-0.009	+/-0.50	
Hexabromobiphenyl [2C]	1034414	14.521	1081630	14.528	96	50 - 200	-0.007	+/-0.50	
H3-SC1b-10-20-82919 (19J0044-08)		(Solid)	Lab File ID: 19101130ECD7.D				Analyzed: 10/12/19 02:02		
1-Bromo-2-Nitrobenzene	244412	2.835	247154	2.843	99	50 - 200	-0.008	+/-0.50	
Hexabromobiphenyl	205398	13.963	356000	13.971	58	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	903558	3.179	1147244	3.19	79	50 - 200	-0.011	+/-0.50	
Hexabromobiphenyl [2C]	1044205	14.521	1081630	14.528	97	50 - 200	-0.007	+/-0.50	
Duplicate (BHJ0164-DUP1)		(Solid)	Lab File ID: 19101131ECD7.D				Analyzed: 10/12/19 02:23		
1-Bromo-2-Nitrobenzene	240254	2.835	247154	2.843	97	50 - 200	-0.008	+/-0.50	
Hexabromobiphenyl	210002	13.963	356000	13.971	59	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	906768	3.179	1147244	3.19	79	50 - 200	-0.011	+/-0.50	
Hexabromobiphenyl [2C]	1027988	14.522	1081630	14.528	95	50 - 200	-0.006	+/-0.50	
J5-SC1b-00to10-82719 (19J0044-09)		(Solid)	Lab File ID: 19101132ECD7.D				Analyzed: 10/12/19 02:44		
1-Bromo-2-Nitrobenzene	267050	2.837	247154	2.843	108	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl	220949	13.962	356000	13.971	62	50 - 200	-0.009	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1080825	3.182	1147244	3.19	94	50 - 200	-0.008	+/-0.50	
Hexabromobiphenyl [2C]	1117477	14.519	1081630	14.528	103	50 - 200	-0.009	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sequence: SHJ0236

Instrument: ECD7

Calibration: CI00052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
J5-SC1b-10to20-82719 (19J0044-10)		(Solid)	Lab File ID: 19101133ECD7.D				Analyzed: 10/12/19 03:05		
1-Bromo-2-Nitrobenzene	253491	2.834	247154	2.843	103	50 - 200	-0.009	+/-0.50	
Hexabromobiphenyl	213813	13.963	356000	13.971	60	50 - 200	-0.008	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	1044010	3.181	1147244	3.19	91	50 - 200	-0.009	+/-0.50	
Hexabromobiphenyl [2C]	1083743	14.522	1081630	14.528	100	50 - 200	-0.006	+/-0.50	



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-01 File ID: 19101119ECD7.D
Sampled: 08/26/19 10:06 Prepared: 10/07/19 13:55 Analyzed: 10/11/19 22:13
Solids: 79.04 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.5	9.506	0.006	6217.25	4.8	20.7
	2	9.106	9.135	0.029	14855.25	3.9	
Aroclor 1254	1	10.2	10.21	0.01	11260.4	11.5	12.2
	* 2	10.443	10.463	0.02	35239.4	13.0	
Aroclor 1260	* 1	11.959	11.96483	0.00583	7951.8	11.2	12.3
	2	12.002	12.02283	0.0208	45871.25	9.9	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-02 File ID: 19101122ECD7.D
Sampled: 08/26/19 10:07 Prepared: 10/07/19 13:55 Analyzed: 10/11/19 23:15
Solids: 79.15 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.5	9.506	0.006	6216.75	5.1	34.5
	2	9.107	9.135	0.028	14248	3.6	
Aroclor 1254	1	10.201	10.21	0.009	10958.6	11.8	20.5
	* 2	10.443	10.463	0.02	38140.4	14.5	
Aroclor 1260	1	11.959	11.96483	0.00583	6893.6	9.5	.
	* 2	12.004	12.02283	0.0188	43050.5	9.5	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-03 File ID: 19101125ECD7.D
Sampled: 08/26/19 12:10 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 00:18
Solids: 53.02 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.496	9.506	0.01	43544	323	23.1
	2	9.104	9.135	0.031	74957.25	256	
Aroclor 1254	1	10.199	10.21	0.011	68854.6	864	18.5
	* 2	10.439	10.463	0.024	246531.4	1040	
Aroclor 1260	* 1	11.955	11.96483	0.00983	19847.6	349	23.4
	2	11.998	12.02283	0.0248	125559.5	276	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-04 File ID: 19101126ECD7.D
Sampled: 08/27/19 19:30 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 00:39
Solids: 52.10 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	1	10.199	10.21	0.011	53463.6	676	6.3
	* 2	10.44	10.463	0.023	180842.8	720	
Aroclor 1260	* 1	11.955	11.96483	0.00983	25649.8	444	30.1
	2	11.998	12.02283	0.0248	153655	328	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-05 File ID: 19101127ECD7.D
Sampled: 08/27/19 19:35 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 01:00
Solids: 51.89 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	1	9.496	9.506	0.01	18791	83.5	1.4
	* 2	9.103	9.135	0.032	49447.5	84.7	
Aroclor 1254	1	10.196	10.21	0.014	29623.8	160	.6
	* 2	10.439	10.463	0.024	94013.8	161	
Aroclor 1260	* 1	11.954	11.96483	0.0108	20865.2	178	31.9
	2	11.998	12.02283	0.0248	113646	129	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-06 File ID: 19101128ECD7.D
Sampled: 08/28/19 13:55 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 01:21
Solids: 52.44 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.495	9.506	0.011	17749.75	74.8	1.5
	2	9.103	9.135	0.032	42563.5	73.7	
Aroclor 1254	1	10.196	10.21	0.014	28570.8	150	4.6
	* 2	10.438	10.463	0.025	89116.4	157	
Aroclor 1260	* 1	11.953	11.96483	0.0118	19290.6	170	32.1
	2	11.997	12.02283	0.0258	106426.5	123	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-07 File ID: 19101129ECD7.D
Sampled: 08/28/19 20:05 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 01:42
Solids: 52.75 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.496	9.506	0.01	34966.75	250	43.3
	2	9.103	9.135	0.032	56101.25	161	
Aroclor 1254	1	10.197	10.21	0.013	60447.6	763	1.6
	* 2	10.438	10.463	0.025	199487.8	775	
Aroclor 1260	* 1	11.954	11.96483	0.0108	26711.6	460	22.2
	2	11.997	12.02283	0.0258	153934.3	368	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Sediment Laboratory ID: 19J0044-08 File ID: 19101130ECD7.D
Sampled: 08/28/19 20:10 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 02:02
Solids: 53.18 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	1	10.199	10.21	0.011	76562.8	989	7.9
	* 2	10.437	10.463	0.026	256728.2	1070	
Aroclor 1260	* 1	11.954	11.96483	0.0108	26880.2	474	17.4
	2	11.998	12.02283	0.0248	169537.5	398	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Solid Laboratory ID: 19J0044-09 File ID: 19101132ECD7.D
Sampled: 08/27/19 14:45 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 02:44
Solids: 46.19 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1254	1	10.196	10.21	0.014	53266.6	314	1.9
	* 2	10.437	10.463	0.026	179806.6	320	
Aroclor 1260	* 1	11.953	11.96483	0.0118	35400.6	279	28.7
	2	11.996	12.02283	0.0268	192705.8	209	

* Column used for quantitation



DUAL COLUMN CONFIRMATION SUMMARY

Laboratory: Analytical Resources, Inc. SDG: 19J0044
Client: Pacific Groundwater Group Project: Swan Island Lagoon Sediment Investigation
Matrix: Solid Laboratory ID: 19J0044-10 File ID: 19101133ECD7.D
Sampled: 08/27/19 14:50 Prepared: 10/07/19 13:55 Analyzed: 10/12/19 03:05
Solids: 52.47 Preparation: EPA 3546 (Microwave) Instrument: ECD7
Batch: BHJ0164 Sequence: SHJ0236
GC Column(1): ZB5 GC Column(2): ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1248	* 1	9.497	9.506	0.009	33821.5	268	36.1
	2	9.105	9.135	0.03	62557.25	186	
Aroclor 1254	1	10.2	10.21	0.01	51600.8	628	8.1
	* 2	10.439	10.463	0.024	188721.4	681	
Aroclor 1260	* 1	11.956	11.96483	0.00883	15817.8	266	16.3
	2	11.998	12.02283	0.0248	99998	226	

* Column used for quantitation



HOLDING TIME SUMMARY

Analysis: EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigation

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
L3-SC1b-00to10-82619 19J0044-01	08/26/19 10:06	09/03/19 14:30	10/07/19 13:55	42	365	10/11/19 22:13	4	40	
L3-SC1b-10to20-82619 19J0044-02	08/26/19 10:07	09/03/19 14:30	10/07/19 13:55	42	365	10/11/19 23:15	4	40	
D6-SC1b-10to20-82619 19J0044-03	08/26/19 12:10	09/03/19 14:30	10/07/19 13:55	42	365	10/12/19 00:18	4	40	
J6-SC1b-00to10-82719 19J0044-04	08/27/19 19:30	09/03/19 14:30	10/07/19 13:55	40	365	10/12/19 00:39	4	40	
J6-SC1b-10to20-82719 19J0044-05	08/27/19 19:35	09/03/19 14:30	10/07/19 13:55	40	365	10/12/19 01:00	4	40	
R4-SC1b-10to20-82819 19J0044-06	08/28/19 13:55	09/03/19 14:30	10/07/19 13:55	40	365	10/12/19 01:21	4	40	
H3-SC1b-00to10-82919 19J0044-07	08/28/19 20:05	09/03/19 14:30	10/07/19 13:55	39	365	10/12/19 01:42	4	40	
H3-SC1b-10-20-82919 19J0044-08	08/28/19 20:10	09/03/19 14:30	10/07/19 13:55	39	365	10/12/19 02:02	5	40	
J5-SC1b-00to10-82719 19J0044-09	08/27/19 14:45	09/03/19 14:30	10/07/19 13:55	40	365	10/12/19 02:44	5	40	
J5-SC1b-10to20-82719 19J0044-10	08/27/19 14:50	09/03/19 14:30	10/07/19 13:55	40	365	10/12/19 03:05	5	40	
Duplicate BHJ0164-DUP1	08/28/19 20:10	09/03/19 14:30	10/07/19 13:55	39	365	10/12/19 02:23	5	40	
Matrix Spike BHJ0164-MS1	08/26/19 10:06	09/03/19 14:30	10/07/19 13:55	42	365	10/11/19 22:33	4	40	
Matrix Spike Dup BHJ0164-MSD1	08/26/19 10:06	09/03/19 14:30	10/07/19 13:55	42	365	10/11/19 22:54	4	40	

* Indicates hold time exceedance.



**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigati

Matrix: Solid

Instrument: ECD7

Analyte	MDL	RL	Units
Aroclor 1016	1.6	4.0	ug/kg
Aroclor 1016 [2C]	1.6	4.0	ug/kg
Aroclor 1221	1.6	4.0	ug/kg
Aroclor 1221 [2C]	1.6	4.0	ug/kg
Aroclor 1232	1.6	4.0	ug/kg
Aroclor 1232 [2C]	1.6	4.0	ug/kg
Aroclor 1242	1.6	4.0	ug/kg
Aroclor 1242 [2C]	1.6	4.0	ug/kg
Aroclor 1248	1.6	4.0	ug/kg
Aroclor 1248 [2C]	1.6	4.0	ug/kg
Aroclor 1254	1.6	4.0	ug/kg
Aroclor 1254 [2C]	1.6	4.0	ug/kg
Aroclor 1260	0.6	4.0	ug/kg
Aroclor 1260 [2C]	0.6	4.0	ug/kg
Aroclor 1262	0.6	4.0	ug/kg
Aroclor 1262 [2C]	0.6	4.0	ug/kg
Aroclor 1268	0.6	4.0	ug/kg
Aroclor 1268 [2C]	0.6	4.0	ug/kg



**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8082A

Laboratory: Analytical Resources, Inc.

SDG: 19J0044

Client: Pacific Groundwater Group

Project: Swan Island Lagoon Sediment Investigati

Matrix: Water

Instrument: ECD7

Analyte	MDL	RL	Units
Aroclor 1016	1.56	4.00	ug/kg
Aroclor 1016 [2C]	1.56	4.00	ug/kg
Aroclor 1221	1.56	4.00	ug/kg
Aroclor 1221 [2C]	1.56	4.00	ug/kg
Aroclor 1232	1.56	4.00	ug/kg
Aroclor 1232 [2C]	1.56	4.00	ug/kg
Aroclor 1242	1.56	4.00	ug/kg
Aroclor 1242 [2C]	1.56	4.00	ug/kg
Aroclor 1248	1.56	4.00	ug/kg
Aroclor 1248 [2C]	1.56	4.00	ug/kg
Aroclor 1254	1.56	4.00	ug/kg
Aroclor 1254 [2C]	1.56	4.00	ug/kg
Aroclor 1260	0.589	4.00	ug/kg
Aroclor 1260 [2C]	0.589	4.00	ug/kg
Aroclor 1262	0.589	4.00	ug/kg
Aroclor 1262 [2C]	0.589	4.00	ug/kg
Aroclor 1268	0.589	4.00	ug/kg
Aroclor 1268 [2C]	0.589	4.00	ug/kg

TOTAL SOLIDS BENCHSHEET				Batch:		BHJ0085
Method: PSEP 1986				Date:		10/2/2019 17:15
(dry at 103-105 C)				Analyst:		YL
Instrumentation				Drying Oven:		15
				Analytical Balance:		B146462614
Batch drying time			TS (%) calculated as: Final dry wt (g) = (Dry Wt - Tare Wt) TS = (Final Dry Wt X 100)/(sample & dish -dish tare)			
record times as mm/dd/yy hh:mm						
date/time in oven:	10/3/2019 14:35					
date/time out:	10/4/2019 7:15					
elapsed hrs:	16.7					
SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19J0044-01	1.0700	11.5200	9.3300	8.26	79.04%	No
19J0044-02	1.0700	11.6700	9.4600	8.39	79.15%	No
19J0044-03	1.1000	6.8900	4.1700	3.07	53.02%	Yes
19J0044-04	1.1100	11.5900	6.5700	5.46	52.10%	Yes
19J0044-05	1.0700	12.1900	6.8400	5.77	51.89%	Yes
19J0044-06	1.0900	6.6200	3.9900	2.90	52.44%	Yes
19J0044-07	1.1000	6.3700	3.8800	2.78	52.75%	Yes
19J0044-08	1.0900	11.9400	6.8600	5.77	53.18%	Yes
19J0044-09	1.0900	6.7400	3.7000	2.61	46.19%	Yes
19J0044-10	1.0900	6.7500	4.0600	2.97	52.47%	Yes

TOTAL SOLIDS BENCHSHEET Method: PSEP 1986 (dry at 103-105 C)					Batch: BHJ0085 Date: 10/2/2019 17:15 Analyst: <i>HL</i> Drying Oven: <i>φ15</i> Analytical Balance: <i>3146462614</i>	
Instrumentation						
Batch drying time record times as mm/dd/yy hh:mm date/time in oven: <i>10/03/19 14:35</i> date/time out: <i>10/4/19 07:15</i> elapsed hrs: 0.0			TS (%) calculated as: Final dry wt (g) = (Dry Wt - Tare Wt) TS = (Final Dry Wt X 100)/ (sample & dish -dish tare)			
SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19J0044-01	<i>1.07</i>	<i>11.52</i>	<i>9.33</i>			No
19J0044-02	<i>1.07</i>	<i>11.67</i>	<i>9.46</i>			No
19J0044-03	<i>1.10</i>	<i>6.89</i>	<i>4.17</i>			No <i>yes</i>
19J0044-04	<i>1.11</i>	<i>11.59</i>	<i>6.57</i>			No <i>yes</i>
19J0044-05	<i>1.07</i>	<i>12.19</i>	<i>6.84</i>			No <i>yes</i>
19J0044-06	<i>1.09</i>	<i>6.62</i>	<i>3.99</i>			No <i>yes</i>
19J0044-07	<i>1.10</i>	<i>6.37</i>	<i>3.88</i>			No <i>yes</i>
19J0044-08	<i>1.09</i>	<i>11.94</i>	<i>6.86</i>			No <i>yes</i>
19J0044-09	<i>1.09</i>	<i>6.74</i>	<i>3.70</i>			No <i>yes</i>
19J0044-10	<i>1.09</i>	<i>6.75</i>	<i>4.06</i>			No <i>yes</i>