

Apex Labs

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Tuesday, December 12, 2017

Rob Ede
Hahn and Associates
434 NW 6th Ave. Suite 203
Portland, OR 97209

RE: Siltronic RI-Doane Creek / 5237-10dc

Enclosed are the results of analyses for work order A6D0056, which was received by the laboratory on 4/1/2016 at 5:50:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Hahn and Associates

434 NW 6th Ave. Suite 203
Portland, OR 97209

Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
Project Manager: Rob Ede

Reported:
12/12/17 09:21

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
5237-160401-DC-EMB038	A6D0056-02	Soil	04/01/16 10:25	04/01/16 17:50
5237-160401-DC-EMB039	A6D0056-04	Soil	04/01/16 11:05	04/01/16 17:50
5237-160401-DC-EMB046	A6D0056-06	Soil	04/01/16 12:00	04/01/16 17:50
5237-160401-NDP-EMB002	A6D0056-08	Soil	04/01/16 16:00	04/01/16 17:50
5237-160401-NDP-EMB003	A6D0056-10	Soil	04/01/16 16:10	04/01/16 17:50

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ANALYTICAL CASE NARRATIVE

Work Order: A6D0056

This report is an addendum to Amended Report Revision 1 from the same work order number.

Philip Nerenberg
Lab Director
12/12/17

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Project: **Siltronic RI-Doane Creek**
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 Project Manager: Rob Ede

Reported:
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
5237-160401-DC-EMB038 (A6D0056-02)			Matrix: Soil		Batch: 6040070			
Benzo(e)pyrene	662	6.59	13.2	ug/kg dry	4	04/06/16 11:00	EPA 8270D	
Perylene	218	6.59	13.2	"	"	"	"	
5237-160401-DC-EMB039 (A6D0056-04)			Matrix: Soil		Batch: 6040070			
Benzo(e)pyrene	265	7.03	14.1	ug/kg dry	4	04/06/16 12:15	EPA 8270D	
Perylene	111	7.03	14.1	"	"	"	"	
5237-160401-DC-EMB046 (A6D0056-06RE1)			Matrix: Soil		Batch: 6040070			
Benzo(e)pyrene	1830	6.59	13.2	ug/kg dry	4	04/06/16 12:55	EPA 8270D	
Perylene	730	6.59	13.2	"	"	"	"	
5237-160401-NDP-EMB002 (A6D0056-08RE1)			Matrix: Soil		Batch: 6040070			
Benzo(e)pyrene	1180	7.44	14.9	ug/kg dry	4	04/06/16 13:33	EPA 8270D	
Perylene	487	7.44	14.9	"	"	"	"	
5237-160401-NDP-EMB003 (A6D0056-10RE1)			Matrix: Soil		Batch: 6040070			
Benzo(e)pyrene	341	6.70	13.4	ug/kg dry	4	04/06/16 14:11	EPA 8270D	Q-42
Perylene	134	6.70	13.4	"	"	"	"	

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Reported:
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
Blank (6040070-BLK1)						Prepared: 04/04/16 14:40 Analyzed: 04/05/16 13:29						
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	---
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	---
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	---
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	---
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	---
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	---
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	---
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	---
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	---
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	---
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	---

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
Blank (6040070-BLK1)						Prepared: 04/04/16 14:40 Analyzed: 04/05/16 13:29						
EPA 8270D												
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	---
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Hexachlorocyclopentadiene	ND	12.5	12.5	"	"	---	---	---	---	---	---	---
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	---
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	---
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	---
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	---

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546												
Soil												
Blank (6040070-BLK1)												
Prepared: 04/04/16 14:40 Analyzed: 04/05/16 13:29												
EPA 8270D												
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	---
Isophorone	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	---
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	---
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	---
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	---
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	---
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	---
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	---
Benzo(e)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---
Perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	---

<i>Surr: Nitrobenzene-d5 (Surr)</i>	<i>Recovery: 68 %</i>	<i>Limits: 37-122 %</i>	<i>Dilution: 1x</i>
<i>2-Fluorobiphenyl (Surr)</i>	<i>74 %</i>	<i>44-115 %</i>	<i>"</i>
<i>Phenol-d6 (Surr)</i>	<i>67 %</i>	<i>33-122 %</i>	<i>"</i>
<i>p-Terphenyl-d14 (Surr)</i>	<i>84 %</i>	<i>54-127 %</i>	<i>"</i>
<i>2-Fluorophenol (Surr)</i>	<i>62 %</i>	<i>35-115 %</i>	<i>"</i>
<i>2,4,6-Tribromophenol (Surr)</i>	<i>74 %</i>	<i>39-132 %</i>	<i>"</i>

LCS (6040070-BS1) Prepared: 04/04/16 14:40 Analyzed: 04/05/16 14:06

EPA 8270D												
Acenaphthene	460	1.33	2.67	ug/kg wet	1	533	---	86	40-122%	---	---	---
Acenaphthylene	434	1.33	2.67	"	"	"	---	81	32-132%	---	---	---
Anthracene	468	1.33	2.67	"	"	"	---	88	47-123%	---	---	---
Benz(a)anthracene	502	1.33	2.67	"	"	"	---	94	49-126%	---	---	---
Benzo(a)pyrene	492	2.00	4.00	"	"	"	---	92	45-129%	---	---	---
Benzo(b)fluoranthene	534	2.00	4.00	"	"	"	---	100	45-132%	---	---	---
Benzo(k)fluoranthene	492	2.00	4.00	"	"	"	---	92	47-132%	---	---	---
Benzo(g,h,i)perylene	506	1.33	2.67	"	"	"	---	95	43-134%	---	---	---
Chrysene	517	1.33	2.67	"	"	"	---	97	50-124%	---	---	---
Dibenz(a,h)anthracene	491	1.33	2.67	"	"	"	---	92	45-134%	---	---	---
Fluoranthene	511	1.33	2.67	"	"	"	---	96	50-127%	---	---	---
Fluorene	467	1.33	2.67	"	"	"	---	88	43-125%	---	---	---
Indeno(1,2,3-cd)pyrene	476	1.33	2.67	"	"	"	---	89	45-133%	---	---	---
1-Methylnaphthalene	455	2.67	5.33	"	"	"	---	85	40-120%	---	---	---
2-Methylnaphthalene	456	2.67	5.33	"	"	"	---	85	38-122%	---	---	---

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Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
LCS (6040070-BS1)						Prepared: 04/04/16 14:40 Analyzed: 04/05/16 14:06						
EPA 8270D												
Naphthalene	426	2.67	5.33	ug/kg wet	"	"	---	80	35-123%	---	---	
Phenanthrene	446	1.33	2.67	"	"	"	---	84	50-121%	---	---	
Pyrene	491	1.33	2.67	"	"	"	---	92	47-127%	---	---	
Carbazole	484	2.00	4.00	"	"	"	---	91	50-122%	---	---	
Dibenzofuran	465	1.33	2.67	"	"	"	---	87	44-120%	---	---	
4-Chloro-3-methylphenol	538	13.3	26.7	"	"	"	---	101	45-122%	---	---	
2-Chlorophenol	467	6.67	13.3	"	"	"	---	88	34-121%	---	---	
2,4-Dichlorophenol	532	6.67	13.3	"	"	"	---	100	40-122%	---	---	
2,4-Dimethylphenol	543	6.67	13.3	"	"	"	---	102	30-127%	---	---	
2,4-Dinitrophenol	455	33.3	66.7	"	"	"	---	85	5-137%	---	---	
4,6-Dinitro-2-methylphenol	480	33.3	66.7	"	"	"	---	90	29-132%	---	---	
2-Methylphenol	489	3.33	6.67	"	"	"	---	92	32-122%	---	---	
3+4-Methylphenol(s)	508	3.33	6.67	"	"	"	---	95	34-120%	---	---	
2-Nitrophenol	498	13.3	26.7	"	"	"	---	93	36-123%	---	---	
4-Nitrophenol	490	13.3	26.7	"	"	"	---	92	30-132%	---	---	
Pentachlorophenol (PCP)	539	13.3	26.7	"	"	"	---	101	25-133%	---	---	
Phenol	471	2.67	5.33	"	"	"	---	88	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	531	6.67	13.3	"	"	"	---	99	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	525	6.67	13.3	"	"	"	---	98	40-120%	---	---	
2,4,5-Trichlorophenol	510	6.67	13.3	"	"	"	---	96	41-124%	---	---	
2,4,6-Trichlorophenol	506	6.67	13.3	"	"	"	---	95	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	529	20.0	40.0	"	"	"	---	99	51-133%	---	---	
Butyl benzyl phthalate	545	13.3	26.7	"	"	"	---	102	48-132%	---	---	
Diethylphthalate	475	13.3	26.7	"	"	"	---	89	50-124%	---	---	
Dimethylphthalate	478	13.3	26.7	"	"	"	---	90	48-124%	---	---	
Di-n-butylphthalate	494	13.3	26.7	"	"	"	---	93	51-128%	---	---	
Di-n-octyl phthalate	512	13.3	26.7	"	"	"	---	96	44-140%	---	---	
N-Nitrosodimethylamine	449	3.33	6.67	"	"	"	---	84	23-120%	---	---	
N-Nitroso-di-n-propylamine	462	3.33	6.67	"	"	"	---	87	36-120%	---	---	
N-Nitrosodiphenylamine	497	3.33	6.67	"	"	"	---	93	38-127%	---	---	
Bis(2-Chloroethoxy) methane	458	3.33	6.67	"	"	"	---	86	36-121%	---	---	
Bis(2-Chloroethyl) ether	404	3.33	6.67	"	"	"	---	76	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	373	3.33	6.67	"	"	"	---	70	33-131%	---	---	
Hexachlorobenzene	475	1.33	2.67	"	"	"	---	89	44-122%	---	---	

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Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
LCS (6040070-BS1)						Prepared: 04/04/16 14:40 Analyzed: 04/05/16 14:06						
EPA 8270D												
Hexachlorobutadiene	461	3.33	6.67	ug/kg wet	"	"	---	87	32-123%	---	---	
Hexachlorocyclopentadiene	435	13.3	13.3	"	"	"	---	82	5-140%	---	---	Q-31
Hexachloroethane	441	3.33	6.67	"	"	"	---	83	28-120%	---	---	
2-Chloronaphthalene	441	1.33	2.67	"	"	"	---	83	41-120%	---	---	
1,2-Dichlorobenzene	412	3.33	6.67	"	"	"	---	77	33-120%	---	---	
1,3-Dichlorobenzene	402	3.33	6.67	"	"	"	---	75	30-120%	---	---	
1,4-Dichlorobenzene	411	3.33	6.67	"	"	"	---	77	31-120%	---	---	
1,2,4-Trichlorobenzene	444	3.33	6.67	"	"	"	---	83	34-120%	---	---	
4-Bromophenyl phenyl ether	509	3.33	6.67	"	"	"	---	95	46-124%	---	---	
4-Chlorophenyl phenyl ether	495	3.33	6.67	"	"	"	---	93	45-121%	---	---	
Aniline	432	6.67	13.3	"	"	"	---	81	7-120%	---	---	
4-Chloroaniline	301	3.33	6.67	"	"	"	---	56	16-120%	---	---	
2-Nitroaniline	509	26.7	53.3	"	"	"	---	95	44-127%	---	---	
3-Nitroaniline	429	26.7	53.3	"	"	"	---	81	33-120%	---	---	
4-Nitroaniline	494	26.7	53.3	"	"	"	---	93	35-120%	---	---	
Nitrobenzene	421	13.3	26.7	"	"	"	---	79	34-122%	---	---	
2,4-Dinitrotoluene	533	13.3	26.7	"	"	"	---	100	48-126%	---	---	
2,6-Dinitrotoluene	496	13.3	26.7	"	"	"	---	93	46-124%	---	---	
Benzoic acid	586	167	333	"	"	1070	---	55	5-140%	---	---	
Benzyl alcohol	500	6.67	13.3	"	"	533	---	94	29-122%	---	---	
Isophorone	485	3.33	6.67	"	"	"	---	91	30-122%	---	---	
Azobenzene (1,2-DPH)	426	3.33	6.67	"	"	"	---	80	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	525	33.3	66.7	"	"	"	---	98	60-121%	---	---	
3,3'-Dichlorobenzidine	1480	13.3	26.7	"	"	1070	---	139	22-121%	---	---	Q-29
1,2-Dinitrobenzene	519	33.3	66.7	"	"	533	---	97	44-120%	---	---	
1,3-Dinitrobenzene	516	33.3	66.7	"	"	"	---	97	42-127%	---	---	
1,4-Dinitrobenzene	518	33.3	66.7	"	"	"	---	97	37-132%	---	---	
Pyridine	388	6.67	13.3	"	"	"	---	73	5-120%	---	---	
Benzo(e)pyrene	523	1.33	2.67	"	"	"	---	98	40-125%	---	---	
Perylene	518	1.33	2.67	"	"	"	---	97	"	---	---	

Surr: Nitrobenzene-d5 (Surr)	Recovery: 72 %	Limits: 37-122 %	Dilution: 1x
2-Fluorobiphenyl (Surr)	78 %	44-115 %	"
Phenol-d6 (Surr)	85 %	33-122 %	"
p-Terphenyl-d14 (Surr)	92 %	54-127 %	"

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Philip Nerenberg, Lab Director

Hahn and Associates

434 NW 6th Ave. Suite 203
Portland, OR 97209

Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
Project Manager: Rob Ede

Reported:
12/12/17 09:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
LCS (6040070-BS1)						Prepared: 04/04/16 14:40 Analyzed: 04/05/16 14:06						
EPA 8270D												
Surr: 2-Fluorophenol (Surr) Recovery: 80 % Limits: 35-115 % Dilution: 1x												
2,4,6-Tribromophenol (Surr) 85 % 39-132 % "												
Duplicate (6040070-DUP1)						Prepared: 04/04/16 14:40 Analyzed: 04/06/16 11:38						
QC Source Sample: 5237-160401-DC-EMB038 (A6D0056-02)												
EPA 8270D												
Acenaphthene	76.4	6.60	13.2	ug/kg dry	4	---	72.3	---	---	6	30%	
Acenaphthylene	76.0	6.60	13.2	"	"	---	61.1	---	---	22	30%	
Anthracene	126	6.60	13.2	"	"	---	124	---	---	1	30%	
Benz(a)anthracene	706	6.60	13.2	"	"	---	597	---	---	17	30%	
Benzo(a)pyrene	987	9.92	19.8	"	"	---	817	---	---	19	30%	
Benzo(b)fluoranthene	1310	9.92	19.8	"	"	---	1050	---	---	23	30%	M-02
Benzo(k)fluoranthene	452	9.92	19.8	"	"	---	372	---	---	19	30%	M-02
Benzo(g,h,i)perylene	1010	6.60	13.2	"	"	---	762	---	---	28	30%	
Chrysene	963	6.60	13.2	"	"	---	791	---	---	20	30%	
Dibenz(a,h)anthracene	165	6.60	13.2	"	"	---	118	---	---	33	30%	Q-17
Fluoranthene	1220	6.60	13.2	"	"	---	1180	---	---	3	30%	
Fluorene	34.4	6.60	13.2	"	"	---	41.9	---	---	20	30%	
Indeno(1,2,3-cd)pyrene	825	6.60	13.2	"	"	---	649	---	---	24	30%	
1-Methylnaphthalene	14.7	13.2	26.4	"	"	---	18.1	---	---	21	30%	J
2-Methylnaphthalene	33.9	13.2	26.4	"	"	---	35.6	---	---	5	30%	
Naphthalene	117	13.2	26.4	"	"	---	105	---	---	10	30%	
Phenanthrene	612	6.60	13.2	"	"	---	649	---	---	6	30%	
Pyrene	1430	6.60	13.2	"	"	---	1410	---	---	1	30%	
Carbazole	81.8	9.92	19.8	"	"	---	62.2	---	---	27	30%	
Dibenzofuran	19.4	6.60	13.2	"	"	---	18.3	---	---	5	30%	
4-Chloro-3-methylphenol	ND	66.0	132	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	165	331	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	165	331	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
2-Nitrophenol	ND	66.0	132	"	"	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

Hahn and Associates

434 NW 6th Ave. Suite 203
 Portland, OR 97209

Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
 Project Manager: Rob Ede

Reported:
 12/12/17 09:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
Duplicate (6040070-DUP1)						Prepared: 04/04/16 14:40 Analyzed: 04/06/16 11:38						
QC Source Sample: 5237-160401-DC-EMB038 (A6D0056-02)												
EPA 8270D												
4-Nitrophenol	ND	66.0	132	ug/kg dry	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	66.0	132	"	"	---	ND	---	---	---	30%	
Phenol	ND	13.2	26.4	"	"	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	99.2	198	"	"	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	66.0	132	"	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	66.0	132	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	66.0	132	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	66.0	132	"	"	---	91.1	---	---	---	30%	
Di-n-octyl phthalate	ND	66.0	132	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	6.60	13.2	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	6.60	13.2	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Aniline	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	132	264	"	"	---	ND	---	---	---	30%	

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Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
 Project Manager: Rob Ede

Reported:
 12/12/17 09:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546												
Soil												
Duplicate (6040070-DUP1)						Prepared: 04/04/16 14:40 Analyzed: 04/06/16 11:38						
QC Source Sample: 5237-160401-DC-EMB038 (A6D0056-02)												
EPA 8270D												
3-Nitroaniline	ND	132	264	ug/kg dry	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	132	264	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	66.0	132	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	66.0	132	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	66.0	132	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	828	1650	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
Isophorone	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	16.5	33.1	"	"	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	165	331	"	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	66.0	132	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	165	331	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	165	331	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	165	331	"	"	---	ND	---	---	---	30%	
Pyridine	ND	33.1	66.0	"	"	---	ND	---	---	---	30%	
Benzo(e)pyrene	816	6.60	13.2	"	"	---	662	---	---	21	30%	
Perylene	277	6.60	13.2	"	"	---	218	---	---	24	30%	

Surr: Nitrobenzene-d5 (Surr)	Recovery: 86 %	Limits: 37-122 %	Dilution: 4x
2-Fluorobiphenyl (Surr)	94 %	44-115 %	"
Phenol-d6 (Surr)	84 %	33-122 %	"
p-Terphenyl-d14 (Surr)	92 %	54-127 %	"
2-Fluorophenol (Surr)	80 %	35-115 %	"
2,4,6-Tribromophenol (Surr)	105 %	39-132 %	"

Matrix Spike (6040070-MS1)

Prepared: 04/04/16 14:40 Analyzed: 04/06/16 14:49

QC Source Sample: 5237-160401-NDP-EMB003 (A6D0056-10RE1)

EPA 8270D												
Acenaphthene	717	6.71	13.5	ug/kg dry	4	673	42.6	100	40-122%	---	---	
Acenaphthylene	665	6.71	13.5	"	"	"	18.7	96	32-132%	---	---	
Anthracene	784	6.71	13.5	"	"	"	62.6	107	47-123%	---	---	
Benz(a)anthracene	1240	6.71	13.5	"	"	"	331	135	49-126%	---	---	Q-04
Benzo(a)pyrene	1490	10.1	20.2	"	"	"	459	153	45-129%	---	---	Q-04
Benzo(b)fluoranthene	1800	10.1	20.2	"	"	"	613	177	45-132%	---	---	Q-04

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Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
Project Manager: Rob Ede

Reported:
12/12/17 09:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
Matrix Spike (6040070-MS1)						Prepared: 04/04/16 14:40 Analyzed: 04/06/16 14:49						
QC Source Sample: 5237-160401-NDP-EMB003 (A6D0056-10RE1)												
EPA 8270D												
Benzo(k)fluoranthene	1080	10.1	20.2	ug/kg dry	"	"	211	129	47-132%	---	---	
Benzo(g,h,i)perylene	1400	6.71	13.5	"	"	"	383	151	43-134%	---	---	Q-04
Chrysene	1370	6.71	13.5	"	"	"	400	144	50-124%	---	---	Q-04
Dibenz(a,h)anthracene	803	6.71	13.5	"	"	"	73.4	108	45-134%	---	---	
Fluoranthene	1570	6.71	13.5	"	"	"	530	155	50-127%	---	---	Q-04
Fluorene	718	6.71	13.5	"	"	"	30.9	102	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	1270	6.71	13.5	"	"	"	347	137	45-133%	---	---	Q-04
1-Methylnaphthalene	655	13.5	26.9	"	"	"	ND	97	40-120%	---	---	
2-Methylnaphthalene	671	13.5	26.9	"	"	"	13.6	98	38-122%	---	---	
Naphthalene	649	13.5	26.9	"	"	"	36.6	91	35-123%	---	---	
Phenanthrene	1080	6.71	13.5	"	"	"	271	120	50-121%	---	---	
Pyrene	1590	6.71	13.5	"	"	"	542	155	47-127%	---	---	Q-04
Carbazole	734	10.1	20.2	"	"	"	46.2	102	50-122%	---	---	
Dibenzofuran	692	6.71	13.5	"	"	"	17.1	100	44-120%	---	---	
4-Chloro-3-methylphenol	705	67.1	135	"	"	"	ND	105	45-122%	---	---	
2-Chlorophenol	628	33.7	67.1	"	"	"	ND	93	34-121%	---	---	
2,4-Dichlorophenol	721	33.7	67.1	"	"	"	ND	107	40-122%	---	---	
2,4-Dimethylphenol	723	33.7	67.1	"	"	"	ND	107	30-127%	---	---	
2,4-Dinitrophenol	714	168	337	"	"	"	ND	106	5-137%	---	---	
4,6-Dinitro-2-methylphenol	698	168	337	"	"	"	ND	104	29-132%	---	---	
2-Methylphenol	652	16.8	33.7	"	"	"	ND	97	32-122%	---	---	
3+4-Methylphenol(s)	693	16.8	33.7	"	"	"	ND	103	34-120%	---	---	
2-Nitrophenol	664	67.1	135	"	"	"	ND	99	36-123%	---	---	
4-Nitrophenol	675	67.1	135	"	"	"	ND	100	30-132%	---	---	
Pentachlorophenol (PCP)	859	67.1	135	"	"	"	ND	128	25-133%	---	---	
Phenol	563	13.5	26.9	"	"	"	ND	84	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	808	33.7	67.1	"	"	"	ND	120	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	775	33.7	67.1	"	"	"	ND	115	40-120%	---	---	
2,4,5-Trichlorophenol	706	33.7	67.1	"	"	"	ND	105	41-124%	---	---	
2,4,6-Trichlorophenol	745	33.7	67.1	"	"	"	ND	111	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	754	101	202	"	"	"	ND	112	51-133%	---	---	
Butyl benzyl phthalate	687	67.1	135	"	"	"	ND	102	48-132%	---	---	
Diethylphthalate	705	67.1	135	"	"	"	ND	105	50-124%	---	---	

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Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
Project Manager: Rob Ede

Reported:
12/12/17 09:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
Matrix Spike (6040070-MS1)						Prepared: 04/04/16 14:40 Analyzed: 04/06/16 14:49						
QC Source Sample: 5237-160401-NDP-EMB003 (A6D0056-10RE1)												
EPA 8270D												
Dimethylphthalate	665	67.1	135	ug/kg dry	"	"	ND	99	48-124%	---	---	
Di-n-butylphthalate	743	67.1	135	"	"	"	ND	110	51-128%	---	---	
Di-n-octyl phthalate	727	67.1	135	"	"	"	ND	108	44-140%	---	---	
N-Nitrosodimethylamine	438	16.8	33.7	"	"	"	ND	65	23-120%	---	---	
N-Nitroso-di-n-propylamine	627	16.8	33.7	"	"	"	ND	93	36-120%	---	---	
N-Nitrosodiphenylamine	611	16.8	33.7	"	"	"	ND	91	38-127%	---	---	
Bis(2-Chloroethoxy) methane	609	16.8	33.7	"	"	"	ND	90	36-121%	---	---	
Bis(2-Chloroethyl) ether	515	16.8	33.7	"	"	"	ND	77	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	530	16.8	33.7	"	"	"	ND	79	33-131%	---	---	
Hexachlorobenzene	657	6.71	13.5	"	"	"	ND	98	44-122%	---	---	
Hexachlorobutadiene	599	16.8	33.7	"	"	"	ND	89	32-123%	---	---	
Hexachlorocyclopentadiene	389	33.7	67.1	"	"	"	ND	58	5-140%	---	---	Q-31
Hexachloroethane	454	16.8	33.7	"	"	"	ND	67	28-120%	---	---	
2-Chloronaphthalene	627	6.71	13.5	"	"	"	ND	93	41-120%	---	---	
1,2-Dichlorobenzene	500	16.8	33.7	"	"	"	ND	74	33-120%	---	---	
1,3-Dichlorobenzene	482	16.8	33.7	"	"	"	ND	72	30-120%	---	---	
1,4-Dichlorobenzene	477	16.8	33.7	"	"	"	ND	71	31-120%	---	---	
1,2,4-Trichlorobenzene	580	16.8	33.7	"	"	"	ND	86	34-120%	---	---	
4-Bromophenyl phenyl ether	679	16.8	33.7	"	"	"	ND	101	46-124%	---	---	
4-Chlorophenyl phenyl ether	642	16.8	33.7	"	"	"	ND	95	45-121%	---	---	
Aniline	21.0	15.1	67.1	"	"	"	ND	3	7-120%	---	---	Q-01, J
4-Chloroaniline	246	16.8	33.7	"	"	"	ND	37	16-120%	---	---	
2-Nitroaniline	566	135	269	"	"	"	ND	84	44-127%	---	---	
3-Nitroaniline	48.1	25.2	269	"	"	"	ND	7	33-120%	---	---	Q-01, J
4-Nitroaniline	125	50.5	269	"	"	"	ND	19	35-120%	---	---	Q-01, J
Nitrobenzene	570	67.1	135	"	"	"	ND	85	34-122%	---	---	
2,4-Dinitrotoluene	658	67.1	135	"	"	"	ND	98	48-126%	---	---	
2,6-Dinitrotoluene	671	67.1	135	"	"	"	ND	100	46-124%	---	---	
Benzoic acid	2300	843	1680	"	"	1350	ND	171	5-140%	---	---	Q-01
Benzyl alcohol	695	33.7	67.1	"	"	673	46.0	96	29-122%	---	---	
Isophorone	669	16.8	33.7	"	"	"	ND	99	30-122%	---	---	
Azobenzene (1,2-DPH)	689	16.8	33.7	"	"	"	ND	102	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	733	168	337	"	"	"	ND	109	60-121%	---	---	

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Philip Nerenberg, Lab Director

Hahn and Associates

434 NW 6th Ave. Suite 203
 Portland, OR 97209

Project: **Siltronic RI-Doane Creek**

Project Number: 5237-10dc
 Project Manager: Rob Ede

Reported:
 12/12/17 09:21

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6040070 - EPA 3546						Soil						
Matrix Spike (6040070-MS1)						Prepared: 04/04/16 14:40 Analyzed: 04/06/16 14:49						
QC Source Sample: 5237-160401-NDP-EMB003 (A6D0056-10RE1)												
EPA 8270D												
3,3'-Dichlorobenzidine	ND	67.1	135	ug/kg dry	"	1350	ND		22-121%	---	---	Q-01
1,2-Dinitrobenzene	642	168	337	"	"	673	ND	95	44-120%	---	---	
1,3-Dinitrobenzene	663	168	337	"	"	"	ND	98	42-127%	---	---	
1,4-Dinitrobenzene	607	168	337	"	"	"	ND	90	37-132%	---	---	
Pyridine	372	33.7	67.1	"	"	"	ND	55	5-120%	---	---	
Benzo(e)pyrene	1270	6.71	13.5	"	"	"	341	139	40-125%	---	---	Q-01
Perylene	953	6.71	13.5	"	"	"	134	122	"	---	---	

<i>Surr: Nitrobenzene-d5 (Surr)</i>	<i>Recovery: 79 %</i>	<i>Limits: 37-122 %</i>	<i>Dilution: 4x</i>
<i>2-Fluorobiphenyl (Surr)</i>	<i>87 %</i>	<i>44-115 %</i>	<i>"</i>
<i>Phenol-d6 (Surr)</i>	<i>85 %</i>	<i>33-122 %</i>	<i>"</i>
<i>p-Terphenyl-d14 (Surr)</i>	<i>89 %</i>	<i>54-127 %</i>	<i>"</i>
<i>2-Fluorophenol (Surr)</i>	<i>75 %</i>	<i>35-115 %</i>	<i>"</i>
<i>2,4,6-Tribromophenol (Surr)</i>	<i>108 %</i>	<i>39-132 %</i>	<i>"</i>



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SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6040070							
A6D0056-02	Soil	EPA 8270D	04/01/16 10:25	04/04/16 14:40	15.86g/2mL	15g/2mL	0.95
A6D0056-04	Soil	EPA 8270D	04/01/16 11:05	04/04/16 14:40	15.22g/2mL	15g/2mL	0.99
A6D0056-06RE1	Soil	EPA 8270D	04/01/16 12:00	04/04/16 14:40	15.43g/2mL	15g/2mL	0.97
A6D0056-08RE1	Soil	EPA 8270D	04/01/16 16:00	04/04/16 14:40	15.51g/2mL	15g/2mL	0.97
A6D0056-10RE1	Soil	EPA 8270D	04/01/16 16:10	04/04/16 14:40	15.67g/2mL	15g/2mL	0.96

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Notes and Definitions

Qualifiers:

- J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-02 Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- Q-01 Spike recovery and/or RPD is outside acceptance limits.
- Q-04 Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-17 RPD between original and duplicate sample is outside of established control limits.
- Q-29 Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-31 Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-42 Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)

Notes and Conventions:

- 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. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

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Philip Nerenberg, Lab Director

Hahn and Associates

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*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Portland, OR 97209

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12/12/17 09:21

AED 01/17

1 of 1

Hahn and Associates, Inc.
Environmental Management
434 NW 6th Avenue, Suite 203 - Portland, OR 97209
(503) 756-9717 - Fax (503) 227-2209

Apex Laboratories
Tigard, Oregon

Project Manager: Rob Ede
Project No: 5237-10dc
Project Name: Siltronic RI - Doane Creek
Collected by: Ben Uhl / Jane Krish

Sample Number Prefix: 5237-160401-DC
and 5237-160401-NDP
- Anchor EDD and Full Data Validation Package
- Target MDLs as per Philip N.
- Metals = aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, silver, thallium, vanadium, zinc
3 day turn around time for DX, Gx+BTEX

Lab ID	Sample #	Date	Time	Sample Description	Matrix	Number of Containers	SVOCs (Full List) by EPA Method 8270	LL Pkts and Homologs by EPA Method 8270D/8270D-M	Soot Carbon by EPA Method 9060 mod	TOC by EPA Method 5310	Sulfide by EPA Method 376.2 mod	Sulfate by EPA Method 9056 mod	Ammonia by SM 4500 mod	Total Cyanide by EPA Method 8014	Thiocyanate by SM 4500 mod	Metals by EPA Method 6020	Diesel and Oil-Range TPH by NMTPH-DX	TPH-Gx+BTEX	EPH by NMTPH-EPH	VPH by NMTPH-VPH	VOCs by EPA Method 8260B	Remarks
EMB036G	01-Apr-16	10:25		Soil Embankment (1.5)	Soil	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB038	01-Apr-16	10:25		Soil Embankment (0-3.5)	Soil	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB039G	01-Apr-16	11:05		Soil Embankment (1.5)	Soil	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB039	01-Apr-16	11:05		Soil Embankment (0-3.5)	Soil	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB040G	01-Apr-16	12:00		Soil Embankment (1.5)	Soil	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB046	01-Apr-16	12:00		Soil Embankment (0-3)	Soil	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB002G	01-Apr-16	16:00		NDP Soil Embankment (2.5)	Soil	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB002	01-Apr-16	16:00		NDP Soil Embankment (0-3.5)	Soil	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB003G	01-Apr-16	16:10		NDP Soil Embankment (1.5)	Soil	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
EMB003	01-Apr-16	16:10		NDP Soil Embankment (0-3.07)	Soil	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Requested by: Ben Uhl
Requested by Date: 4-1-16
Company: MARY KASSOC
Company: Apex
Requested by Date: 4-1-16
Company: Apex

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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