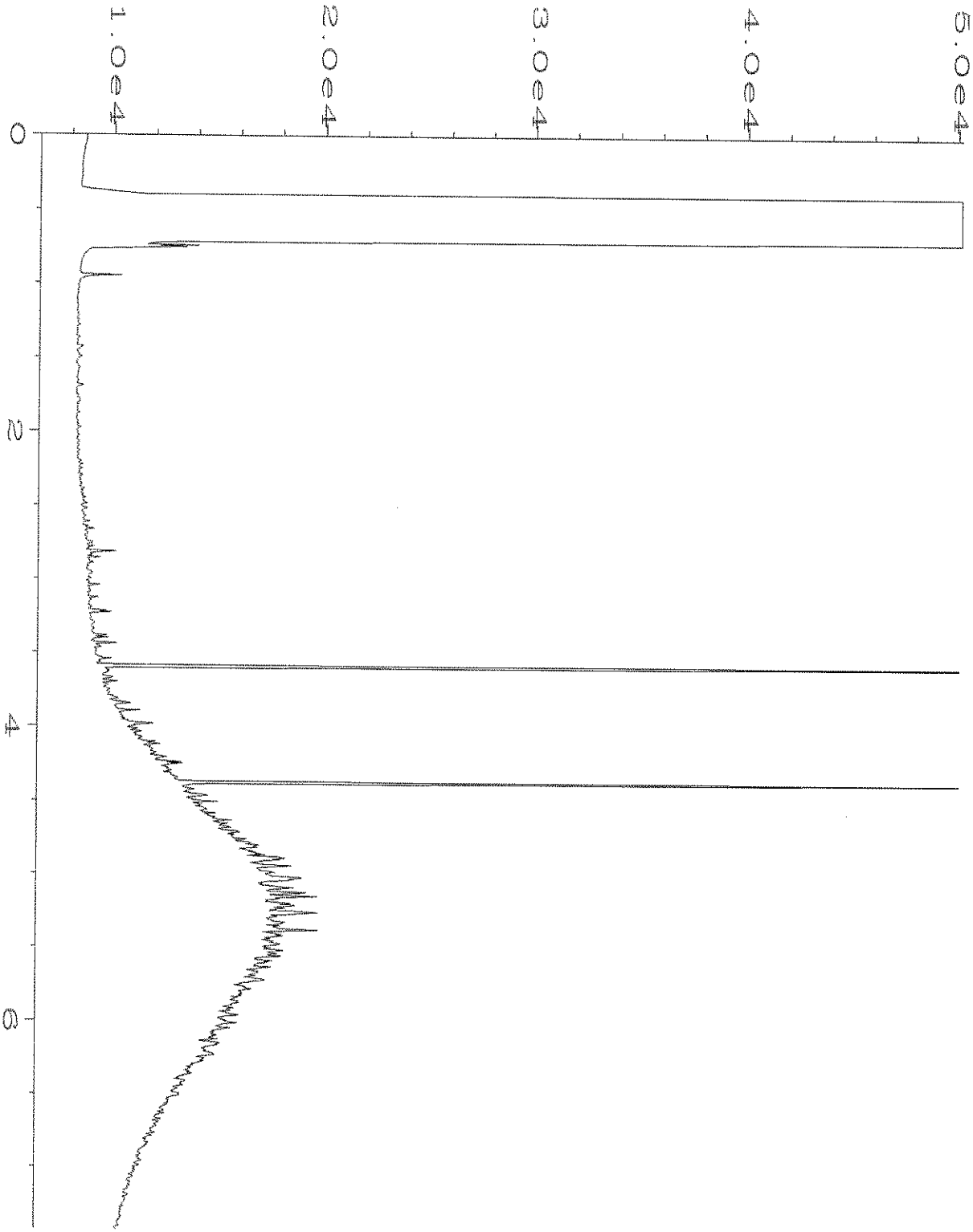
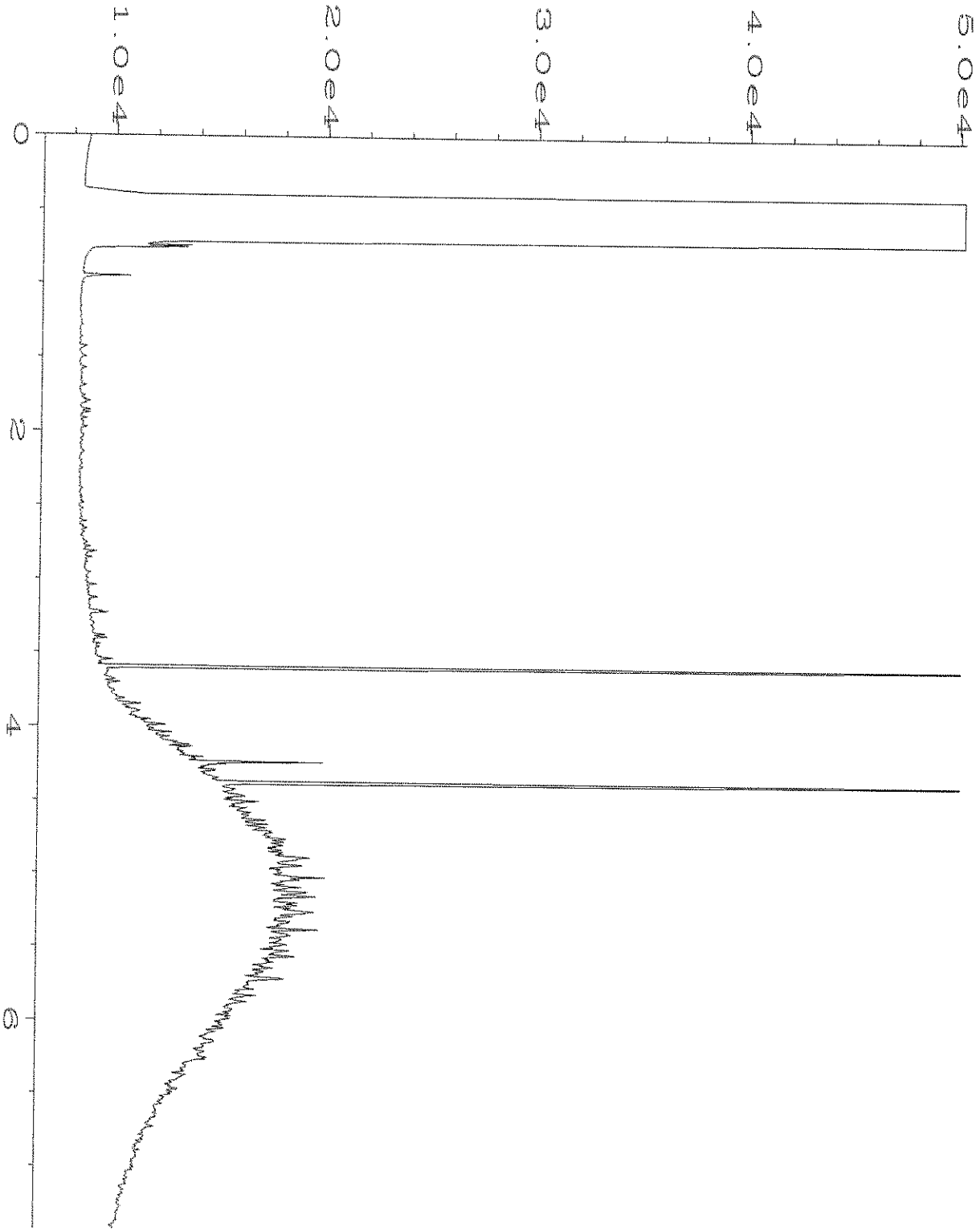
APPENDIX C3
Chromatograms for TPH in Select Samples



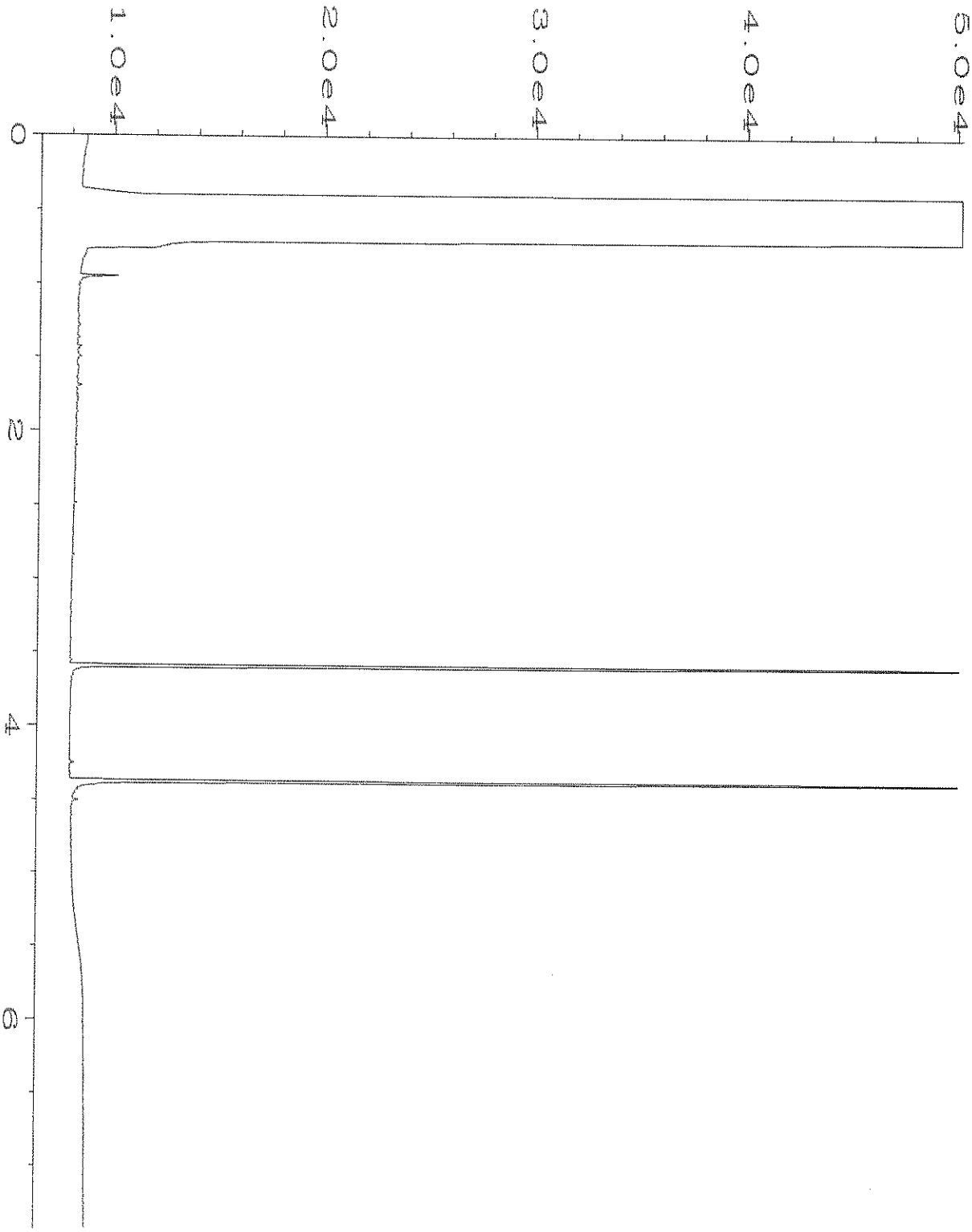
Data File Name : C:\HPCHEM\1\DATA\03-02-20\052F0701.D
Operator : TL
Instrument : GC1
Sample Name : 002468-08
Run Time Bar Code:
Acquired on : 02 Mar 20 08:47 PM
Report Created on: 07 Jan 21 11:10 AM

Page Number : 1
Vial Number : 52
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



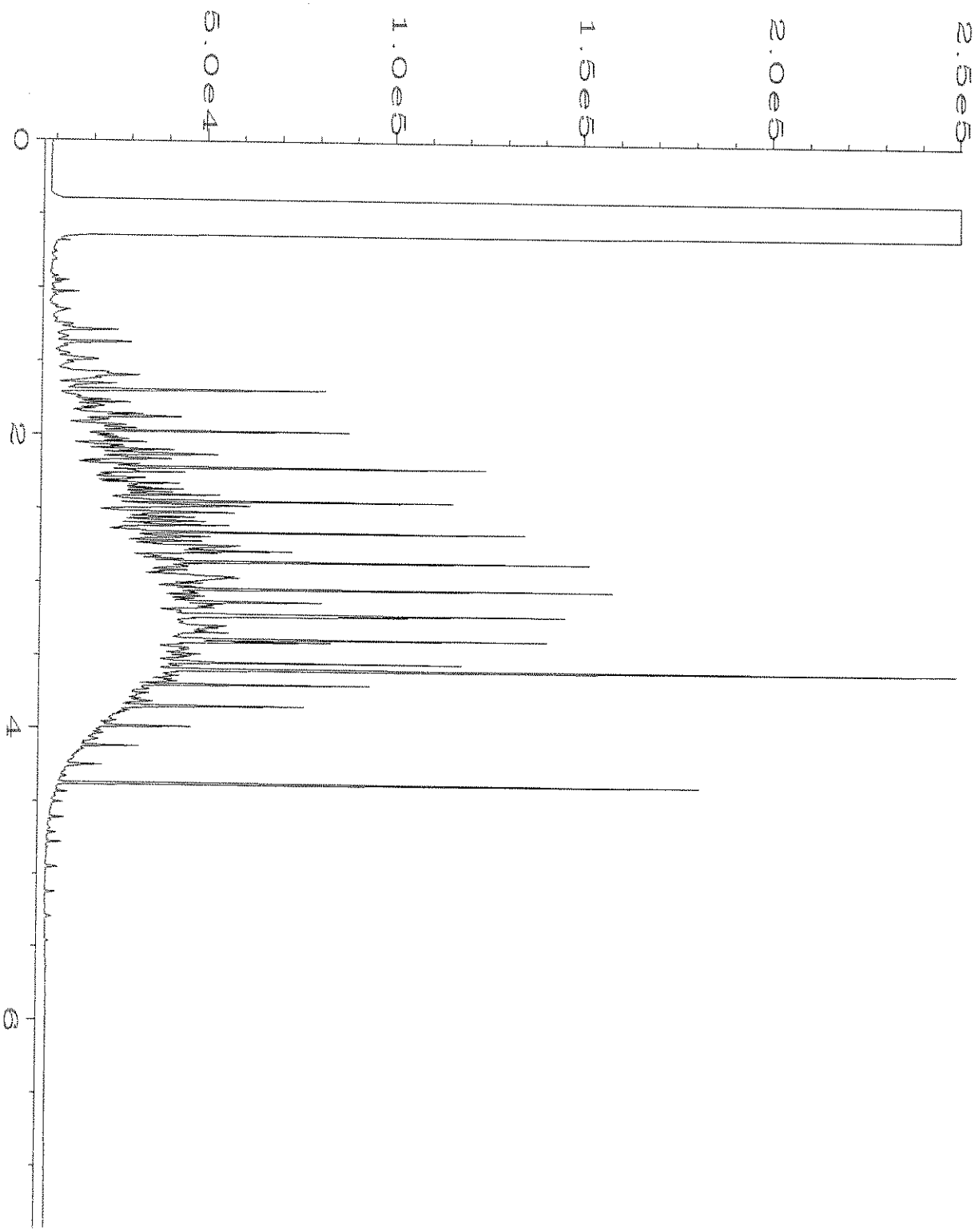
Data File Name : C:\HPCHEM\1\DATA\03-02-20\053F0701.D
Operator : TL
Instrument : GC1
Sample Name : 002468-09
Run Time Bar Code:
Acquired on : 02 Mar 20 08:59 PM
Report Created on: 07 Jan 21 11:10 AM

Page Number : 1
Vial Number : 53
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



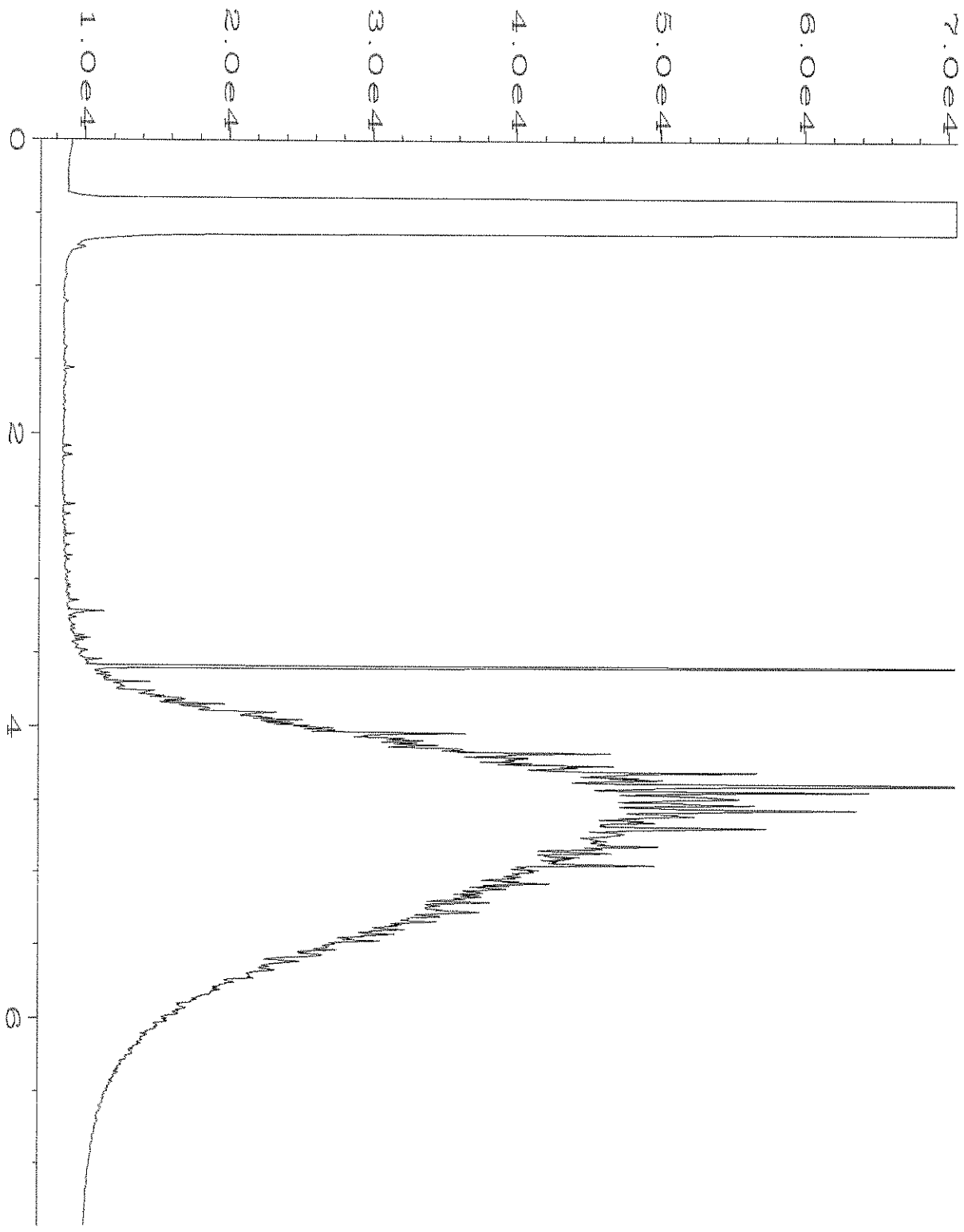
Data File Name : C:\HPCHEM\1\DATA\03-02-20\031F0701.D
Operator : TL
Instrument : GC1
Sample Name : 00-516 mb
Run Time Bar Code:
Acquired on : 02 Mar 20 04:50 PM
Report Created on: 07 Jan 21 12:06 PM

Page Number : 1
Vial Number : 31
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

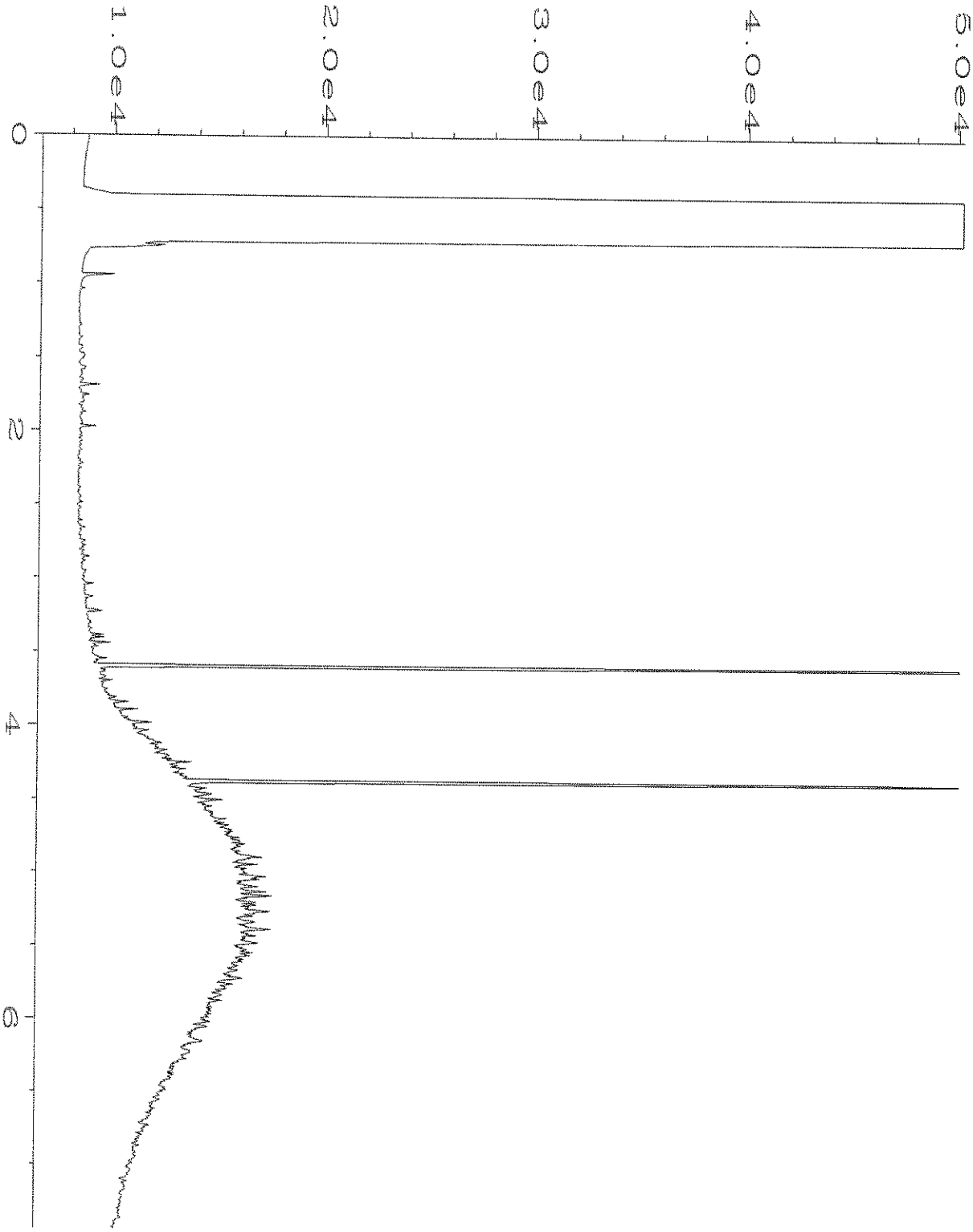


Data File Name : C:\HPCHEM\1\DATA\03-02-20\003F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 Dx 58-146H
Run Time Bar Code:
Acquired on : 02 Mar 20 06:41 AM
Report Created on: 07 Jan 21 11:12 AM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

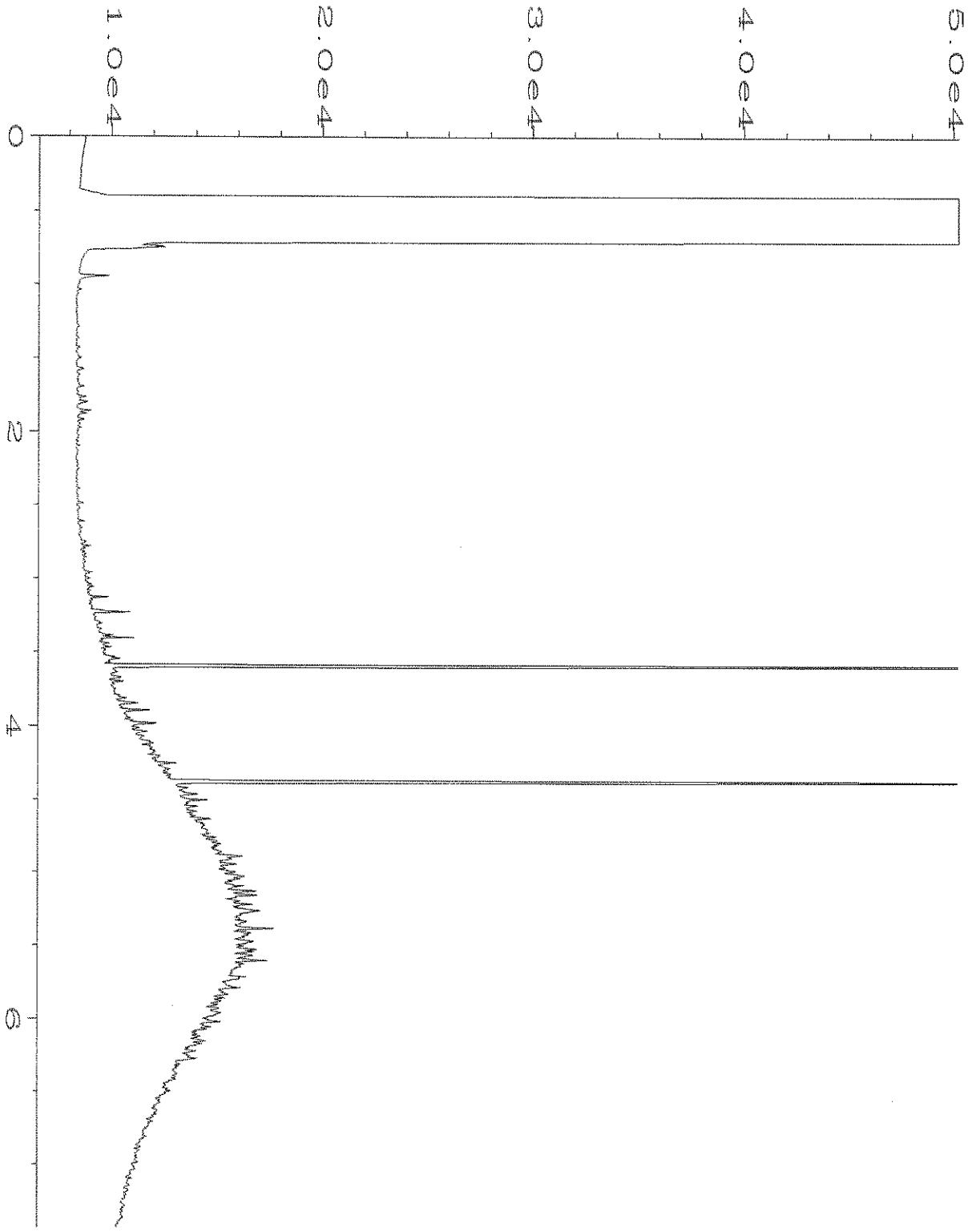


Data File Name	: C:\HPCHEM\1\DATA\03-02-20\002F0201.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 2
Sample Name	: 500 MO 59-156B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 2
Acquired on	: 02 Mar 20 05:53 AM	Instrument Method	: DX.MTH
Report Created on	: 07 Jan 21 11:11 AM	Analysis Method	: DEFAULT.MTH

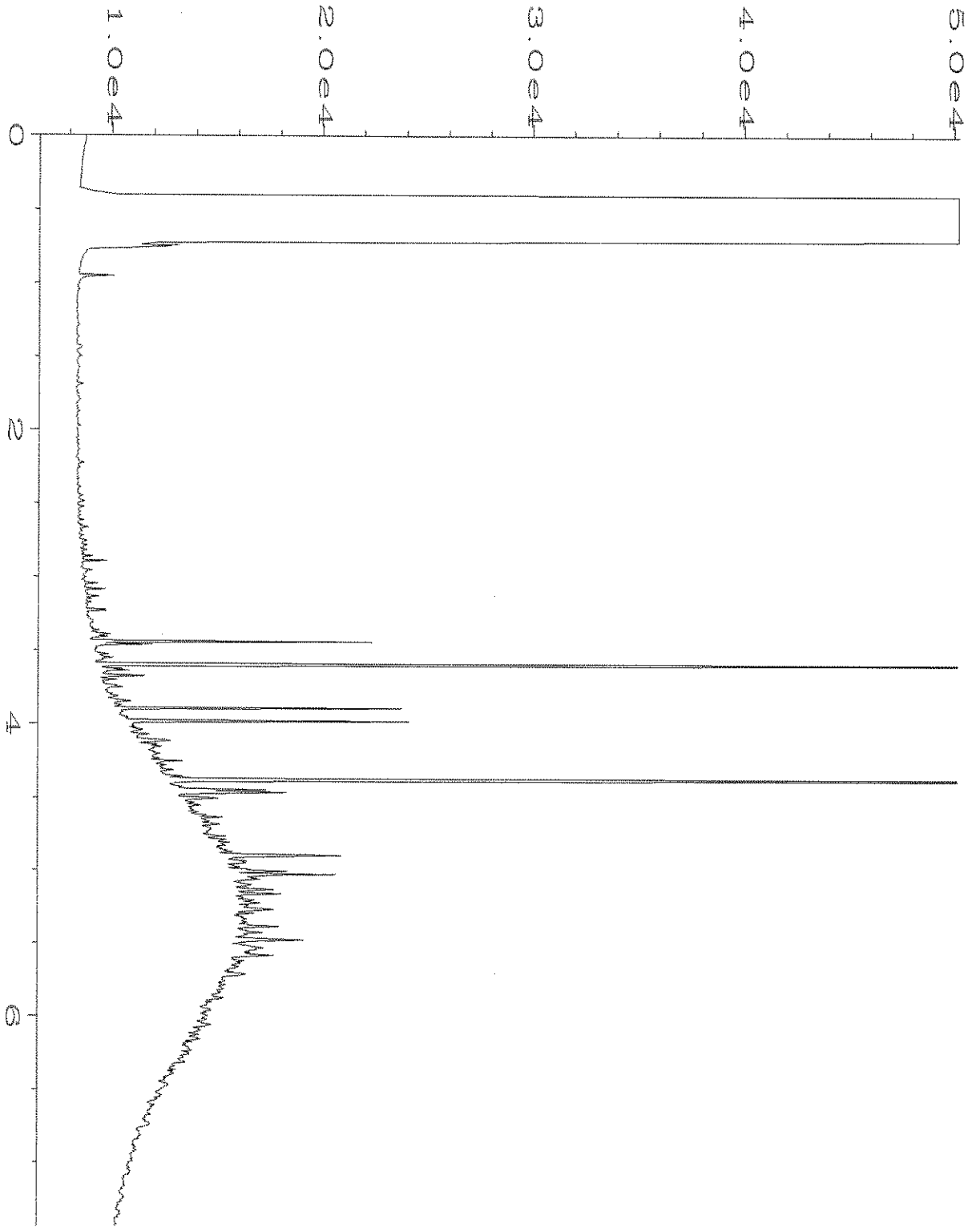


Data File Name : C:\HPCHEM\1\DATA\03-03-20\043F1001.D
Operator : TL
Instrument : GC1
Sample Name : 003022-13
Run Time Bar Code:
Acquired on : 03 Mar 20 06:24 PM
Report Created on: 07 Jan 21 11:12 AM

Page Number : 1
Vial Number : 43
Injection Number : 1
Sequence Line : 10
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

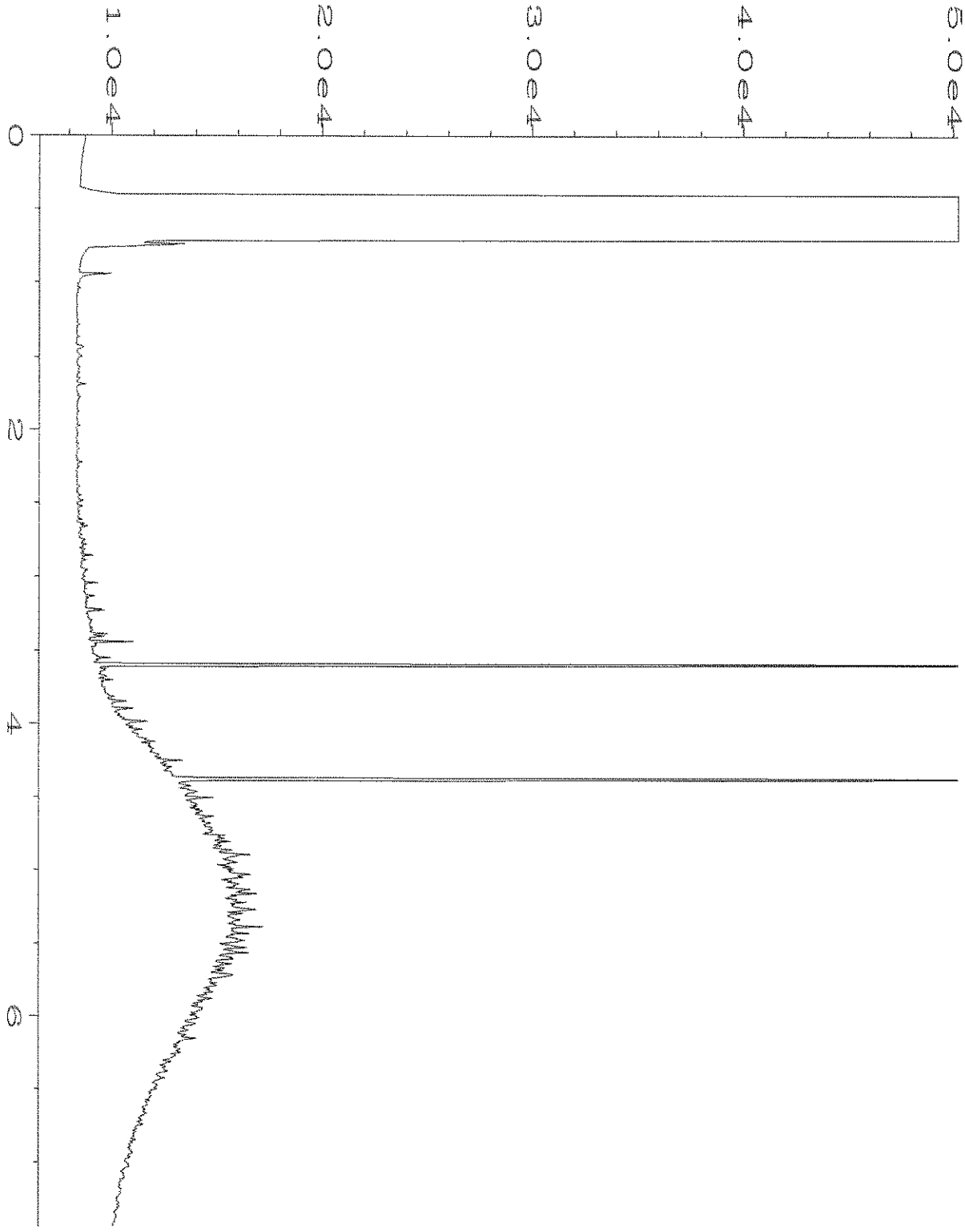


Data File Name	: C:\HPCHEM\1\DATA\03-03-20\044F1001.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 44
Sample Name	: 003022-14	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 10
Acquired on	: 03 Mar 20 06:36 PM	Instrument Method	: DX.MTH
Report Created on	: 07 Jan 21 11:12 AM	Analysis Method	: DEFAULT.MTH



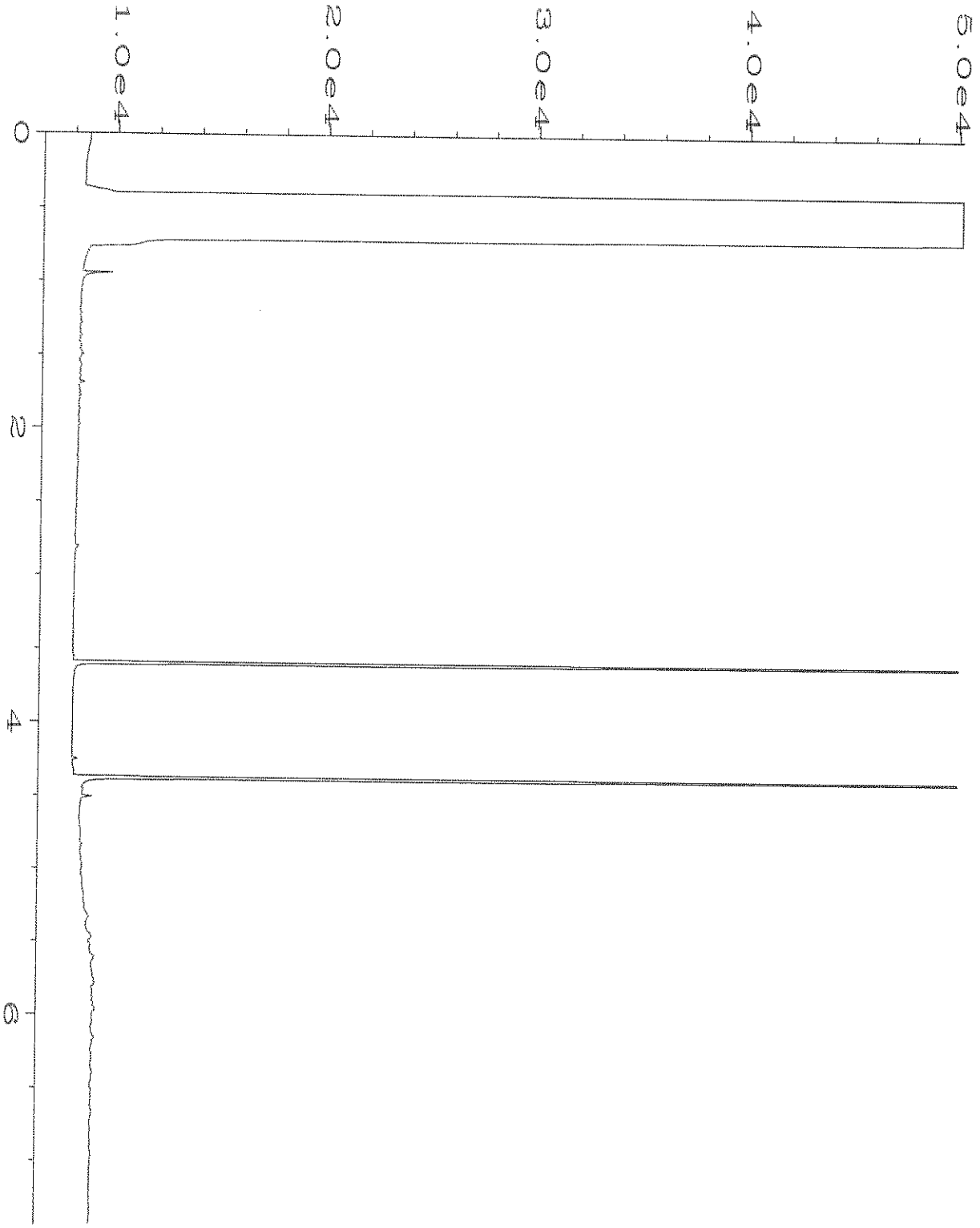
Data File Name : C:\HPCHEM\1\DATA\03-03-20\047F1001.D
Operator : TL
Instrument : GC1
Sample Name : 003022-17
Run Time Bar Code:
Acquired on : 03 Mar 20 07:10 PM
Report Created on: 07 Jan 21 11:12 AM

Page Number : 1
Vial Number : 47
Injection Number : 1
Sequence Line : 10
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



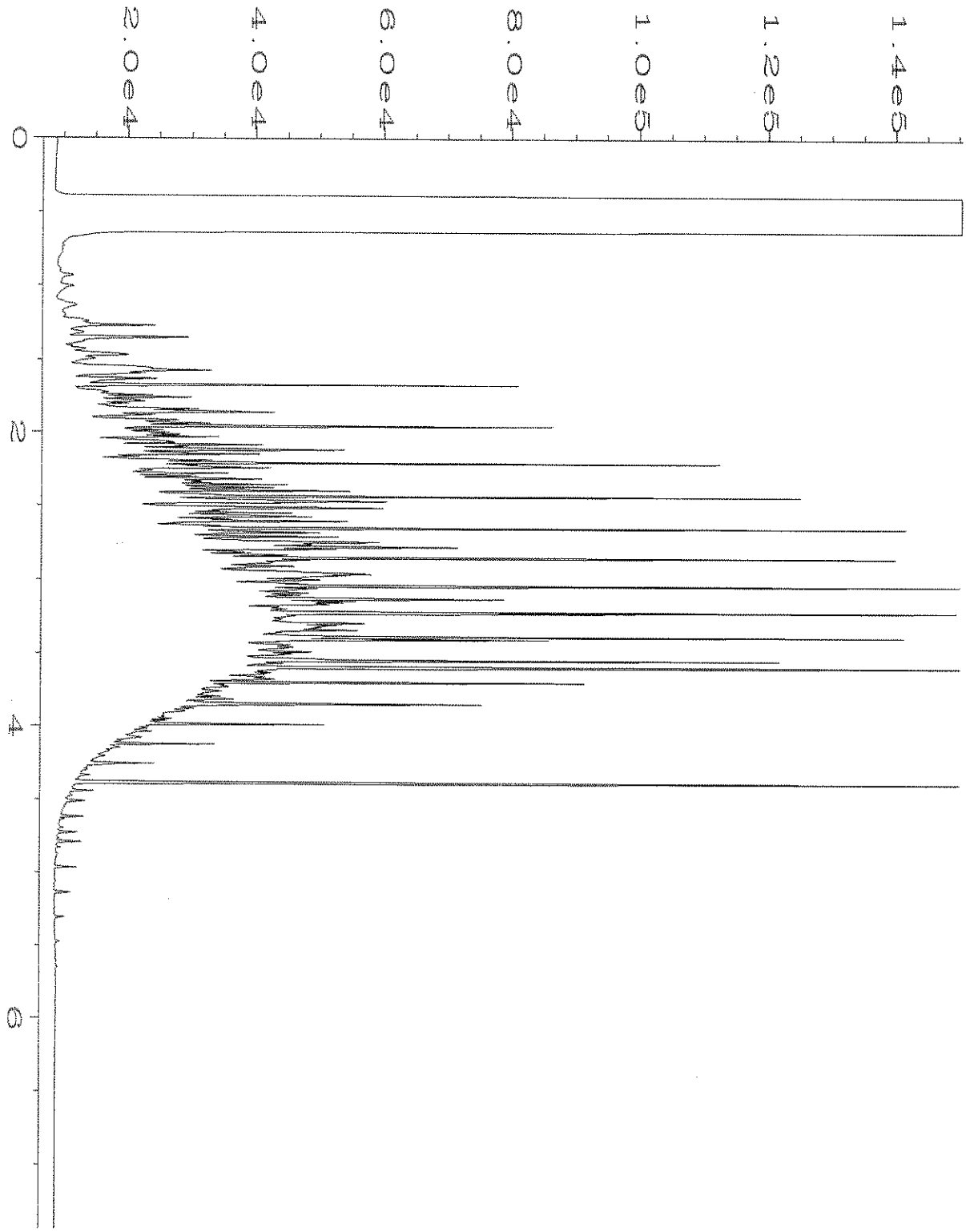
Data File Name : C:\HPCHEM\1\DATA\03-03-20\049F1001.D
Operator : TL
Instrument : GC1
Sample Name : 003022-19
Run Time Bar Code:
Acquired on : 03 Mar 20 07:32 PM
Report Created on: 07 Jan 21 11:12 AM

Page Number : 1
Vial Number : 49
Injection Number : 1
Sequence Line : 10
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



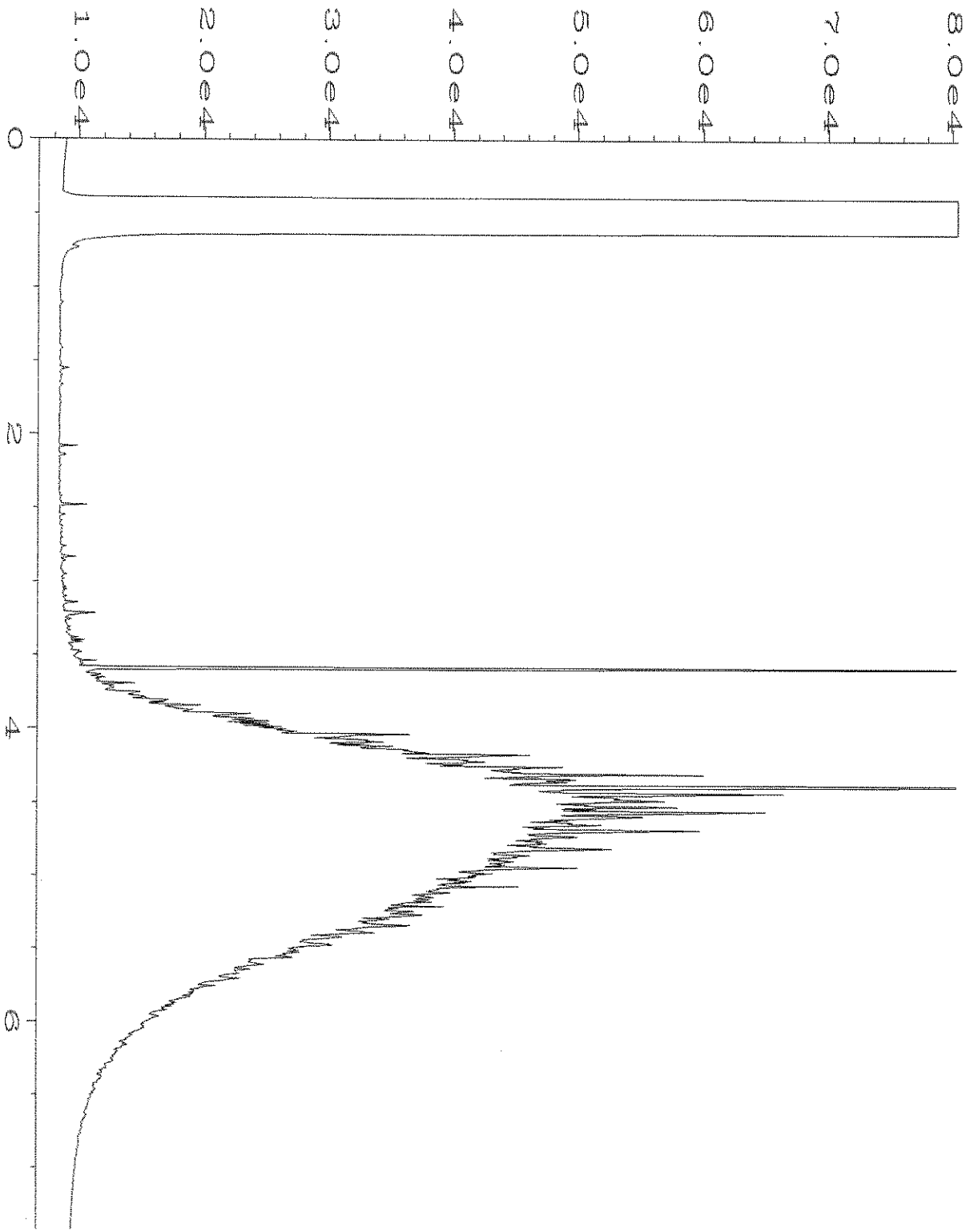
Data File Name : C:\HPCHEM\1\DATA\03-03-20\027F0801.D
Operator : TL
Instrument : GC1
Sample Name : 00-527 mb
Run Time Bar Code:
Acquired on : 03 Mar 20 03:01 PM
Report Created on: 07 Jan 21 11:13 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



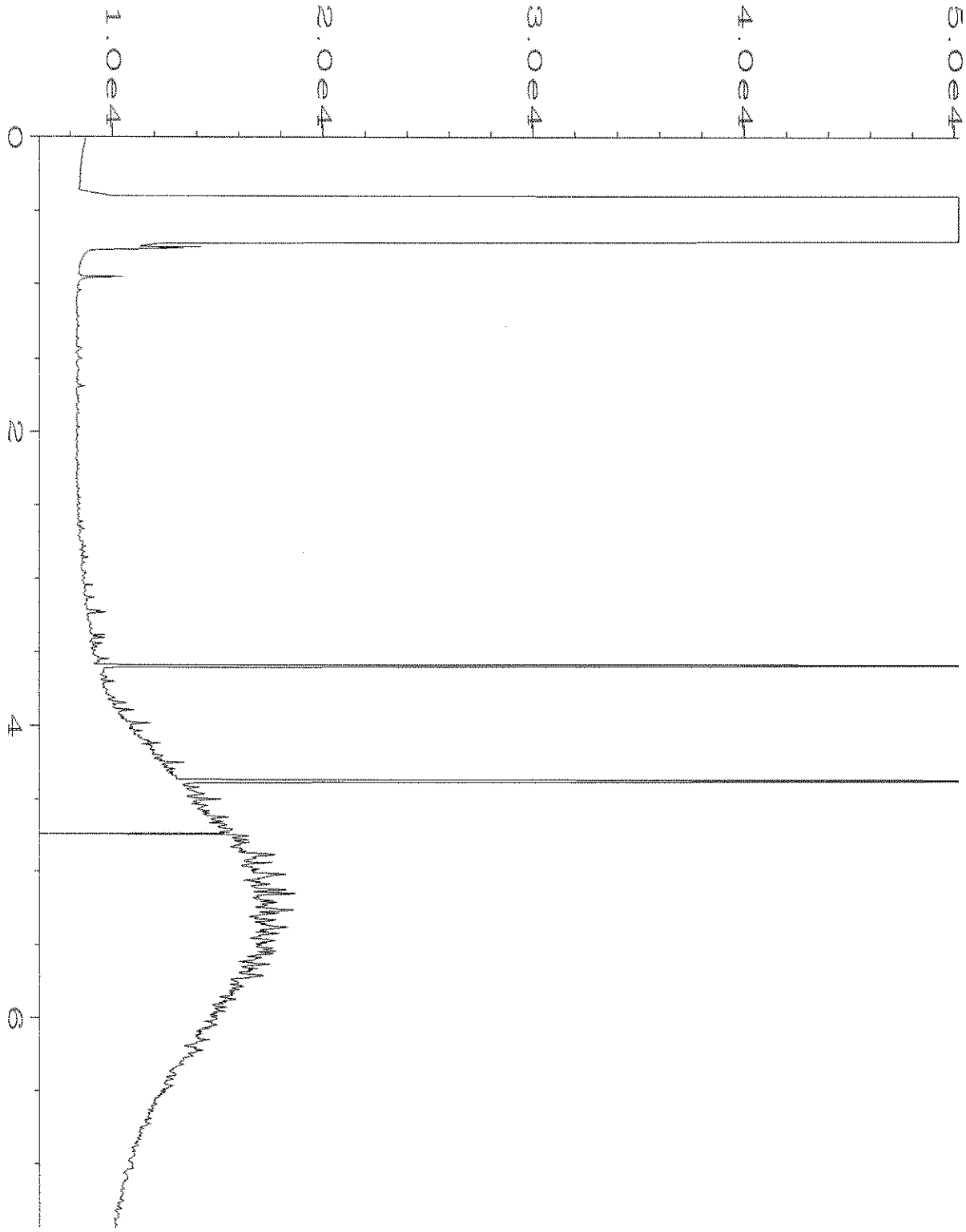
Data File Name : C:\HPCHEM\1\DATA\03-03-20\003F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 Dx 58-146H
Run Time Bar Code:
Acquired on : 03 Mar 20 05:54 AM
Report Created on: 07 Jan 21 11:13 AM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



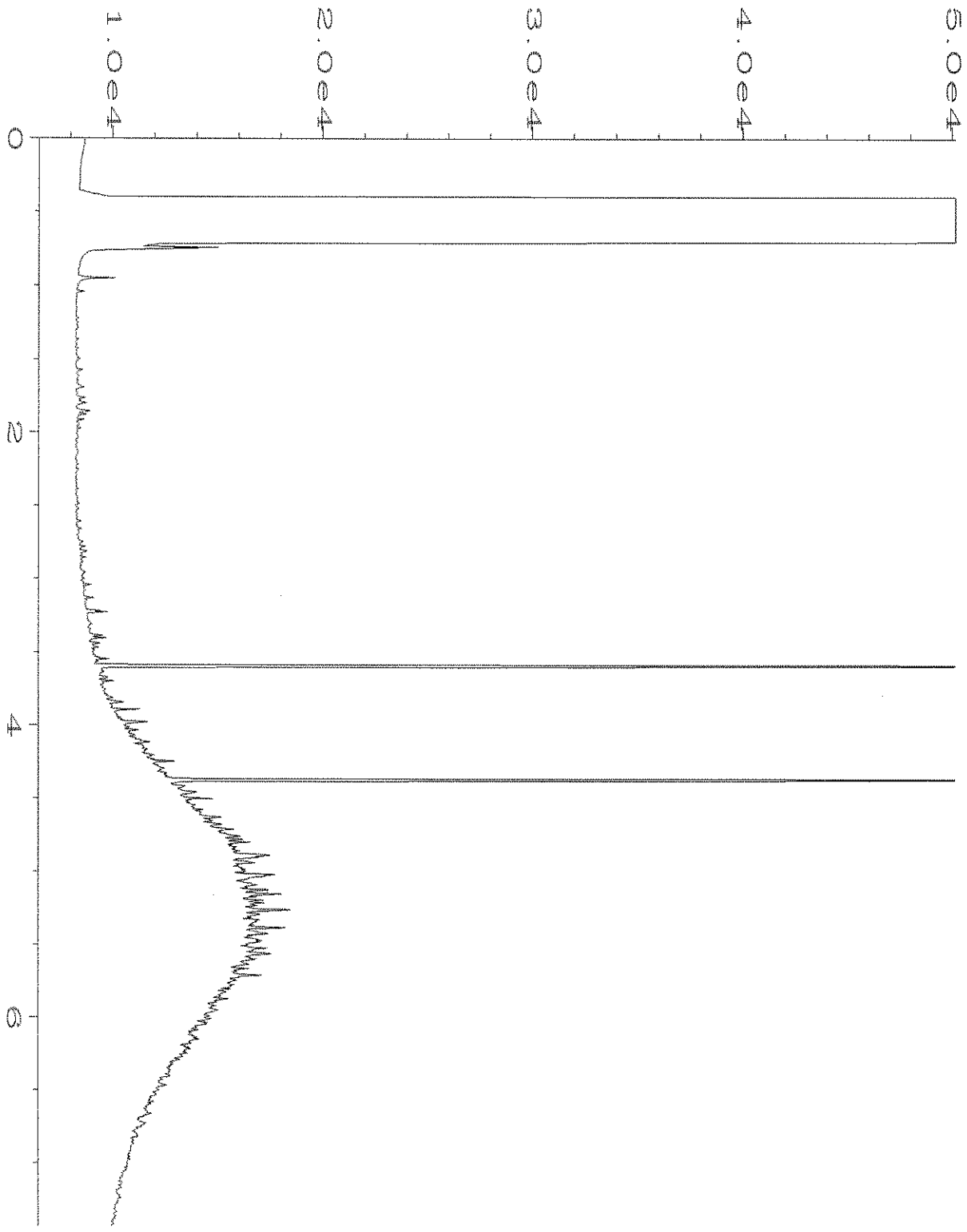
Data File Name : C:\HPCHEM\1\DATA\03-03-20\002F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 MO 59-156B
Run Time Bar Code:
Acquired on : 03 Mar 20 05:25 AM
Report Created on: 07 Jan 21 11:13 AM

Page Number : 1
Vial Number : 2
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

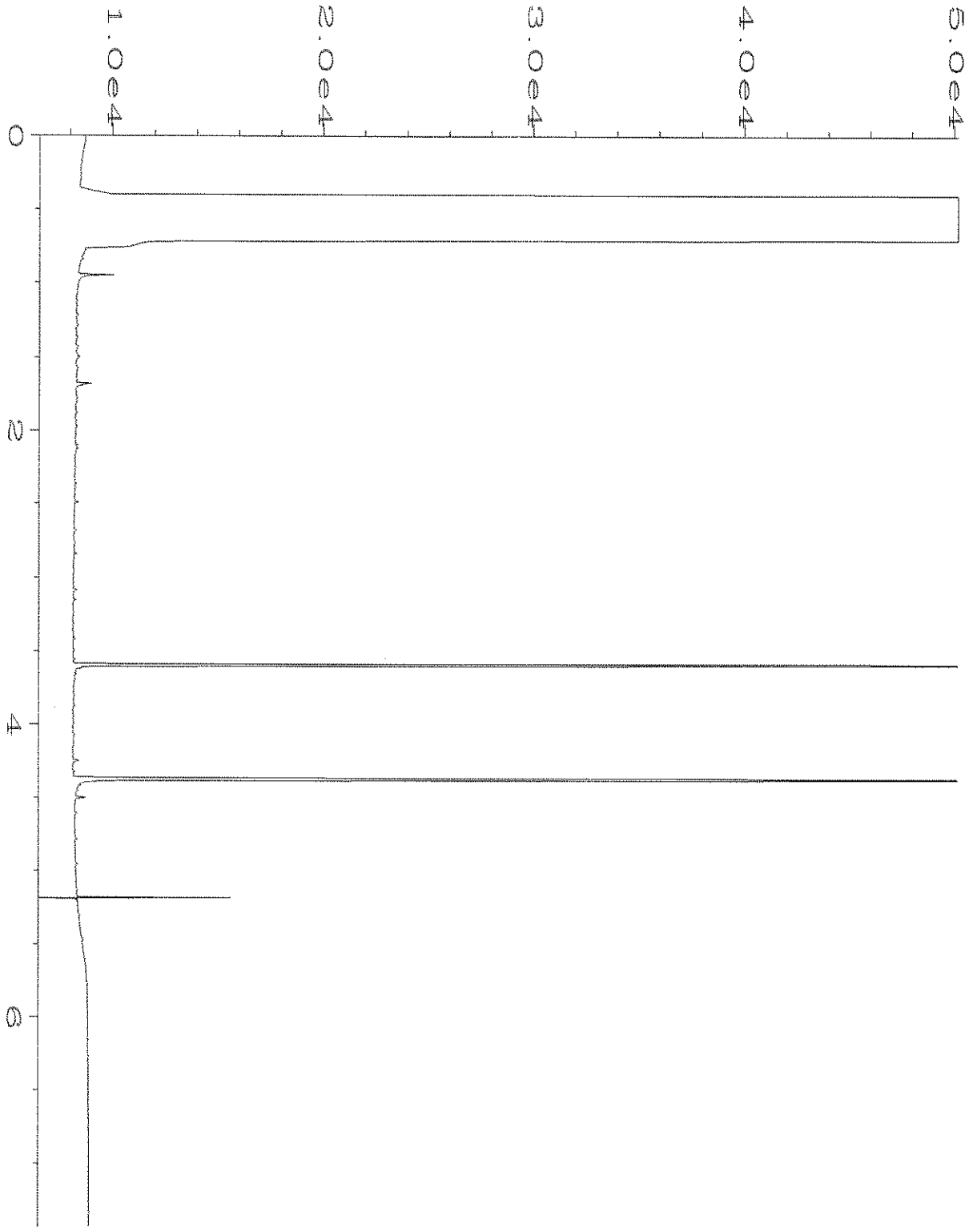


Data File Name : C:\HPCHEM\1\DATA\03-04-20\026F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003038-01
Run Time Bar Code:
Acquired on : 04 Mar 20 04:55 PM
Report Created on: 07 Jan 21 11:14 AM

Page Number : 1
Vial Number : 26
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

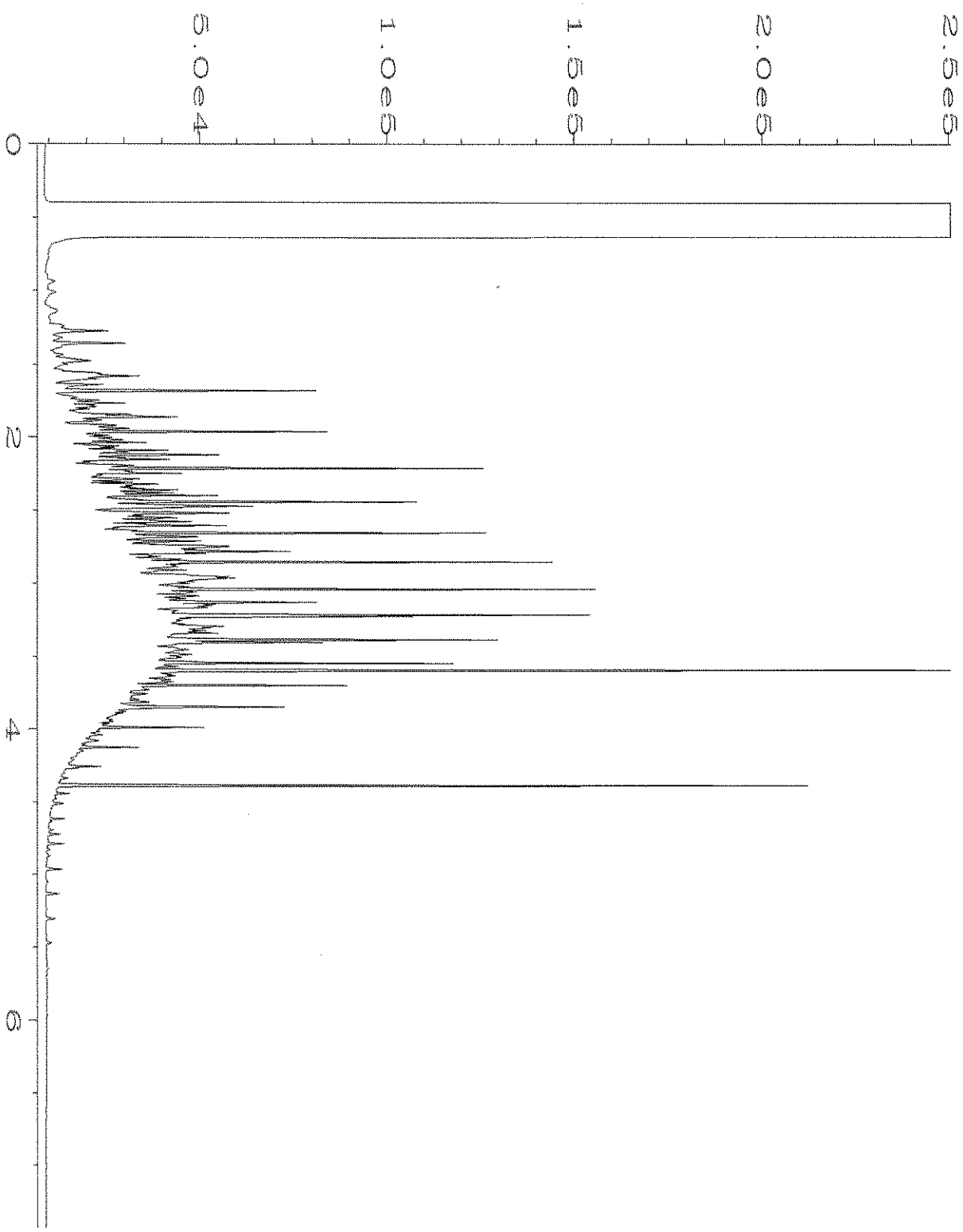


Data File Name	: C:\HPCHEM\1\DATA\03-04-20\029F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 29
Sample Name	: 003038-04	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 04 Mar 20 05:29 PM	Instrument Method	: DX.MTH
Report Created on	: 07 Jan 21 11:14 AM	Analysis Method	: DEFAULT.MTH



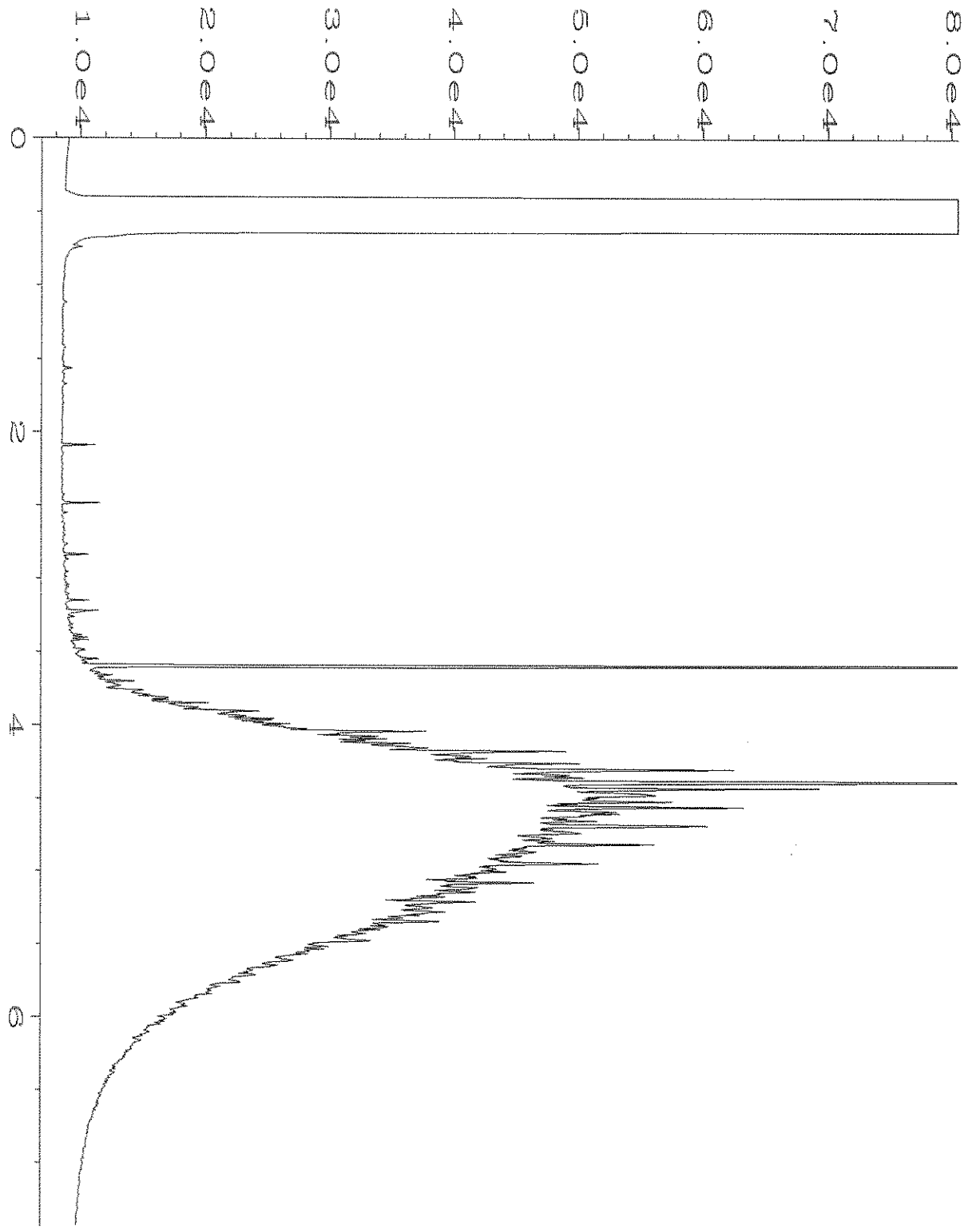
Data File Name : C:\HPCHEM\1\DATA\03-04-20\022F0501.D
Operator : TL
Instrument : GC1
Sample Name : 00-535 mb
Run Time Bar Code:
Acquired on : 04 Mar 20 03:36 PM
Report Created on: 07 Jan 21 11:14 AM

Page Number : 1
Vial Number : 22
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



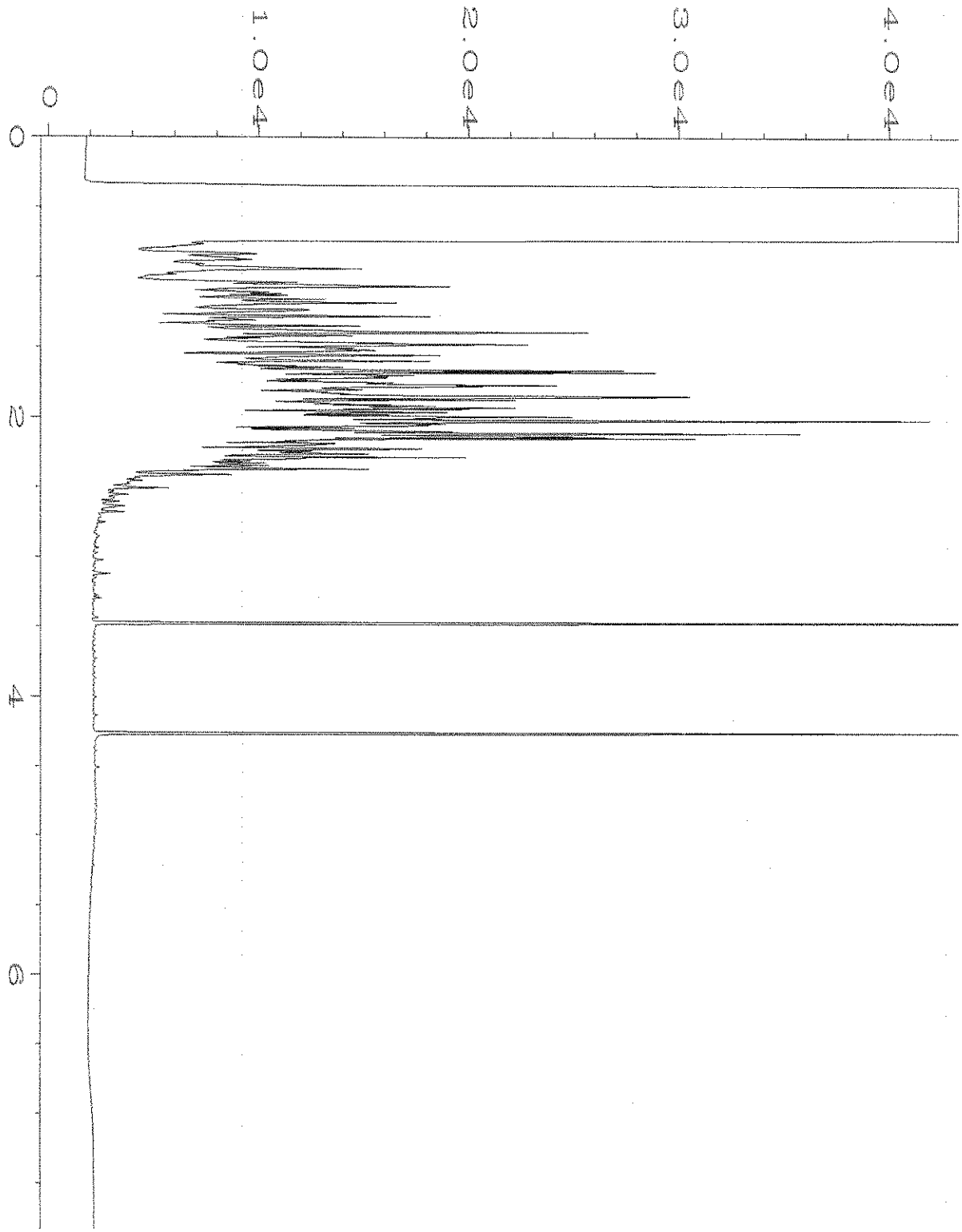
Data File Name : C:\HPCHEM\1\DATA\03-04-20\003F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 Dx 58-146H
Run Time Bar Code:
Acquired on : 04 Mar 20 05:46 AM
Report Created on: 07 Jan 21 11:14 AM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

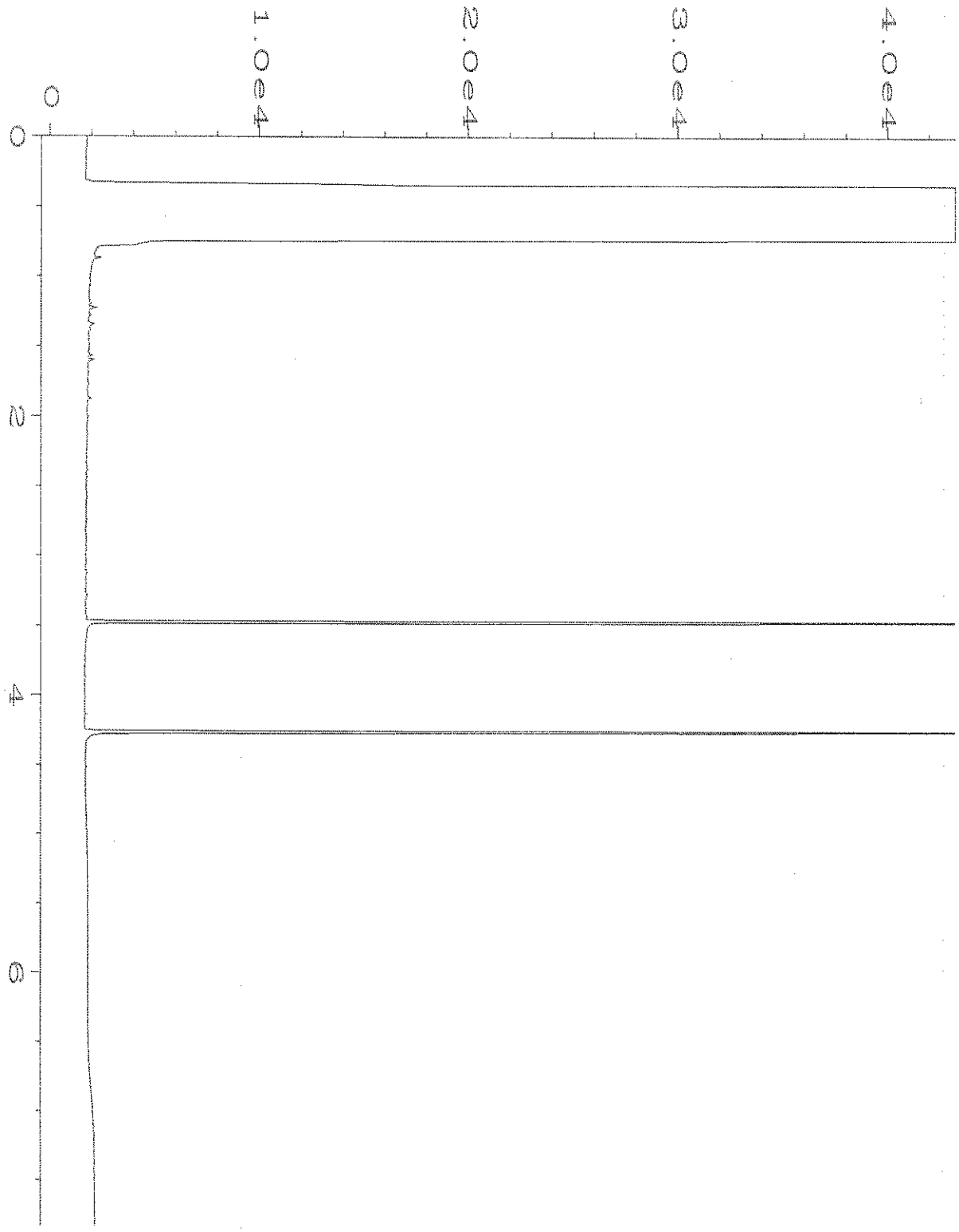


Data File Name : C:\HPCHEM\1\DATA\03-04-20\002F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 MO 59-156B
Run Time Bar Code:
Acquired on : 04 Mar 20 05:33 AM
Report Created on: 07 Jan 21 11:14 AM

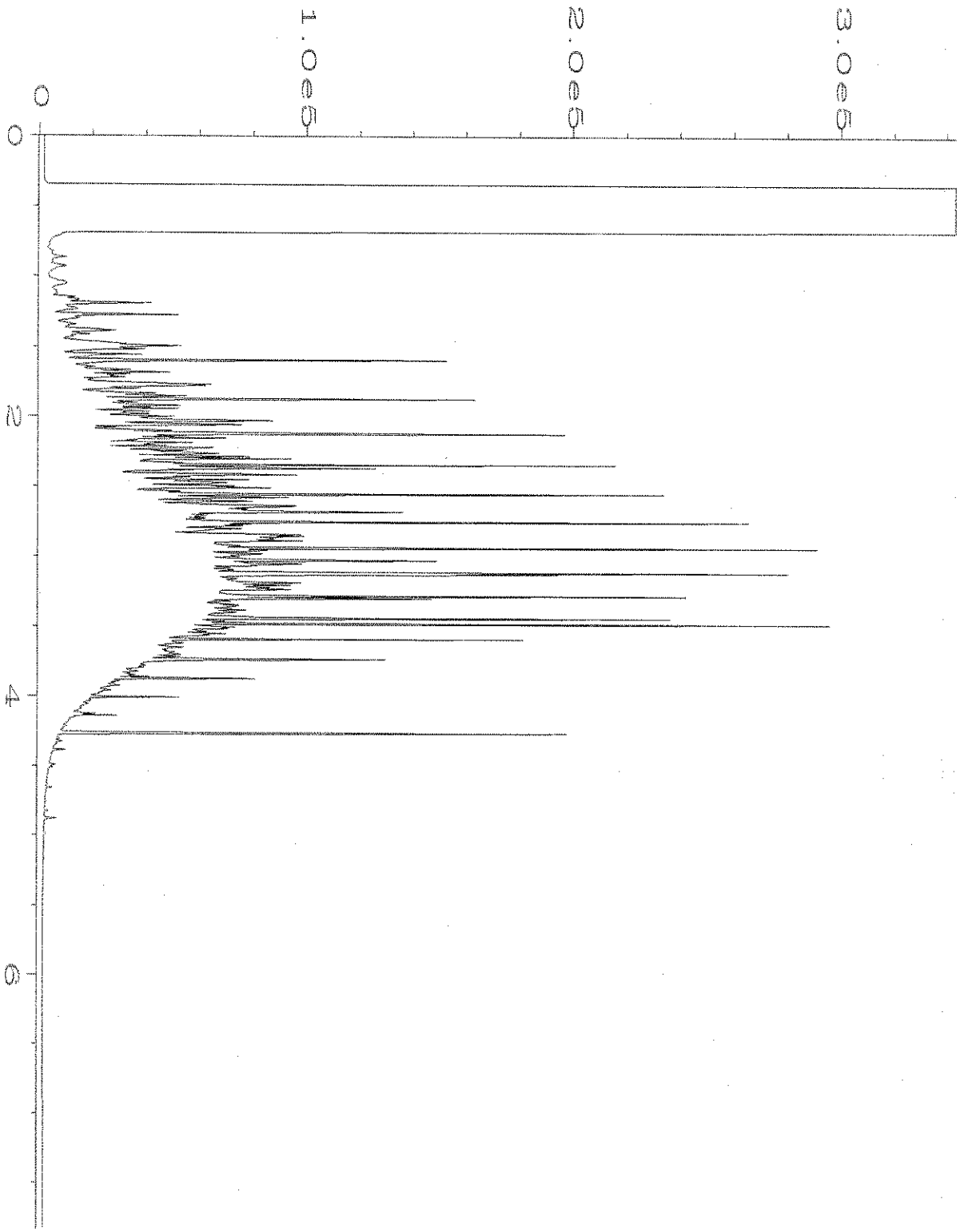
Page Number : 1
Vial Number : 2
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



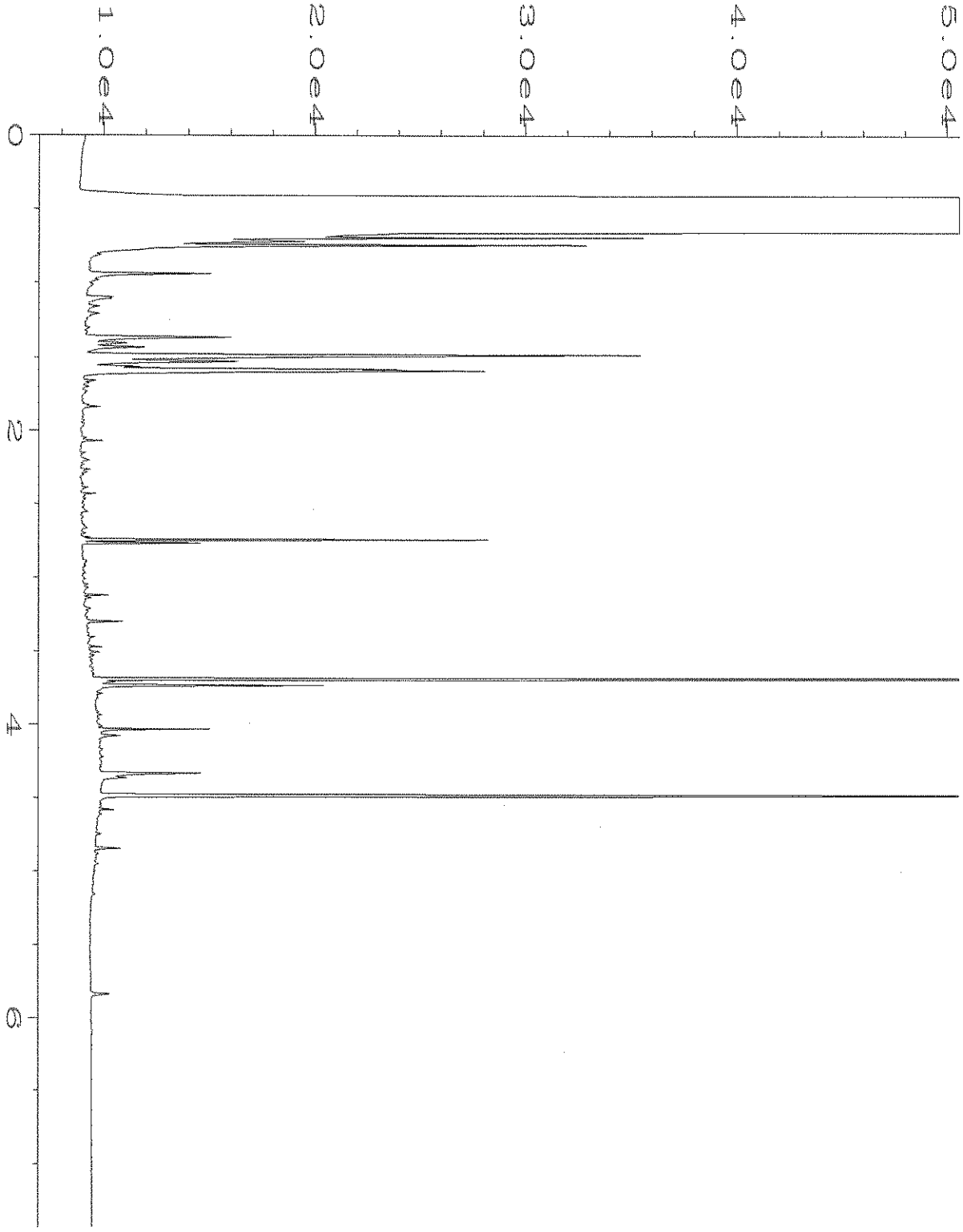
Data File Name	: C:\HPCHEM\4\DATA\09-03-20\030F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 30
Sample Name	: 009053-01	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 03 Sep 20 03:21 PM	Instrument Method	: DX.MTH
Report Created on	: 07 Jan 21 10:11 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\09-03-20\026F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 26
Sample Name	: 00-1986 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 03 Sep 20 02:30 PM	Instrument Method	: DX.MTH
Report Created on	: 07 Jan 21 10:11 AM	Analysis Method	: DEFAULT.MTH

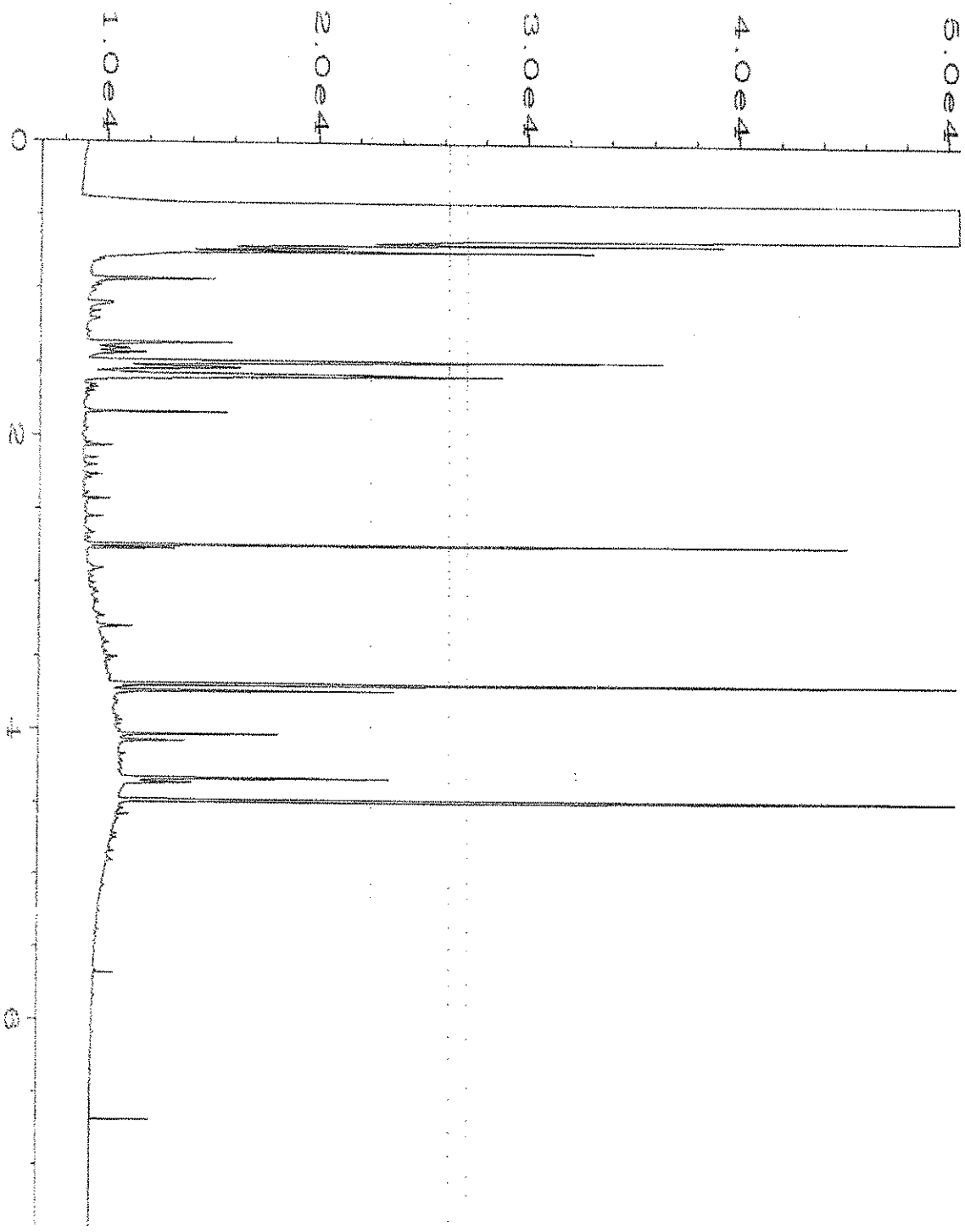


Data File Name	: C:\HPCHEM\4\DATA\09-03-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 03 Sep 20 02:17 PM	Instrument Method	: DX.MTH
Report Created on	: 07 Jan 21 10:11 AM	Analysis Method	: DEFAULT.MTH



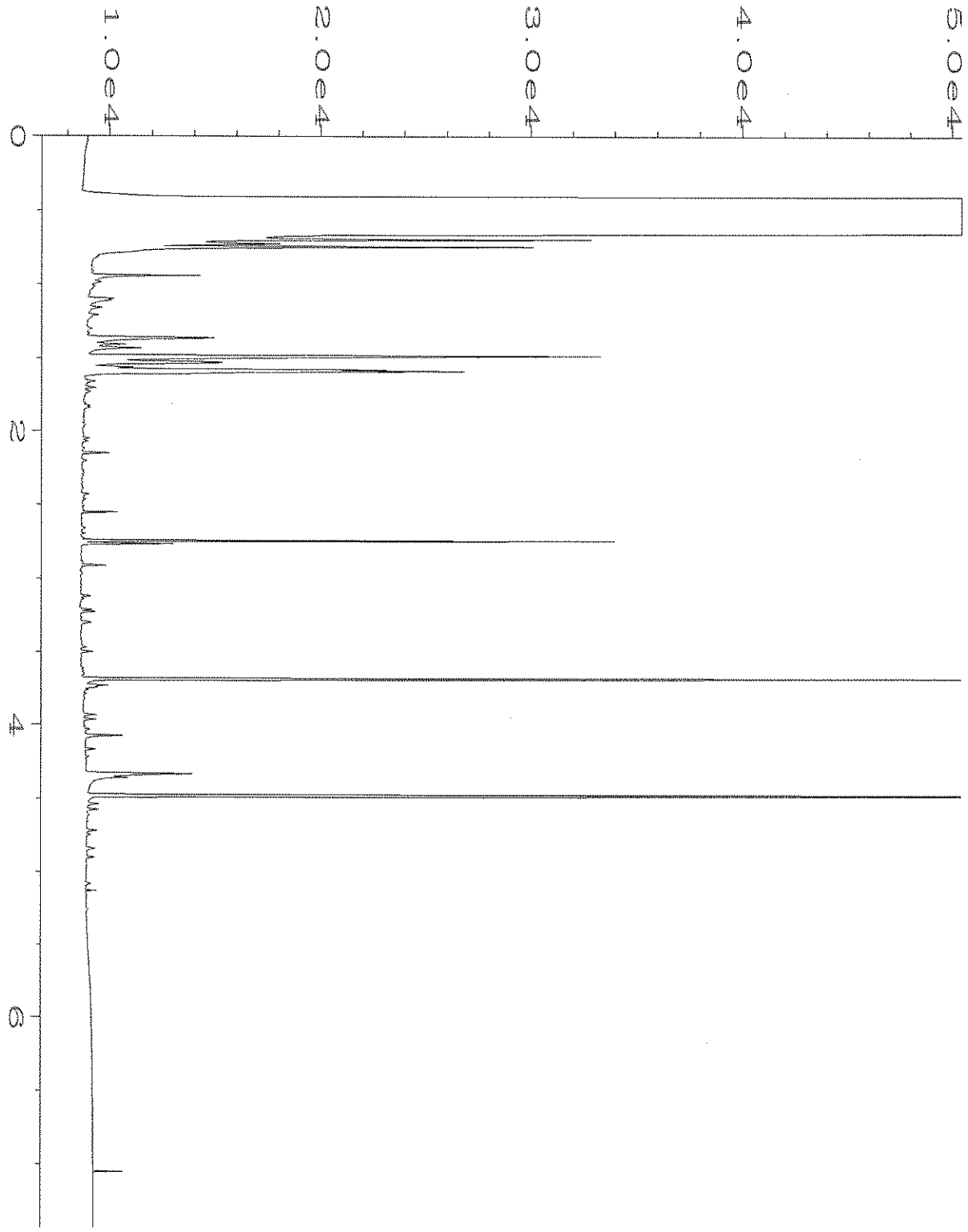
Data File Name : C:\HPCHEM\1\DATA\11-04-20\008F0301.D
Operator : TL
Instrument : GC1
Sample Name : 011044-01
Run Time Bar Code:
Acquired on : 04 Nov 20 10:26 AM
Report Created on: 12 Jan 21 12:58 PM

Page Number : 1
Vial Number : 8
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



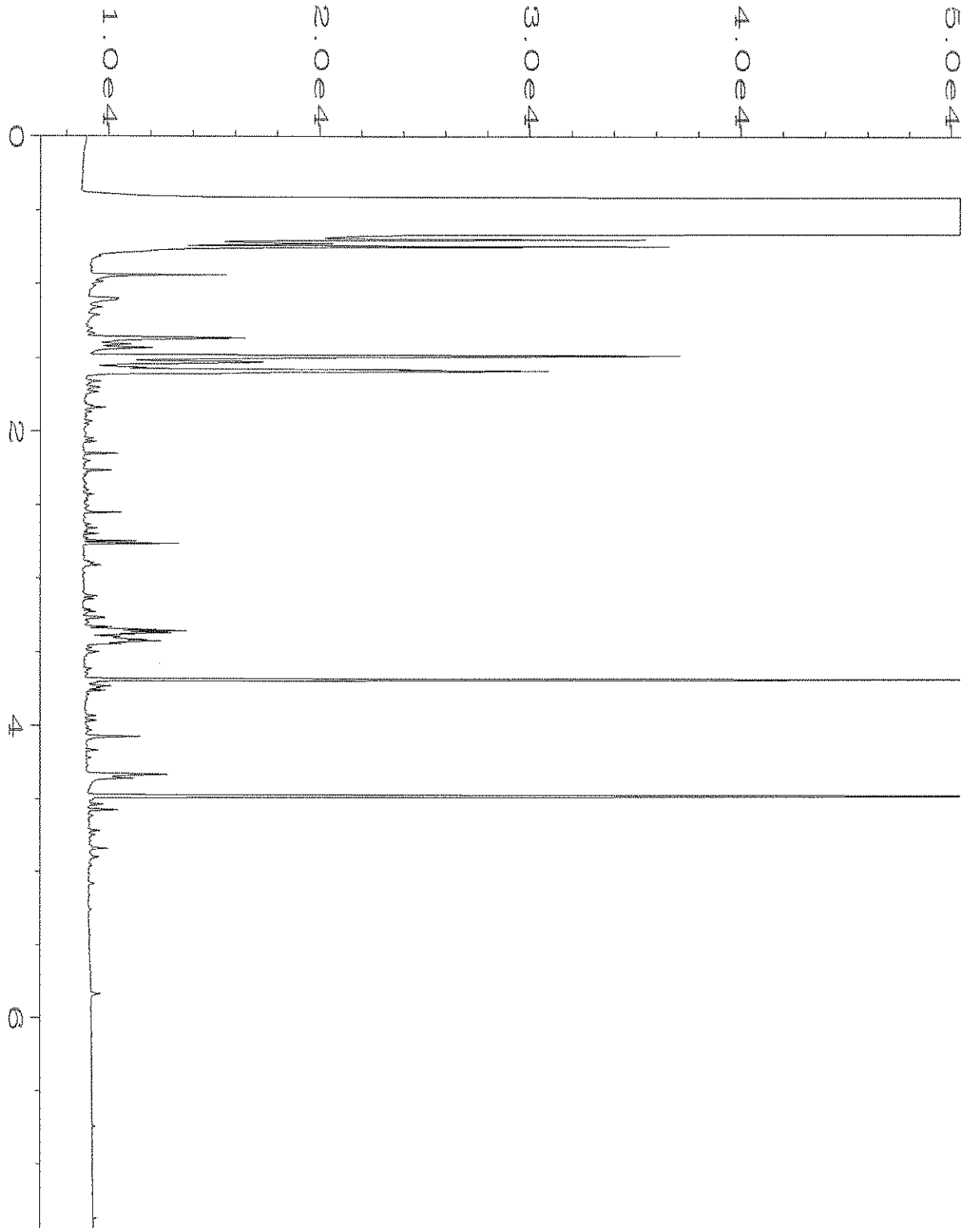
Data File Name : C:\HPCHEM\1\DATA\11-04-20\009F0301.D
Operator : TL
Instrument : GC1
Sample Name : 011044-02
Run Time Bar Code:
Acquired on : 04 Nov 20 10:38 AM
Report Created on: 05 Nov 20 10:15 AM

Page Number : 1
Vial Number : 9
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



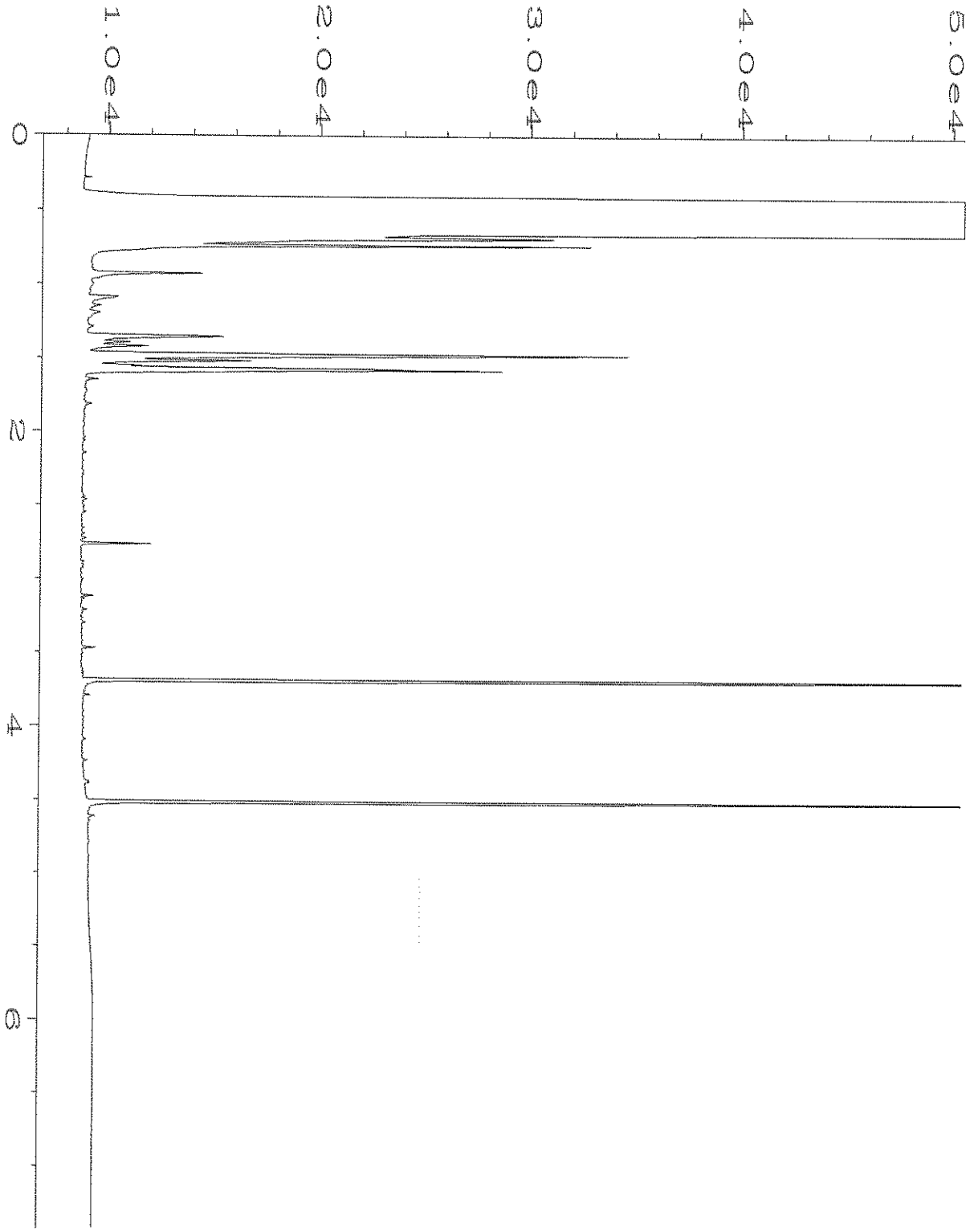
Data File Name : C:\HPCHEM\1\DATA\11-04-20\010F0301.D
Operator : TL
Instrument : GC1
Sample Name : 011044-03
Run Time Bar Code:
Acquired on : 04 Nov 20 10:50 AM
Report Created on: 12 Jan 21 12:58 PM

Page Number : 1
Vial Number : 10
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



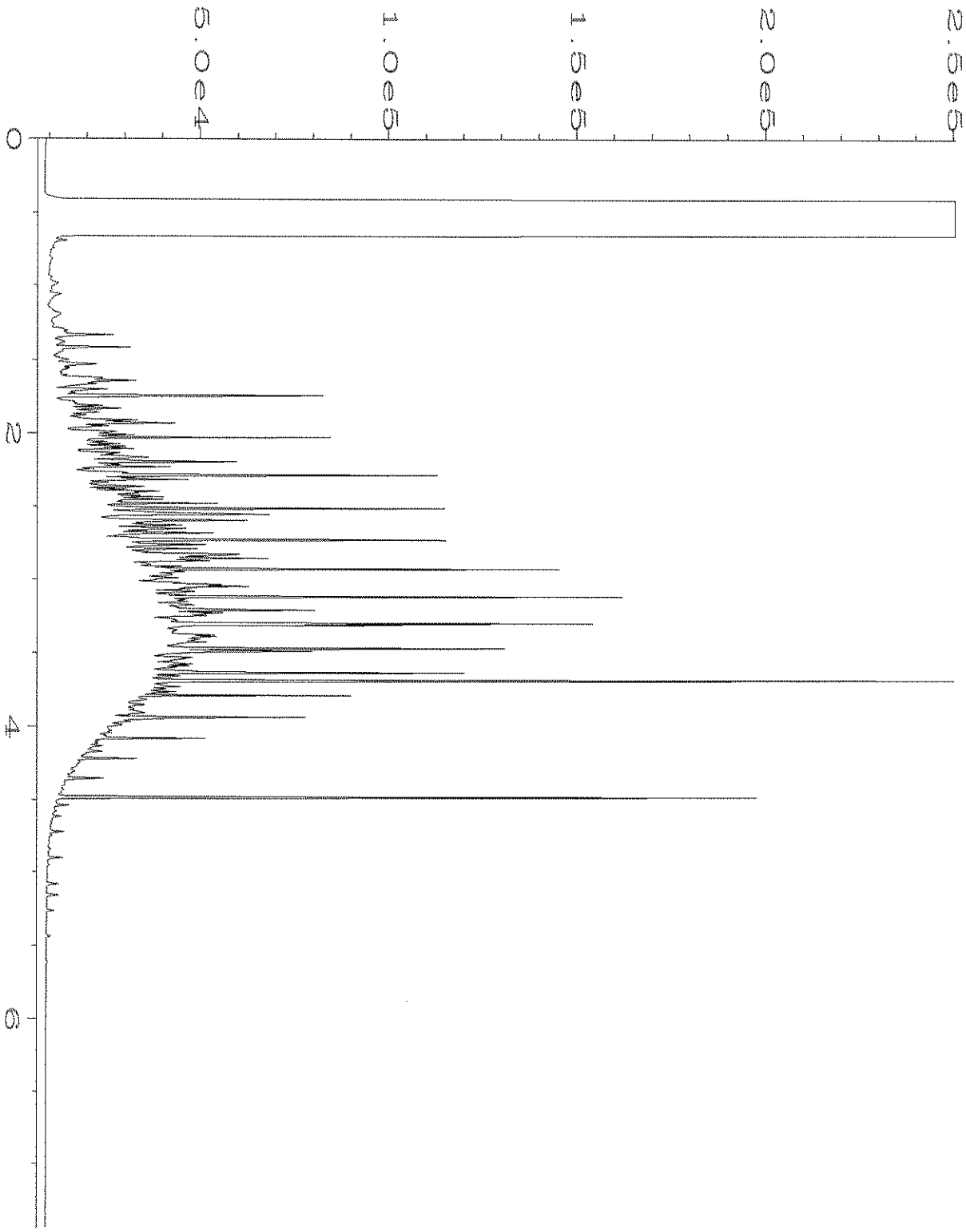
Data File Name : C:\HPCHEM\1\DATA\11-04-20\011F0301.D
Operator : TL
Instrument : GC1
Sample Name : 011044-04
Run Time Bar Code:
Acquired on : 04 Nov 20 11:01 AM
Report Created on: 12 Jan 21 12:59 PM

Page Number : 1
Vial Number : 11
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

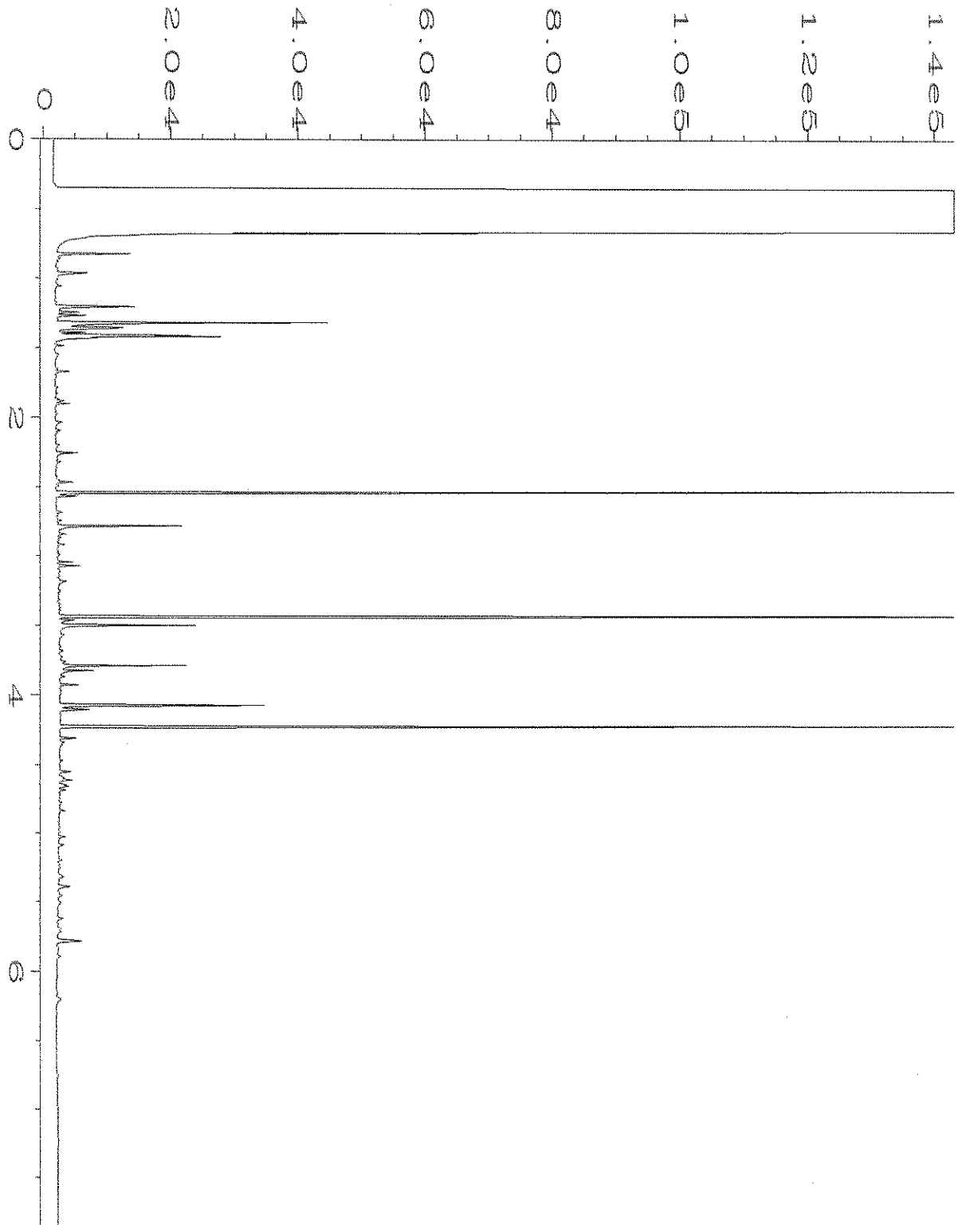


Data File Name : C:\HPCHEM\1\DATA\11-04-20\006F0301.D
Operator : TL
Instrument : GC1
Sample Name : 00-2465 mb2
Run Time Bar Code:
Acquired on : 04 Nov 20 10:05 AM
Report Created on: 12 Jan 21 12:59 PM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

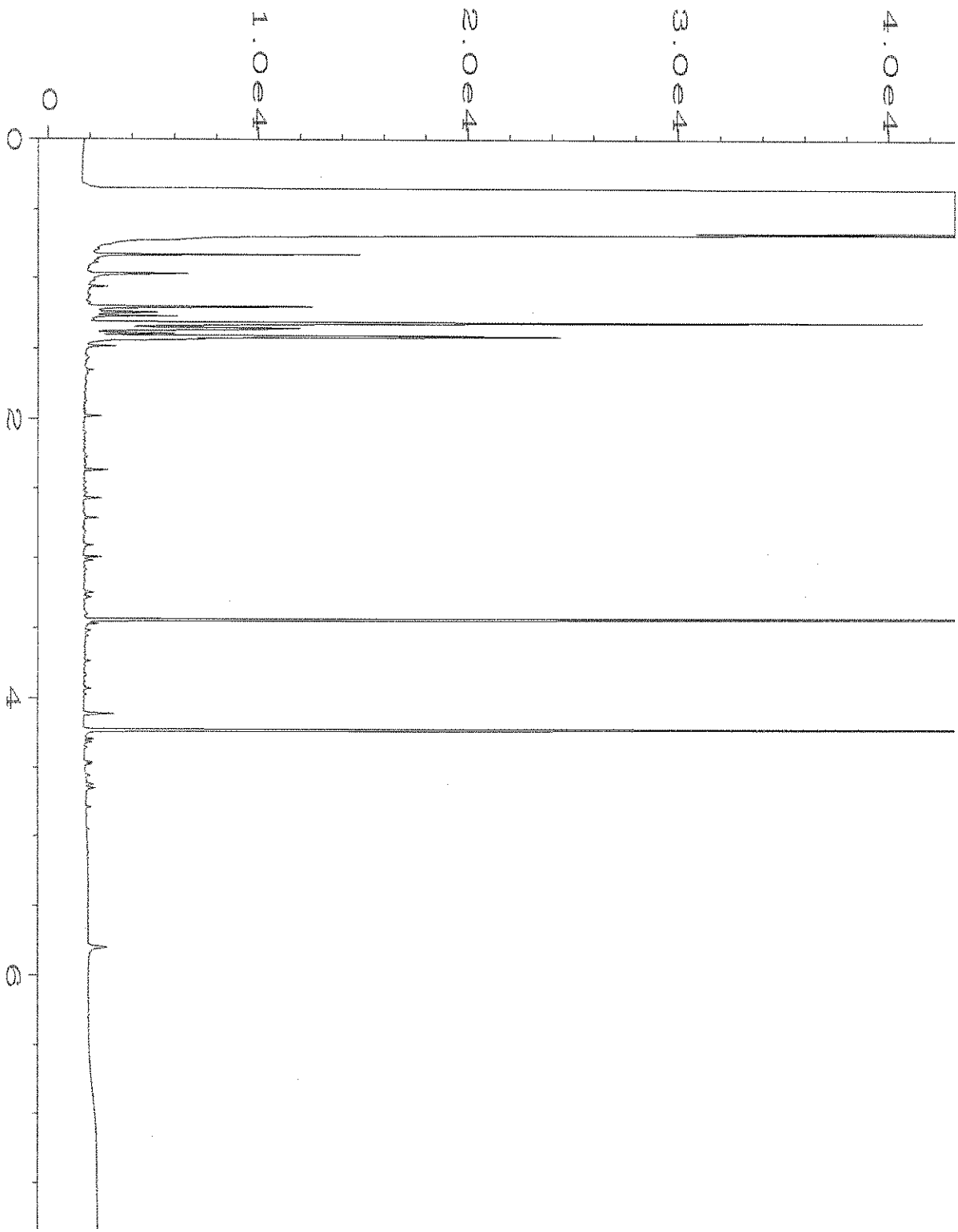


Data File Name	: C:\HPCHEM\1\DATA\11-04-20\003F0201.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 3
Sample Name	: 500 Dx 61-146D	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 2
Acquired on	: 04 Nov 20 05:46 AM	Instrument Method	: DX.MTH
Report Created on	: 12 Jan 21 12:59 PM	Analysis Method	: DEFAULT.MTH

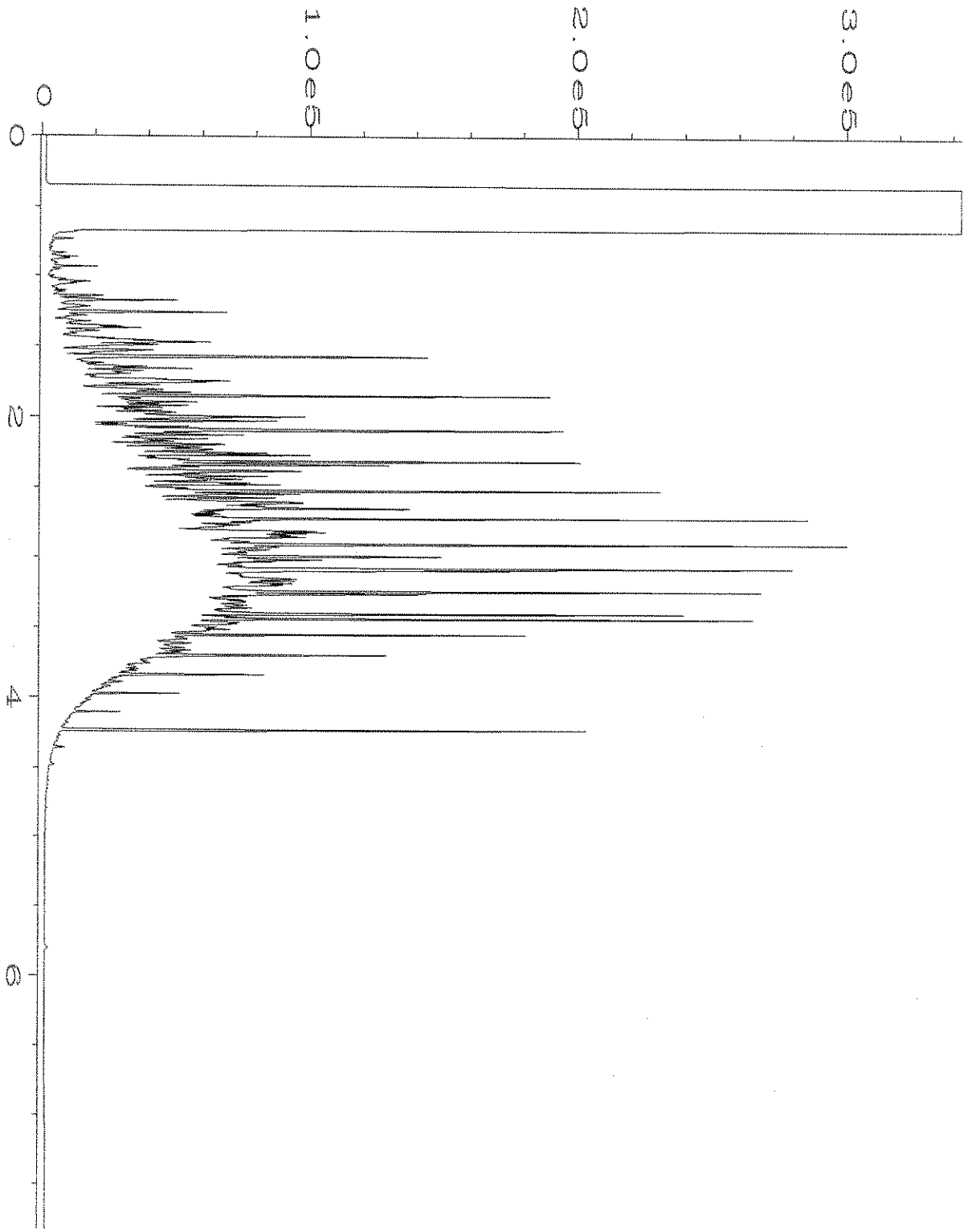


Data File Name : C:\HPCHEM\4\DATA\10-15-20\023F0601.D
Operator : TL
Instrument : GC#4
Sample Name : 010245-01
Run Time Bar Code:
Acquired on : 15 Oct 20 01:57 PM
Report Created on: 16 Oct 20 11:05 AM

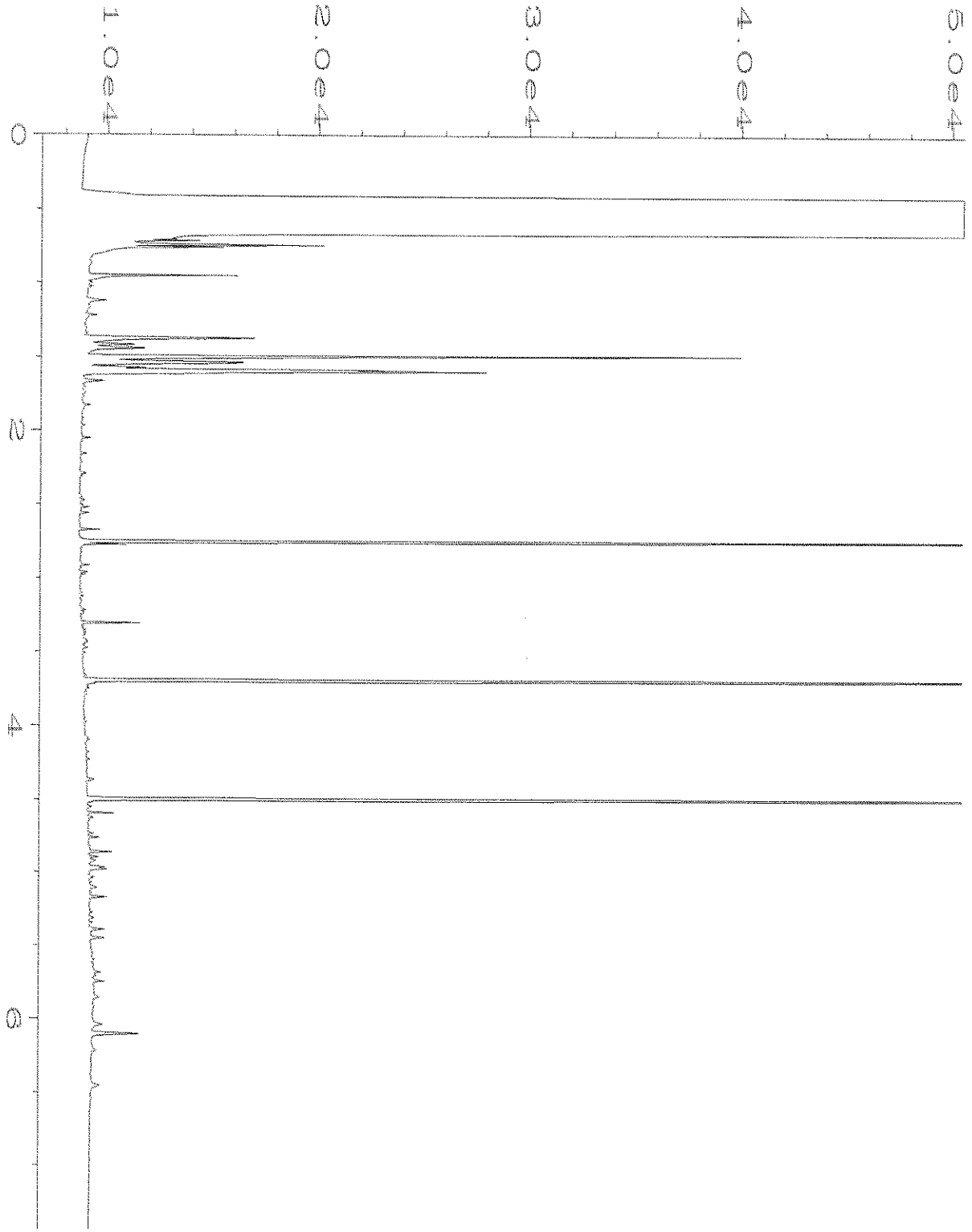
Page Number : 1
Vial Number : 23
Injection Number : 1
Sequence Line : 6
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



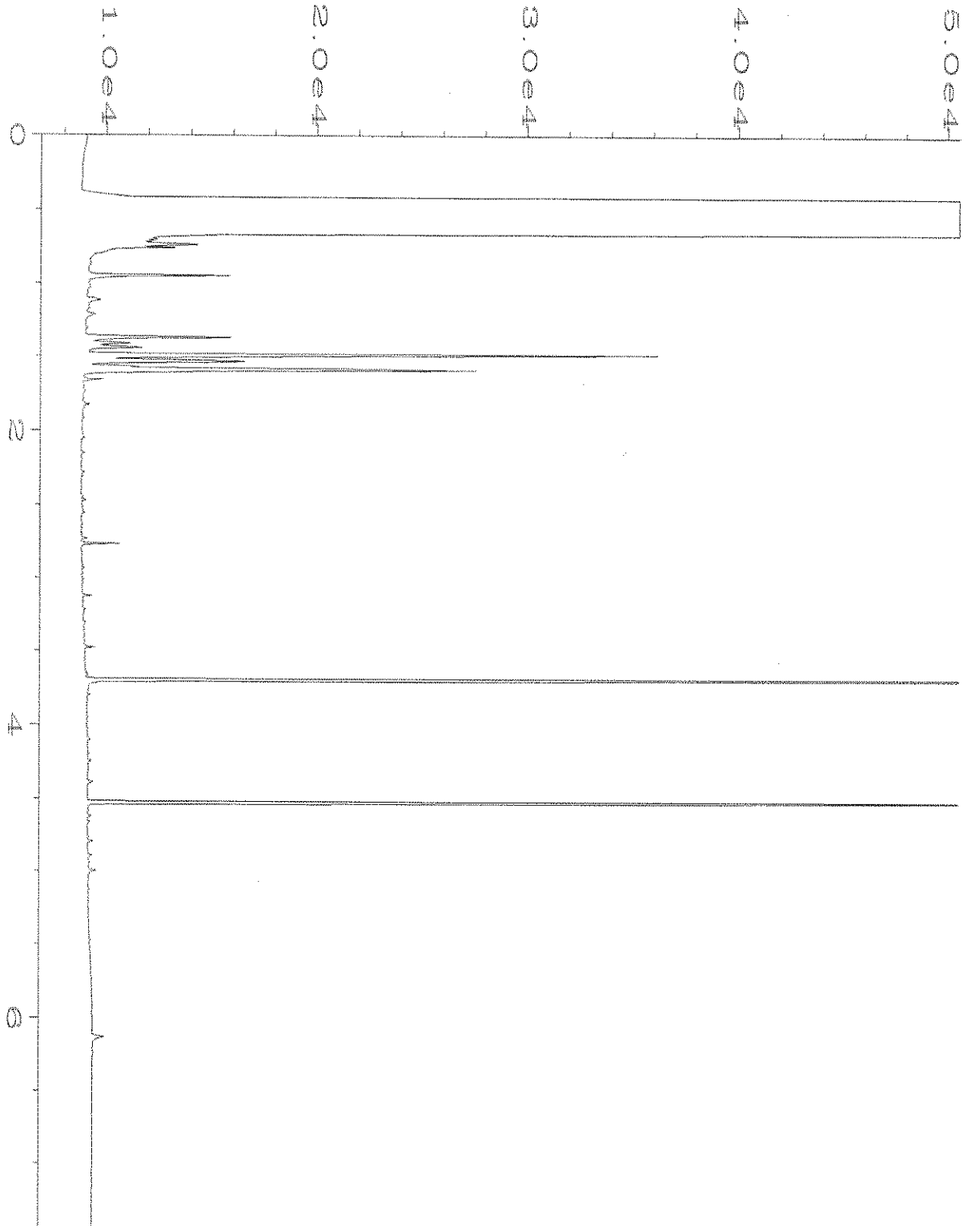
Data File Name	: C:\HPCHEM\4\DATA\10-15-20\022F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 22
Sample Name	: 00-2331 mb2	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 15 Oct 20 01:44 PM	Instrument Method	: DX.MTH
Report Created on	: 16 Oct 20 11:05 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\10-15-20\005F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 15 Oct 20 02:22 PM	Instrument Method	: DX.MTH
Report Created on:	16 Oct 20 11:05 AM	Analysis Method	: DEFAULT.MTH

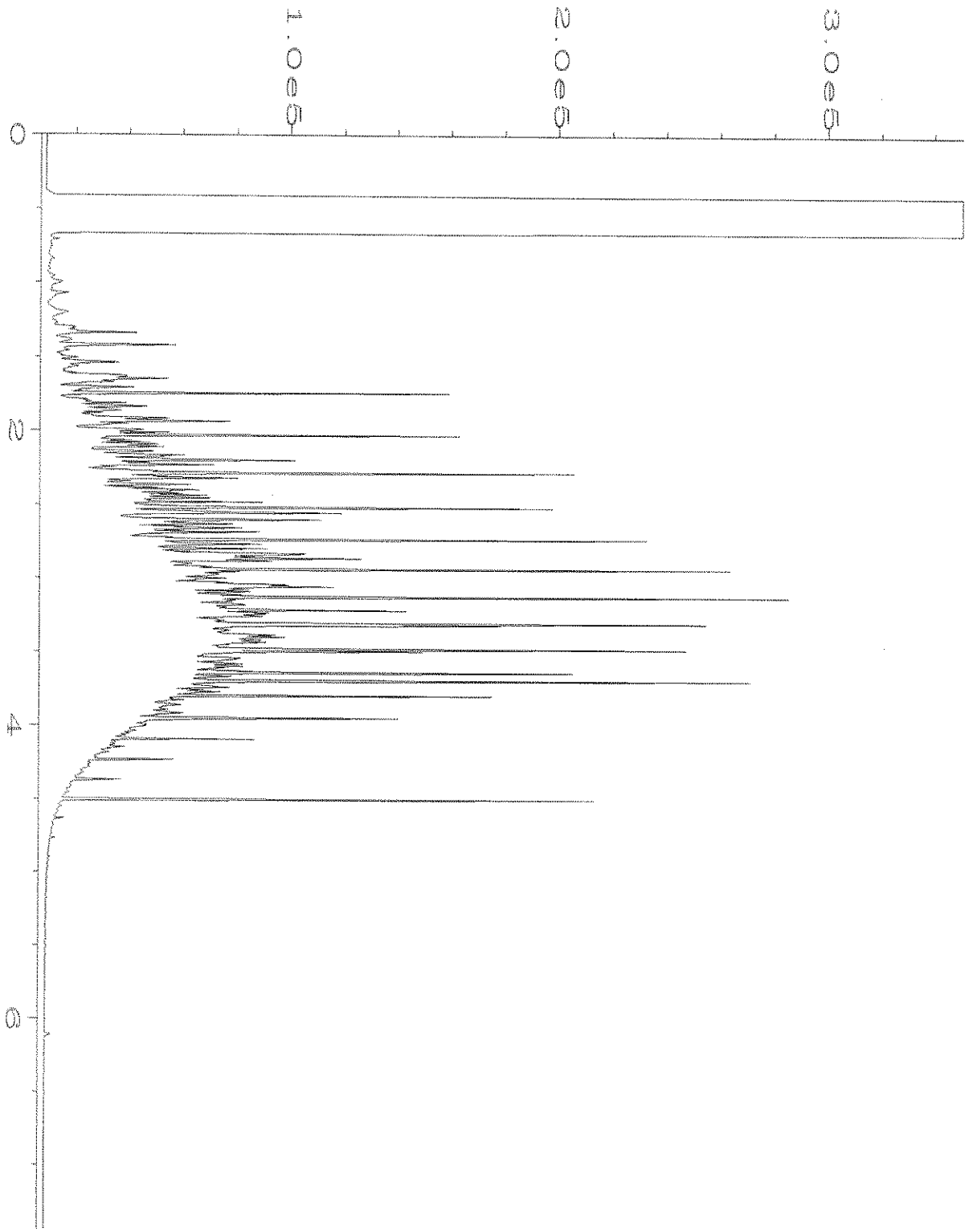


Data File Name	: C:\HPCHEM\1\DATA\10-15-20\022F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 22
Sample Name	: 010245-01 sg	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 15 Oct 20 02:43 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 03:06 PM	Analysis Method	: DEFAULT.MTH

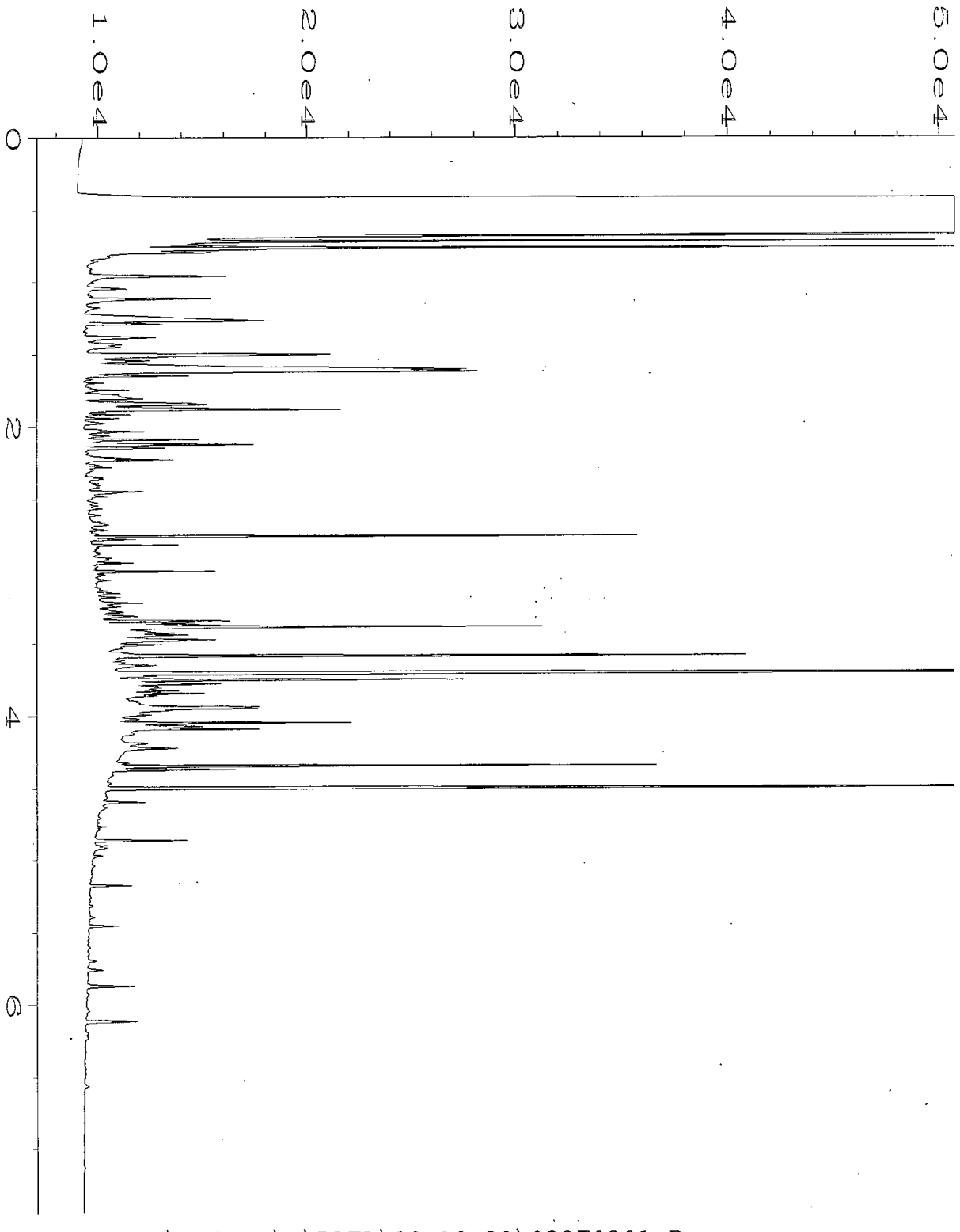


Data File Name : C:\HPCHEM\1\DATA\10-15-20\021F0501.D
Operator : TL
Instrument : GC1
Sample Name : 00-2331 mb2 sg
Run Time Bar Code:
Acquired on : 15 Oct 20 02:34 PM
Report Created on: 16 Oct 20 10:55 AM

Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



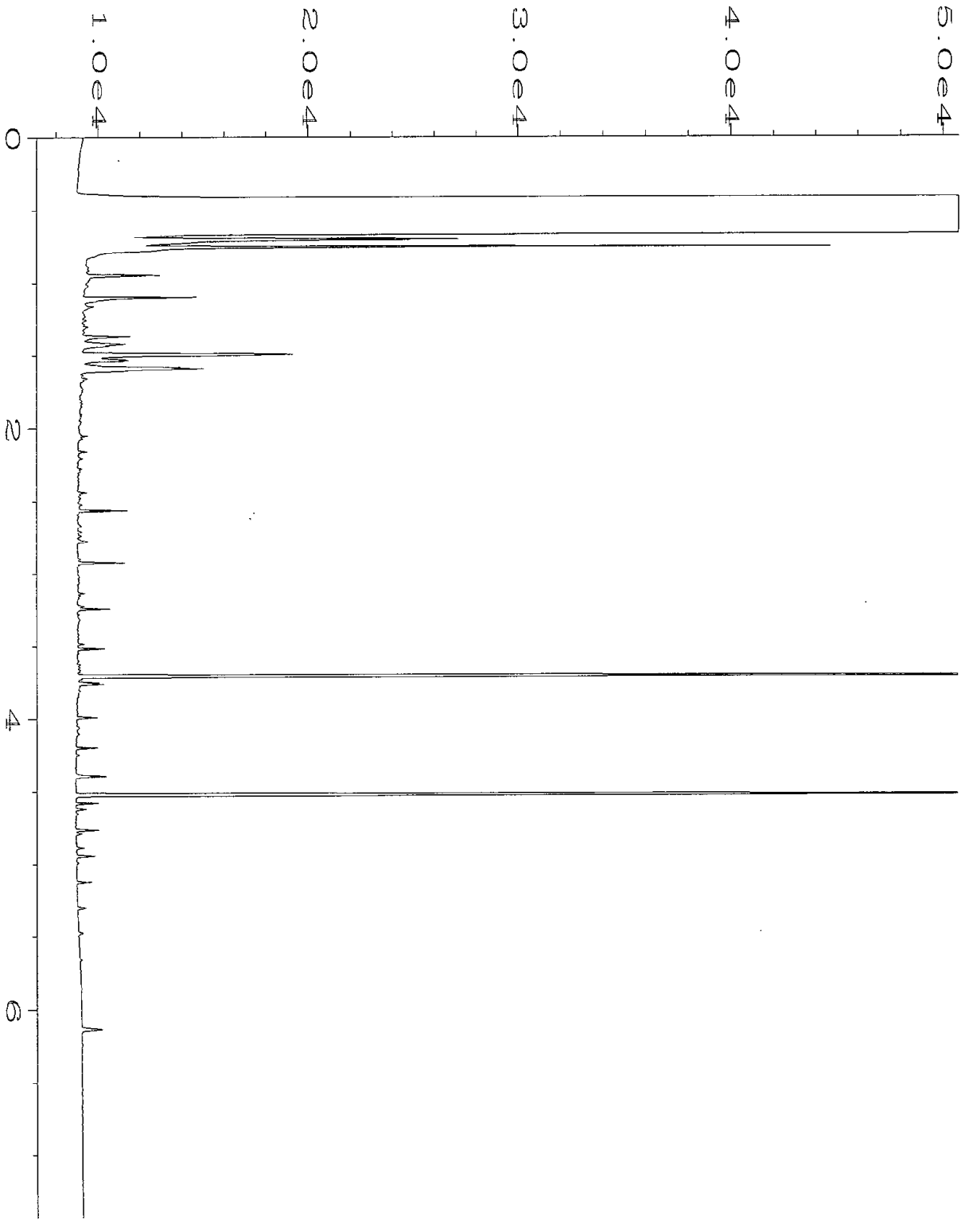
Data File Name	: C:\HPCHEM\1\DATA\10-15-20\005F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 15 Oct 20 02:11 PM	Instrument Method	: DX.MTH
Report Created on	: 16 Oct 20 10:55 AM	Analysis Method	: DEFAULT.MTH



HMW-16IR

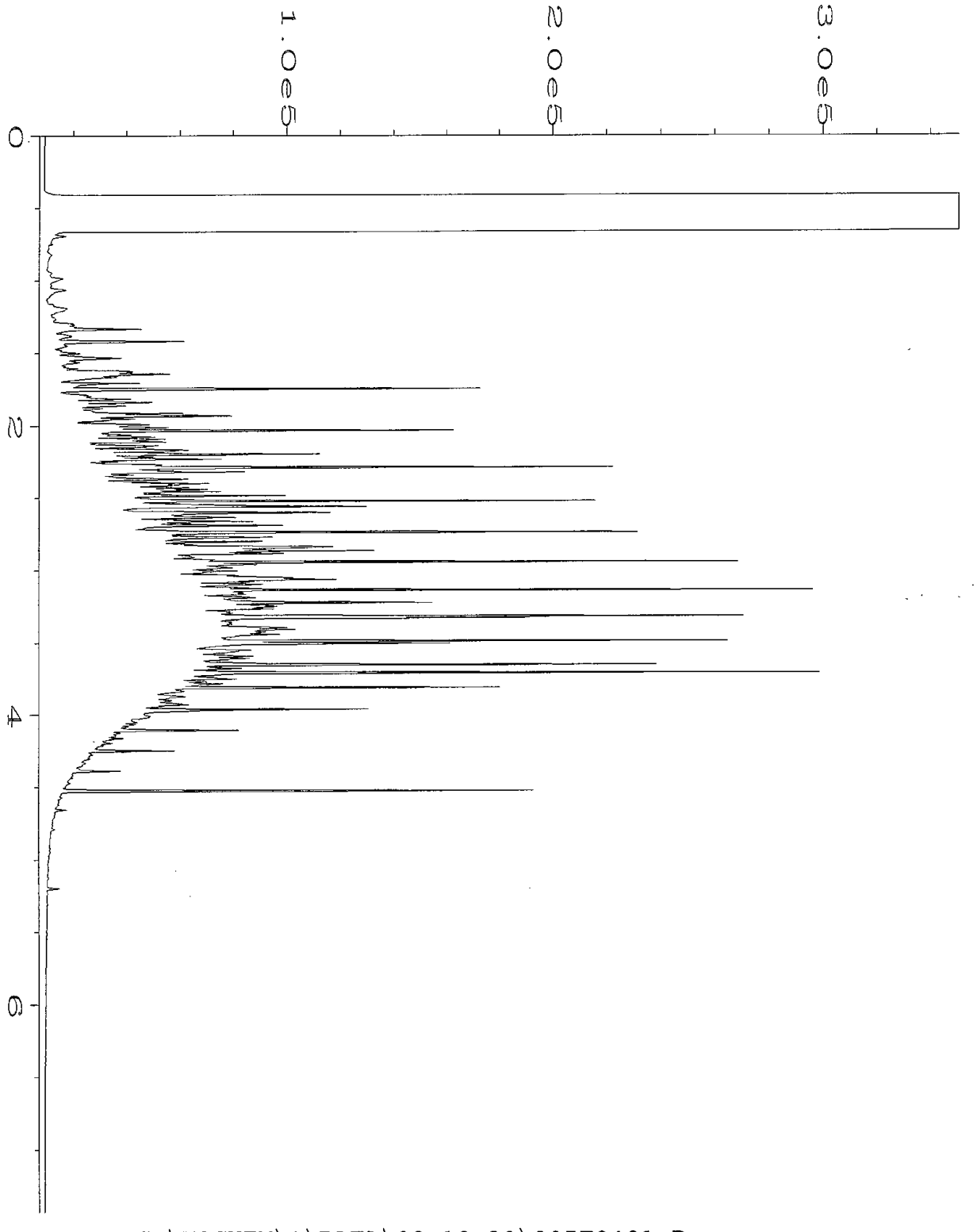
Data File Name : C:\HPCHEM\1\DATA\09-18-20\022F0301.D
Operator : TL
Instrument : GC1
Sample Name : 009314-02
Run Time Bar Code:
Acquired on : 18 Sep 20 01:31 PM
Report Created on: 15 Oct 20 10:38 AM

Page Number : 1
Vial Number : 22
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

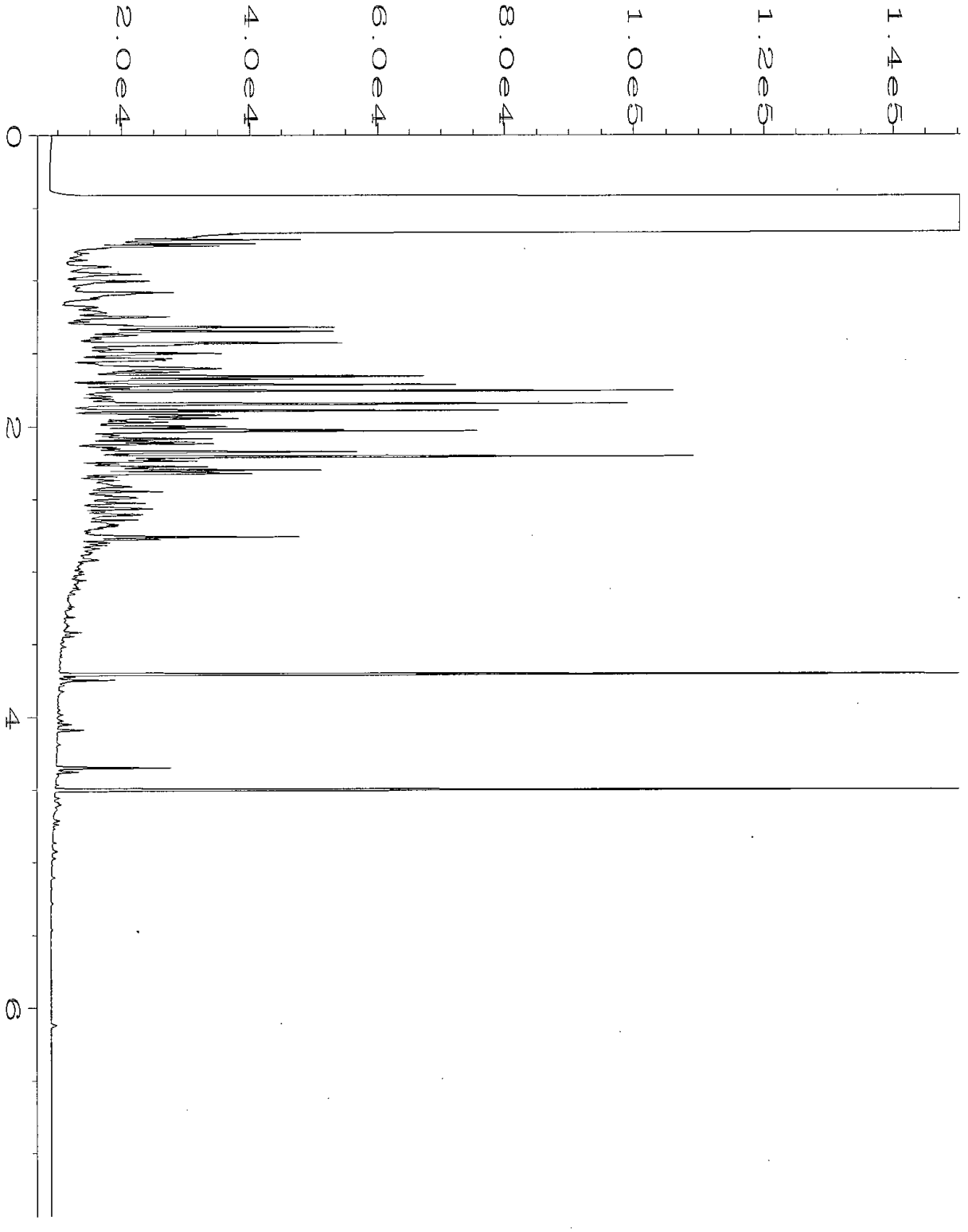


Data File Name : C:\HPCHEM\1\DATA\09-18-20\026F0501.D
Operator : TL
Instrument : GC1
Sample Name : 00-2096 mb
Run Time Bar Code:
Acquired on : 18 Sep 20 03:36 PM
Report Created on: 15 Oct 20 10:38 AM

Page Number : 1
Vial Number : 26
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



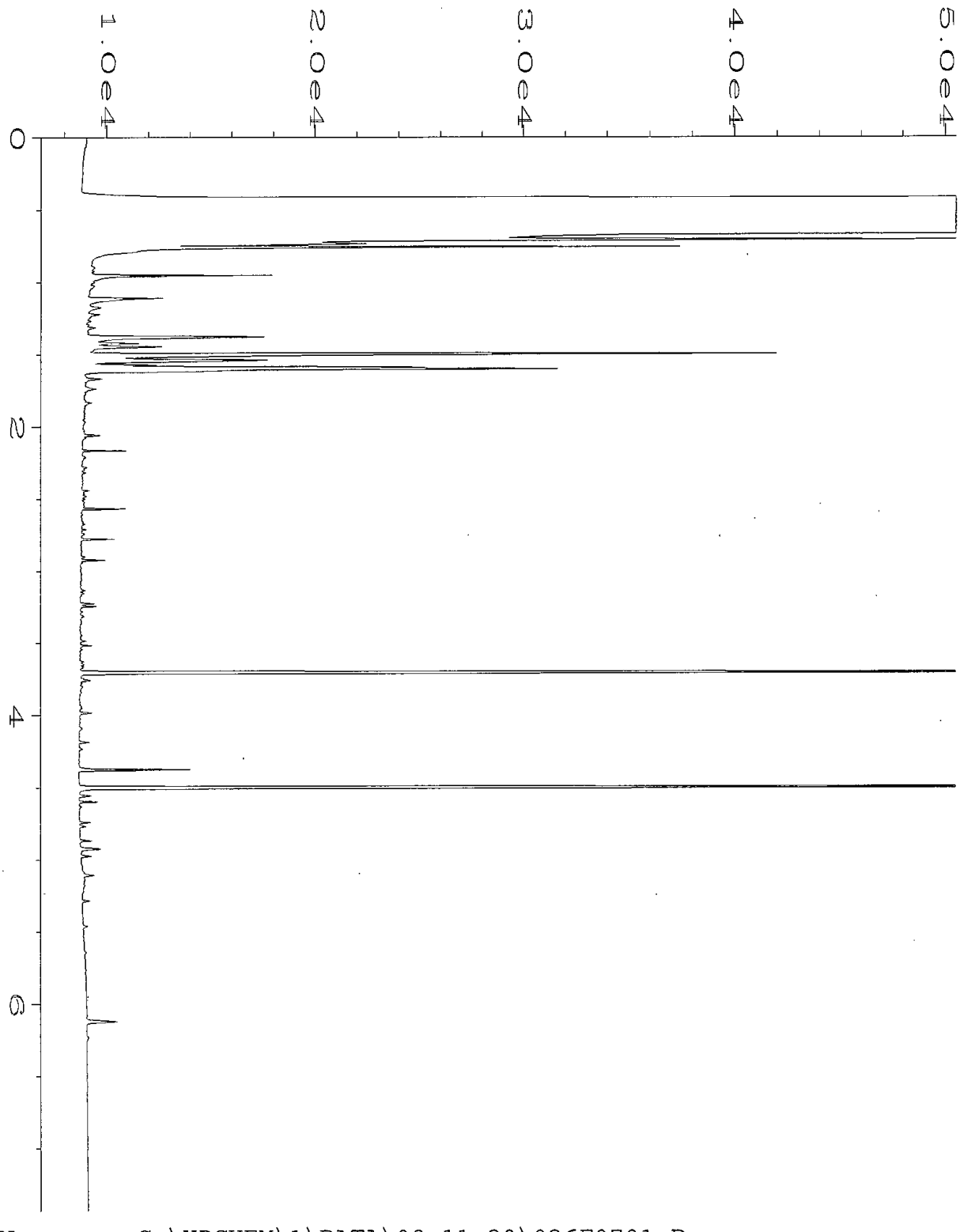
Data File Name	: C:\HPCHEM\1\DATA\09-18-20\005F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 18 Sep 20 02:43 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 10:38 AM	Analysis Method	: DEFAULT.MTH



MBB-24

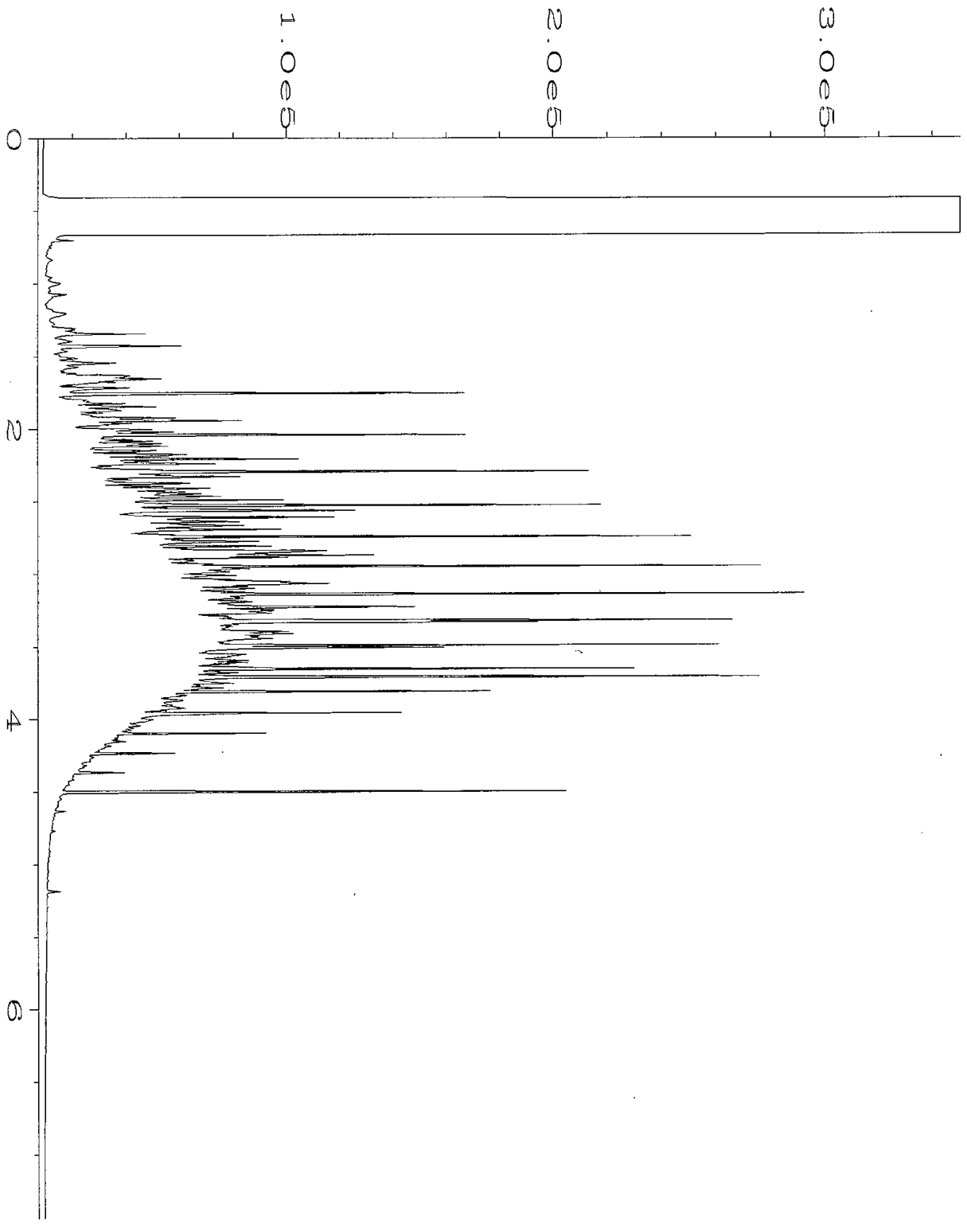
Data File Name : C:\HPCHEM\1\DATA\09-11-20\027F0701.D
Operator : TL
Instrument : GC1
Sample Name : 009184-01
Run Time Bar Code:
Acquired on : 11 Sep 20 03:10 PM
Report Created on: 15 Oct 20 10:36 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

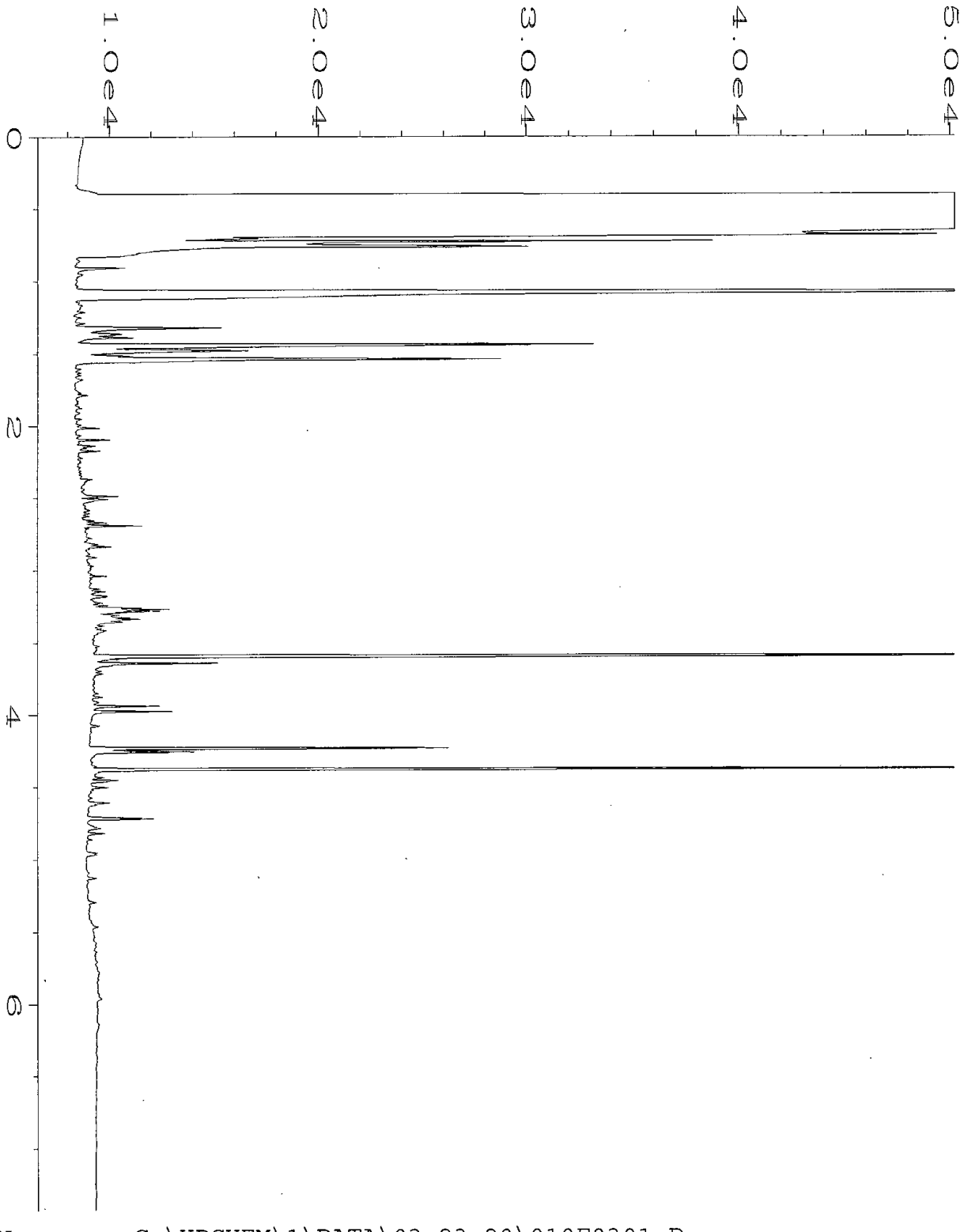


Data File Name : C:\HPCHEM\1\DATA\09-11-20\026F0701.D
Operator : TL
Instrument : GC1
Sample Name : 00-2060 mb2
Run Time Bar Code:
Acquired on : 11 Sep 20 02:58 PM
Report Created on: 15 Oct 20 10:36 AM

Page Number : 1
Vial Number : 26
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



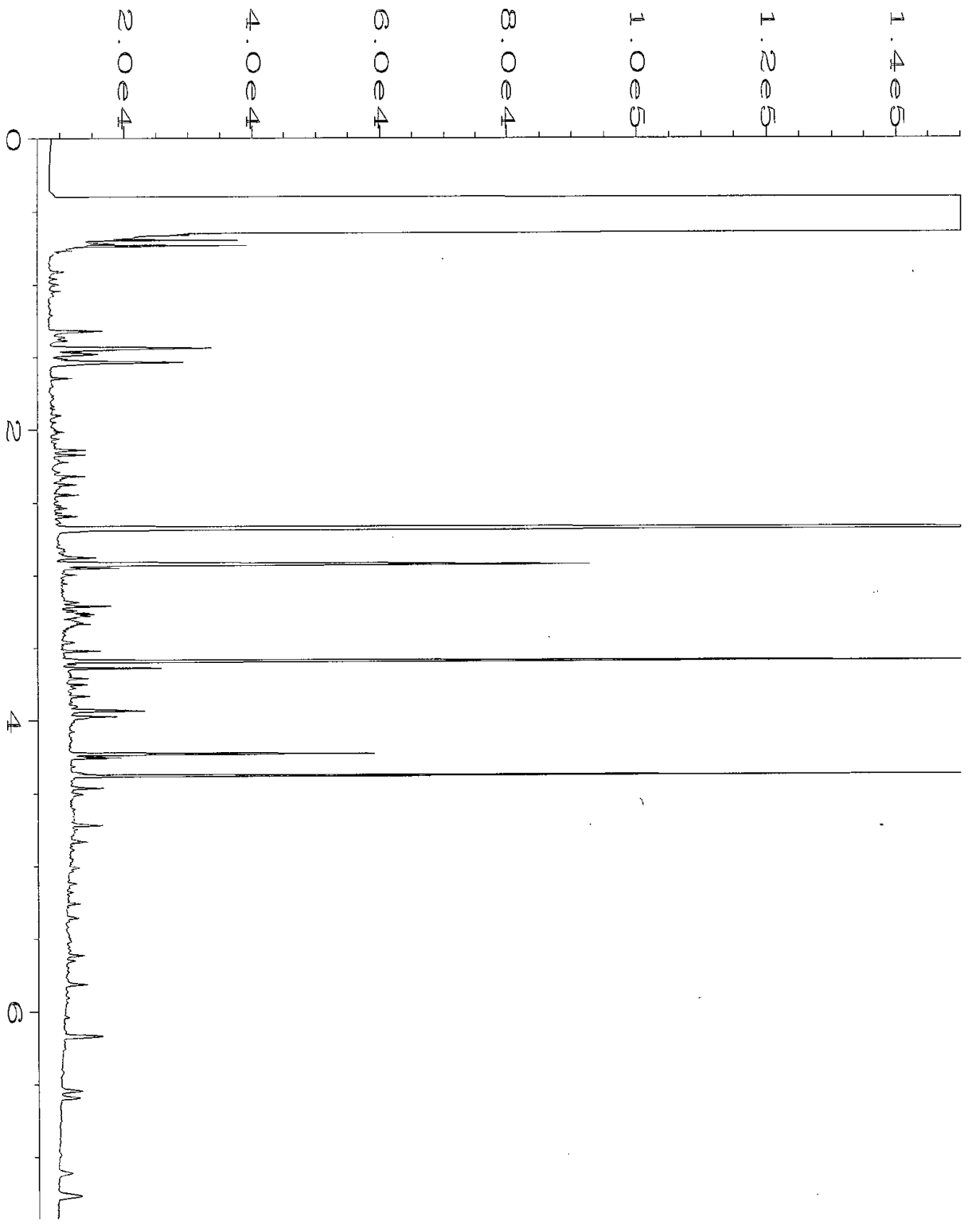
Data File Name	: C:\HPCHEM\1\DATA\09-11-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 11 Sep 20 02:46 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 10:36 AM	Analysis Method	: DEFAULT.MTH



HMW-91B

Data File Name : C:\HPCHEM\1\DATA\03-23-20\010F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003357-01
Run Time Bar Code:
Acquired on : 23 Mar 20 11:44 AM
Report Created on: 15 Oct 20 10:12 AM

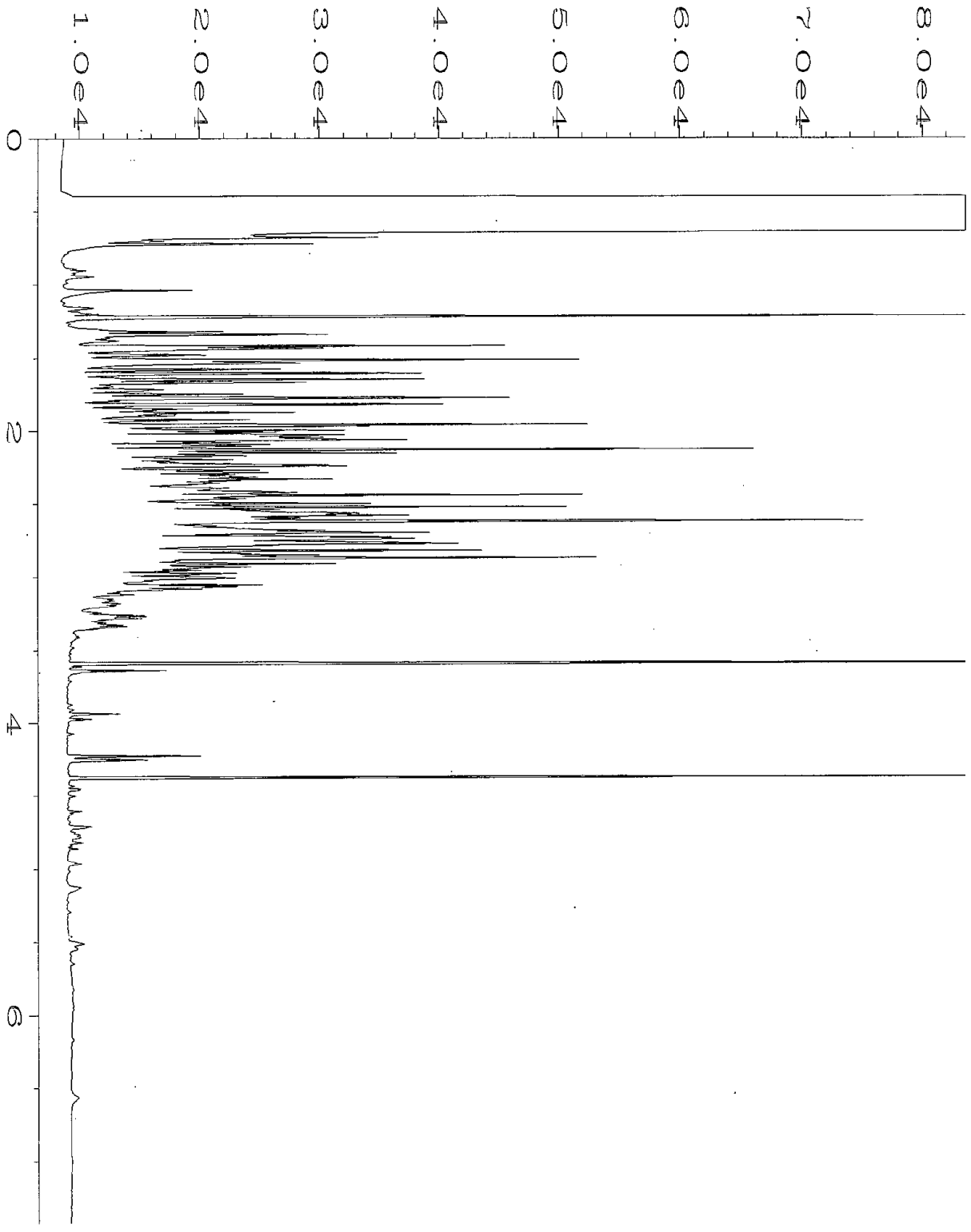
Page Number : 1
Vial Number : 10
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



DMW - 51A

Data File Name : C:\HPCHEM\1\DATA\03-23-20\012F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003357-03
Run Time Bar Code:
Acquired on : 23 Mar 20 12:07 PM
Report Created on: 15 Oct 20 10:13 AM

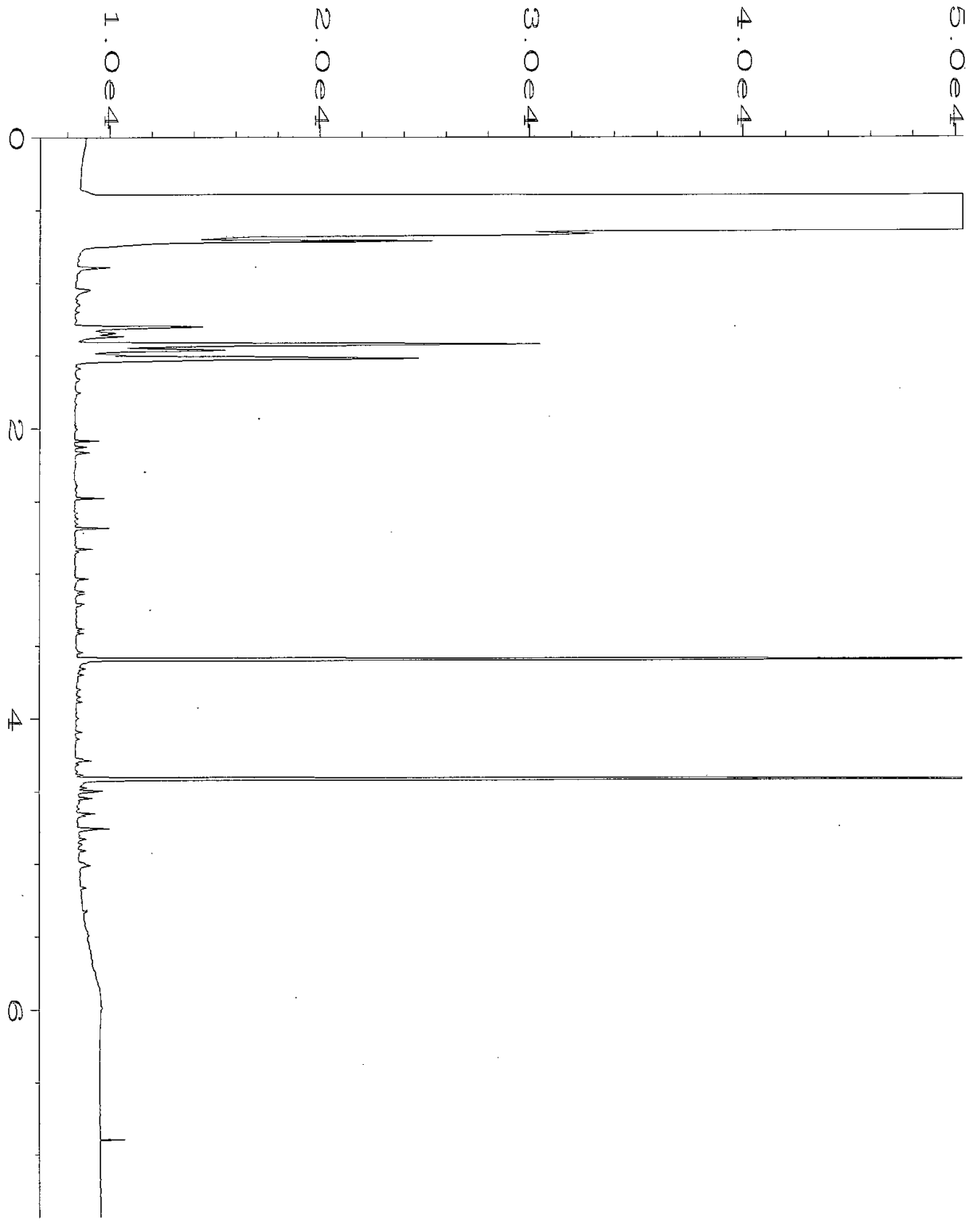
Page Number : 1
Vial Number : 12
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



DMW-45

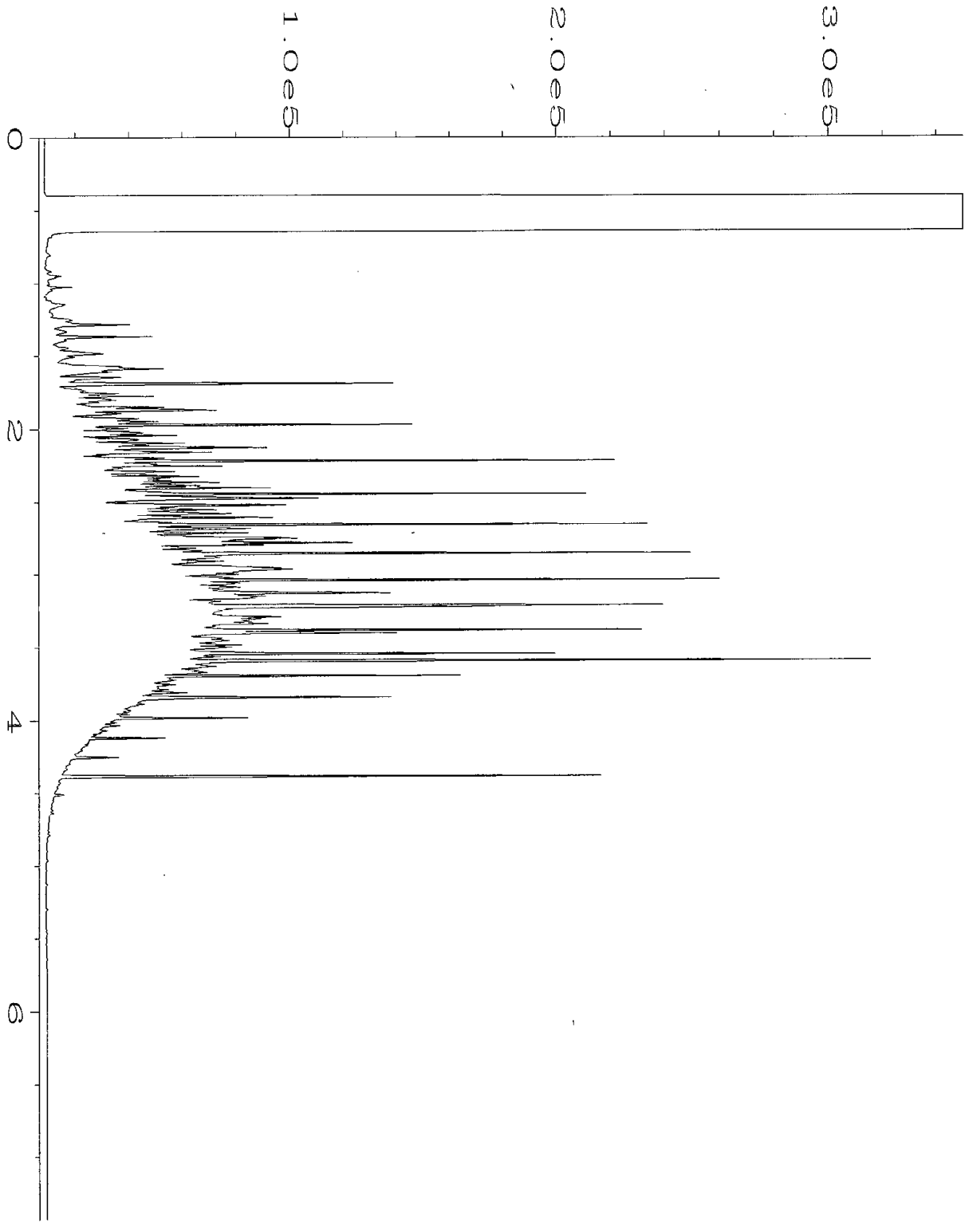
Data File Name : C:\HPCHEM\1\DATA\03-23-20\013F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003357-04
Run Time Bar Code:
Acquired on : 23 Mar 20 12:18 PM
Report Created on: 15 Oct 20 10:14 AM

Page Number : 1
Vial Number : 13
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

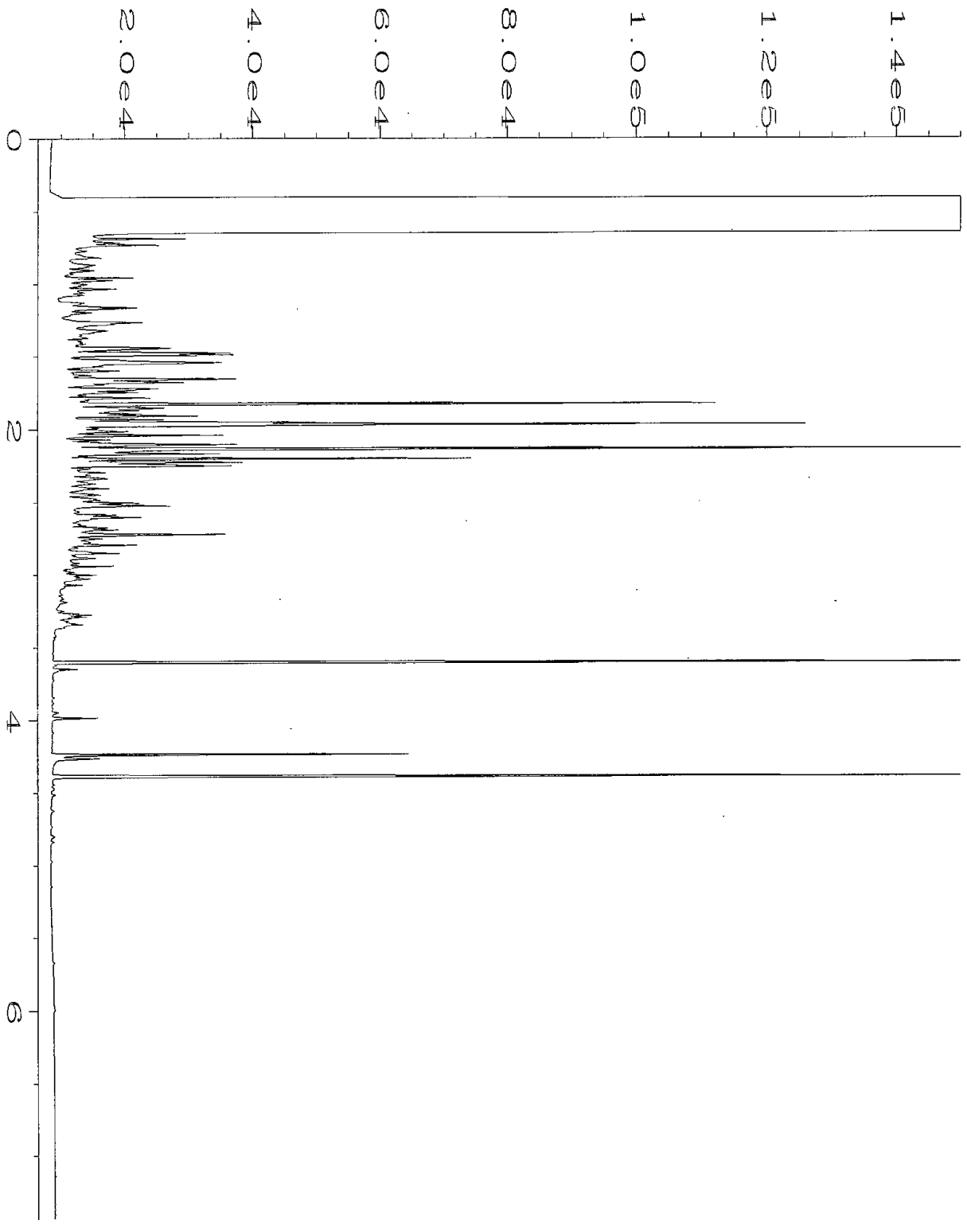


Data File Name : C:\HPCHEM\1\DATA\03-23-20\006F0301.D
Operator : TL
Instrument : GC1
Sample Name : 00-736 mb
Run Time Bar Code:
Acquired on : 23 Mar 20 11:01 AM
Report Created on: 15 Oct 20 10:14 AM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



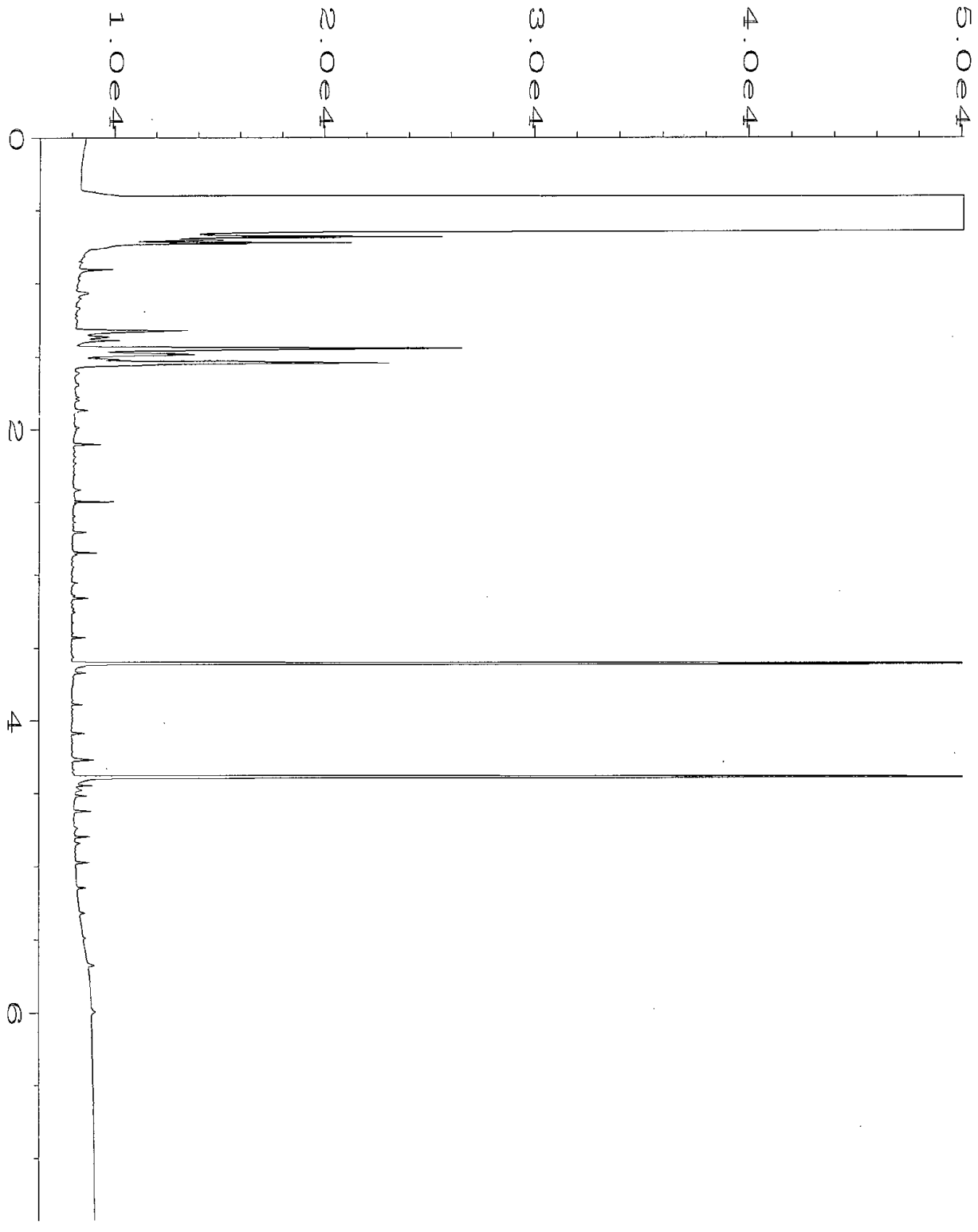
Data File Name	: C:\HPCHEM\1\DATA\03-23-20\005F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 23 Mar 20 02:11 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 10:14 AM	Analysis Method	: DEFAULT.MTH



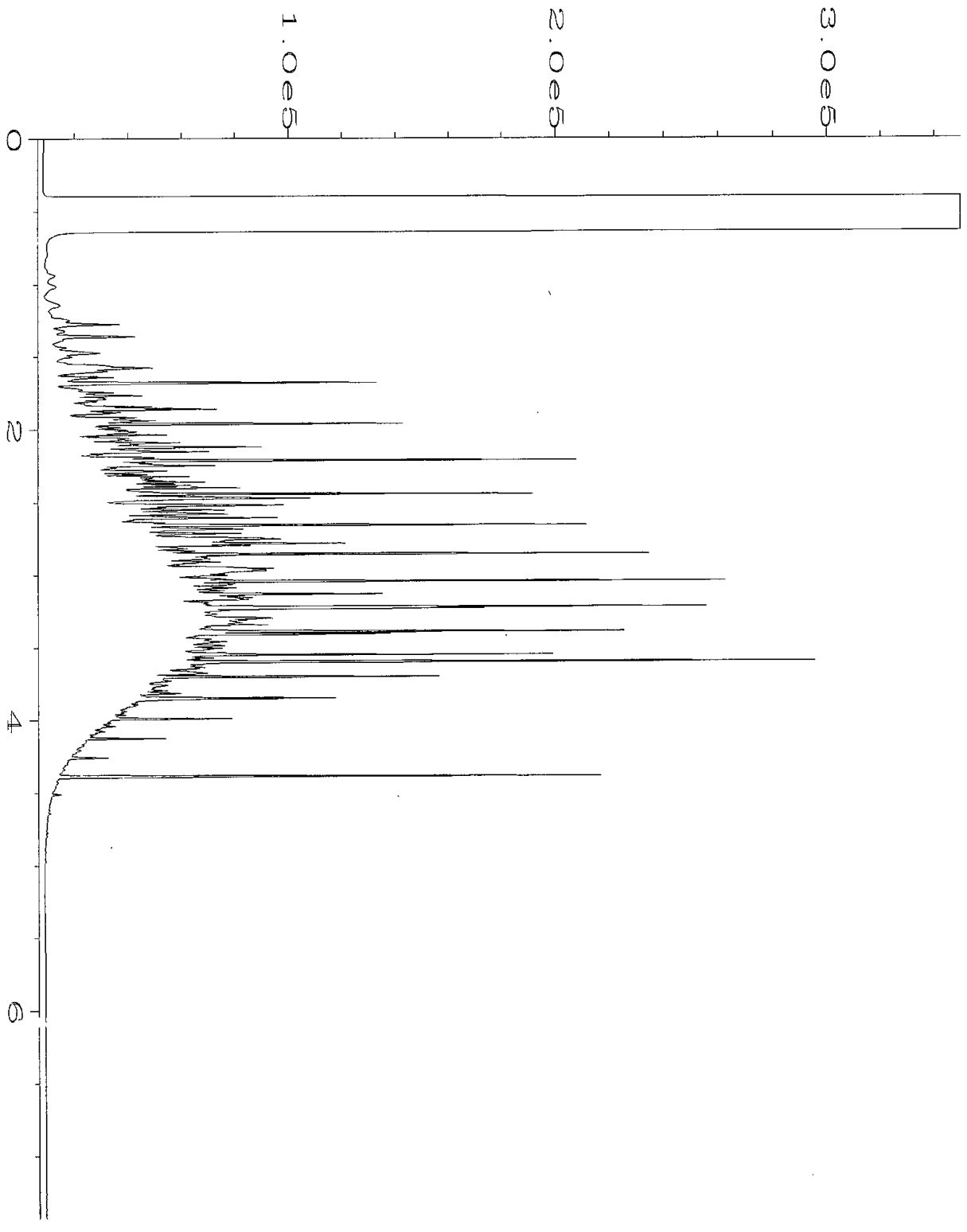
PMW-1S

Data File Name : C:\HPCHEM\1\DATA\03-19-20\016F0601.D
Operator : TL
Instrument : GC1
Sample Name : 003307-01
Run Time Bar Code:
Acquired on : 19 Mar 20 01:48 PM
Report Created on: 15 Oct 20 10:11 AM

Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 6
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

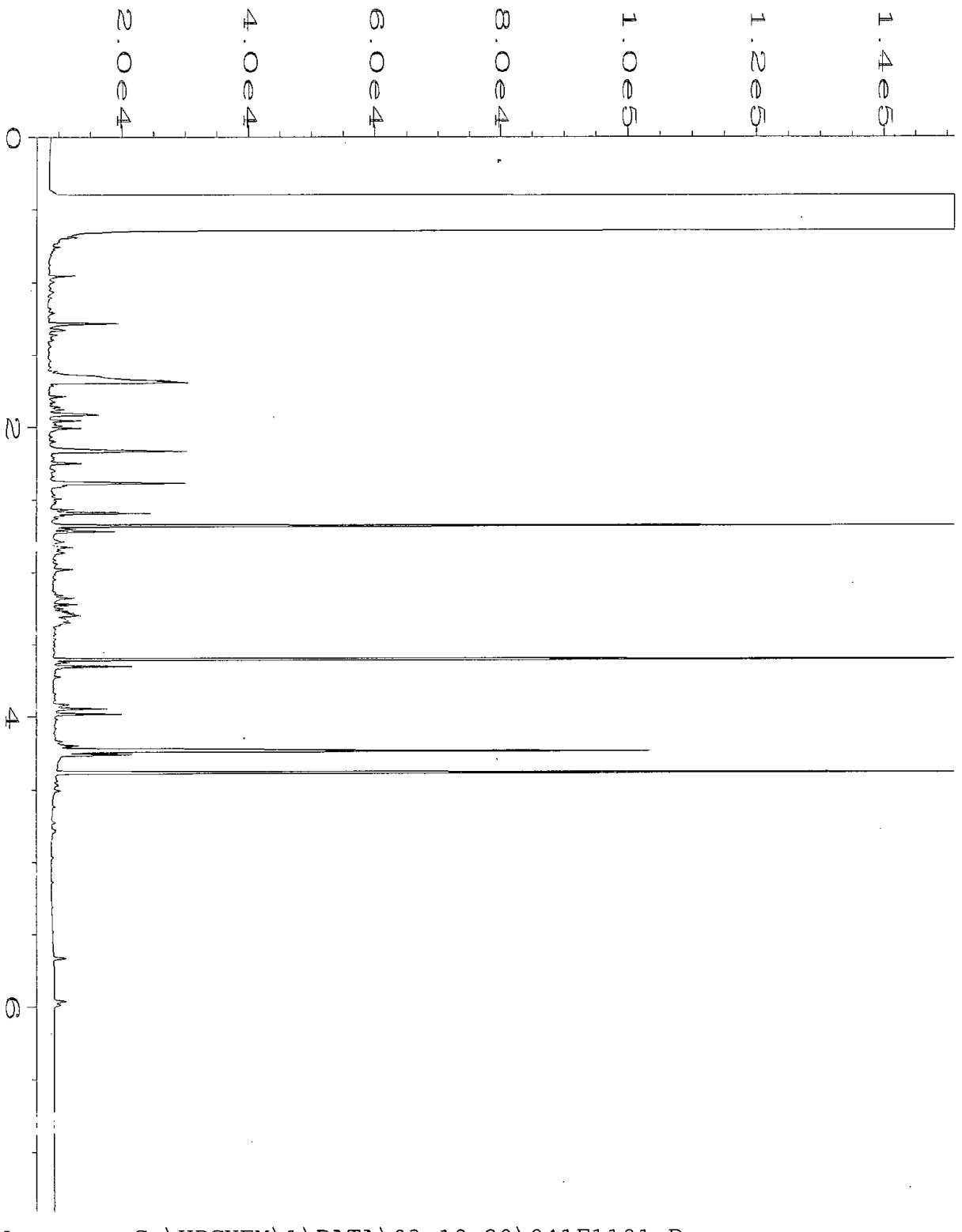


Data File Name	: C:\HPCHEM\1\DATA\03-19-20\010F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 10
Sample Name	: 00-700 mb2	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 19 Mar 20 11:08 AM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 10:11 AM	Analysis Method	: DEFAULT.MTH



Data File Name : C:\HPCHEM\1\DATA\03-19-20\005F0701.D
Operator : TL
Instrument : GC1
Sample Name : 1000 Dx 59-162B
Run Time Bar Code:
Acquired on : 19 Mar 20 03:00 PM
Report Created on: 15 Oct 20 10:11 AM

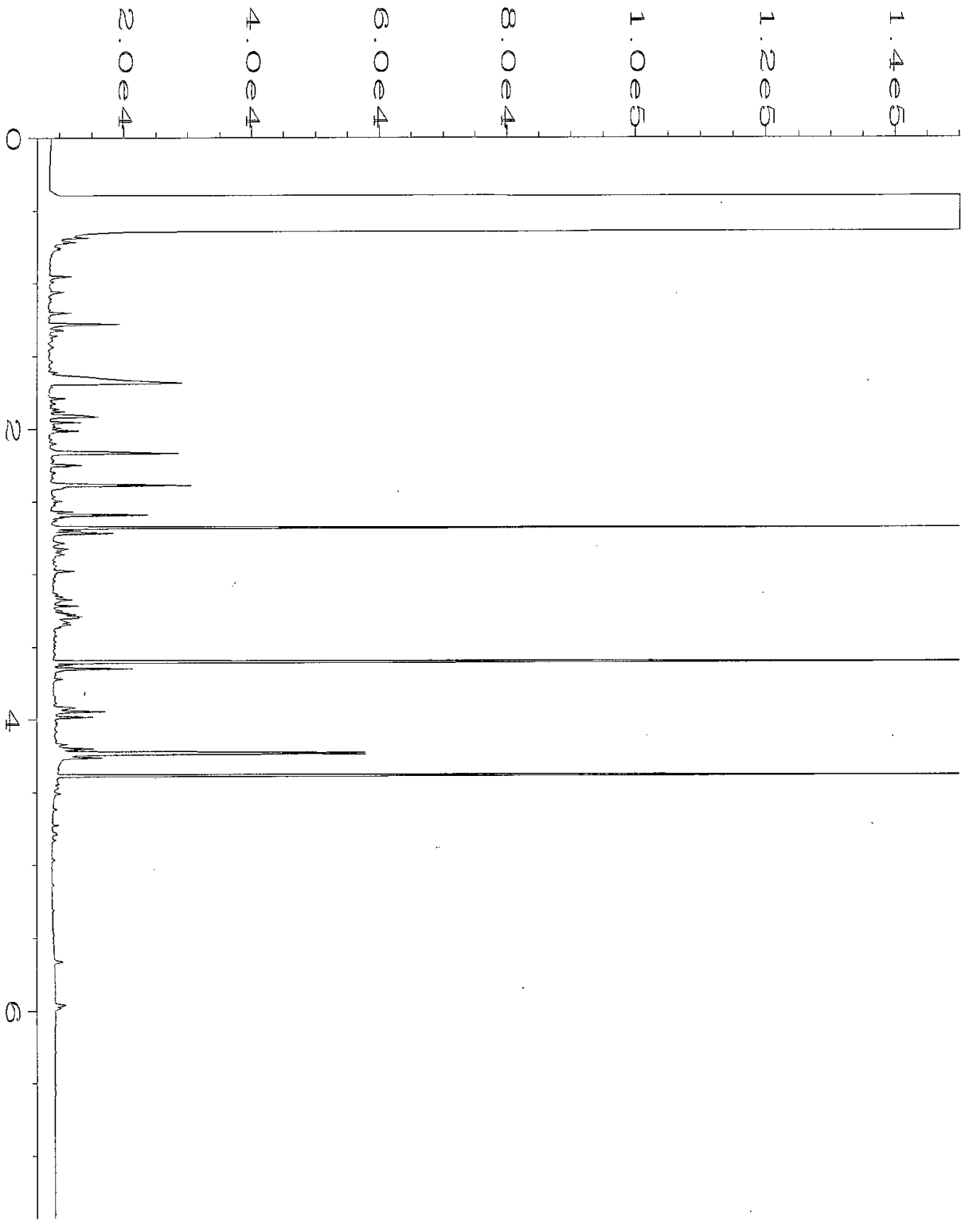
Page Number : 1
Vial Number : 5
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-9D

Data File Name : C:\HPCHEM\1\DATA\03-18-20\041F1101.D
Operator : TL
Instrument : GC1
Sample Name : 003285-02
Run Time Bar Code:
Acquired on : 18 Mar 20 08:25 PM
Report Created on: 15 Oct 20 10:06 AM

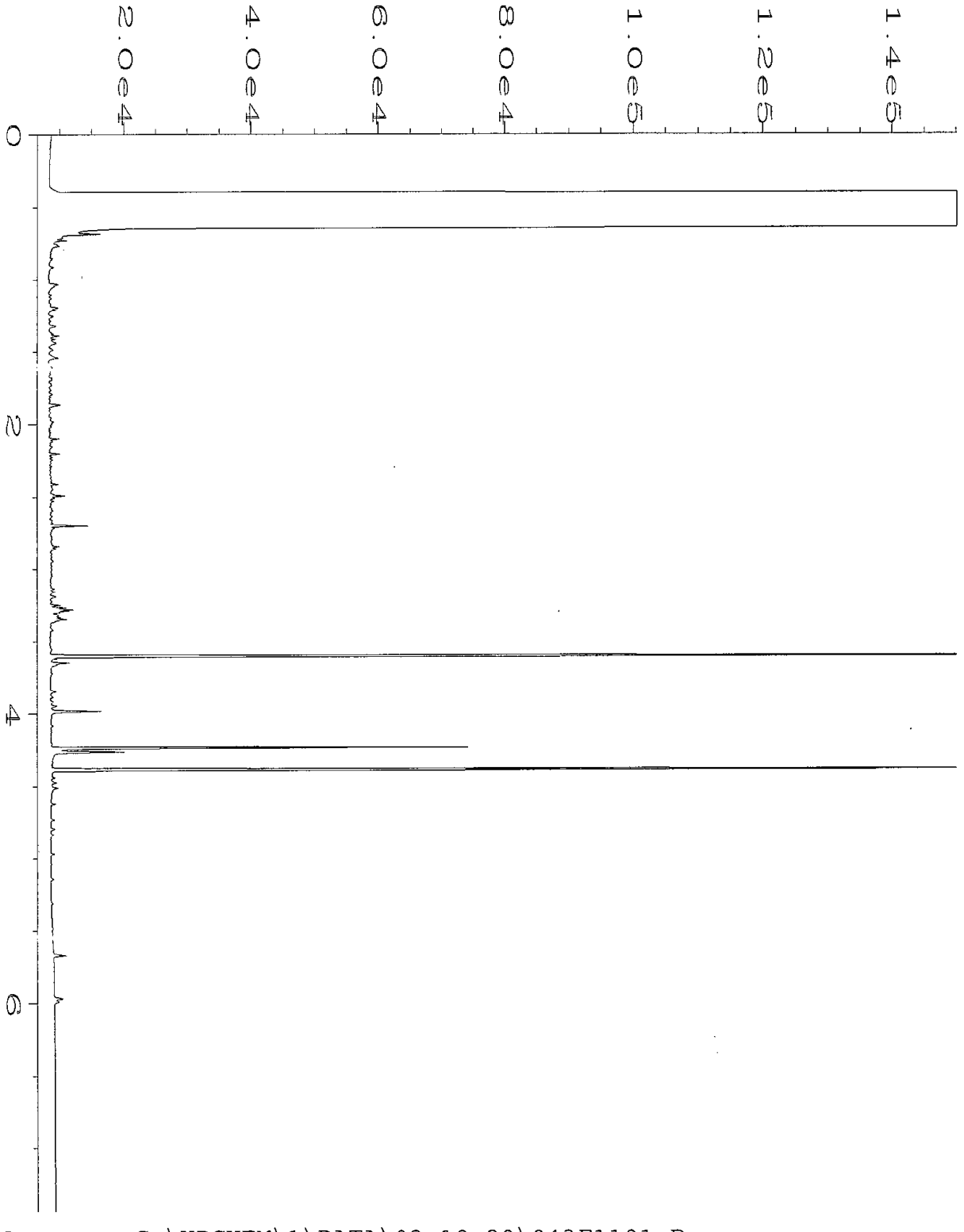
Page Number : 1
Vial Number : 41
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-900

Data File Name : C:\HPCHEM\1\DATA\03-18-20\042F1101.D
Operator : TL
Instrument : GC1
Sample Name : 003285-03
Run Time Bar Code:
Acquired on : 18 Mar 20 08:37 PM
Report Created on: 15 Oct 20 10:08 AM

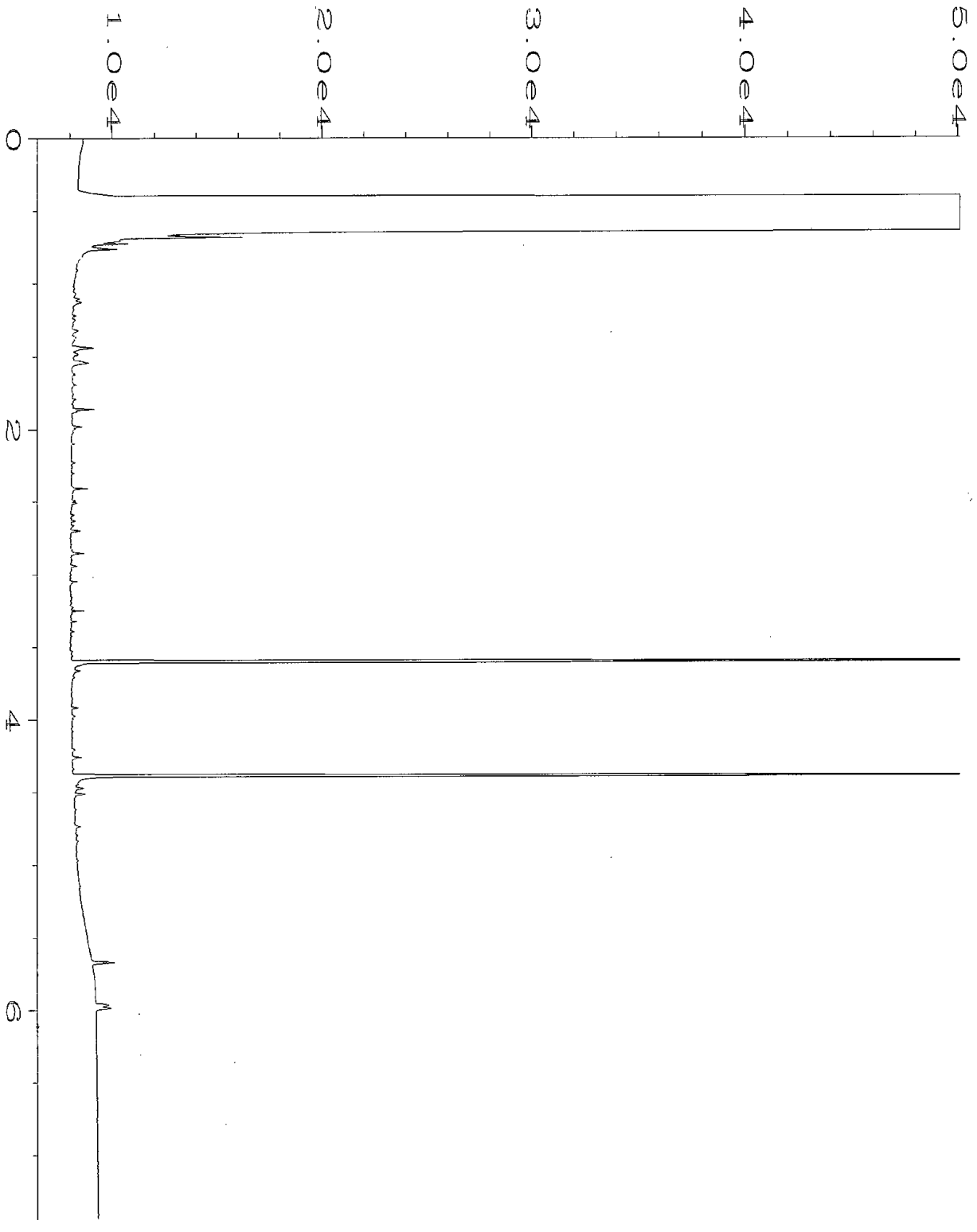
Page Number : 1
Vial Number : 42
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-9S

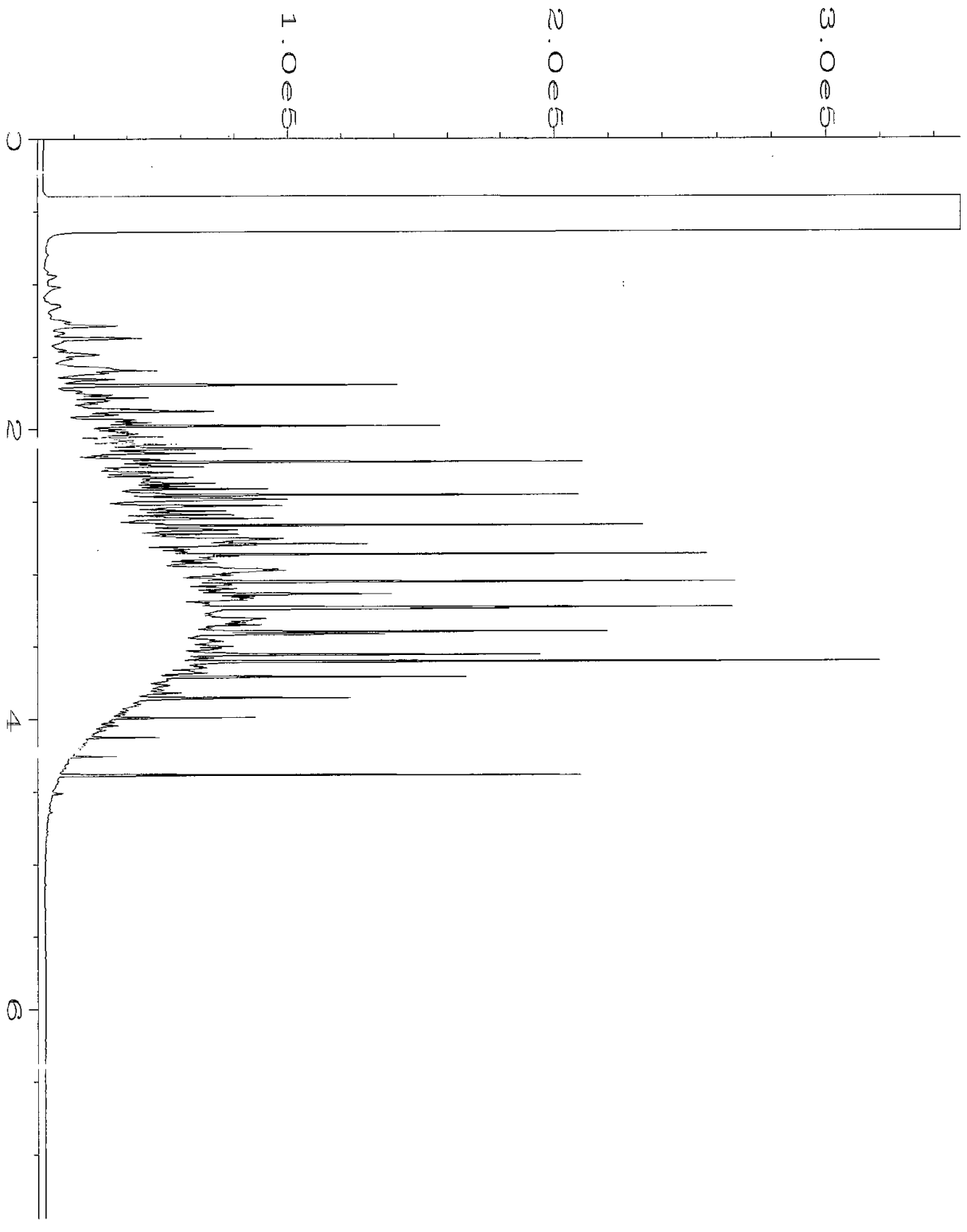
Data File Name : C:\HPCHEM\1\DATA\03-18-20\043F1101.D
Operator : TL
Instrument : GC1
Sample Name : 003285-04
Run Time Bar Code:
Acquired on : 18 Mar 20 08:48 PM
Report Created on: 15 Oct 20 10:08 AM

Page Number : 1
Vial Number : 43
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

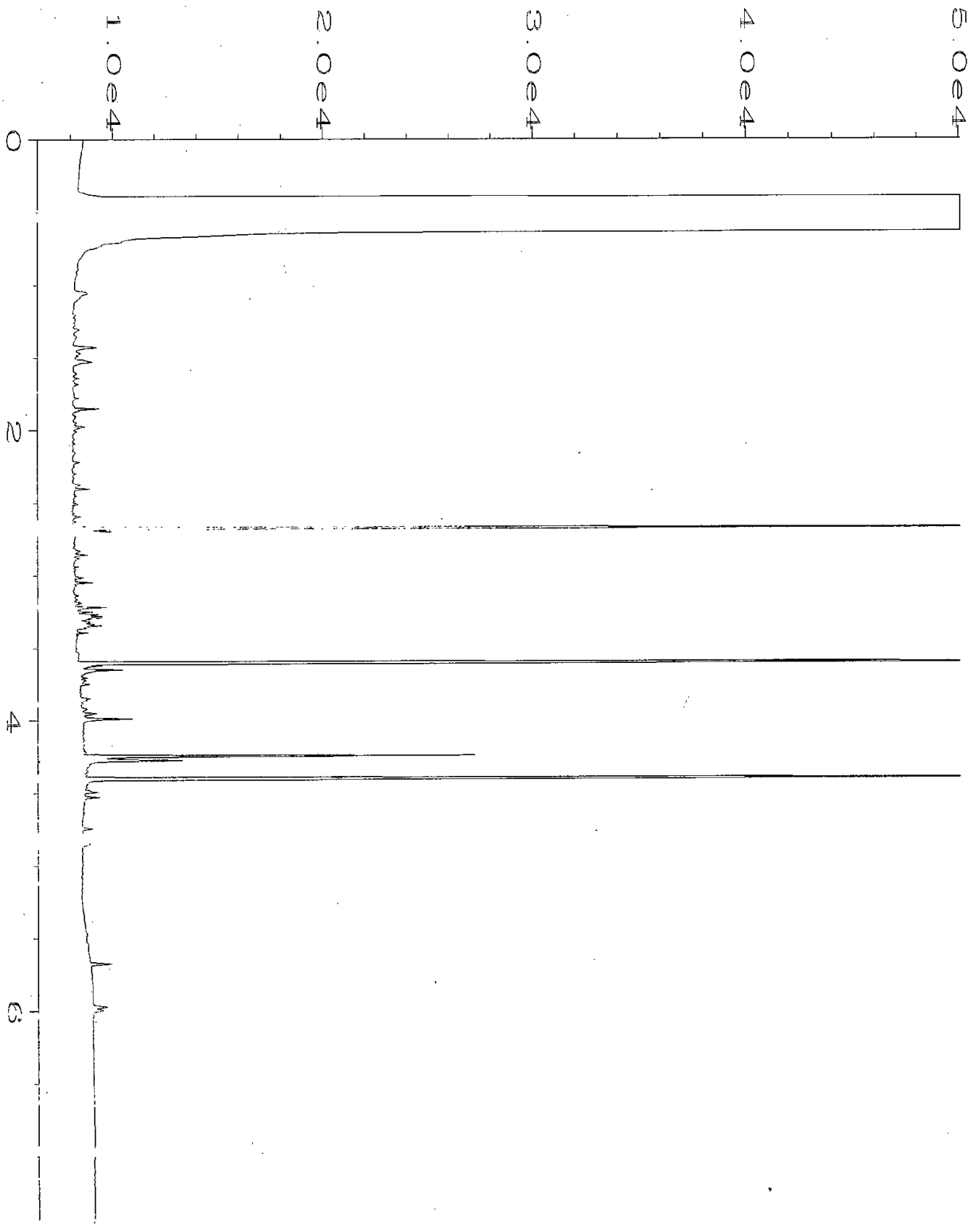


Data File Name : C:\HPCHEM\1\DATA\03-18-20\037F1101.D
Operator : TL
Instrument : GC1
Sample Name : 00-700 mb
Run Time Bar Code:
Acquired on : 18 Mar 20 07:39 PM
Report Created on: 15 Oct 20 10:08 AM

Page Number : 1
Vial Number : 37
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



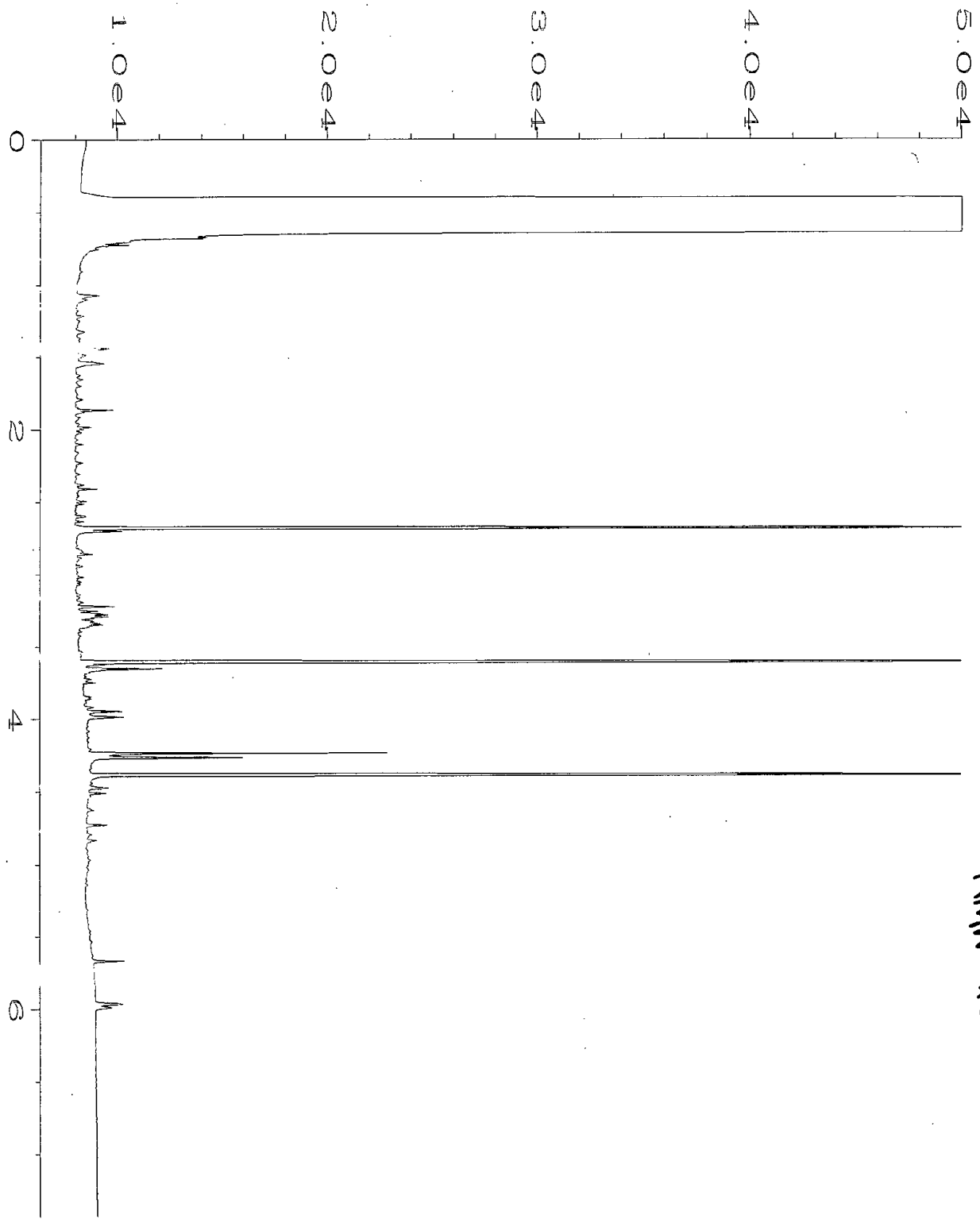
Data File Name	: C:\HPCHEM\1\DATA\03-18-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 18 Mar 20 02:54 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 10:05 AM	Analysis Method	: DEFAULT.MTH



HMW-11B

Data File Name : C:\HPCHEM\1\DATA\03-18-20\025F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003271-01
Run Time Bar Code:
Acquired on : 18 Mar 20 05:01 PM
Report Created on: 15 Oct 20 10:04 AM

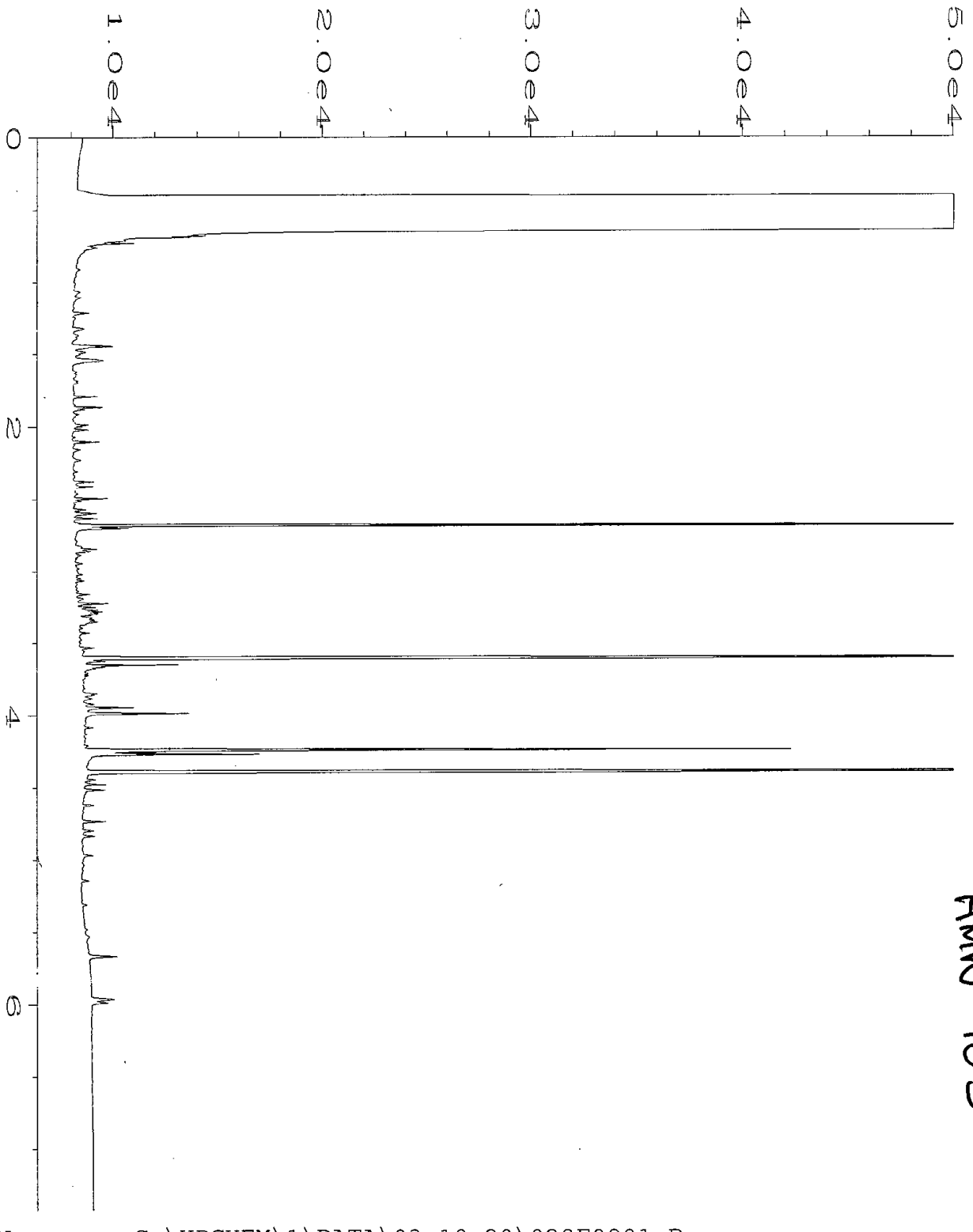
Page Number : 1
Vial Number : 25
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-1100TB

Data File Name : C:\HPCHEM\1\DATA\03-18-20\026F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003271-02
Run Time Bar Code:
Acquired on : 18 Mar 20 05:10 PM
Report Created on: 15 Oct 20 10:04 AM

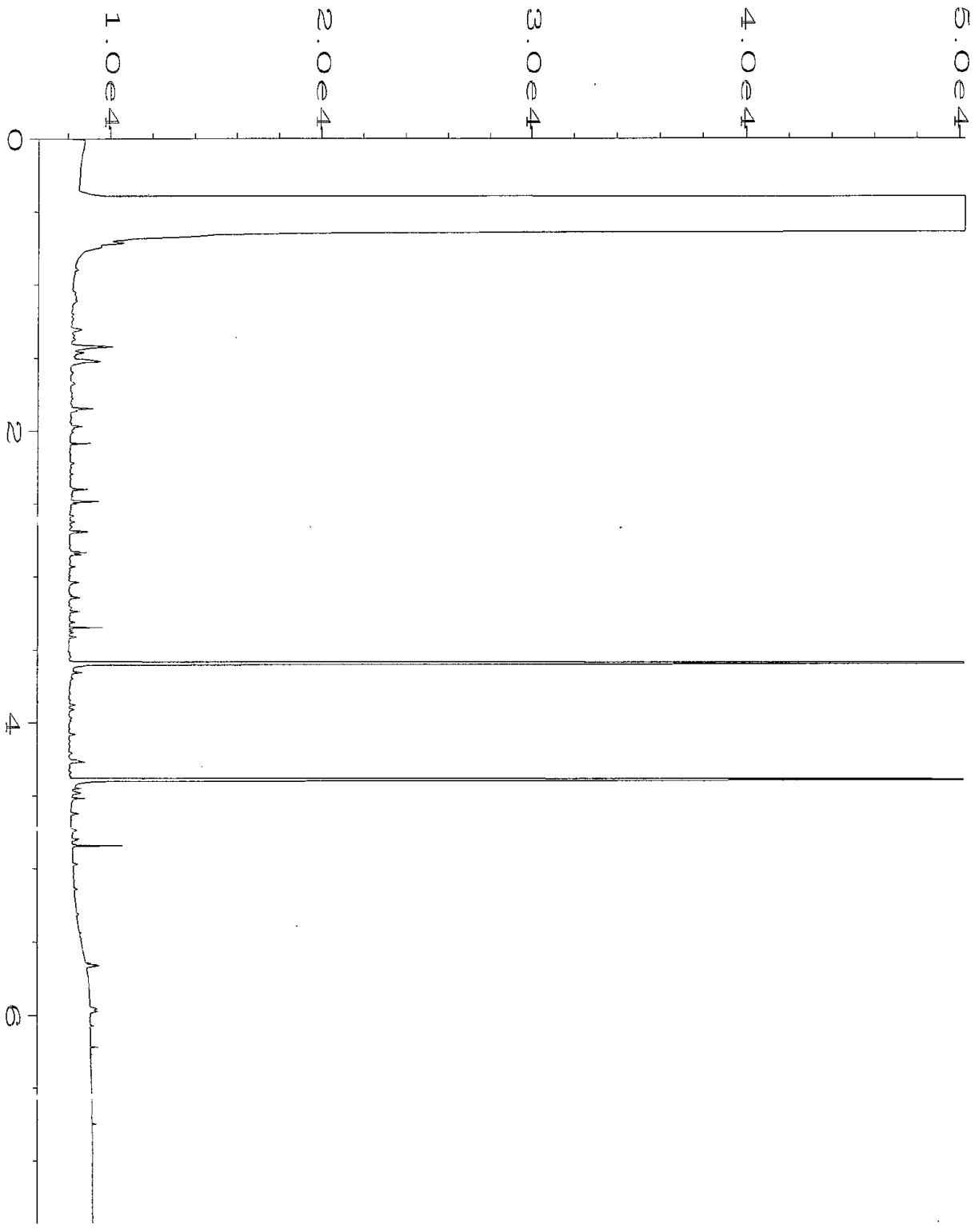
Page Number : 1
Vial Number : 26
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-10S

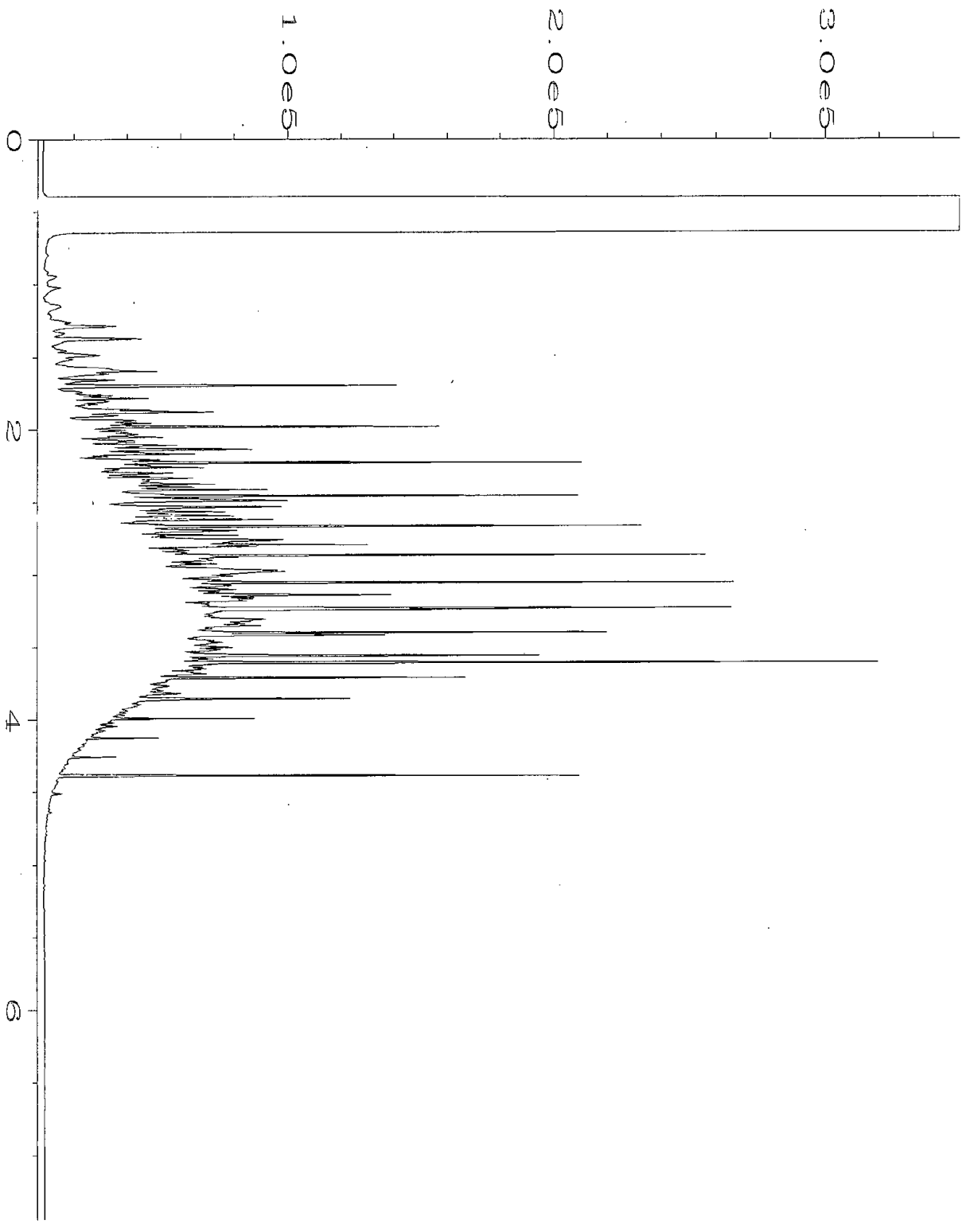
Data File Name : C:\HPCHEM\1\DATA\03-18-20\028F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003271-04
Run Time Bar Code:
Acquired on : 18 Mar 20 05:33 PM
Report Created on: 15 Oct 20 10:05 AM

Page Number : 1
Vial Number : 28
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

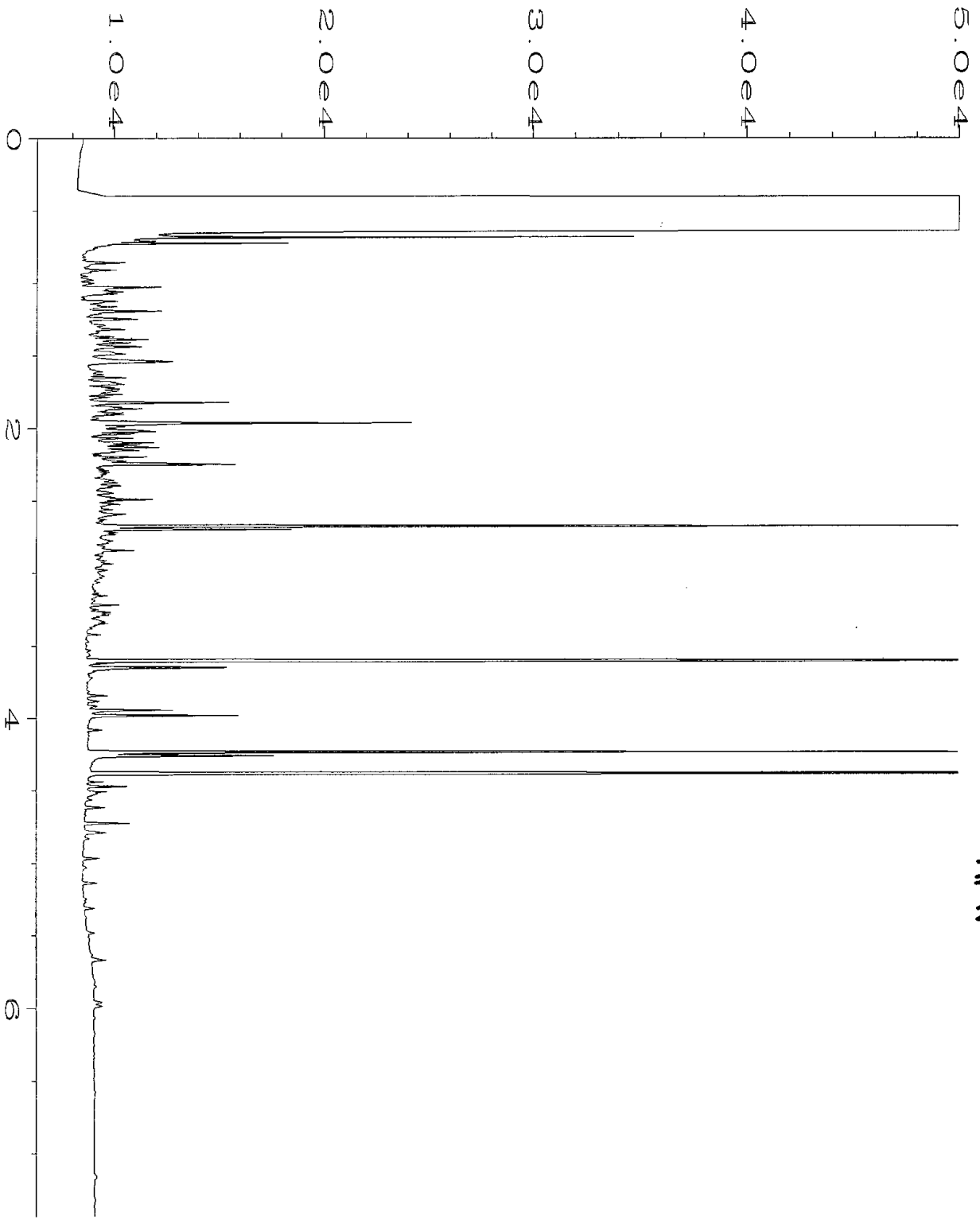


Data File Name : C:\HPCHEM\1\DATA\03-18-20\014F0501.D
Operator : TL
Instrument : GC1
Sample Name : 00-698 mb
Run Time Bar Code:
Acquired on : 18 Mar 20 01:55 PM
Report Created on: 15 Oct 20 10:05 AM

Page Number : 1
Vial Number : 14
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



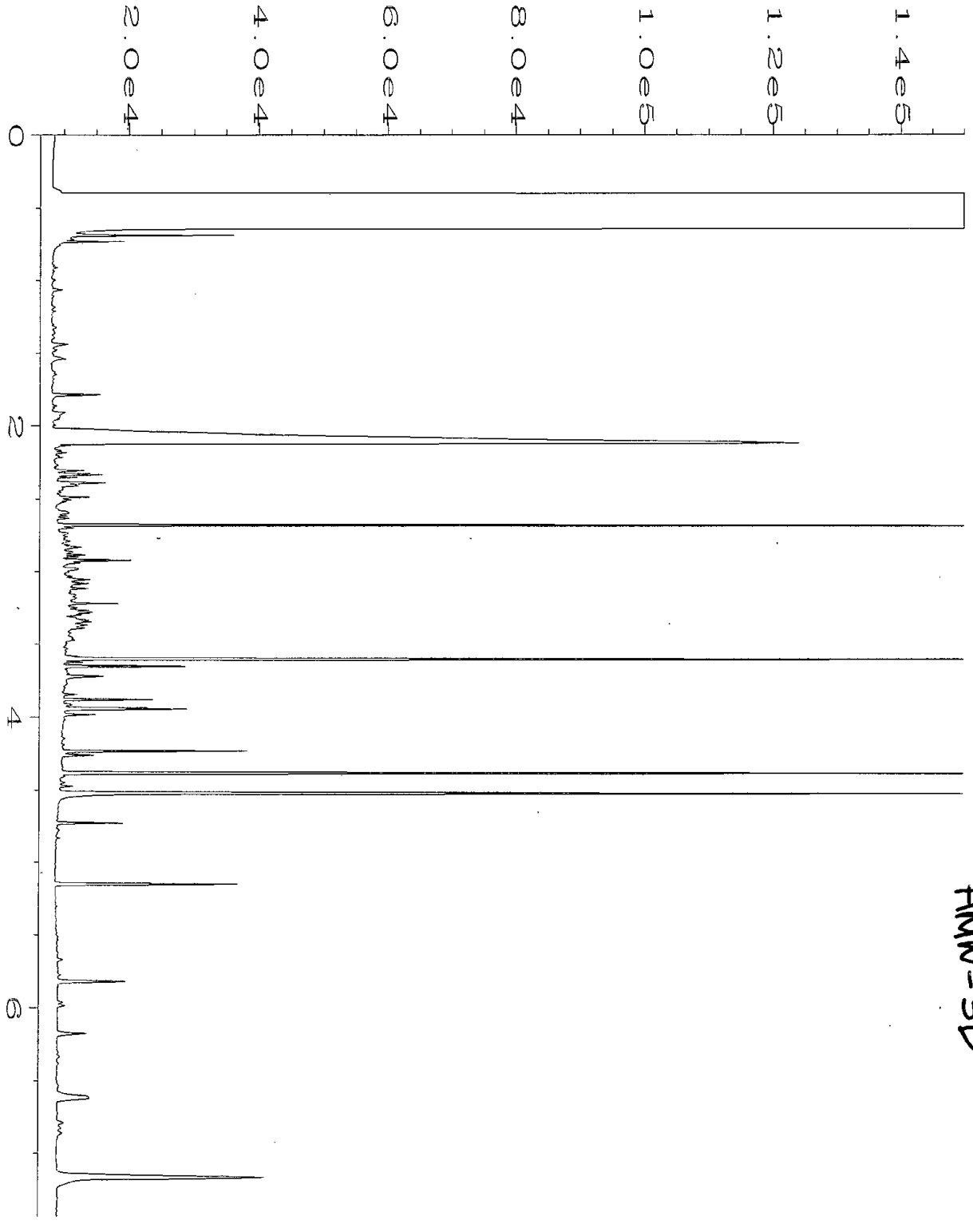
Data File Name	: C:\HPCHEM\1\DATA\03-18-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 18 Mar 20 02:54 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 10:05 AM	Analysis Method	: DEFAULT.MTH



HMW-31A

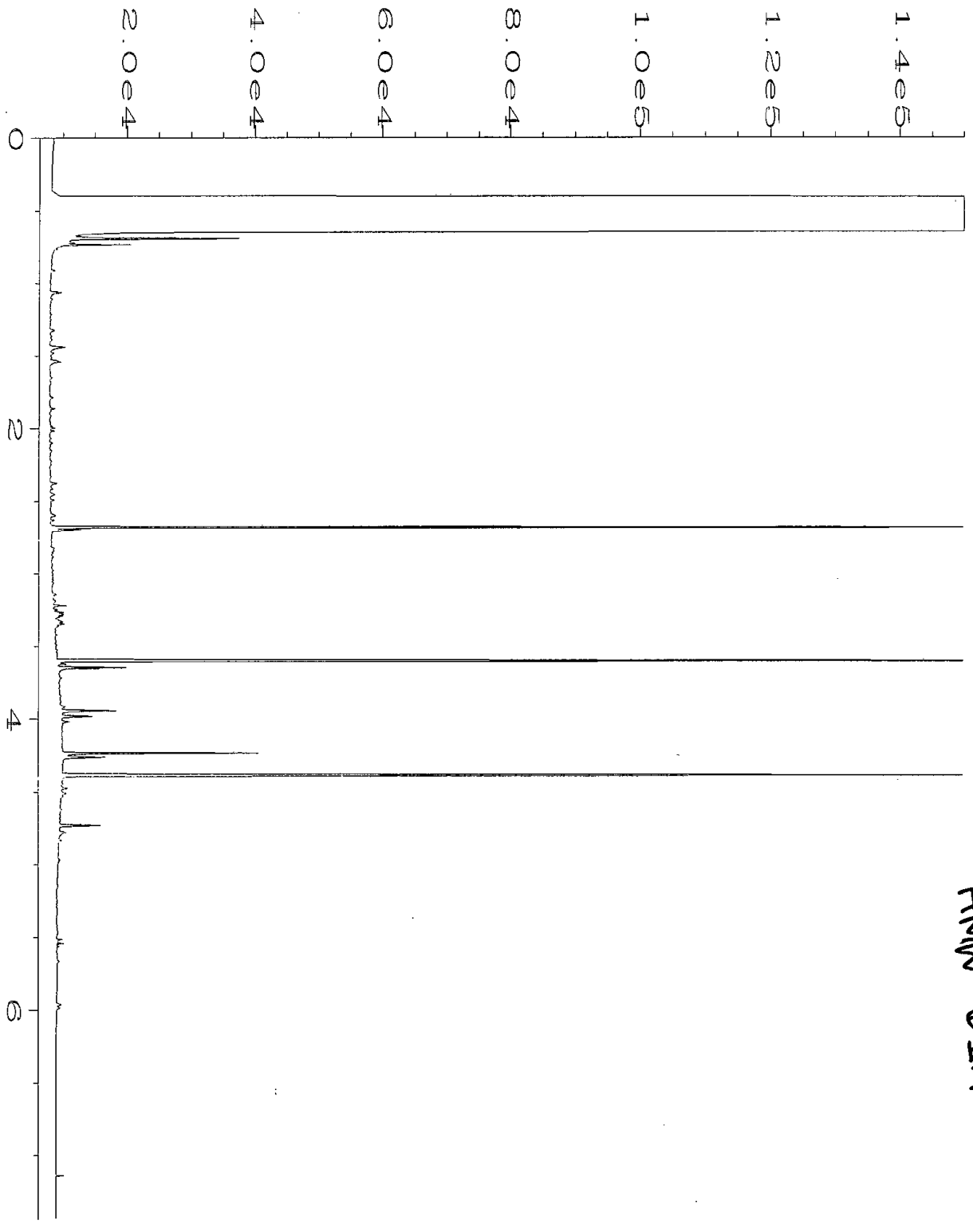
Data File Name : C:\HPCHEM\1\DATA\03-16-20\021F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003245-01
Run Time Bar Code:
Acquired on : 16 Mar 20 04:16 PM
Report Created on: 15 Oct 20 09:56 AM

Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name : C:\HPCHEM\1\DATA\03-16-20\022F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003245-02
Run Time Bar Code:
Acquired on : 16 Mar 20 04:27 PM
Report Created on: 15 Oct 20 09:56 AM

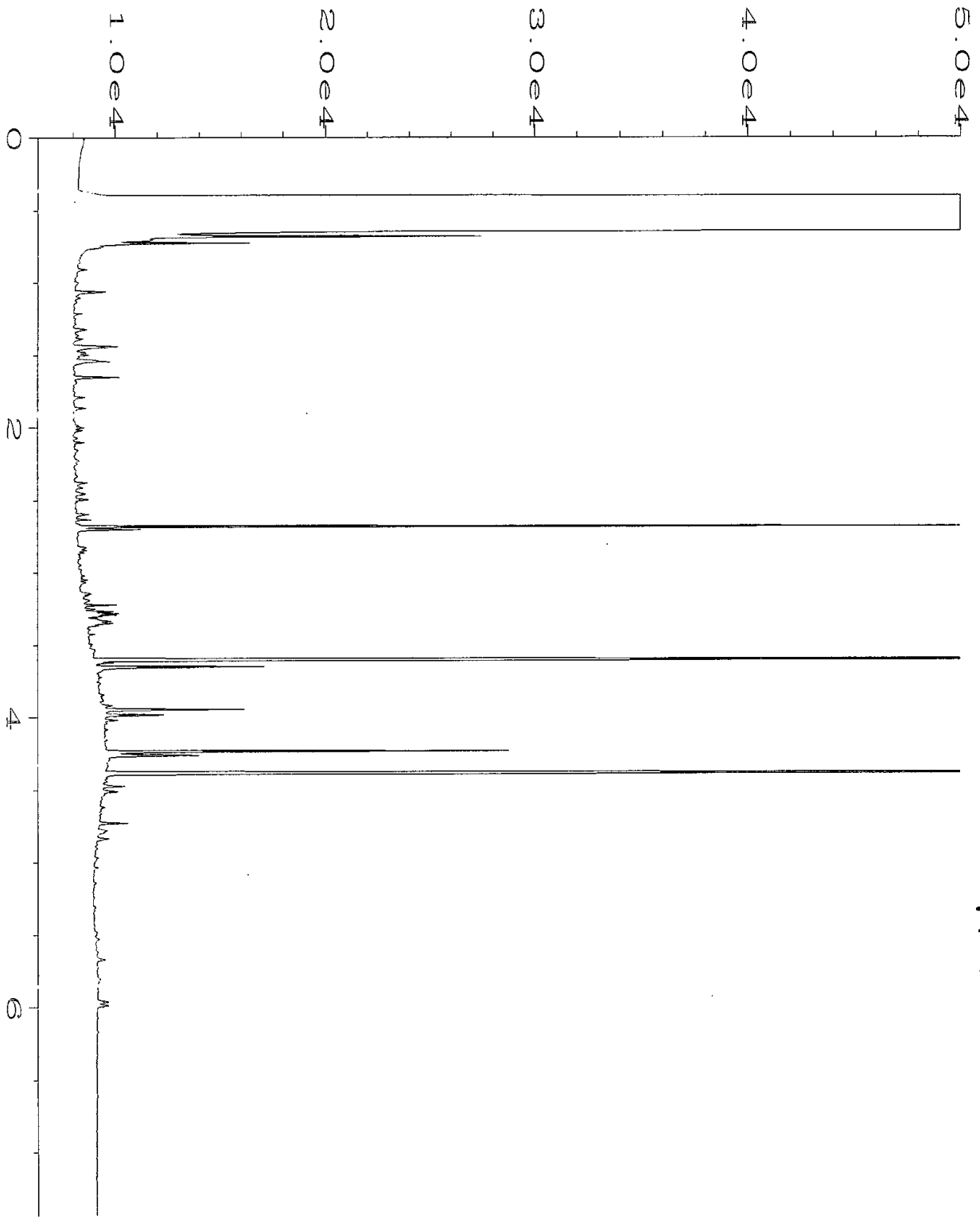
Page Number : 1
Vial Number : 22
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-6IA

Data File Name : C:\HPCHEM\1\DATA\03-16-20\023F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003245-03
Run Time Bar Code:
Acquired on : 16 Mar 20 04:38 PM
Report Created on: 15 Oct 20 09:57 AM

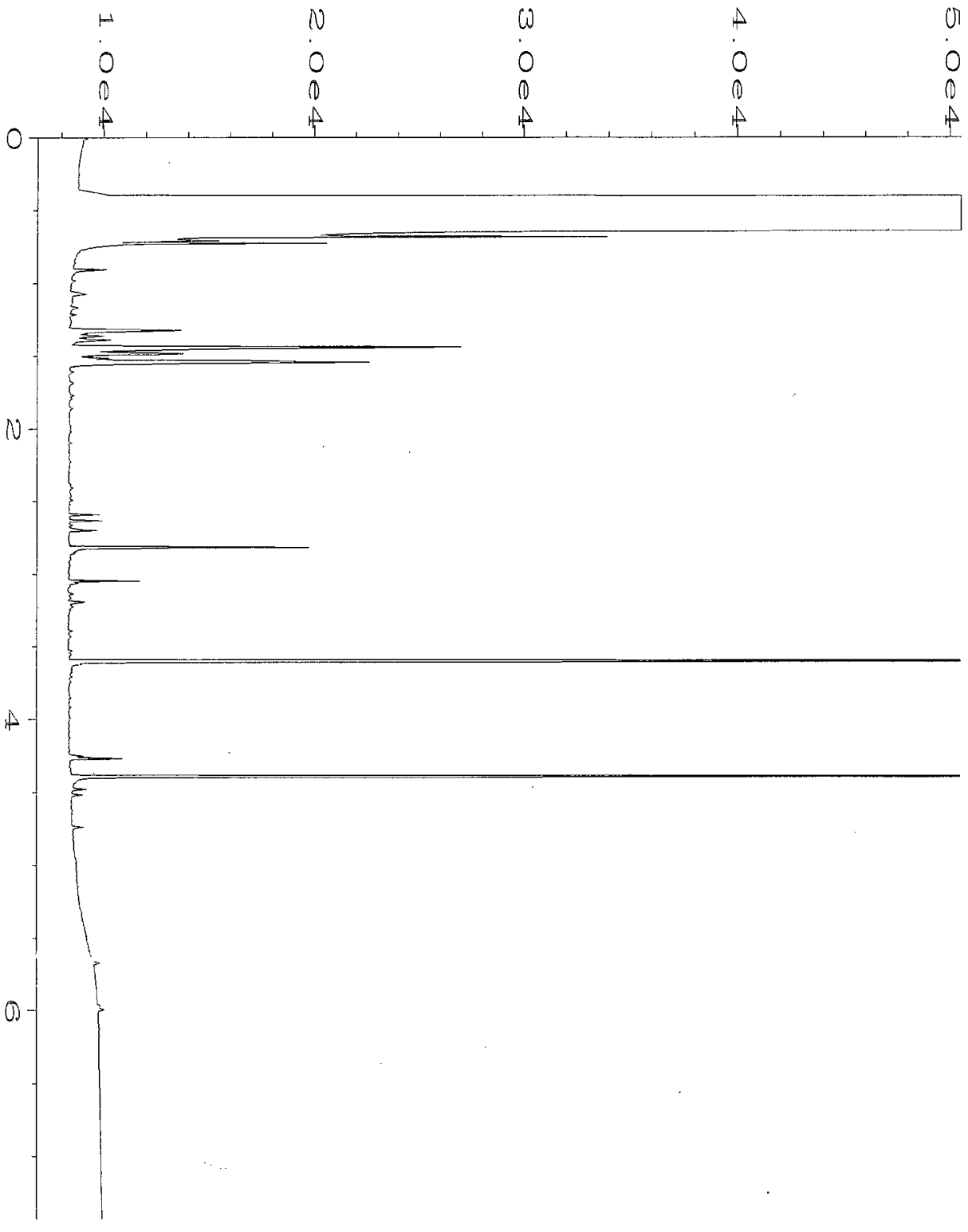
Page Number : 1
Vial Number : 23
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



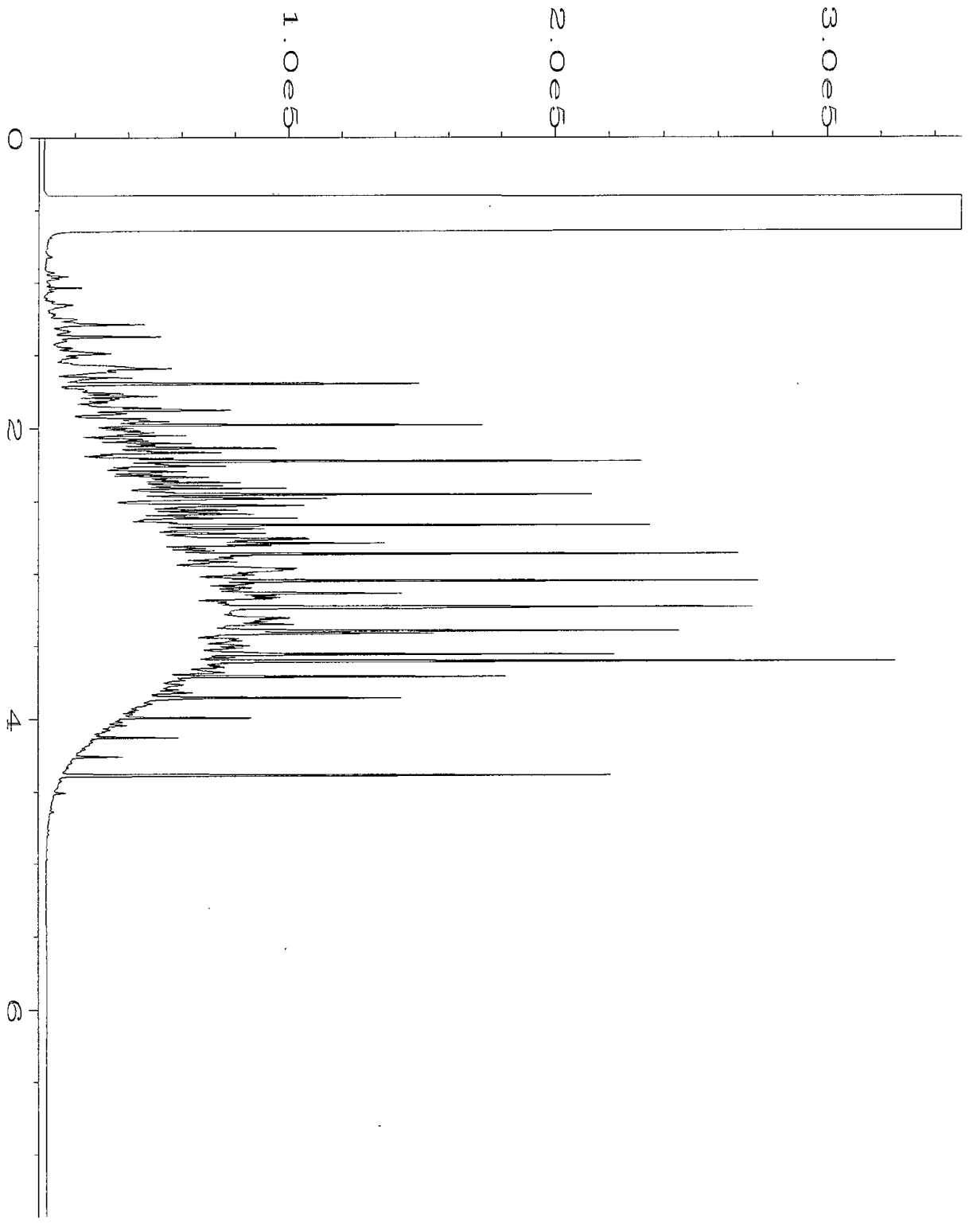
HMW-6TR

Data File Name : C:\HPCHEM\1\DATA\03-16-20\024F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003245-04
Run Time Bar Code:
Acquired on : 16 Mar 20 04:50 PM
Report Created on: 15 Oct 20 09:57 AM

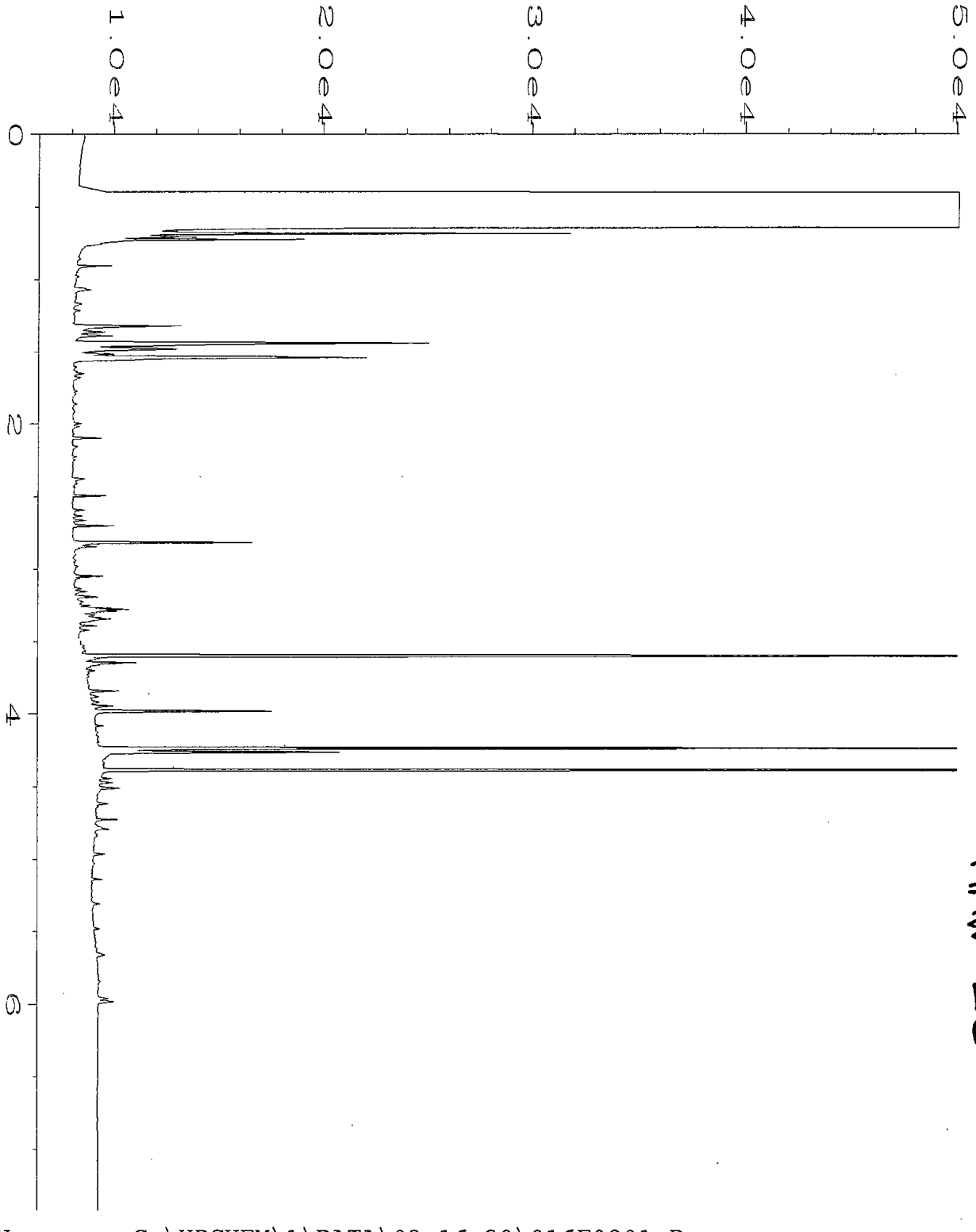
Page Number : 1
Vial Number : 24
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\03-16-20\006F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 6
Sample Name	: 00-636 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 16 Mar 20 11:42 AM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:56 AM	Analysis Method	: DEFAULT.MTH



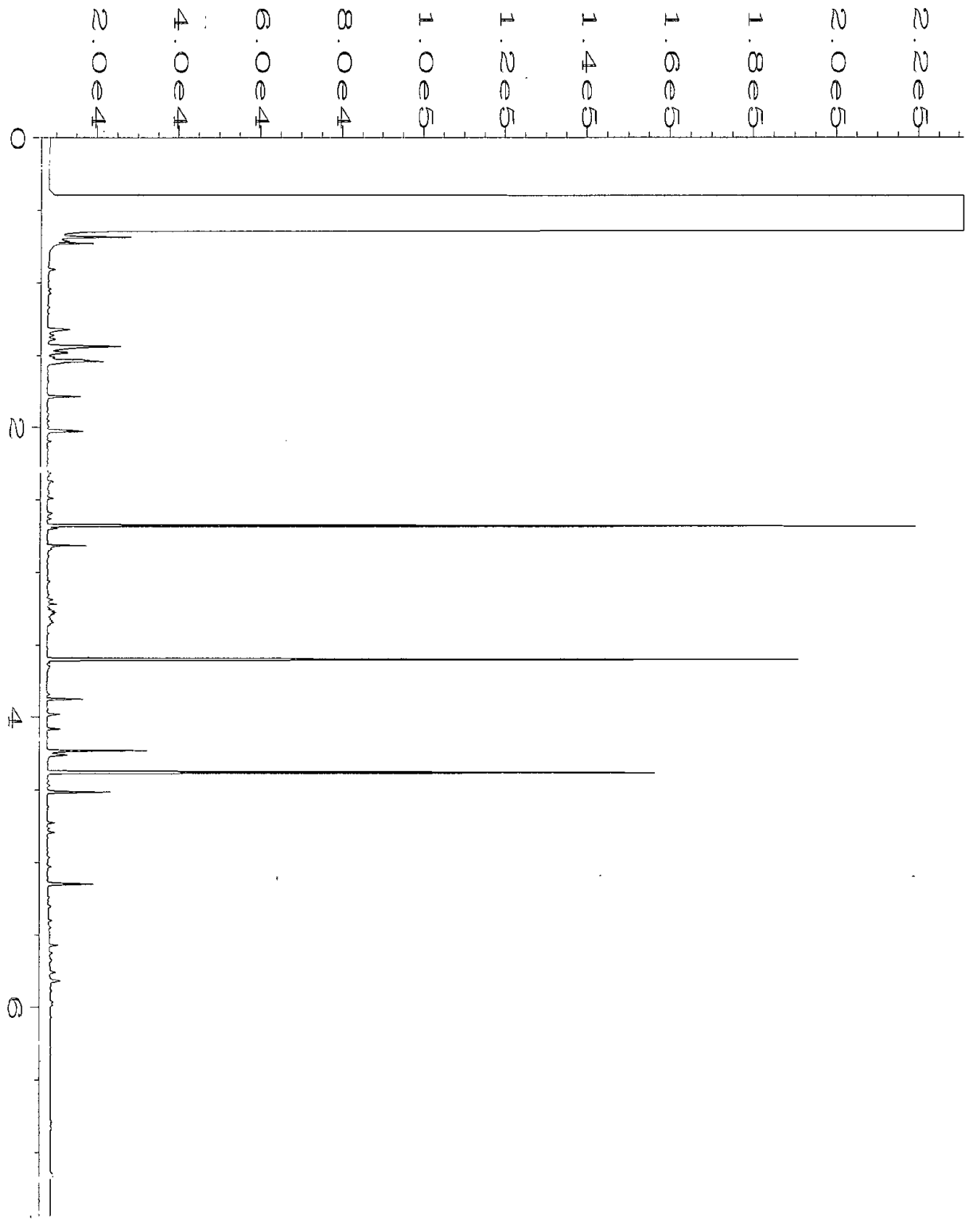
Data File Name	: C:\HPCHEM\1\DATA\03-16-20\005F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 16 Mar 20 02:44 PM	Instrument Method	: DX.MTH
Report Created on:	15 Oct 20 09:56 AM	Analysis Method	: DEFAULT.MTH



HMW-2S

Data File Name : C:\HPCHEM\1\DATA\03-16-20\016F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003233-01
Run Time Bar Code:
Acquired on : 16 Mar 20 03:19 PM
Report Created on: 15 Oct 20 09:54 AM

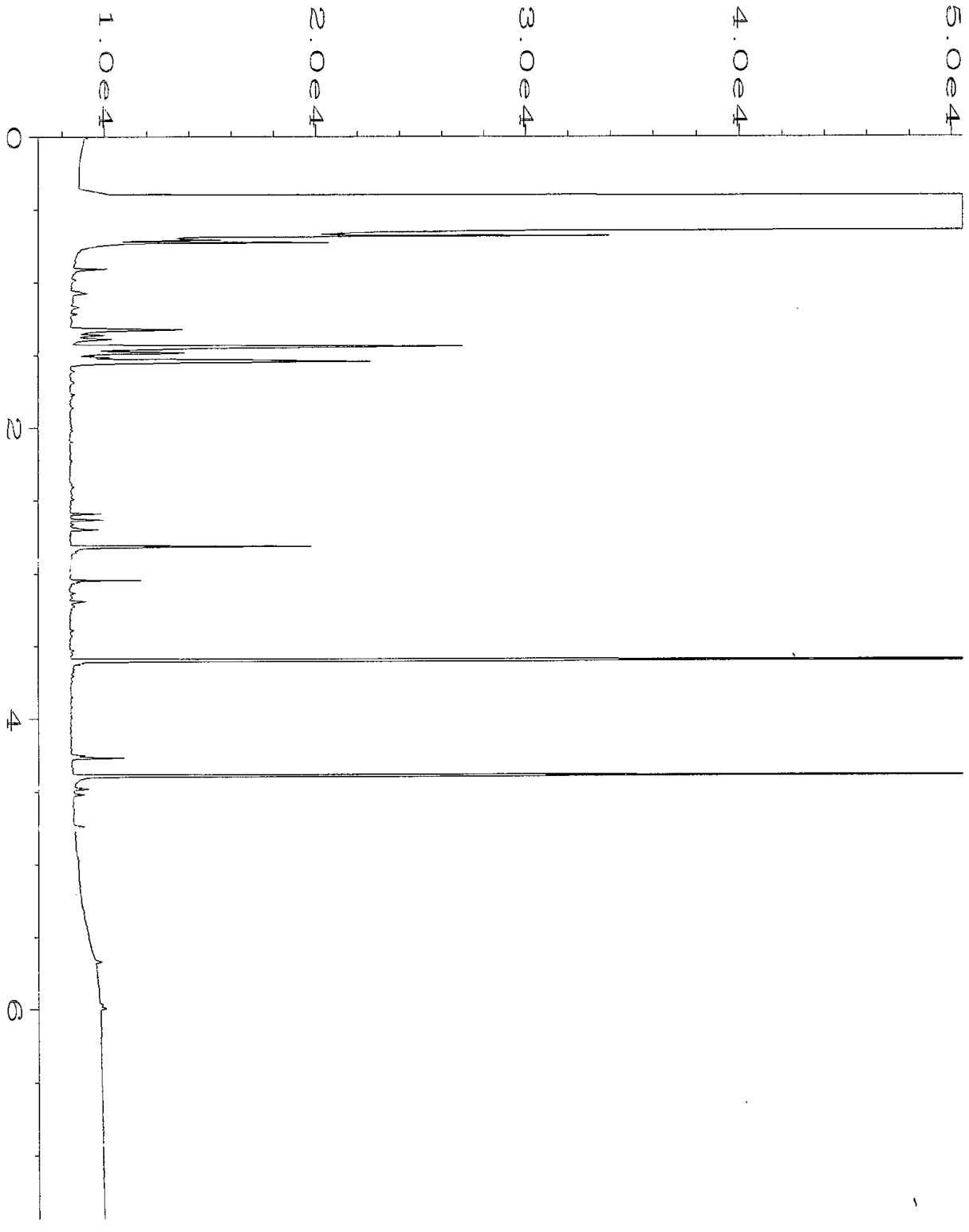
Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-2D

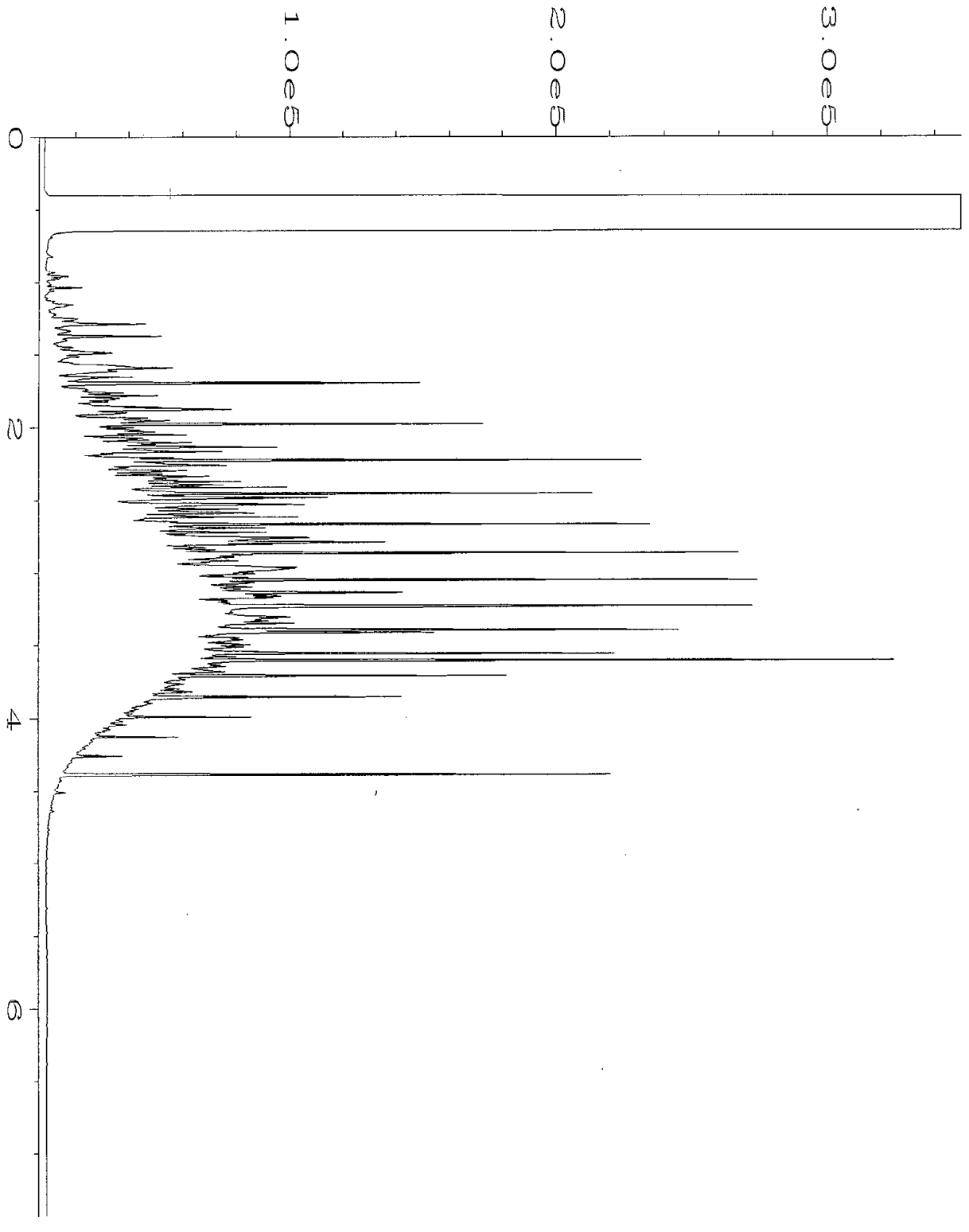
Data File Name : C:\HPCHEM\1\DATA\03-16-20\018F0901.D
Operator : TL
Instrument : GC1
Sample Name : 003233-03
Run Time Bar Code:
Acquired on : 16 Mar 20 03:42 PM
Report Created on: 15 Oct 20 09:55 AM

Page Number : 1
Vial Number : 18
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

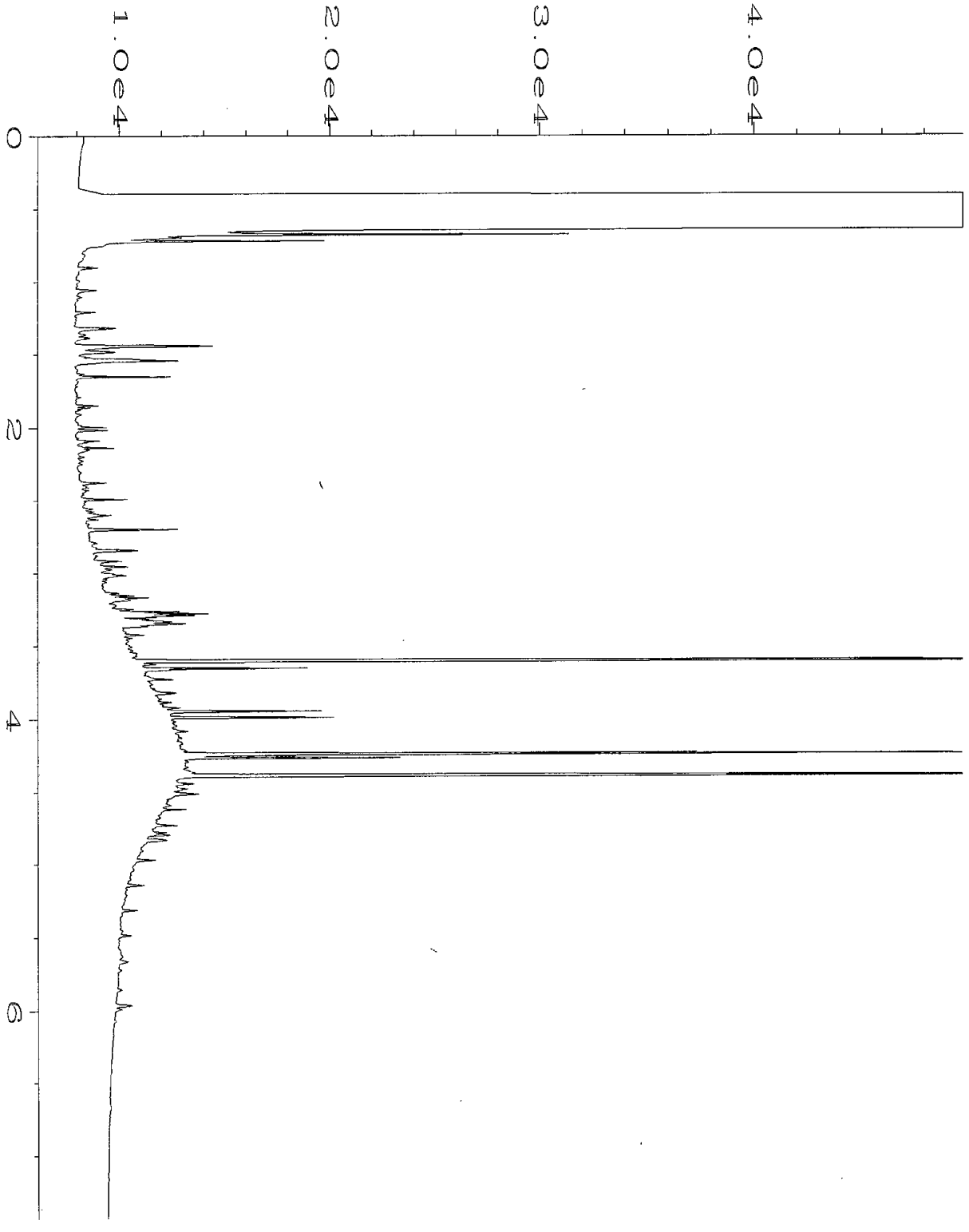


Data File Name : C:\HPCHEM\1\DATA\03-16-20\006F0601.D
Operator : TL
Instrument : GC1
Sample Name : 00-636 mb
Run Time Bar Code:
Acquired on : 16 Mar 20 11:42 AM
Report Created on: 15 Oct 20 09:56 AM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 6
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



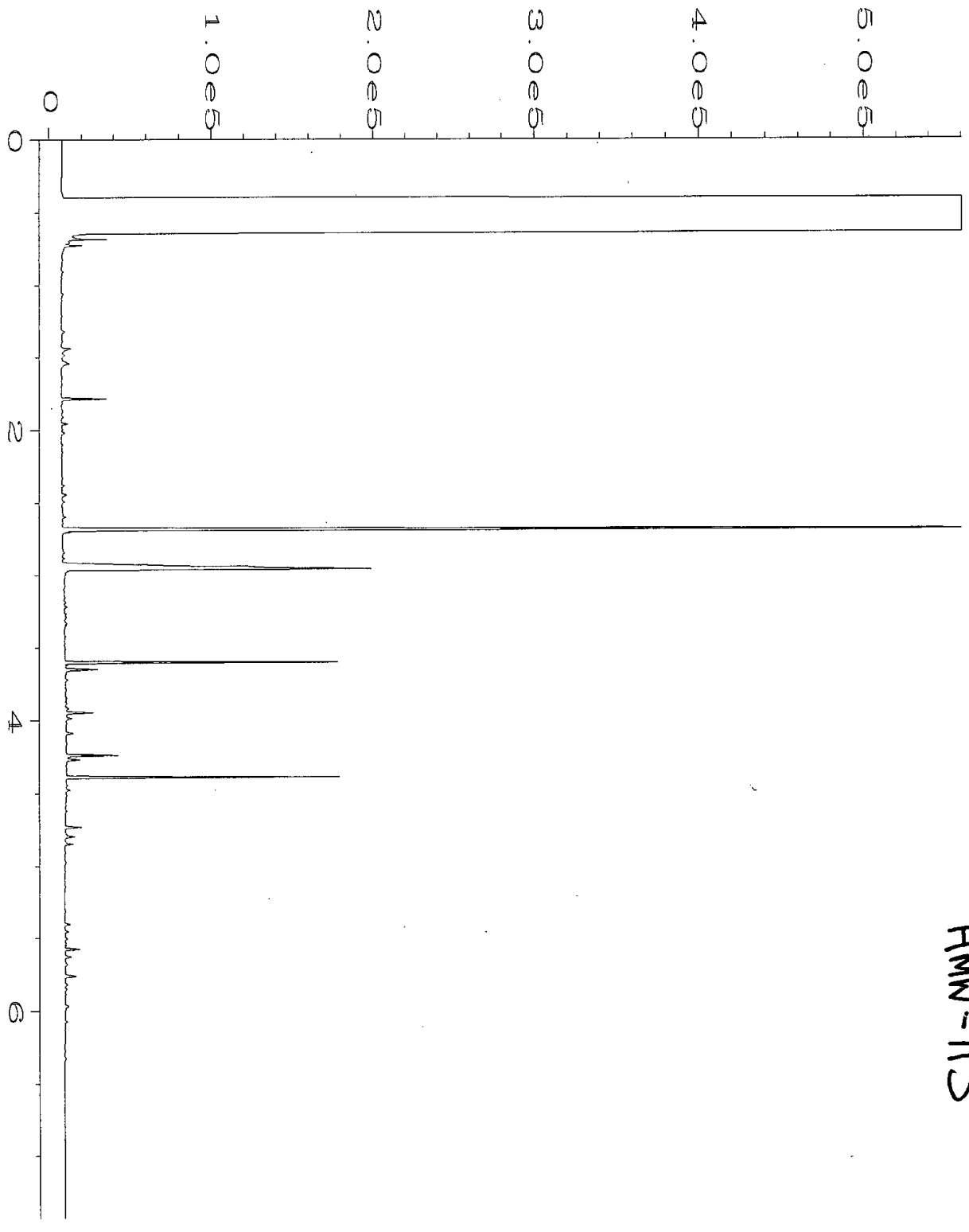
Data File Name	: C:\HPCHEM\1\DATA\03-16-20\005F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 16 Mar 20 02:44 PM	Instrument Method	: DX.MTH
Report Created on:	15 Oct 20 09:56 AM	Analysis Method	: DEFAULT.MTH



HMW-15

Data File Name : C:\HPCHEM\1\DATA\03-13-20\025F0701.D
Operator : TL
Instrument : GC1
Sample Name : 003203-04
Run Time Bar Code:
Acquired on : 13 Mar 20 03:26 PM
Report Created on: 15 Oct 20 09:53 AM

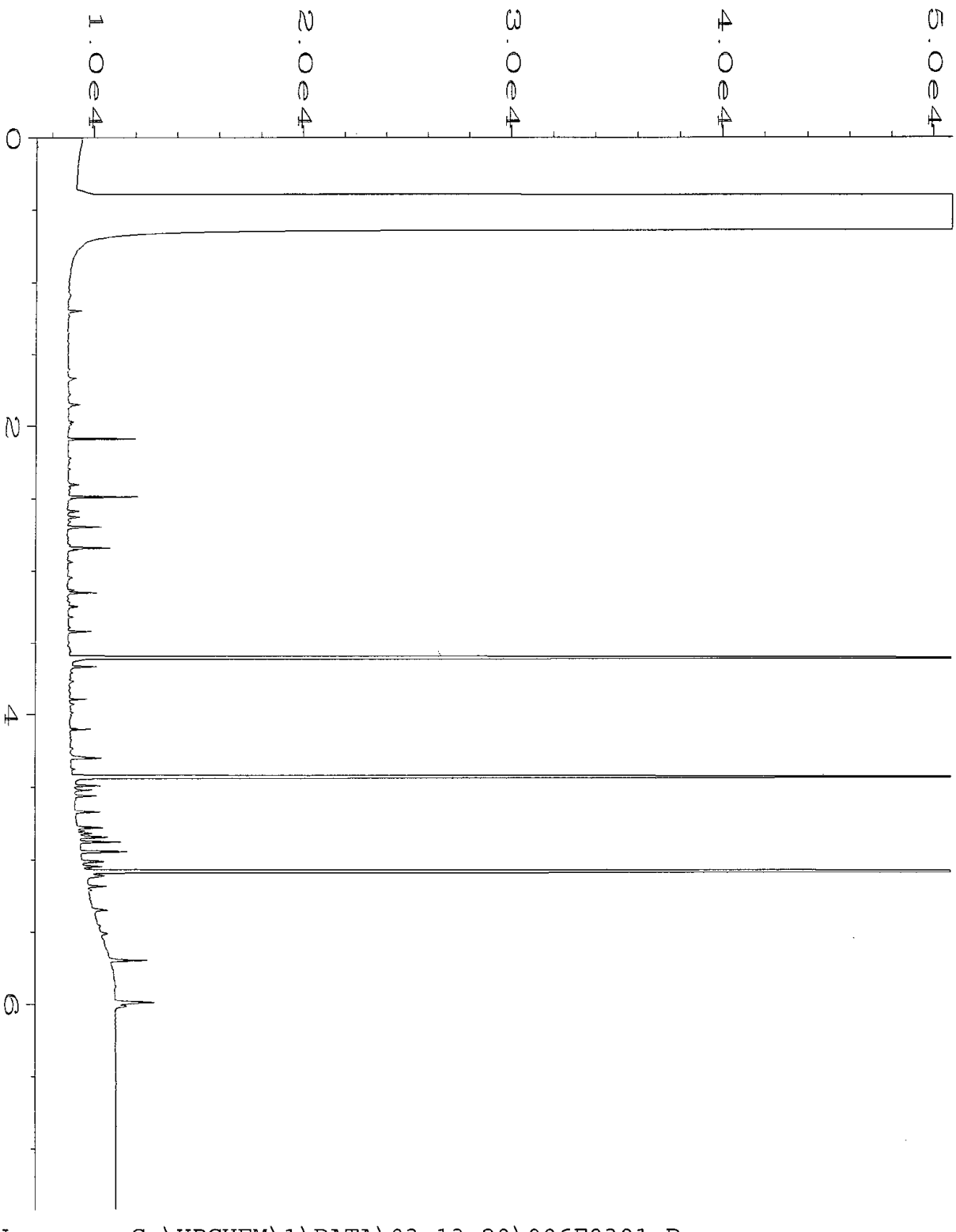
Page Number : 1
Vial Number : 25
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



HMW-11S

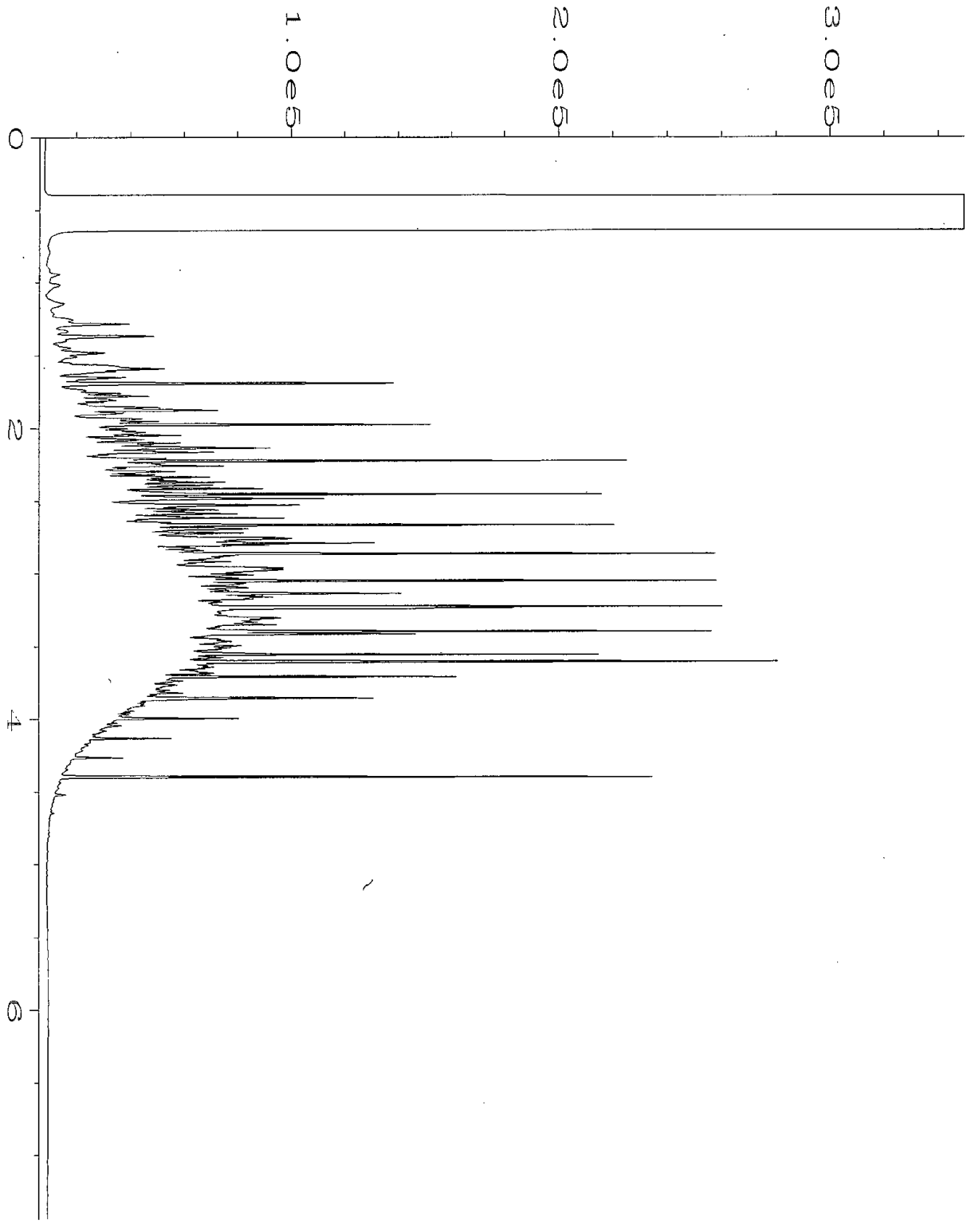
Data File Name : C:\HPCHEM\1\DATA\03-13-20\027F0701.D
Operator : TL
Instrument : GC1
Sample Name : 003203-06
Run Time Bar Code:
Acquired on : 13 Mar 20 03:49 PM
Report Created on: 15 Oct 20 09:53 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

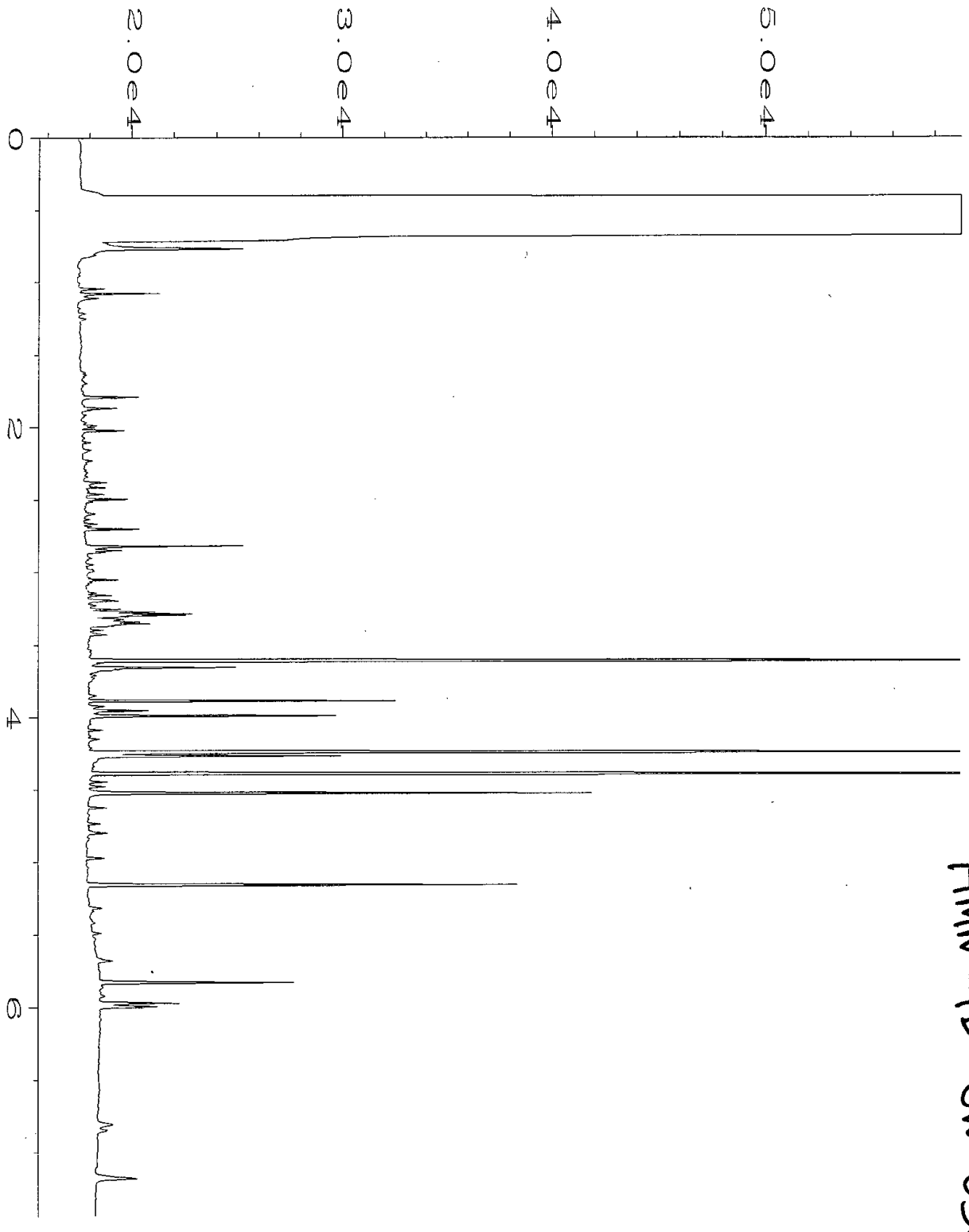


Data File Name : C:\HPCHEM\1\DATA\03-13-20\006F0301.D
Operator : TL
Instrument : GC1
Sample Name : 00-632 mb2
Run Time Bar Code:
Acquired on : 13 Mar 20 07:19 AM
Report Created on: 15 Oct 20 09:53 AM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



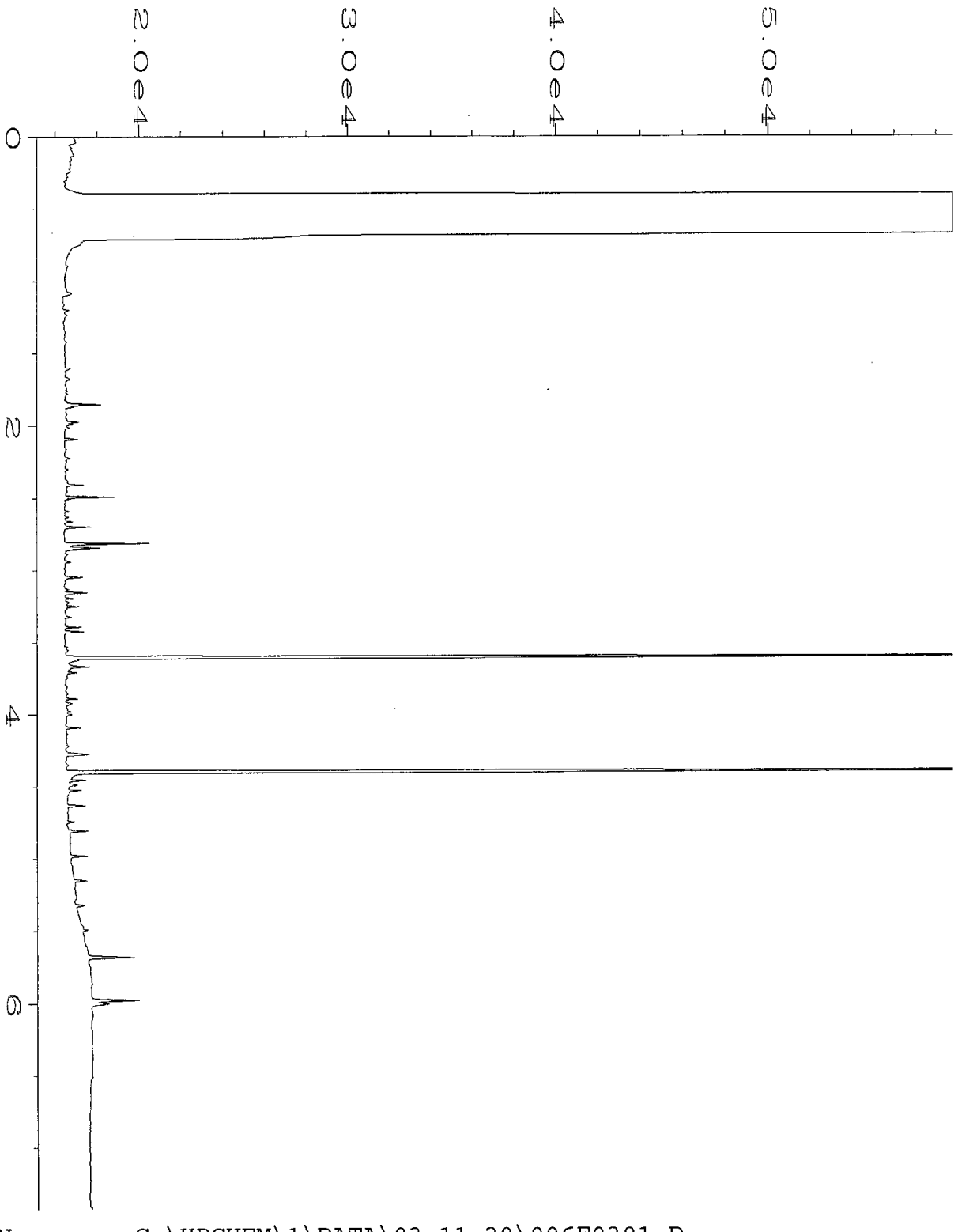
Data File Name	: C:\HPCHEM\1\DATA\03-13-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 13 Mar 20 02:51 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:53 AM	Analysis Method	: DEFAULT.MTH



HMW-1D-GW-0309

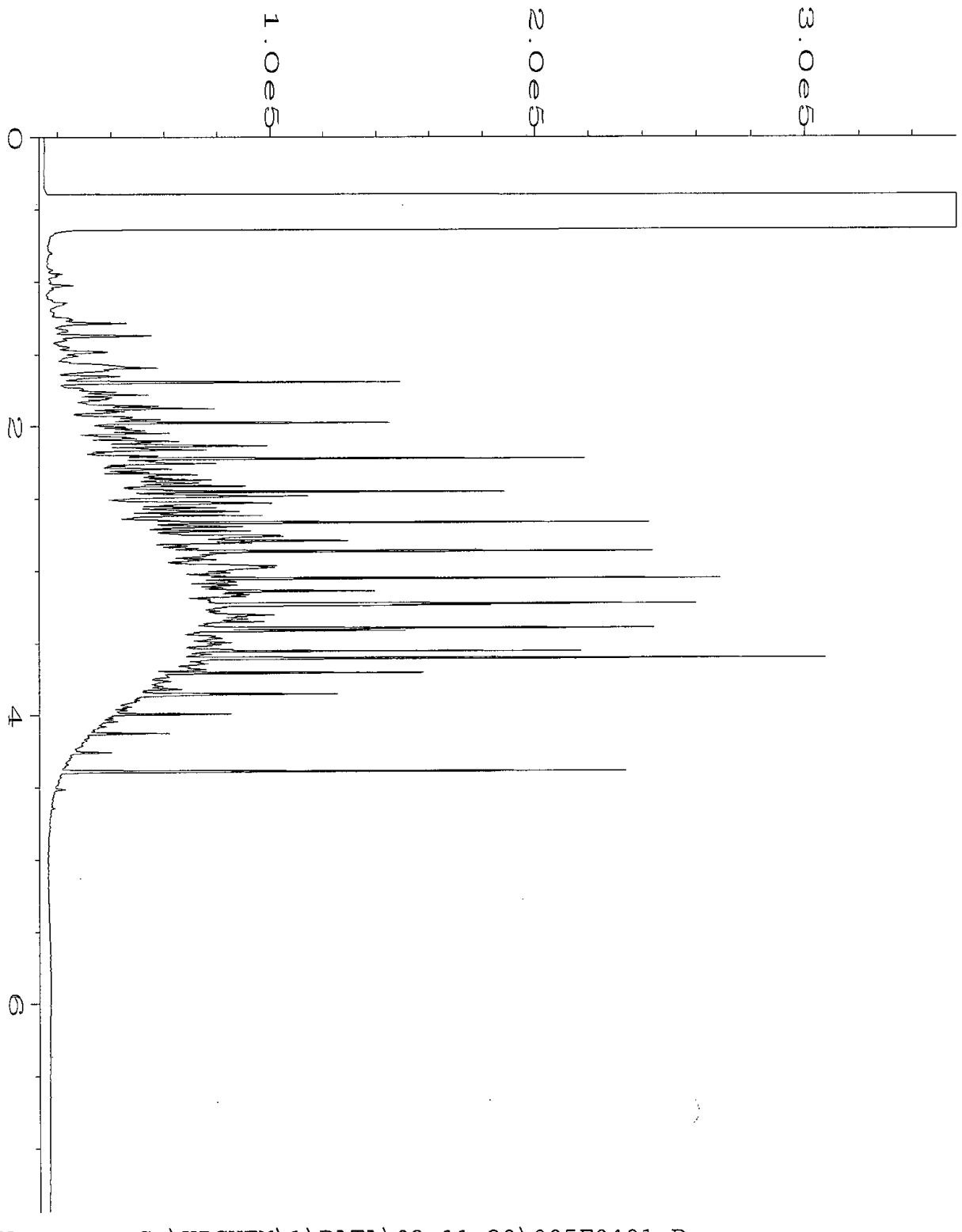
Data File Name : C:\HPCHEM\1\DATA\03-11-20\009F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003160-03
Run Time Bar Code:
Acquired on : 11 Mar 20 08:50 AM
Report Created on: 15 Oct 20 09:52 AM

Page Number : 1
Vial Number : 9
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

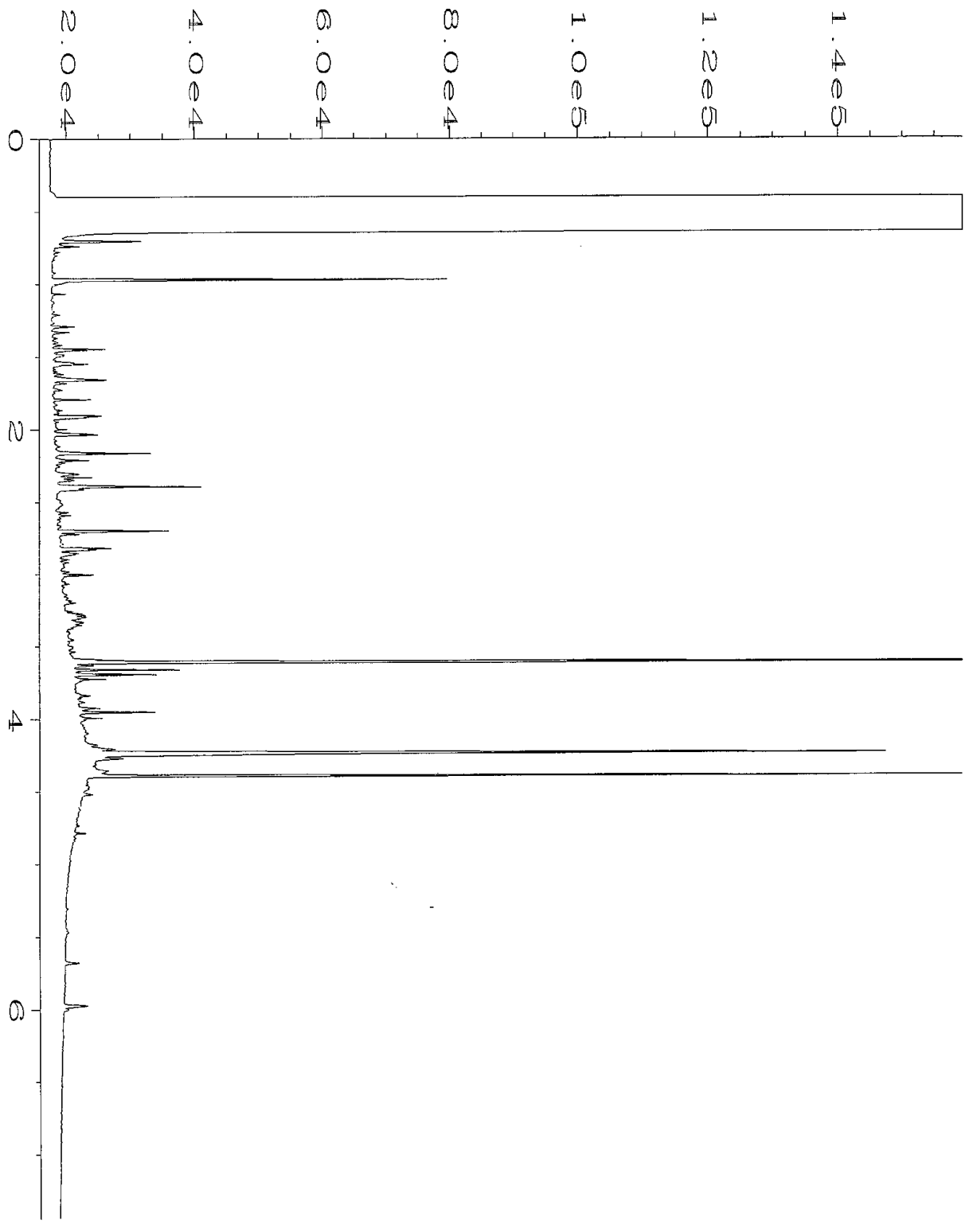


Data File Name : C:\HPCHEM\1\DATA\03-11-20\006F0301.D
Operator : TL
Instrument : GC1
Sample Name : 00-602 mb
Run Time Bar Code:
Acquired on : 11 Mar 20 08:18 AM
Report Created on: 15 Oct 20 09:52 AM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



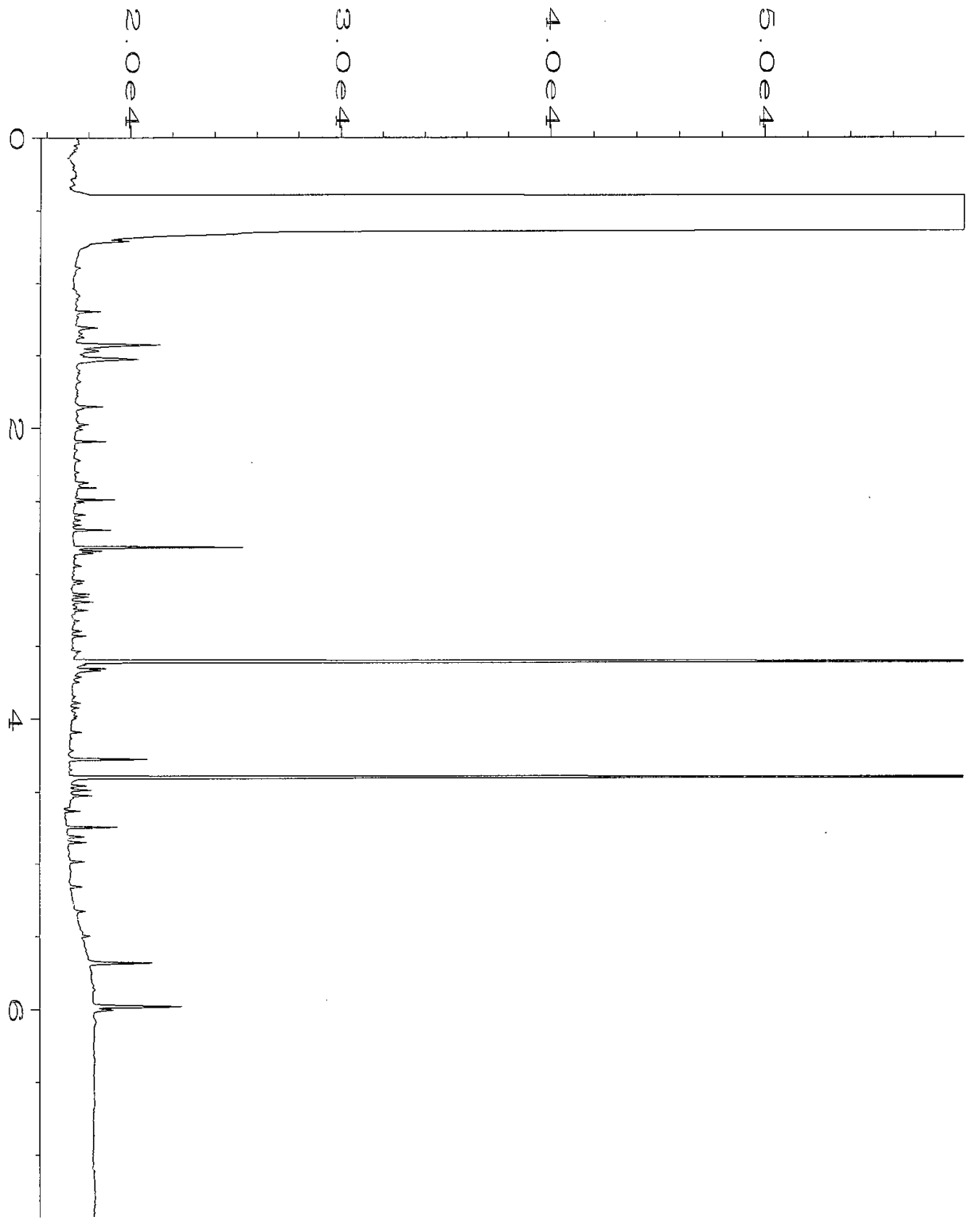
Data File Name	: C:\HPCHEM\1\DATA\03-11-20\005F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 11 Mar 20 02:08 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:52 AM	Analysis Method	: DEFAULT.MTH



MBB15-GW

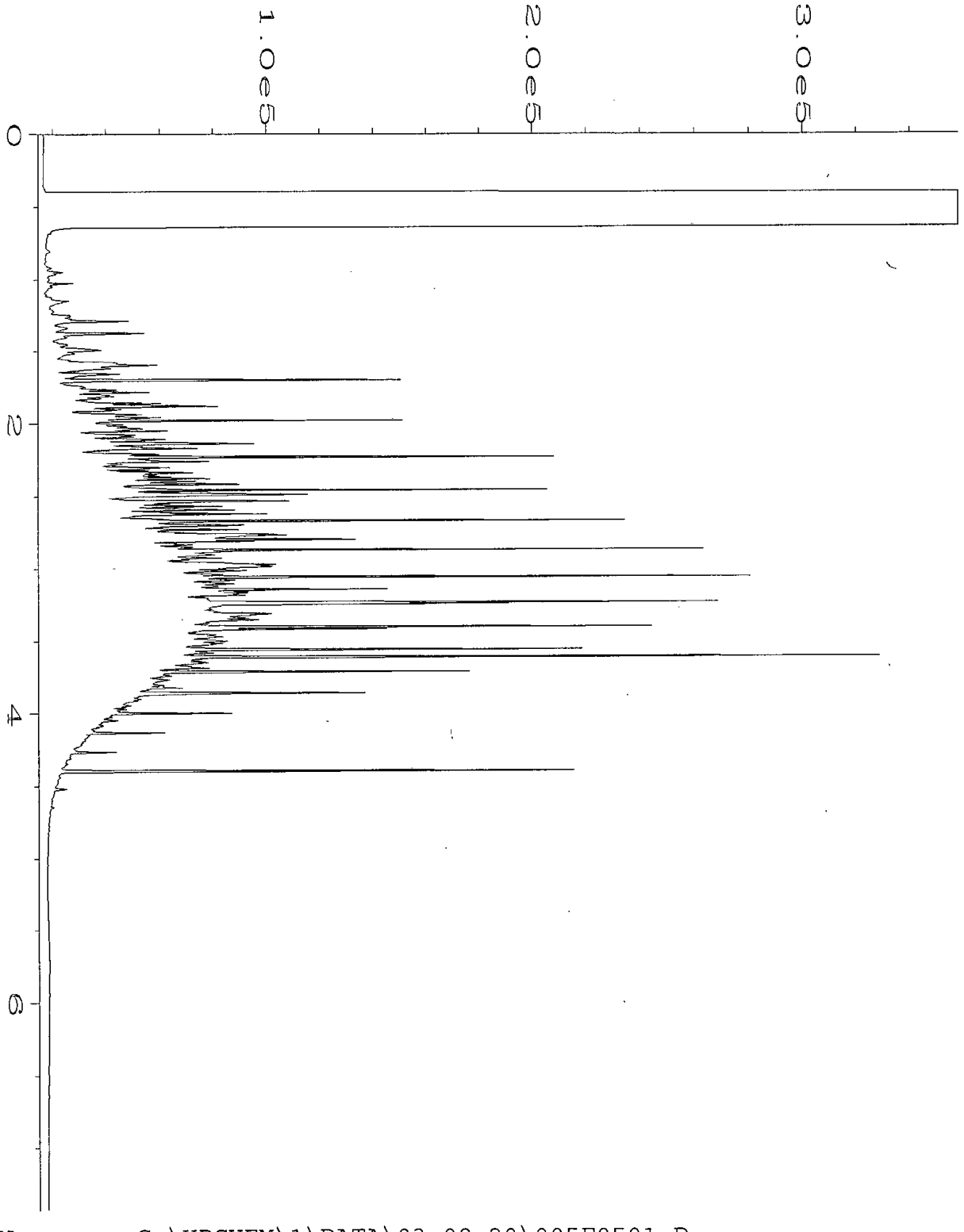
Data File Name : C:\HPCHEM\1\DATA\03-09-20\016F0401.D
Operator : TL
Instrument : GC1
Sample Name : 003138-02
Run Time Bar Code:
Acquired on : 09 Mar 20 01:08 PM
Report Created on: 15 Oct 20 09:41 AM

Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 4
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

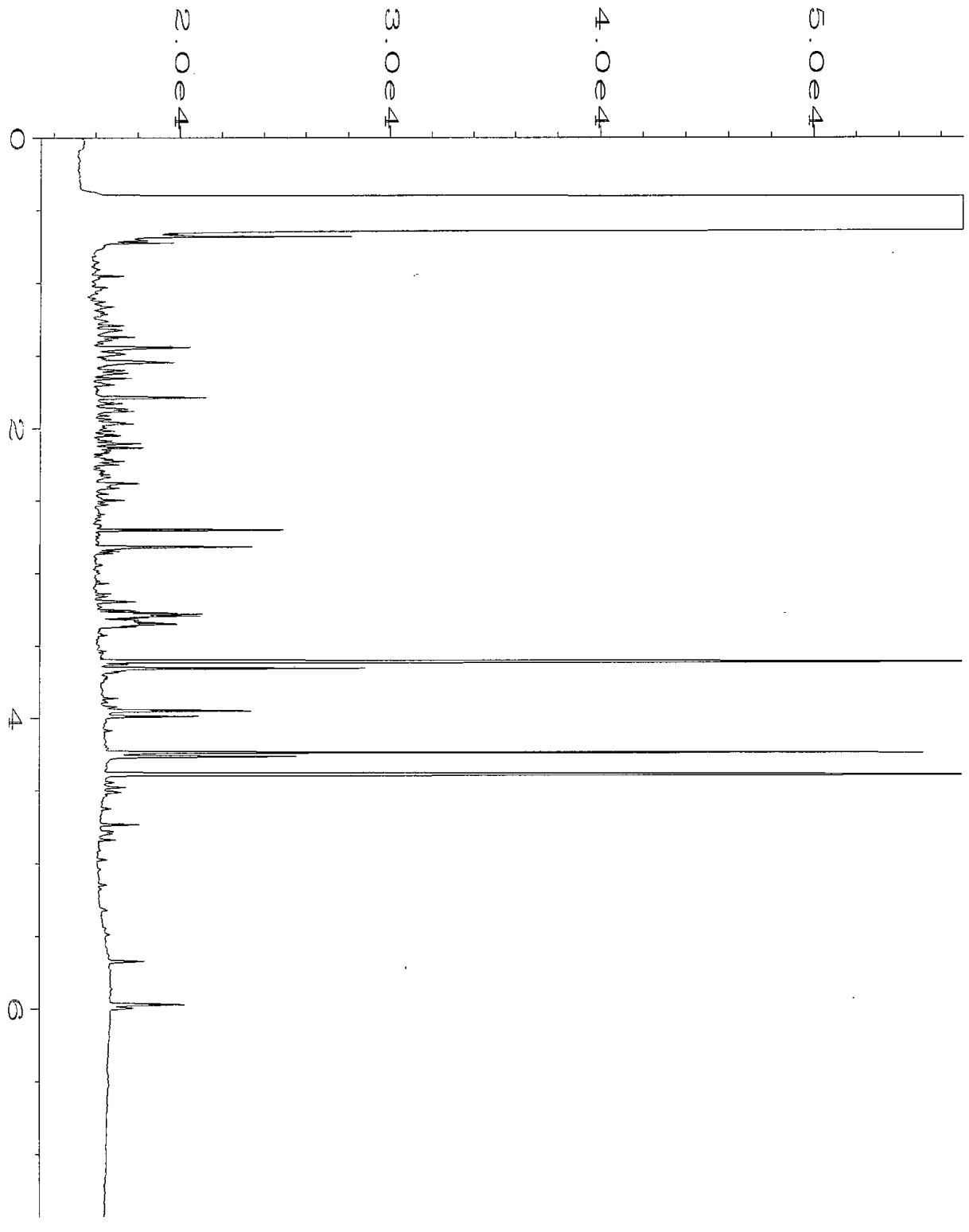


Data File Name : C:\HPCHEM\1\DATA\03-09-20\013F0401.D
Operator : TL
Instrument : GC1
Sample Name : 00-589 mb
Run Time Bar Code:
Acquired on : 09 Mar 20 12:36 PM
Report Created on: 15 Oct 20 09:42 AM

Page Number : 1
Vial Number : 13
Injection Number : 1
Sequence Line : 4
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



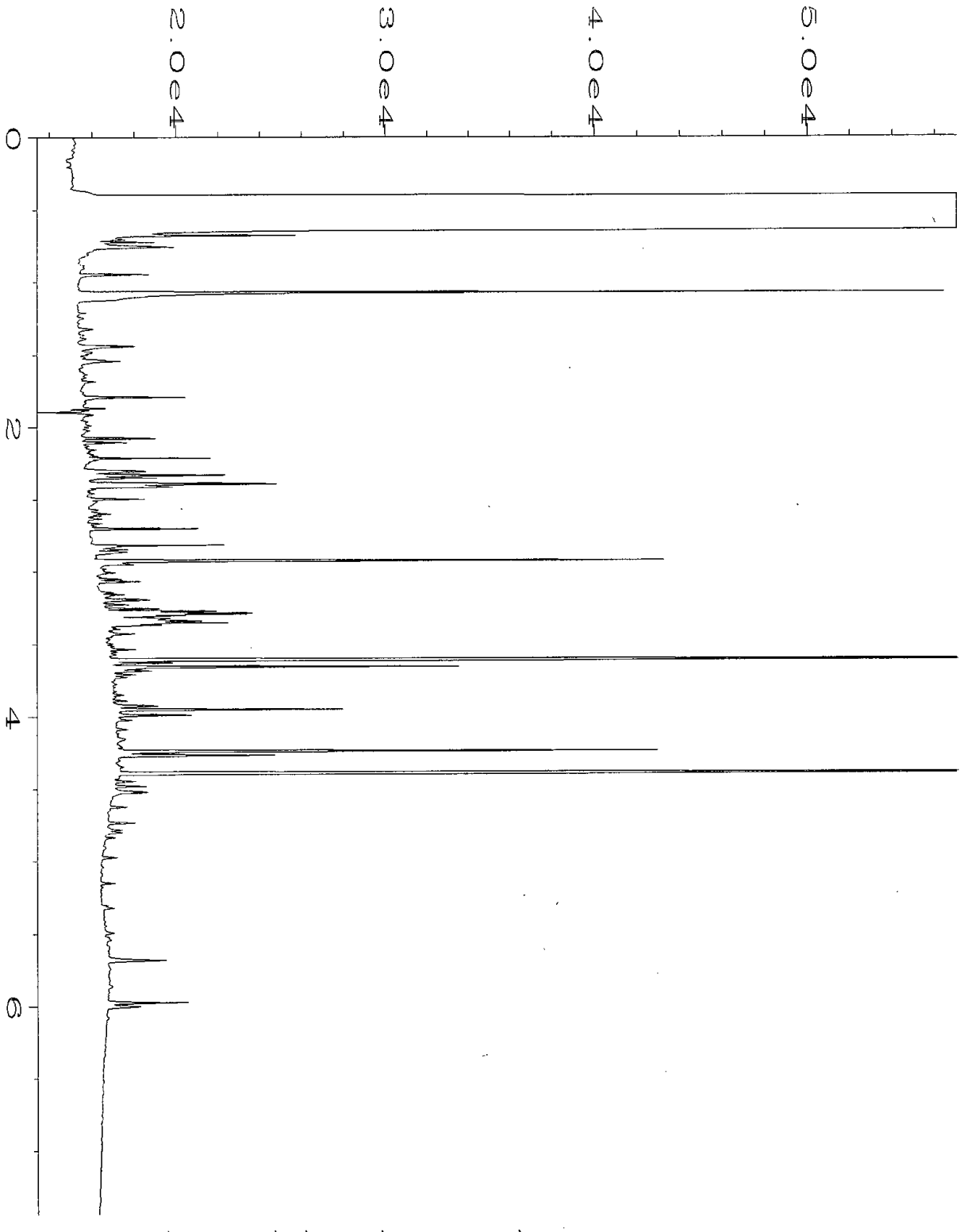
Data File Name	: C:\HPCHEM\1\DATA\03-09-20\005F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 09 Mar 20 02:15 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:41 AM	Analysis Method	: DEFAULT.MTH



MBB-4-GW

Data File Name : C:\HPCHEM\1\DATA\03-09-20\037F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003120-01
Run Time Bar Code:
Acquired on : 09 Mar 20 06:10 PM
Report Created on: 15 Oct 20 09:40 AM

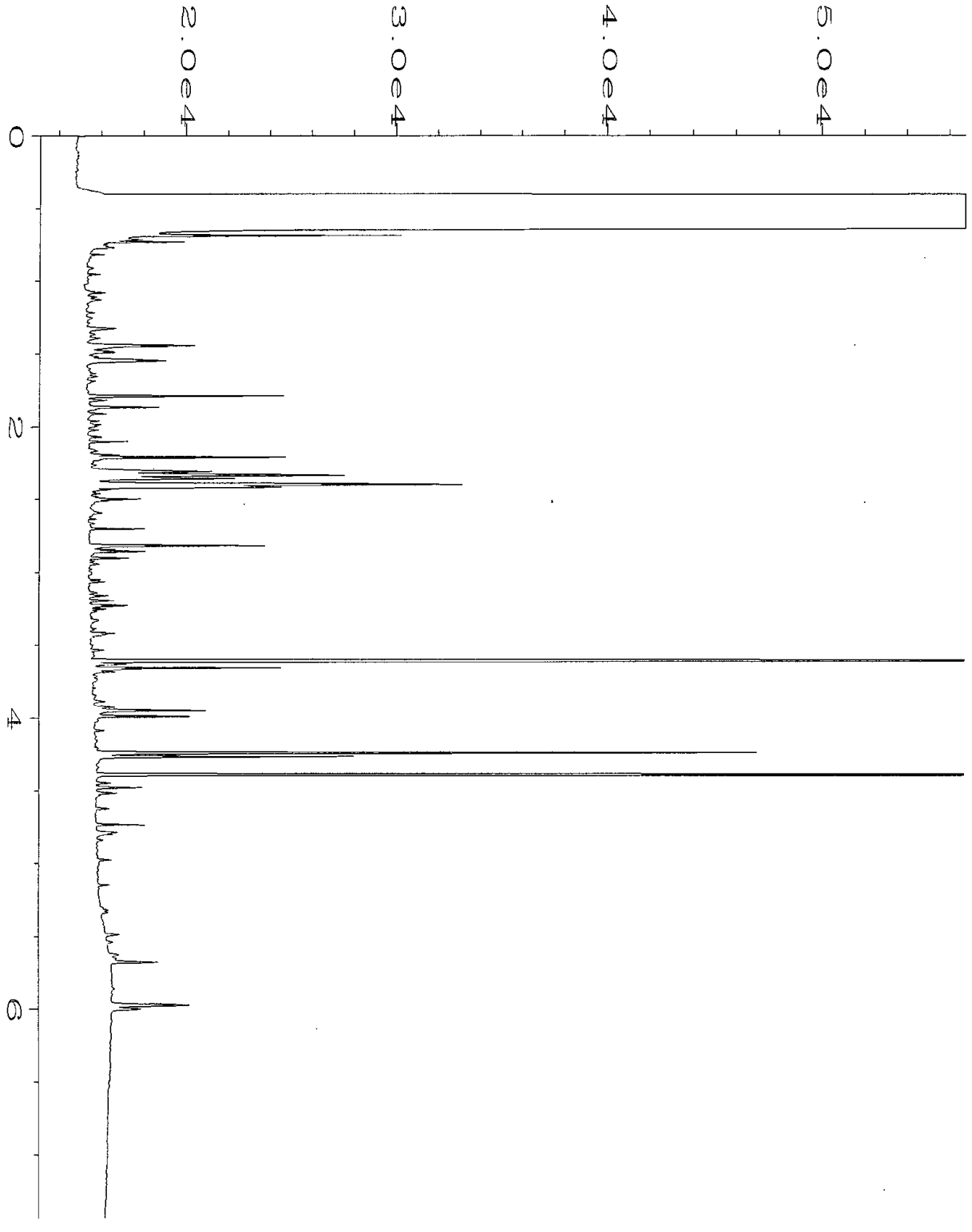
Page Number : 1
Vial Number : 37
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



MBB-5-GW

Data File Name : C:\HPCHEM\1\DATA\03-09-20\038F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003120-02
Run Time Bar Code:
Acquired on : 09 Mar 20 06:21 PM
Report Created on: 15 Oct 20 09:41 AM

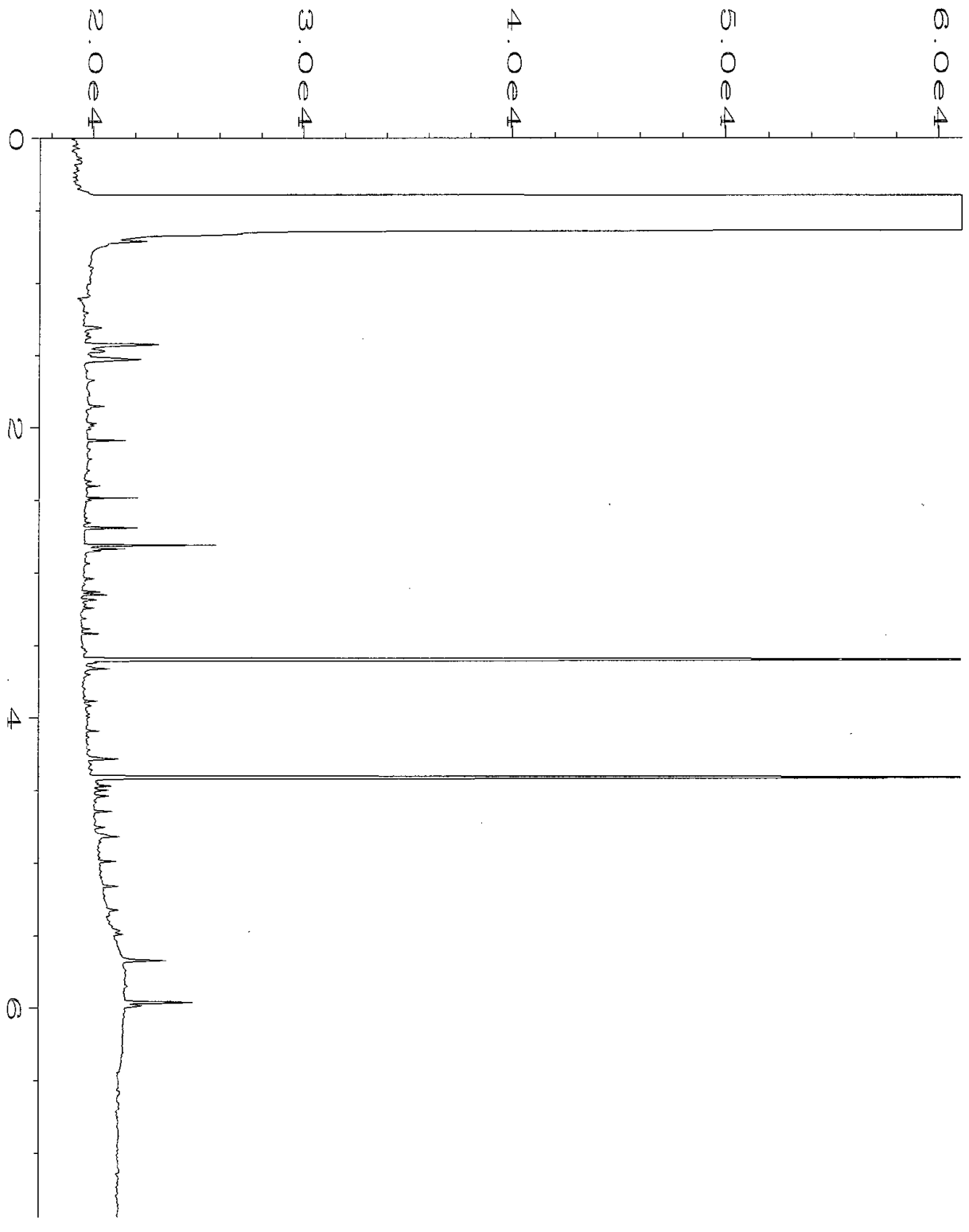
Page Number : 1
Vial Number : 38
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



MBB-6-GW

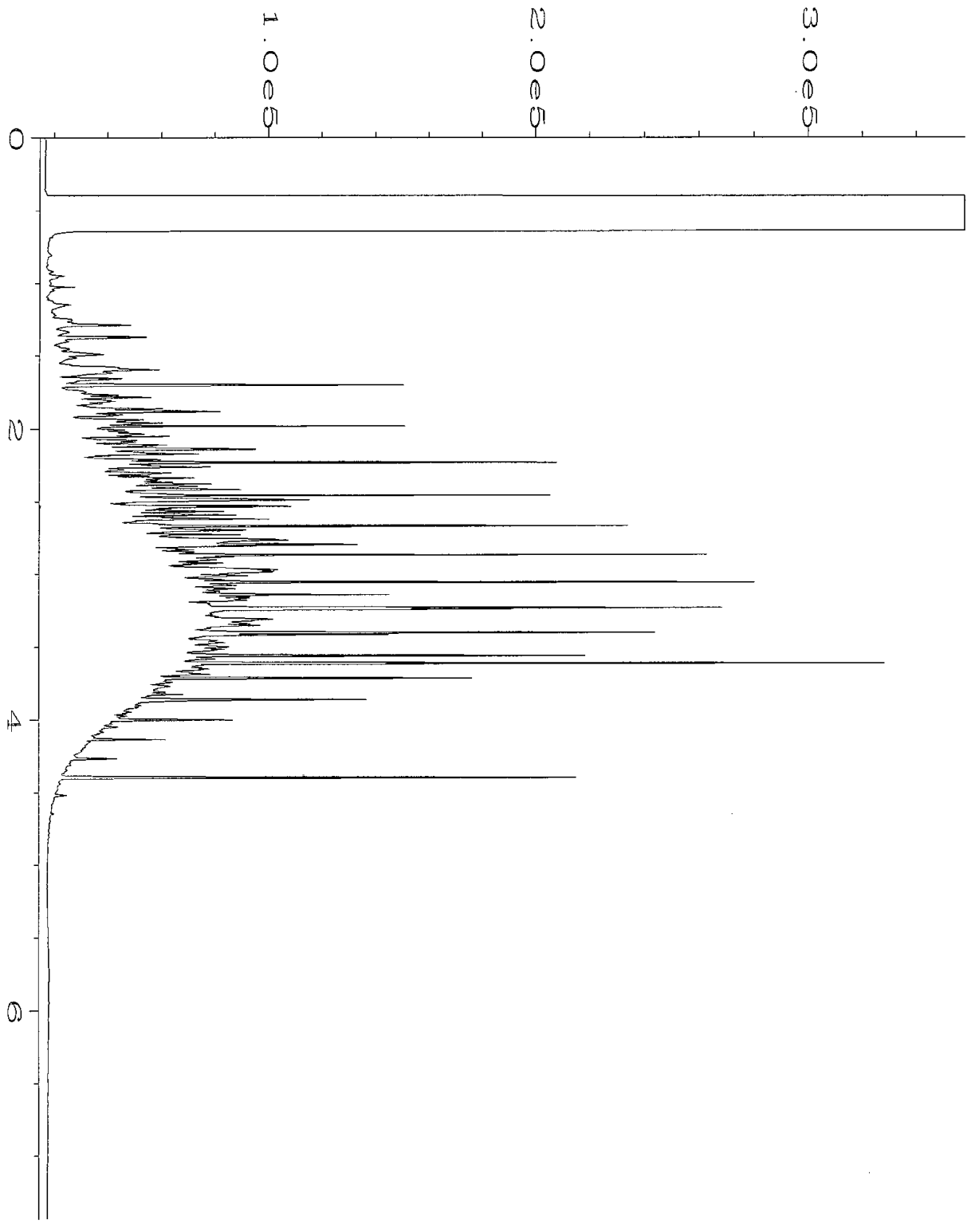
Data File Name : C:\HPCHEM\1\DATA\03-09-20\039F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003120-03
Run Time Bar Code:
Acquired on : 09 Mar 20 06:32 PM
Report Created on: 15 Oct 20 09:41 AM

Page Number : 1
Vial Number : 39
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

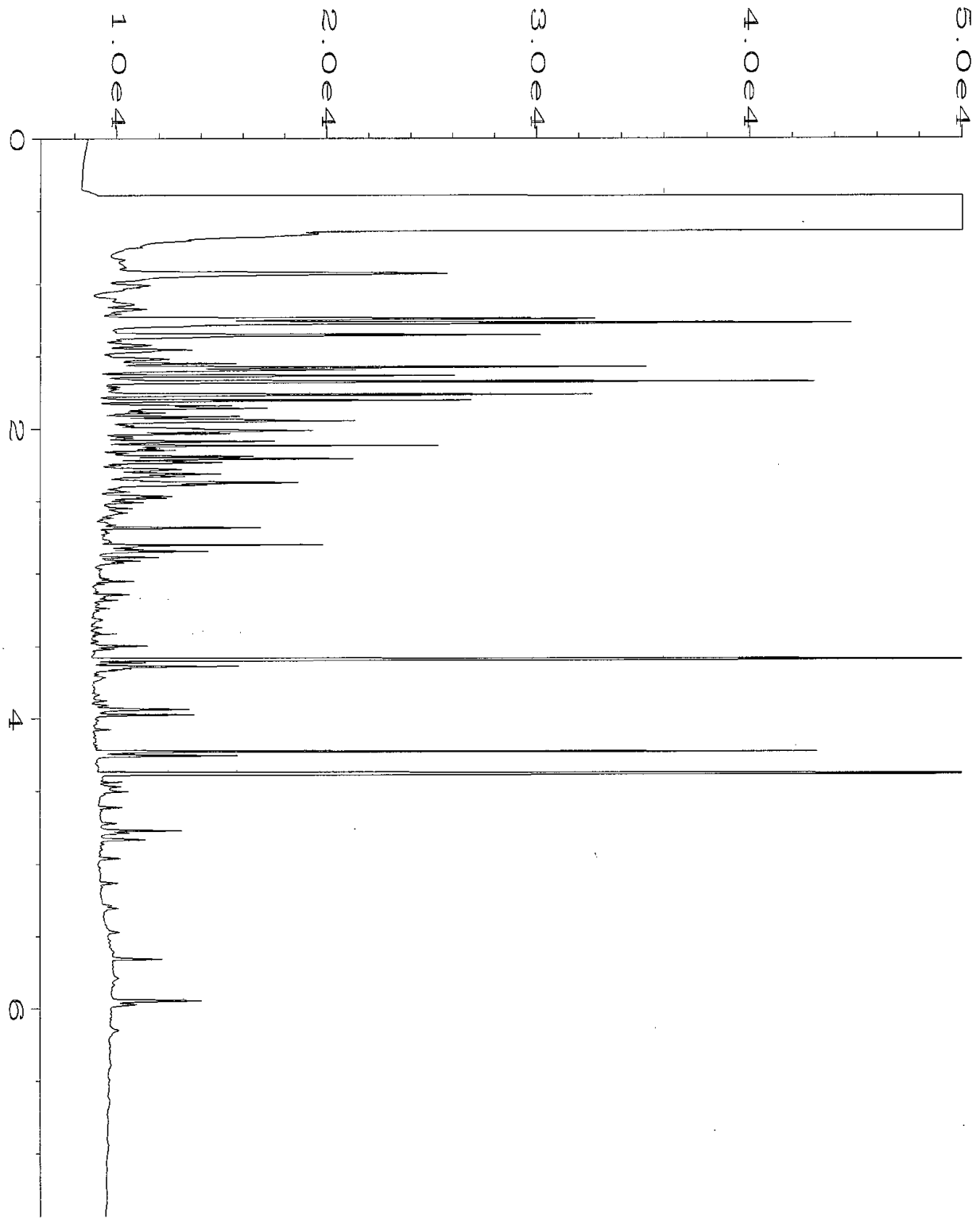


Data File Name : C:\HPCHEM\1\DATA\03-09-20\006F0401.D
Operator : TL
Instrument : GC1
Sample Name : 00-590 mb
Run Time Bar Code:
Acquired on : 09 Mar 20 10:25 AM
Report Created on: 15 Oct 20 09:41 AM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 4
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



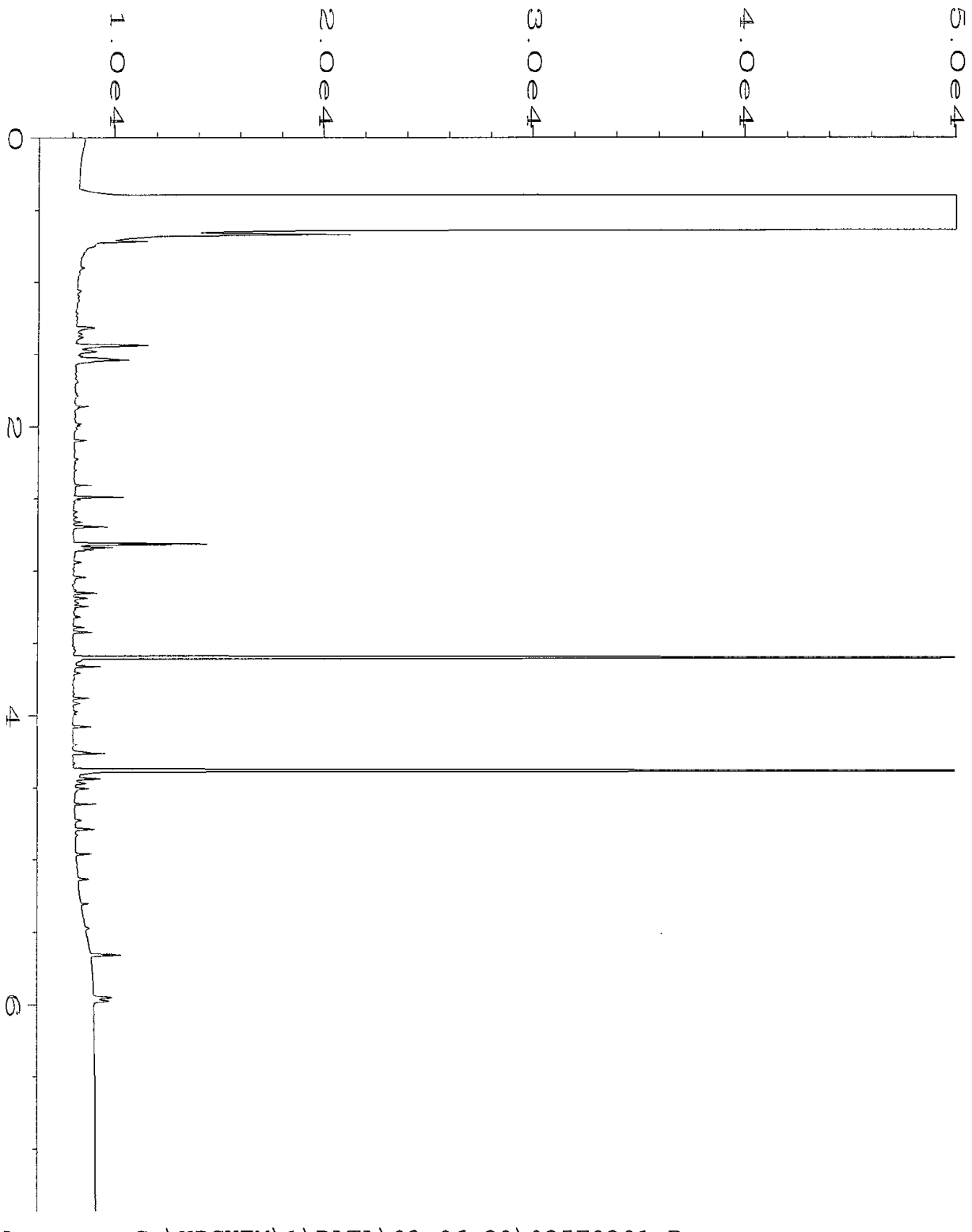
Data File Name	: C:\HPCHEM\1\DATA\03-09-20\005F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 09 Mar 20 02:15 PM	Instrument Method	: DX.MTH
Report Created on:	15 Oct 20 09:41 AM	Analysis Method	: DEFAULT.MTH



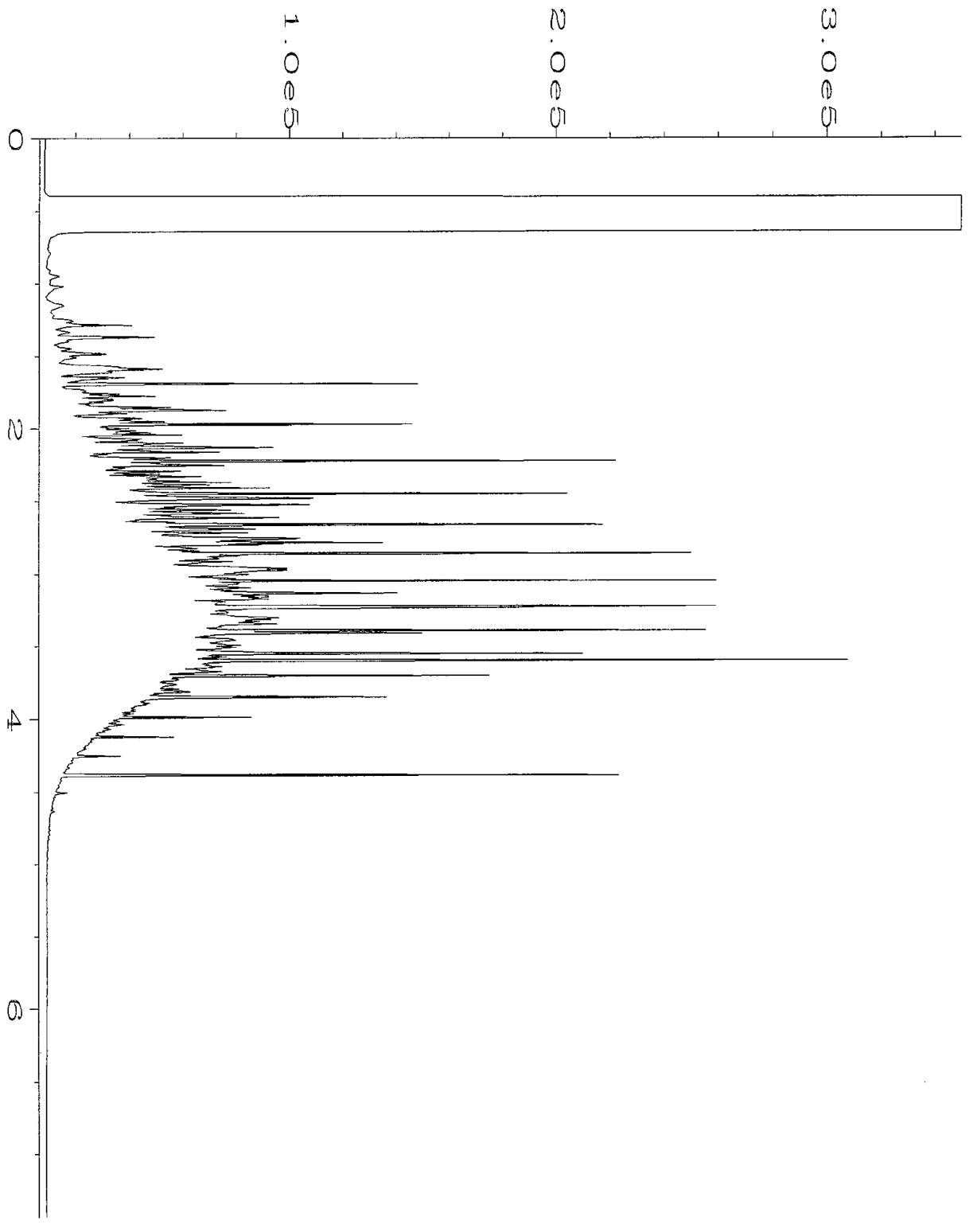
MBB-3-GW

Data File Name : C:\HPCHEM\1\DATA\03-06-20\032F0701.D
Operator : TL
Instrument : GC1
Sample Name : 003079-01
Run Time Bar Code:
Acquired on : 06 Mar 20 03:01 PM
Report Created on: 15 Oct 20 09:39 AM

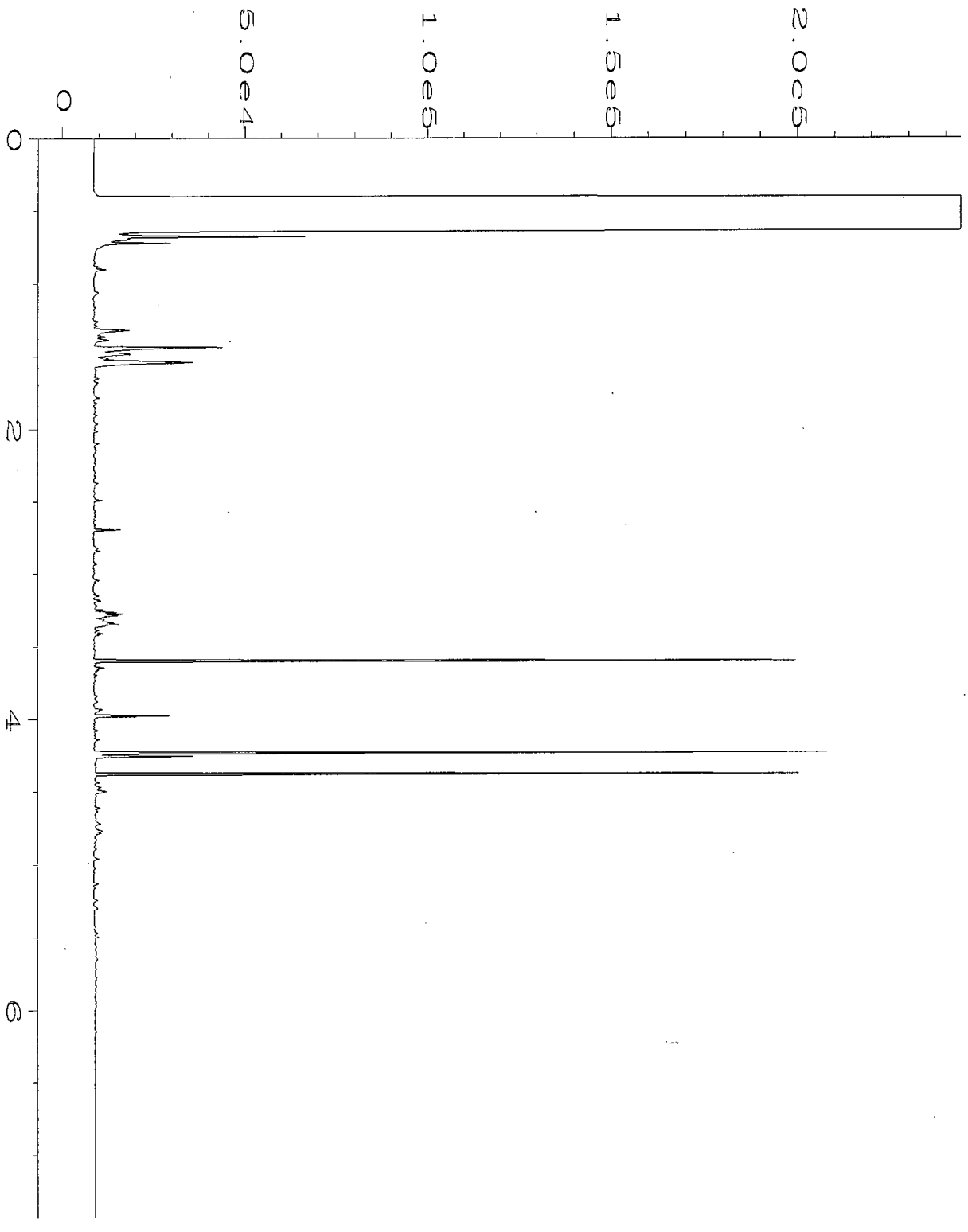
Page Number : 1
Vial Number : 32
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\03-06-20\025F0301.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 25
Sample Name	: 00-582 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 3
Acquired on	: 06 Mar 20 12:20 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:39 AM	Analysis Method	: DEFAULT.MTH



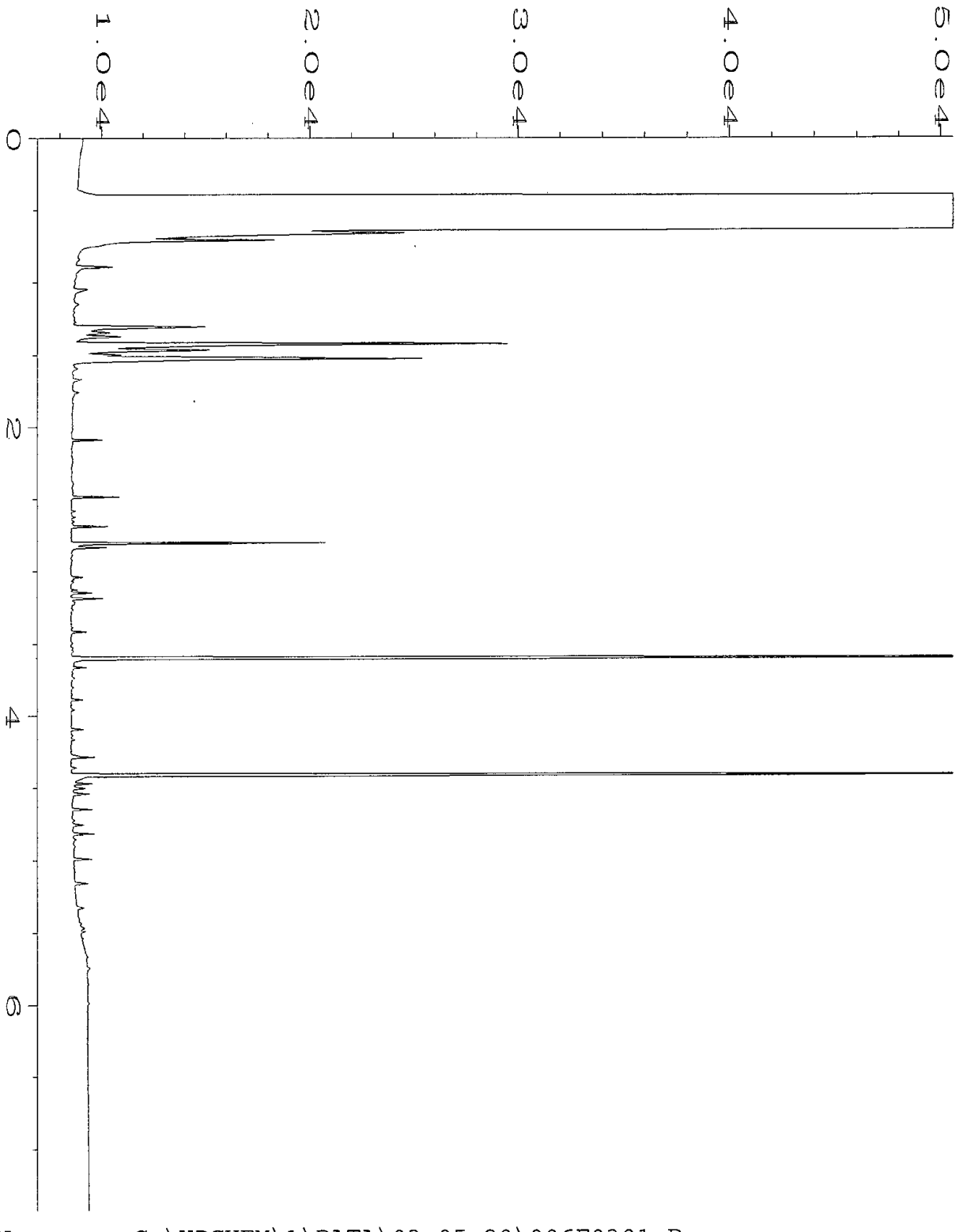
Data File Name	: C:\HPCHEM\1\DATA\03-06-20\005F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 06 Mar 20 01:57 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:40 AM	Analysis Method	: DEFAULT.MTH



MBB-2-GW

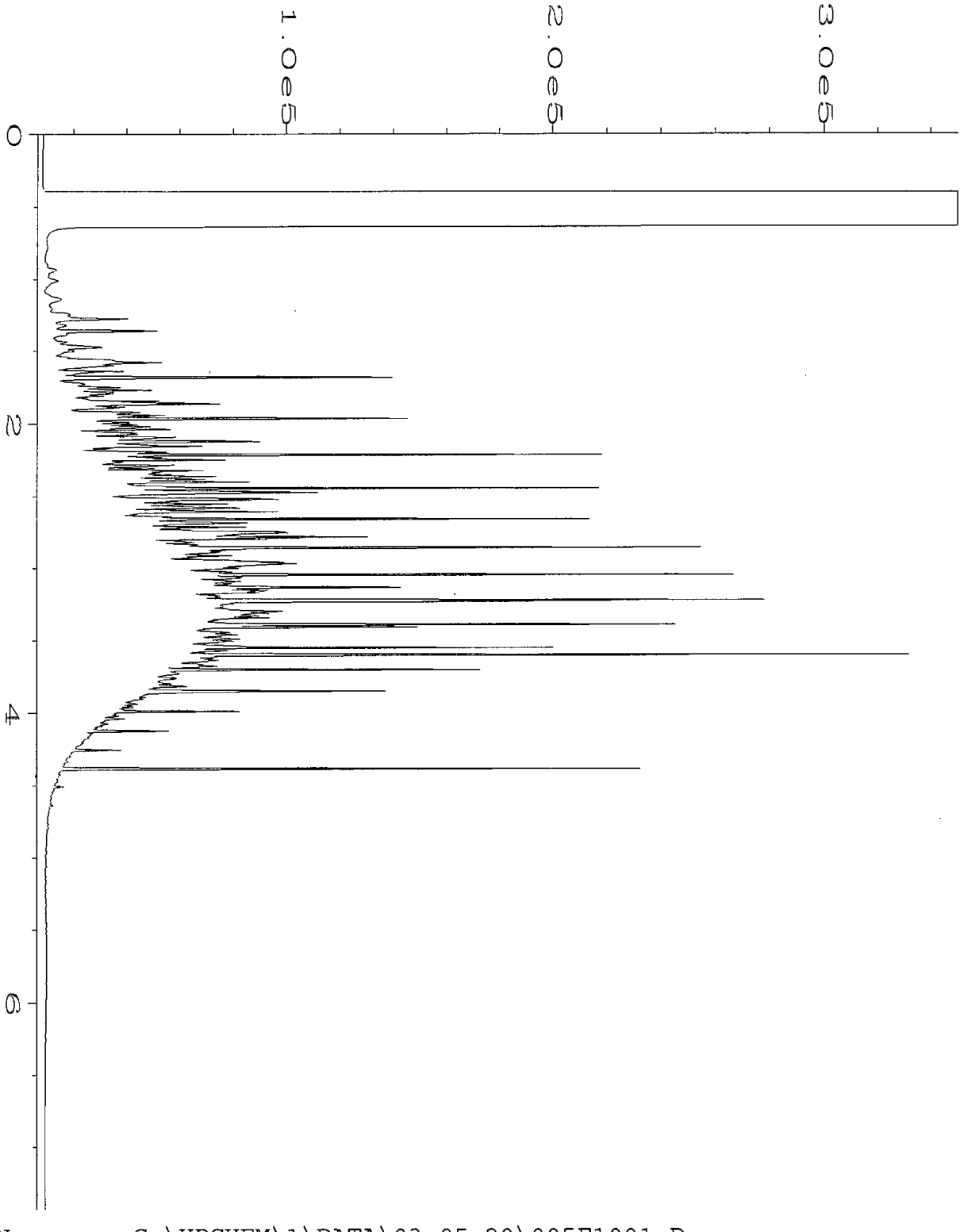
Data File Name : C:\HPCHEM\1\DATA\03-05-20\009F0501.D
Operator : TL
Instrument : GC1
Sample Name : 003038-27
Run Time Bar Code:
Acquired on : 05 Mar 20 10:29 AM
Report Created on: 15 Oct 20 09:38 AM

Page Number : 1
Vial Number : 9
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

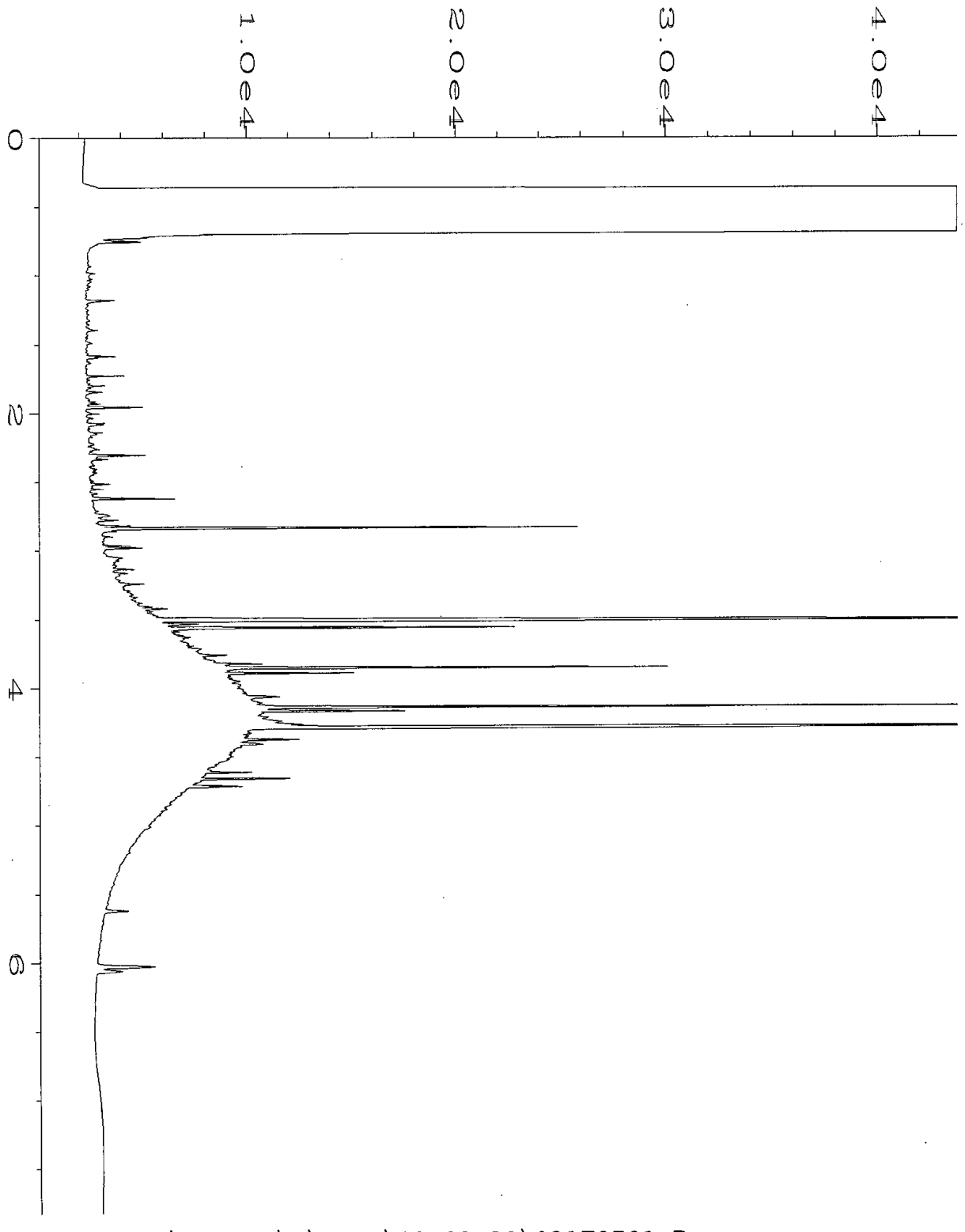


Data File Name : C:\HPCHEM\1\DATA\03-05-20\006F0301.D
Operator : TL
Instrument : GC1
Sample Name : 00-530 mb2
Run Time Bar Code:
Acquired on : 05 Mar 20 09:34 AM
Report Created on: 15 Oct 20 09:39 AM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



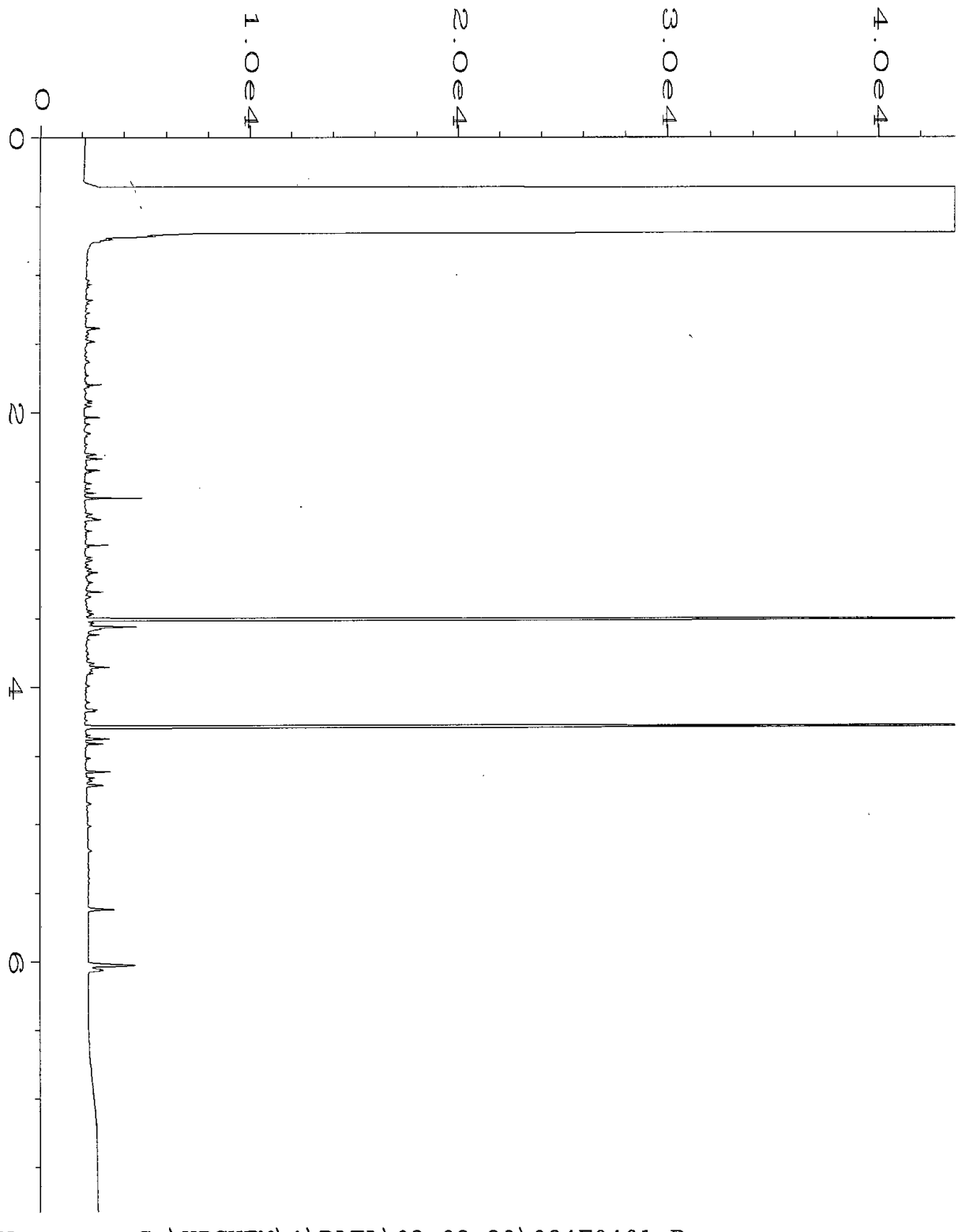
Data File Name	: C:\HPCHEM\1\DATA\03-05-20\005F1001.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 10
Acquired on	: 05 Mar 20 02:50 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:39 AM	Analysis Method	: DEFAULT.MTH



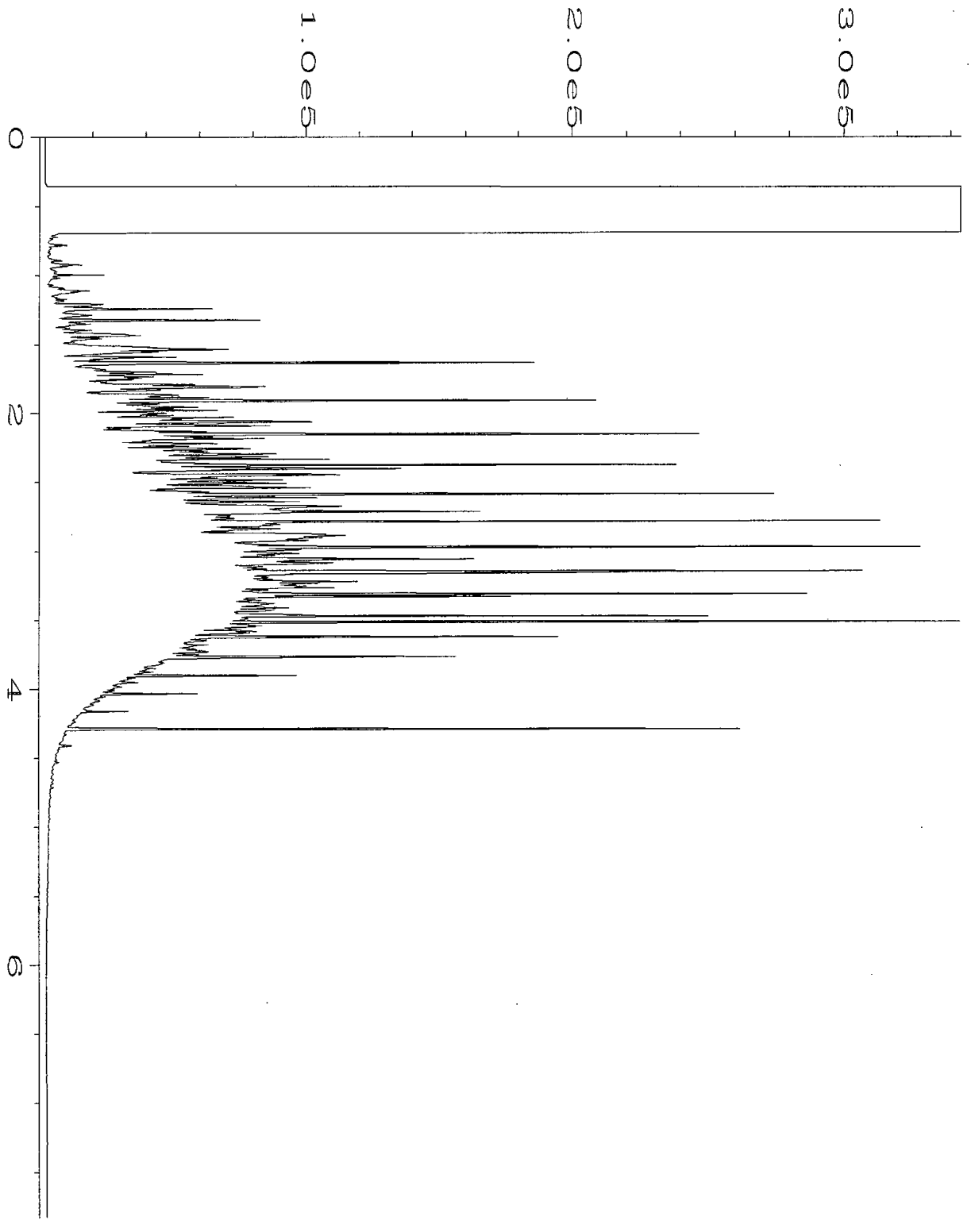
MBB-9-GW

Data File Name : C:\HPCHEM\4\DATA\03-02-20\031F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 002468-30
Run Time Bar Code:
Acquired on : 02 Mar 20 04:57 PM
Report Created on: 15 Oct 20 09:26 AM

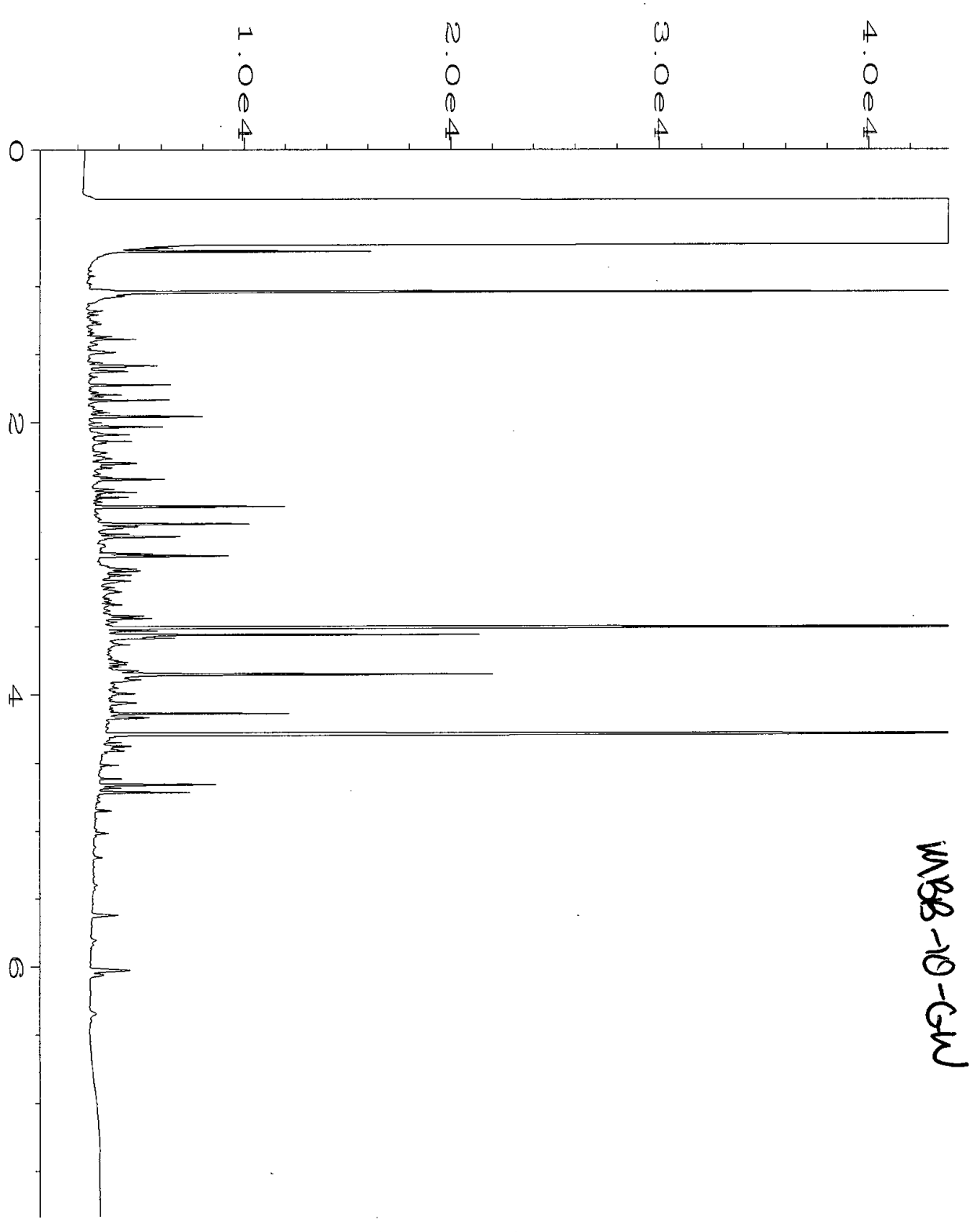
Page Number : 1
Vial Number : 31
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\03-02-20\084F0401.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 84
Sample Name	: 00-518 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 4
Acquired on	: 02 Mar 20 01:02 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:26 AM	Analysis Method	: DEFAULT.MTH



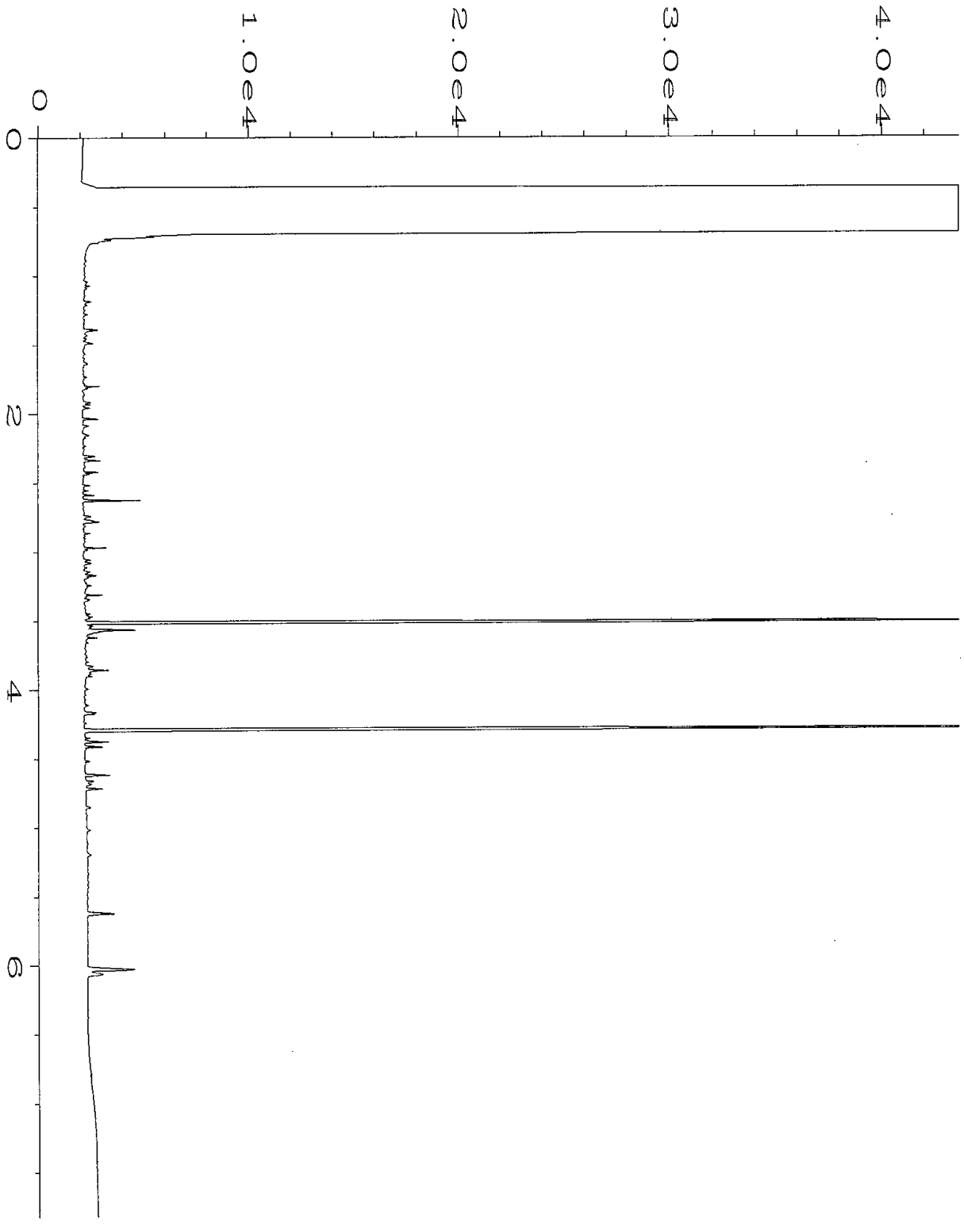
Data File Name	: C:\HPCHEM\4\DATA\03-02-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 02 Mar 20 02:57 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 09:26 AM	Analysis Method	: DEFAULT.MTH



WBB-10-GW

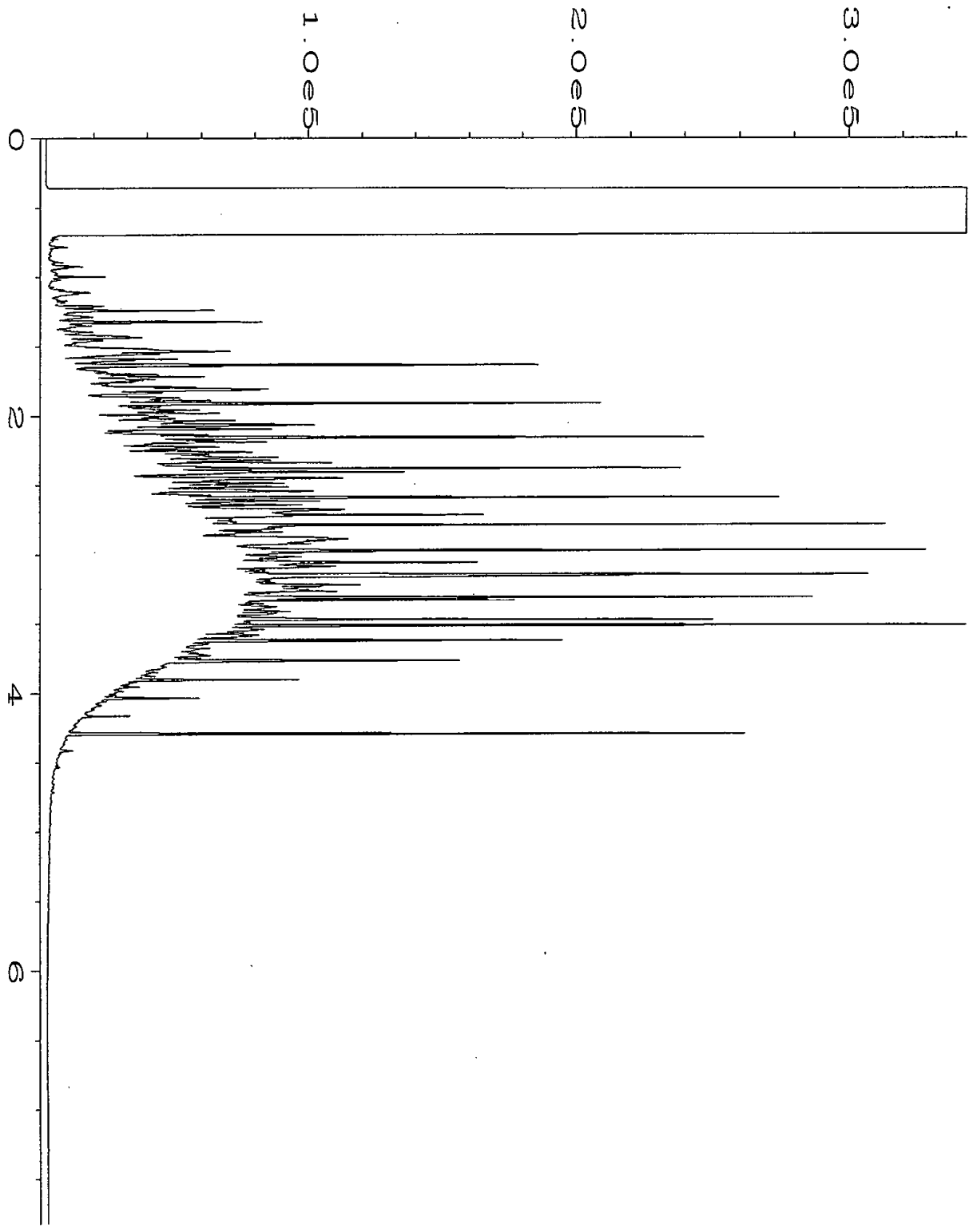
Data File Name : C:\HPCHEM\4\DATA\03-02-20\022F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 002445-36
Run Time Bar Code:
Acquired on : 02 Mar 20 03:09 PM
Report Created on: 15 Oct 20 03:03 PM

Page Number : 1
Vial Number : 22
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name : C:\HPCHEM\4\DATA\03-02-20\084F0401.D
Operator : TL
Instrument : GC#4
Sample Name : 00-518 mb
Run Time Bar Code:
Acquired on : 02 Mar 20 01:02 PM
Report Created on: 15 Oct 20 03:03 PM

Page Number : 1
Vial Number : 84
Injection Number : 1
Sequence Line : 4
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



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Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 02 Mar 20 02:57 PM	Instrument Method	: DX.MTH
Report Created on	: 15 Oct 20 03:03 PM	Analysis Method	: DEFAULT.MTH

APPENDIX D
MW-146 and MW-147 Laboratory Narratives and Data Validation Memos

MEMORANDUM

TO: Project File **DATE:** June 12, 2018

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.304

TASK: April and May 2018 - Groundwater Samples

LAB: ESC Sample Delivery Groups L988839, L989529, L989149, L989898, L990247, L991410, and L995641

Thirty-one (31) groundwater samples (including two field duplicates), one (1) equipment blank, and two (2) trip blank samples were collected as part of a sampling event at the Former American Linen Supply Site, in Seattle, Washington, between April 25 and May 21, 2018. The samples were shipped and delivered to ESC Lab Sciences (ESC) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical methods stipulated by Washington State Department of Ecology;
- VOCs by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (Chloride, Nitrate, and Sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020A.

Associated sample data are reported in seven ESC SDGs (L988839, L989529, L989149, L989898, L990247, L991410, and L995641). The quality assurance review of the sample data are summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with ESC control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation less than 6°C. Samples were received in good condition with the following discussions:

- SDGs L988839 and L989149: Review of associated chain of custodies (COCs) show that the relinquished portions were not signed however daily field forms show a record of sample delivery to FedEx for shipment to ESC. Internal corrective action has been implemented by PES to ensure that all COCs are signed and dated when relinquishing possession/custody of the samples.

- SDG L989898: One of the vials for sample MW-143-043018 was received broken. ESC notified PES and proceeded with analysis.

- SDG L990247: One of the vials for sample EQ-0501118 was received broken. ESC notified PES and proceeded with analysis.

- SDG L991410: ESC did not receive a container for analysis for ferric iron analysis requested on the chain of custody form. ESC contacted PES to clarify the requested analysis. PES clarified that sample MW-106-05-04-18 should be analyzed for total iron and not ferric iron.

- SDG L995641: Three groundwater samples were submitted for a full suite of analytical parameters. A rapid 24 hour turn was requested for VOC analysis and normal turn was requested on the remaining analytical parameters. ESC applied two laboratory identifications for each sample for internal tracking purposes. No action was taken other than to note this.

No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:
All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria were met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria were met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria were met.

USEPA Method 6020A:
All samples were analyzed within the USEPA recommended holding time for arsenic of 180 days for preserved waters from the date of sample collection. All holding time criteria were met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria were met with the following exceptions:

- SDG L988839 – Analytical batch WG1103510: Sample MW-139-042518 was initially analyzed within the required holding time but was reanalyzed eight days past the recommended holding time due to an elevated precision result. **The nitrate result for MW-139-042518 is a non-detect, rejected, and qualified (R) due to a gross holding time exceedance. For further details refer to the section on Laboratory Duplicates.**

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however ESC's notes indicate the following:

- SDG L988839 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by ESC for vinyl acetate associated with analytical batch WG1103800 (analyzed on April 27, 2018). These results are qualified by the laboratory "J0" to indicate that percent difference CCVs are outside of laboratory acceptance criteria. **All associated results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

- SDG L989529 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by ESC for vinyl chloride associated with analytical batch WG1104728 (analyzed on April 29, 2018). These results are qualified by the laboratory "J0" to indicate that percent difference CCVs are outside of laboratory acceptance criteria. **All associated results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

- SDG L995641 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by ESC for bromomethane, chloroethane, hexachloro-1,3-butadiene, naphthalene, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene associated with analytical batch WG1114542 (analyzed on May 22, 2018). These results are qualified by the laboratory "J0" to indicate that percent difference CCVs are outside of laboratory acceptance criteria. **All associated results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

Method Blank Results

USEPA Method 8260C:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L988839 - Analytical batch WG1103800: Low levels of hexachloro-1,3-butadiene and 1,2,3-trichlorobenzene are detected in the method blank. No action is necessary as these compounds are not detected in the associated samples.

- SDG L989898 - Analytical batch WG1105522: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action is necessary as this compound is not detected in the associated samples.

- SDG L995641 - Analytical batch WG1114542: A low level of cis-1,2-dichloroethene, hexachloro-1,3-butadiene, naphthalene and 1,2,3-trichlorobenzene are detected in the method blank below the RDL. Naphthalene was detected at a low level, below the RDL, in sample MW-130-052118. **Naphthalene result for sample MW-130-052118 is qualified is not detected (U) due to method blank contamination.** For the remaining compounds cis-1,2-dichloroethene, hexachloro-1,3-butadiene, and 1,2,3-trichlorobenzene no action was necessary as these compounds were not detected in the associated samples below the RDL.

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L989529 - Analytical batch WG1104802: Gasoline was detected at a low level in the method blank. Gasoline was detected at low levels in associated samples MW-142-042718, MW-155-042718, and MW-145-042718. **Samples MW-142-042718, MW-155-042718, and MW-145-042718 gasoline results were reported below the RDL and are qualified as not detected (U) due to method blank contamination.**

- SDG L989898 - Analytical batch WG1105159: Gasoline was detected at a low level in the method blank. Gasoline was detected at low levels in associated samples MW-154-043018 and MW-143-043018. No action is required for sample MW-143-043018 since the contamination in the method blank is less than the RDL. **Sample MW-154-043018 gasoline result reported below the RDL is qualified as not detected (U) due to method blank contamination.**

- SDG L990247 - Analytical batch WG1106035: Gasoline as detected at a low level in the method blank and was also detected at a low level in associated equipment blank sample EQ-050118. **Equipment blank sample EQ-050118 gasoline result was reported below the RDL and is qualified as not detected (U) due to method blank contamination.**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) were not detected in the method blanks at or above the RDLs.

USEPA Method 6020A:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L989149 - Analytical batch WG1104177: Manganese was detected at a low level in the method blank. No action was taken since the sample amounts are far greater than the detection in the method blank

- SDG L989529 - Analytical batch WG1104647: Manganese was detected at a low level in the method blank. No action was taken since the sample amounts are far greater than the detection in the method blank

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L988839 - Analytical batch WG1103755: TOC was detected at a low level in the method blank. No action was necessary as TOC detections in the associated samples are far greater than the detection in the associated method blank.

- SDG L990247 - Analytical batch WG1105796: Sulfate was detected at a low level in the method blank. No action was necessary as sulfate detections in the associated samples are far greater than the detection in the method blank.

- SDG L991410: Analytical batch WG1109945: TOC was detected at a low level in the method blank. No action was necessary as TOC detection in the associated sample is far greater than the detection in the method blank.

- SDG L995641 - Analytical batch WG1114448: Chloride and sulfate were detected at low levels in the method blank. No action was necessary as chloride and sulfate detections in the associated samples are far greater than the detection in the method blank.

- All SDGs: Alkalinity method blanks are not analyzed by the laboratory. No action is taken other than to note this.

Trip Blank Results

USEPA Method 8260Cand NWTPH-Gx Method:

Two trip blanks were collected and analyzed. The target analytes were not detected in the trip blanks at or above the RDLs with the following exceptions:

- SDG L989149 - Analytical batch WG1104412: A low level of acetone was detected in the trip blank. **Associated samples (IW-4C-042618, MW-156-042618, and MW-159-042618) with acetone detected less than the RDL are qualified (U) as not detected due to trip blank contamination.**

Field, Rinsate, or Equipment Blank Results

Equipment blank was collected and analyzed. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

- SDG L990247: Low levels of alkalinity, chloride, TOC, manganese, gasoline, acetone, and chloroform were detected in the equipment blank sample EQ-050118. No action was taken for alkalinity, chloride, TOC, and manganese as levels are significantly higher than the detections in the equipment blank. Chloroform was either not detected or detected significantly higher than the detection in the equipment blank and no action was required. Acetone was detected at a low level in samples MW-148-050118, MW-153-050118, IW-11D-050118, MW-905-050118, and MW-147-050118. **The acetone results in sample MW-148-050118, MW-153-050118, IW-11D-050118, MW-905-050118, and MW-147-050118 are qualified as not detected (U) due to possible equipment blank contamination. Gasoline was also detected in the associated method blank therefore the gasoline result in the equipment blank sample is qualified as not detected (U) due to method blank contamination.**

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L990247: Samples MW-905-050118 and MW-148-050118

VOC target analyte results are comparable and within a relative percent difference (RPD) of 30% (for results >5X the RDL) for the field duplicate.
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Laboratory Duplicate Analyses

USEPA Method 8260C:
A laboratory duplicate sample was not analyzed. Refer to the section on Laboratory Control Samples for additional details.

NWTPH-Gx Method:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

Laboratory duplicate sample analyses were performed on client samples and on non-client samples within the analytical batch. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020A:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
A laboratory duplicate sample was performed on client samples and on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following issue:

- SDG L988839 - Analytical batch WG1103510: Laboratory duplicate for nitrate was initially performed on sample MW-139-042518 within holding time. The sample was reanalyzed outside of holding time due to an elevated RPD result for nitrate. ESC initial results for the sample and sample duplicate are 658 µg/L and non-detect (100 µg/L). ESC opted to report the original result as a non-detect due to initial results. **The nitrate result for MW-139-042518 is a non-detect, rejected, and qualified (R) due to holding time exceedance. For further details refer to the section on Holding Times.**

- SDG L990247 - Analytical batch WG1105796: Laboratory duplicate was performed on the equipment sample EQ-050118. Sample laboratory duplicate RPD result for chloride was 200%. No action was taken since for results are less than five times the reporting limit.

- SDG L991410 - Analytical batch WG1107365: Laboratory duplicate for nitrate was performed on the sample MW-106-050418. Sample laboratory duplicate RPD result for nitrate was 200%. No action was taken since for results are both below the RDL and less than five times the reporting limit.

- SDG L995641 – Analytical batch WG1115490: Laboratory duplicates for TOC were performed on non-client samples. Sample laboratory duplicate RPD result for nitrate was 48%. No action was taken since for results are both below the RDL and less than five times the reporting limit.

Surrogate Recoveries

USEPA Method 8260C:
The surrogate recovery results for the samples, laboratory control samples, and blanks are within the laboratory surrogate control limits for all of the analyses.

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and blanks are within the laboratory surrogate control limits for all of the analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample (LCS) or LCS/LCSD were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDGs L988839, L989149, L989529, L989898, L990247, and L991410: A laboratory control sample duplicate was not analyzed and VOC precision data are not available. No action was taken other than to note this. Refer to SDG L990247 for field duplicate precision data.

NWTPH-Gx Method:
The LCS/LCSD %Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD %Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020A:
The LCS/LCSD %Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS/LCSD %Rs and RPDs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS and field duplicate data for accuracy and precision data.

NWTPH-Gx Method:
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters with the following exception:

- SDG L995641 – Analytical batch WG1115294: MS/MSD was performed on a non-client sample. Gasoline results are laboratory qualified (J6) since recoveries are below laboratory criteria. No action was taken since the MS/MSD was performed on a non-client sample and LCS/LCSD results are acceptable.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDG L989149 - Analytical batch WG1106076: MS/MSD was performed on a non-client sample and methane results are laboratory qualified (V) since the sample concentrations are greater than four times the spike concentration. Ethane and ethene MS/MSD recoveries are below laboratory acceptance criteria and are laboratory qualified (J6). No action was taken since the MS/MSD was performed on a non-client sample and LCS/LCSD results are acceptable.

USEPA Method 6020A:
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDG L988839 - Analytical batch WG1103346: Manganese MS/MSD was performed on a non-client sample and results are laboratory qualified (J6) since the recoveries are below criteria. No action is taken since the spike was performed on a non-client sample and LCS/LCSD results are acceptable.

- SDG L990247 – Analytical batch WG1106119: Manganese MS/MSD was performed on sample MW-153-050118 and results are laboratory qualified (V) since the sample concentrations are greater than four times the spike concentration. No action is necessary.

- SDG L991410 – Analytical batch WG1108904: Manganese MS/MSD was performed on a client sample associated with SDG L992074. MS/MSD results are laboratory qualified (V) since the sample concentrations are greater than four times the spike concentration. No action is necessary.

- SDG L995641 – Analytical batch WG1113975: Manganese MS/MSD was performed on a non-client sample and results are laboratory qualified (V) since the sample concentrations are greater than four times the spike concentration. No action is necessary.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exception:

- SDG L990247 – Analytical batch WG1105796: Chloride MS/MSD was performed on a non-client sample and results are laboratory qualified (J5 and J3) since the MS recovery and associated RPD are both above acceptance criteria. No action was taken since the spike was performed on a non-client sample and LCS/LCSD results are acceptable.

- SDG L995641 – Analytical batch WG1115226: Sulfate MS/MSD was performed on a sample MW-130-052118 and results are laboratory qualified (J6) since the recoveries are below criteria. **Sulfate result for sample MW-130-052118 is estimated (J) due to low MS/MSD recoveries.**

In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussion:

- SDGs L989529, L989149, L989898, L990247, L991410, and L995641: Sample narratives for a number of alkalinity results indicate that sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.

Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. The RDLs used for this sample group are acceptable for the project. Several samples were diluted due to elevated concentrations of various target analytes. ESC sample narrative notes indicate that for water sample IW-22B-042518 (SDG L988839) the target compounds were too high to run the sample at a lower dilution. Specific issues were also identified by laboratory qualifier or sample narratives and are noted as follows:

- SDG L989149 - Analytical Batch WG1104412: Tetrachloroethene (PCE) result for sample MW-156-042618 was not reportable without a dilution factor (1X) due to possible carryover and could not be reanalyzed at a lower dilution due to high levels of targets. **Sample MW-156-042618 PCE result is estimated (UJ) due to the 50X dilution.**

Detections between the MDL and RDL are estimated (J) by the laboratory and qualified (J) by the data validator to re-emphasize that the detection is estimated.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use with the following exceptions:

- SDG L988839: Sample MW-139-042518 was analyzed 8 days past the recommended holding time due to poor precision data. **The nitrate result for MW-139-042518 is a non-detect, rejected, and qualified (R) due to a gross holding time exceedance.**

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	363000		2710	20000	1	05/07/2018 18:44	WG1107742

Sample Narrative:

L989898-04 WG1107742: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30400		51.9	1000	1	05/02/2018 02:30	WG1105262
Nitrate	U		22.7	100	1	05/02/2018 02:30	WG1105262
Sulfate	22300		77.4	5000	1	05/02/2018 02:30	WG1105262

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4470		102	1000	1	05/02/2018 23:01	WG1106165

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	26500		300	2000	20	05/02/2018 22:43	WG1105579
Manganese	1260		0.250	5.00	1	05/02/2018 21:32	WG1105579

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	597		31.6	100	1	05/02/2018 17:05	WG1105159
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-122*		*05/02/2018 17:05*	WG1105159

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	9240		2.87	6.78	10	05/08/2018 13:22	WG1107969
Ethane	11.9		0.296	1.29	1	05/08/2018 10:27	WG1107967
Ethene	489		0.422	1.27	1	05/08/2018 10:27	WG1107967

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	4.54 J	J	1.05	25.0	1	05/01/2018 20:45	WG1105522
Acrylonitrile	U		0.873	5.00	1	05/01/2018 20:45	WG1105522
Benzene	U		0.0896	0.500	1	05/01/2018 20:45	WG1105522
Bromobenzene	U		0.133	0.500	1	05/01/2018 20:45	WG1105522
Bromodichloromethane	U		0.0800	0.500	1	05/01/2018 20:45	WG1105522
Bromochloromethane	U		0.145	0.500	1	05/01/2018 20:45	WG1105522
Bromoform	U		0.186	0.500	1	05/01/2018 20:45	WG1105522
Bromomethane	U		0.157	2.50	1	05/01/2018 20:45	WG1105522
n-Butylbenzene	U		0.143	0.500	1	05/01/2018 20:45	WG1105522
sec-Butylbenzene	U		0.134	0.500	1	05/01/2018 20:45	WG1105522
tert-Butylbenzene	U		0.183	0.500	1	05/01/2018 20:45	WG1105522
Carbon disulfide	U		0.101	0.500	1	05/01/2018 20:45	WG1105522
Carbon tetrachloride	U		0.159	0.500	1	05/01/2018 20:45	WG1105522

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	05/01/2018 20:45	WG1105522
Chlorodibromomethane	U		0.128	0.500	1	05/01/2018 20:45	WG1105522
Chloroethane	1.05 J	J	0.141	2.50	1	05/01/2018 20:45	WG1105522
Chloroform	U		0.0860	0.500	1	05/01/2018 20:45	WG1105522
Chloromethane	U		0.153	1.25	1	05/01/2018 20:45	WG1105522
2-Chlorotoluene	U		0.111	0.500	1	05/01/2018 20:45	WG1105522
4-Chlorotoluene	U		0.0972	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	05/01/2018 20:45	WG1105522
1,2-Dibromoethane	U		0.193	0.500	1	05/01/2018 20:45	WG1105522
Dibromomethane	U		0.117	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dichlorobenzene	U		0.101	0.500	1	05/01/2018 20:45	WG1105522
1,3-Dichlorobenzene	U		0.130	0.500	1	05/01/2018 20:45	WG1105522
1,4-Dichlorobenzene	U		0.121	0.500	1	05/01/2018 20:45	WG1105522
Dichlorodifluoromethane	U		0.127	2.50	1	05/01/2018 20:45	WG1105522
1,1-Dichloroethane	U		0.114	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dichloroethane	U		0.108	0.500	1	05/01/2018 20:45	WG1105522
1,1-Dichloroethene	4.02		0.188	0.500	1	05/01/2018 20:45	WG1105522
cis-1,2-Dichloroethene	900		9.33	50.0	100	05/07/2018 21:47	WG1105522
trans-1,2-Dichloroethene	6.12		0.152	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dichloropropane	U		0.190	0.500	1	05/01/2018 20:45	WG1105522
1,1-Dichloropropene	U		0.128	0.500	1	05/01/2018 20:45	WG1105522
1,3-Dichloropropane	U		0.147	1.00	1	05/01/2018 20:45	WG1105522
cis-1,3-Dichloropropene	U		0.0976	0.500	1	05/01/2018 20:45	WG1105522
trans-1,3-Dichloropropene	U		0.222	0.500	1	05/01/2018 20:45	WG1105522
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	05/01/2018 20:45	WG1105522
2,2-Dichloropropane	U		0.0929	0.500	1	05/01/2018 20:45	WG1105522
Di-isopropyl ether	U		0.0924	0.500	1	05/01/2018 20:45	WG1105522
Ethylbenzene	U		0.158	0.500	1	05/01/2018 20:45	WG1105522
Hexachloro-1,3-butadiene	U		0.157	1.00	1	05/01/2018 20:45	WG1105522
2-Hexanone	U		0.757	5.00	1	05/01/2018 20:45	WG1105522
n-Hexane	U		0.305	5.00	1	05/01/2018 20:45	WG1105522
Iodomethane	U		0.377	10.0	1	05/01/2018 20:45	WG1105522
Isopropylbenzene	U		0.126	0.500	1	05/01/2018 20:45	WG1105522
p-Isopropyltoluene	U		0.138	0.500	1	05/01/2018 20:45	WG1105522
2-Butanone (MEK)	U		1.28	5.00	1	05/01/2018 20:45	WG1105522
Methylene Chloride	U		1.07	2.50	1	05/01/2018 20:45	WG1105522
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	05/01/2018 20:45	WG1105522
Methyl tert-butyl ether	U		0.102	0.500	1	05/01/2018 20:45	WG1105522
Naphthalene	U		0.174	2.50	1	05/01/2018 20:45	WG1105522
n-Propylbenzene	U		0.162	0.500	1	05/01/2018 20:45	WG1105522
Styrene	U		0.117	0.500	1	05/01/2018 20:45	WG1105522
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	05/01/2018 20:45	WG1105522
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	05/01/2018 20:45	WG1105522
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	05/01/2018 20:45	WG1105522
Tetrachloroethene	3.56		0.199	0.500	1	05/01/2018 20:45	WG1105522
Toluene	U		0.412	0.500	1	05/01/2018 20:45	WG1105522
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/01/2018 20:45	WG1105522
1,2,4-Trichlorobenzene	U		0.355	0.500	1	05/01/2018 20:45	WG1105522
1,1,1-Trichloroethane	U		0.0940	0.500	1	05/01/2018 20:45	WG1105522
1,1,2-Trichloroethane	U		0.186	0.500	1	05/01/2018 20:45	WG1105522
Trichloroethene	48.4		0.153	0.500	1	05/01/2018 20:45	WG1105522
Trichlorofluoromethane	U		0.130	2.50	1	05/01/2018 20:45	WG1105522
1,2,3-Trichloropropane	U		0.247	2.50	1	05/01/2018 20:45	WG1105522
1,2,4-Trimethylbenzene	U		0.123	0.500	1	05/01/2018 20:45	WG1105522
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	05/01/2018 20:45	WG1105522
1,3,5-Trimethylbenzene	U		0.124	0.500	1	05/01/2018 20:45	WG1105522 JC 6/11/18

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	05/01/2018 20:45	WG1105522
Vinyl chloride	2100		11.8	50.0	100	05/07/2018 21:47	WG1105522
Xylenes, Total	U		0.316	1.50	1	05/01/2018 20:45	WG1105522
(S) Toluene-d8	*104*			*80.0-120*		*05/07/2018 21:47*	WG1105522
(S) Toluene-d8	*103*			*80.0-120*		*05/01/2018 20:45*	WG1105522
(S) Dibromofluoromethane	*98.7*			*76.0-123*		*05/07/2018 21:47*	WG1105522
(S) Dibromofluoromethane	*96.4*			*76.0-123*		*05/01/2018 20:45*	WG1105522
(S) 4-Bromofluorobenzene	*95.0*			*80.0-120*		*05/01/2018 20:45*	WG1105522
(S) 4-Bromofluorobenzene	*96.7*			*80.0-120*		*05/07/2018 21:47*	WG1105522

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	302000		2710	20000	1	05/07/2018 23:58	WG1107743

Sample Narrative:
L990247-05 WG1107743: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	40800		51.9	1000	1	05/03/2018 00:00	WG1105796
Nitrate	U		22.7	100	1	05/03/2018 00:00	WG1105796
Sulfate	183000		387	25000	5	05/03/2018 12:23	WG1105796

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	21300		102	1000	1	05/04/2018 21:13	WG1106959

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	17100		15.0	100	1	05/04/2018 16:00	WG1106119
Manganese	564		0.250	5.00	1	05/04/2018 16:00	WG1106119

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	484		31.6	100	1	05/02/2018 19:28	WG1106035
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-122*		*05/02/2018 19:28*	WG1106035

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5060		0.287	0.678	1	05/08/2018 13:28	WG1107969
Ethane	10.7		0.296	1.29	1	05/08/2018 13:28	WG1107969
Ethene	144		0.422	1.27	1	05/08/2018 13:28	WG1107969

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.16 U	J	1.05	25.0	1	05/02/2018 16:41	WG1105852
Acrylonitrile	U		0.873	5.00	1	05/02/2018 16:41	WG1105852
Benzene	U		0.0896	0.500	1	05/02/2018 16:41	WG1105852
Bromobenzene	U		0.133	0.500	1	05/02/2018 16:41	WG1105852
Bromodichloromethane	U		0.0800	0.500	1	05/02/2018 16:41	WG1105852
Bromochloromethane	U		0.145	0.500	1	05/02/2018 16:41	WG1105852
Bromoform	U		0.186	0.500	1	05/02/2018 16:41	WG1105852
Bromomethane	U		0.157	2.50	1	05/02/2018 16:41	WG1105852
n-Butylbenzene	U		0.143	0.500	1	05/02/2018 16:41	WG1105852
sec-Butylbenzene	U		0.134	0.500	1	05/02/2018 16:41	WG1105852
tert-Butylbenzene	U		0.183	0.500	1	05/02/2018 16:41	WG1105852
Carbon disulfide	6.02		0.101	0.500	1	05/02/2018 16:41	WG1105852
Carbon tetrachloride	U		0.159	0.500	1	05/02/2018 16:41	WG1105852

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	05/02/2018 16:41	WG1105852
Chlorodibromomethane	U		0.128	0.500	1	05/02/2018 16:41	WG1105852
Chloroethane	2.01 J	J	0.141	2.50	1	05/02/2018 16:41	WG1105852
Chloroform	U		0.0860	0.500	1	05/02/2018 16:41	WG1105852
Chloromethane	U		0.153	1.25	1	05/02/2018 16:41	WG1105852
2-Chlorotoluene	U		0.111	0.500	1	05/02/2018 16:41	WG1105852
4-Chlorotoluene	U		0.0972	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	05/02/2018 16:41	WG1105852
1,2-Dibromoethane	U		0.193	0.500	1	05/02/2018 16:41	WG1105852
Dibromomethane	U		0.117	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dichlorobenzene	U		0.101	0.500	1	05/02/2018 16:41	WG1105852
1,3-Dichlorobenzene	U		0.130	0.500	1	05/02/2018 16:41	WG1105852
1,4-Dichlorobenzene	U		0.121	0.500	1	05/02/2018 16:41	WG1105852
Dichlorodifluoromethane	U		0.127	2.50	1	05/02/2018 16:41	WG1105852
1,1-Dichloroethane	U		0.114	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dichloroethane	U		0.108	0.500	1	05/02/2018 16:41	WG1105852
1,1-Dichloroethene	4.59		0.188	0.500	1	05/02/2018 16:41	WG1105852
cis-1,2-Dichloroethene	399		2.33	12.5	25	05/07/2018 20:25	WG1105852
trans-1,2-Dichloroethene	2.09		0.152	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dichloropropane	U		0.190	0.500	1	05/02/2018 16:41	WG1105852
1,1-Dichloropropene	U		0.128	0.500	1	05/02/2018 16:41	WG1105852
1,3-Dichloropropane	U		0.147	1.00	1	05/02/2018 16:41	WG1105852
cis-1,3-Dichloropropene	U		0.0976	0.500	1	05/02/2018 16:41	WG1105852
trans-1,3-Dichloropropene	U		0.222	0.500	1	05/02/2018 16:41	WG1105852
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	05/02/2018 16:41	WG1105852
2,2-Dichloropropane	U		0.0929	0.500	1	05/02/2018 16:41	WG1105852
Di-isopropyl ether	U		0.0924	0.500	1	05/02/2018 16:41	WG1105852
Ethylbenzene	U		0.158	0.500	1	05/02/2018 16:41	WG1105852
Hexachloro-1,3-butadiene	U		0.157	1.00	1	05/02/2018 16:41	WG1105852
2-Hexanone	U		0.757	5.00	1	05/02/2018 16:41	WG1105852
n-Hexane	U		0.305	5.00	1	05/02/2018 16:41	WG1105852
Iodomethane	U		0.377	10.0	1	05/02/2018 16:41	WG1105852
Isopropylbenzene	U		0.126	0.500	1	05/02/2018 16:41	WG1105852
p-Isopropyltoluene	U		0.138	0.500	1	05/02/2018 16:41	WG1105852
2-Butanone (MEK)	U		1.28	5.00	1	05/02/2018 16:41	WG1105852
Methylene Chloride	U		1.07	2.50	1	05/02/2018 16:41	WG1105852
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	05/02/2018 16:41	WG1105852
Methyl tert-butyl ether	U		0.102	0.500	1	05/02/2018 16:41	WG1105852
Naphthalene	U		0.174	2.50	1	05/02/2018 16:41	WG1105852
n-Propylbenzene	U		0.162	0.500	1	05/02/2018 16:41	WG1105852
Styrene	U		0.117	0.500	1	05/02/2018 16:41	WG1105852
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	05/02/2018 16:41	WG1105852
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	05/02/2018 16:41	WG1105852
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	05/02/2018 16:41	WG1105852
Tetrachloroethene	19.8		0.199	0.500	1	05/02/2018 16:41	WG1105852
Toluene	U		0.412	0.500	1	05/02/2018 16:41	WG1105852
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2018 16:41	WG1105852
1,2,4-Trichlorobenzene	U		0.355	0.500	1	05/02/2018 16:41	WG1105852
1,1,1-Trichloroethane	U		0.0940	0.500	1	05/02/2018 16:41	WG1105852
1,1,2-Trichloroethane	U		0.186	0.500	1	05/02/2018 16:41	WG1105852
Trichloroethene	83.4		0.153	0.500	1	05/02/2018 16:41	WG1105852
Trichlorofluoromethane	U		0.130	2.50	1	05/02/2018 16:41	WG1105852
1,2,3-Trichloropropane	U		0.247	2.50	1	05/02/2018 16:41	WG1105852
1,2,4-Trimethylbenzene	U		0.123	0.500	1	05/02/2018 16:41	WG1105852
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	05/02/2018 16:41	WG1105852
1,3,5-Trimethylbenzene	U		0.124	0.500	1	05/02/2018 16:41	WG1105852

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	05/02/2018 16:41	WG1105852
Vinyl chloride	1150		2.95	12.5	25	05/07/2018 20:25	WG1105852
Xylenes, Total	U		0.316	1.50	1	05/02/2018 16:41	WG1105852
(S) Toluene-d8	*106*			*80.0-120*		*05/02/2018 16:41*	WG1105852
(S) Toluene-d8	*99.7*			*80.0-120*		*05/07/2018 20:25*	WG1105852
(S) Dibromofluoromethane	*97.1*			*76.0-123*		*05/02/2018 16:41*	WG1105852
(S) Dibromofluoromethane	*95.1*			*76.0-123*		*05/07/2018 20:25*	WG1105852
(S) 4-Bromofluorobenzene	*81.1*			*80.0-120*		*05/02/2018 16:41*	WG1105852
(S) 4-Bromofluorobenzene	*94.1*			*80.0-120*		*05/07/2018 20:25*	WG1105852

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MEMORANDUM

TO: Project File **DATE:** January 20, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review - Addendum

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.304/601

TASK: EIM Data Validation Level EPA2A for April, May, October, and December of 2018 – Quarterly Groundwater Samples

LAB: Pace Analytical (Pace) Sample Delivery Groups (SDGs): L984034, L985379, L986193, L989529, L990247, L1038864, L1038867, L1053029, L1053462, and L1053929

This memorandum has been drafted to further clarify the analytical laboratory (Pace) gasoline method of analysis via Volatile Organic Compounds (GC) by Washington State Method NWTPHGx (using a gas chromatograph/flame ionization detector (GC/FID)) and reported gasoline range organic-NWTPH results. Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, and vinyl chloride) elute within the gasoline range organics (GRO) retention time range as specified by Washington State (detections falling between the toluene and dodecane range).

Non-petroleum organics (e.g. chlorinated VOC compounds) eluting within the gasoline range contribute to the GRO result and GRO results are likely biased high (J+). PES requested that Pace evaluate chromatograms associated with positive sample detections to confirm the potential presence of gasoline. Per PES's request Pace reviewed selected sample chromatograms against the gasoline standard chromatograms and assigned "no discernible petroleum pattern" or "most closely resembles gasoline" to GRO results associated with this Task. PES assigned an additional project level qualifier (Z) to GRO results when the chromatogram for the sample does not match a discernible gasoline standard pattern. Associated chromatograms and qualified samples for this Task are as follows:

Sample ID	Laboratory Identification	Gasoline Range Organic Result (µg/L)	DV Qualifier	Data Validation Comments	Pace Chromatogram Review Notes
J5-040518	L984034-08	207	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
K8-4518	L984034-12	156	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-141-041218	L985379-04	326	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-130-041618	L986193-03	256		Low levels of chlorinated VOCs are detected in the GRO elution range	Most closely resembles gasoline
MW-144-042718	L989529-02	364	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-146-043018	L989898-04	597	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-147-050118	L990247-05	484	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-149-102518	L1038864-10	4570	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-150-102518	L1038864-09	14600	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-135-102518	L1038864-08	31800	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-152-102618	L1038864-03	36700	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-104-102618	L1038867-03	1570	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-133-102618	L1038867-04	458	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-150-121218	L1053029-01	17500	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-904-121318	L1053029-09	11400	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-149-121318	L1053029-07	11400	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-135-121318	L1053029-10	80000	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-151-121418	L1053462-01/03	1040	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-152-121418	L1053462-02/04	47300	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-130-121718	L1053929-02	16400	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern

For additional details refer to the attached Table 1 which includes the sample GRO result along with associated chlorinated VOC results, and Pace's review notes. Pace will, for future sampling events, include a sample narrative evaluating each positive GRO detection (greater than the RDL). Pace has indicated that this effort may result in cost increases and delay in requested analytical turnaround time. A project action level threshold for GRO may be determined to expedite turnaround and minimize any fee increases.

Project level qualifiers have been included to the PES's project database (Epiphany) as (ZJ+). Washington State EIM valid values were reviewed. In this case no Washington State EIM valid value descriptor is ideal and the default estimated value (J) has been selected as the best match to qualify GRO (ZJ+) data.

Table 1
American Linen Data Validation
Project 1413.001.05.304/601 - 2018 Groundwater Samples
Chlorinated VOC Results and Gasoline Range Organic Chromatogram Review

Sample Location	Sample ID	Lab ID	Sample Date	SDG	GRO (µg/L)	Lab Qual	PCE (µg/L)	Lab Qual	TCE (µg/L)	Lab Qual	cDCE (µg/L)	Lab Qual	VC (µg/L)	Lab Qual	PACE Chromatographic Analysis
J5	J5-040518	L984034-08	04/05/18	L984034	207		267		70.5		222		17.6		No discernable petroleum pattern
K8	K8-4518	L984034-12	04/05/18	L984034	156		229		26.3		104		1.45		No discernable petroleum pattern
MW-141	MW-141-041218	L985379-04	04/12/18	L985379	326	B	71.3		25.6		91.6		7.01		No discernable petroleum pattern
MW-130	MW-130-041618	L986193-03	04/16/18	L986193	256	B	2.59		0.365	J	4.73		8.57		*Most closely resembles gasoline*
MW-144	MW-144-042718	L989529-02	04/27/18	L989529	364		1.86		3.31		662		888		No discernable petroleum pattern
MW-146	MW-146-043018	L989898-04	04/30/18	L989898	597		3.56		48.4		900		2100		No discernable petroleum pattern
MW-147	MW-147-050118	L990247-05	05/01/18	L990247	484		19.8		83.4		399		1150		No discernable petroleum pattern
MW-149	MW-149-102518	L1038864-10	10/25/18	L1038864	4570		6100		2720		3320		100		No discernable petroleum pattern
MW-150	MW-150-102518	L1038864-09	10/25/18	L1038864	14600		15200		8800		17700		1430		No discernable petroleum pattern
MW-135	MW-135-102518	L1038864-08	10/25/18	L1038864	31800		45900		8330		40400		1170		No discernable petroleum pattern
MW-152	MW-152-102618	L1038864-03	10/26/18	L1038864	36700		1960		3150		73000		4510		No discernable petroleum pattern
MW104	MW-104-102618	L1038867-03	10/26/18	L1038867	1570		1.87		2.94		71.2		43.5		No discernable petroleum pattern
MW-133	MW-133-102618	L1038867-04	10/26/18	L1038867	458		1.92		1.63		7.94		3.43		No discernable petroleum pattern
MW-150	MW-150-121218	L1053029-01	12/12/18	L1053029	17500		75.6		533		32800		2040		No discernable petroleum pattern
MW-904	MW-904-121318	L1053029-09	12/13/18	L1053029	11400		24500		5780		5210		243	J	No discernable petroleum pattern
MW-149	MW-149-121318	L1053029-07	12/13/18	L1053029	11400		23300		5470		5150		253		No discernable petroleum pattern
MW-135	MW-135-121318	L1053029-10	12/13/18	L1053029	80000		97200		11000		42100		1380		No discernable petroleum pattern
MW-151	MW-151-121418	L1053462-01/03	12/14/18	L1053462	1040		1460		155		1690		530		No discernable petroleum pattern
MW-152	MW-152-121418	L1053462-02/04	12/14/18	L1053462	47300		23600		6870		77100		7830		No discernable petroleum pattern
MW130	MW-130-121718	L1053929-02	12/17/18	L1053929	16400		9650		3220		26400		1420		No discernable petroleum pattern

Definitions
SDG - Sample Delivery Group
GRO - Gasoline Range Organics
PCE - Tetrachloroethene
TCE - Trichloroethene
cDCE - cis-1,2-Dichloroethene
VC - Vinyl Chloride
U - Not detected
J - Estimated value

ANALYTICAL REPORT

May 08, 2018

PES Environmental, Inc.- WA

Sample Delivery Group:	L989898
Samples Received:	05/01/2018
Project Number:	
Description:	American Linen
Report To:	Brian O'Neal/Bill Haldeman 1215 Fourth Ave., Suite 1350 Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

TABLE OF CONTENTS

MW-143-043018 L989898-01 GW

Collected by: Jeff Dobbins
Collected date/time: 04/30/18 08:58
Received date/time: 05/01/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107742	1	05/07/18 18:29	05/07/18 18:29	MCG
Wet Chemistry by Method 9056A	WG1105262	1	05/02/18 01:28	05/02/18 01:28	MAJ
Wet Chemistry by Method 9060A	WG1106165	20	05/02/18 22:38	05/02/18 22:38	SJM
Metals (ICPMS) by Method 6020A	WG1105579	1	05/02/18 17:43	05/02/18 21:23	LD
Metals (ICPMS) by Method 6020A	WG1105579	5	05/02/18 17:43	05/02/18 23:16	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1105159	1	05/01/18 20:33	05/01/18 20:33	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107967	1	05/08/18 10:20	05/08/18 10:20	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105522	1	05/01/18 19:49	05/01/18 19:49	JHH

MW-158-043018 L989898-02 GW

Collected by: Jeff Dobbins
Collected date/time: 04/30/18 11:14
Received date/time: 05/01/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107742	1	05/07/18 18:37	05/07/18 18:37	MCG
Wet Chemistry by Method 9056A	WG1105262	1	05/02/18 01:59	05/02/18 01:59	MAJ
Wet Chemistry by Method 9056A	WG1105262	5	05/02/18 02:14	05/02/18 02:14	MAJ
Wet Chemistry by Method 9060A	WG1106165	20	05/02/18 22:49	05/02/18 22:49	SJM
Metals (ICPMS) by Method 6020A	WG1105579	1	05/02/18 17:43	05/02/18 21:28	LD
Metals (ICPMS) by Method 6020A	WG1105579	50	05/02/18 17:43	05/02/18 22:38	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1105159	1	05/01/18 20:57	05/01/18 20:57	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107967	1	05/08/18 10:25	05/08/18 10:25	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105522	1	05/01/18 20:08	05/01/18 20:08	JHH

MW-154-043018 L989898-03 GW

Collected by: Jeff Dobbins
Collected date/time: 04/30/18 12:46
Received date/time: 05/01/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1105159	1	05/02/18 16:27	05/02/18 16:27	ACG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105522	1	05/01/18 20:27	05/01/18 20:27	JHH

MW-146-043018 L989898-04 GW

Collected by: Jeff Dobbins
Collected date/time: 04/30/18 13:50
Received date/time: 05/01/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107742	1	05/07/18 18:44	05/07/18 18:44	MCG
Wet Chemistry by Method 9056A	WG1105262	1	05/02/18 02:30	05/02/18 02:30	MAJ
Wet Chemistry by Method 9060A	WG1106165	1	05/02/18 23:01	05/02/18 23:01	SJM
Metals (ICPMS) by Method 6020A	WG1105579	1	05/02/18 17:43	05/02/18 21:32	LD
Metals (ICPMS) by Method 6020A	WG1105579	20	05/02/18 17:43	05/02/18 22:43	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1105159	1	05/02/18 17:05	05/02/18 17:05	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107967	1	05/08/18 10:27	05/08/18 10:27	BG
Volatile Organic Compounds (GC) by Method RSK175	WG1107969	10	05/08/18 13:22	05/08/18 13:22	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105522	1	05/01/18 20:45	05/01/18 20:45	JHH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105522	100	05/07/18 21:47	05/07/18 21:47	ACG

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	363000		2710	20000	1	05/07/2018 18:44	WG1107742

Sample Narrative:

L989898-04 WG1107742: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30400		51.9	1000	1	05/02/2018 02:30	WG1105262
Nitrate	U		22.7	100	1	05/02/2018 02:30	WG1105262
Sulfate	22300		77.4	5000	1	05/02/2018 02:30	WG1105262

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4470		102	1000	1	05/02/2018 23:01	WG1106165

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	26500		300	2000	20	05/02/2018 22:43	WG1105579
Manganese	1260		0.250	5.00	1	05/02/2018 21:32	WG1105579

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	597		31.6	100	1	05/02/2018 17:05	WG1105159
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-122*		*05/02/2018 17:05*	WG1105159

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	9240		2.87	6.78	10	05/08/2018 13:22	WG1107969
Ethane	11.9		0.296	1.29	1	05/08/2018 10:27	WG1107967
Ethene	489		0.422	1.27	1	05/08/2018 10:27	WG1107967

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	4.54	J	1.05	25.0	1	05/01/2018 20:45	WG1105522
Acrylonitrile	U		0.873	5.00	1	05/01/2018 20:45	WG1105522
Benzene	U		0.0896	0.500	1	05/01/2018 20:45	WG1105522
Bromobenzene	U		0.133	0.500	1	05/01/2018 20:45	WG1105522
Bromodichloromethane	U		0.0800	0.500	1	05/01/2018 20:45	WG1105522
Bromochloromethane	U		0.145	0.500	1	05/01/2018 20:45	WG1105522
Bromoform	U		0.186	0.500	1	05/01/2018 20:45	WG1105522
Bromomethane	U		0.157	2.50	1	05/01/2018 20:45	WG1105522
n-Butylbenzene	U		0.143	0.500	1	05/01/2018 20:45	WG1105522
sec-Butylbenzene	U		0.134	0.500	1	05/01/2018 20:45	WG1105522
tert-Butylbenzene	U		0.183	0.500	1	05/01/2018 20:45	WG1105522
Carbon disulfide	U		0.101	0.500	1	05/01/2018 20:45	WG1105522
Carbon tetrachloride	U		0.159	0.500	1	05/01/2018 20:45	WG1105522

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	05/01/2018 20:45	WG1105522
Chlorodibromomethane	U		0.128	0.500	1	05/01/2018 20:45	WG1105522
Chloroethane	1.05	J	0.141	2.50	1	05/01/2018 20:45	WG1105522
Chloroform	U		0.0860	0.500	1	05/01/2018 20:45	WG1105522
Chloromethane	U		0.153	1.25	1	05/01/2018 20:45	WG1105522
2-Chlorotoluene	U		0.111	0.500	1	05/01/2018 20:45	WG1105522
4-Chlorotoluene	U		0.0972	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	05/01/2018 20:45	WG1105522
1,2-Dibromoethane	U		0.193	0.500	1	05/01/2018 20:45	WG1105522
Dibromomethane	U		0.117	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dichlorobenzene	U		0.101	0.500	1	05/01/2018 20:45	WG1105522
1,3-Dichlorobenzene	U		0.130	0.500	1	05/01/2018 20:45	WG1105522
1,4-Dichlorobenzene	U		0.121	0.500	1	05/01/2018 20:45	WG1105522
Dichlorodifluoromethane	U		0.127	2.50	1	05/01/2018 20:45	WG1105522
1,1-Dichloroethane	U		0.114	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dichloroethane	U		0.108	0.500	1	05/01/2018 20:45	WG1105522
1,1-Dichloroethene	4.02		0.188	0.500	1	05/01/2018 20:45	WG1105522
cis-1,2-Dichloroethene	900		9.33	50.0	100	05/07/2018 21:47	WG1105522
trans-1,2-Dichloroethene	6.12		0.152	0.500	1	05/01/2018 20:45	WG1105522
1,2-Dichloropropane	U		0.190	0.500	1	05/01/2018 20:45	WG1105522
1,1-Dichloropropene	U		0.128	0.500	1	05/01/2018 20:45	WG1105522
1,3-Dichloropropane	U		0.147	1.00	1	05/01/2018 20:45	WG1105522
cis-1,3-Dichloropropene	U		0.0976	0.500	1	05/01/2018 20:45	WG1105522
trans-1,3-Dichloropropene	U		0.222	0.500	1	05/01/2018 20:45	WG1105522
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	05/01/2018 20:45	WG1105522
2,2-Dichloropropane	U		0.0929	0.500	1	05/01/2018 20:45	WG1105522
Di-isopropyl ether	U		0.0924	0.500	1	05/01/2018 20:45	WG1105522
Ethylbenzene	U		0.158	0.500	1	05/01/2018 20:45	WG1105522
Hexachloro-1,3-butadiene	U		0.157	1.00	1	05/01/2018 20:45	WG1105522
2-Hexanone	U		0.757	5.00	1	05/01/2018 20:45	WG1105522
n-Hexane	U		0.305	5.00	1	05/01/2018 20:45	WG1105522
Iodomethane	U		0.377	10.0	1	05/01/2018 20:45	WG1105522
Isopropylbenzene	U		0.126	0.500	1	05/01/2018 20:45	WG1105522
p-Isopropyltoluene	U		0.138	0.500	1	05/01/2018 20:45	WG1105522
2-Butanone (MEK)	U		1.28	5.00	1	05/01/2018 20:45	WG1105522
Methylene Chloride	U		1.07	2.50	1	05/01/2018 20:45	WG1105522
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	05/01/2018 20:45	WG1105522
Methyl tert-butyl ether	U		0.102	0.500	1	05/01/2018 20:45	WG1105522
Naphthalene	U		0.174	2.50	1	05/01/2018 20:45	WG1105522
n-Propylbenzene	U		0.162	0.500	1	05/01/2018 20:45	WG1105522
Styrene	U		0.117	0.500	1	05/01/2018 20:45	WG1105522
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	05/01/2018 20:45	WG1105522
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	05/01/2018 20:45	WG1105522
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	05/01/2018 20:45	WG1105522
Tetrachloroethene	3.56		0.199	0.500	1	05/01/2018 20:45	WG1105522
Toluene	U		0.412	0.500	1	05/01/2018 20:45	WG1105522
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/01/2018 20:45	WG1105522
1,2,4-Trichlorobenzene	U		0.355	0.500	1	05/01/2018 20:45	WG1105522
1,1,1-Trichloroethane	U		0.0940	0.500	1	05/01/2018 20:45	WG1105522
1,1,2-Trichloroethane	U		0.186	0.500	1	05/01/2018 20:45	WG1105522
Trichloroethene	48.4		0.153	0.500	1	05/01/2018 20:45	WG1105522
Trichlorofluoromethane	U		0.130	2.50	1	05/01/2018 20:45	WG1105522
1,2,3-Trichloropropane	U		0.247	2.50	1	05/01/2018 20:45	WG1105522
1,2,4-Trimethylbenzene	U		0.123	0.500	1	05/01/2018 20:45	WG1105522
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	05/01/2018 20:45	WG1105522
1,3,5-Trimethylbenzene	U		0.124	0.500	1	05/01/2018 20:45	WG1105522

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	05/01/2018 20:45	WG1105522
Vinyl chloride	2100		11.8	50.0	100	05/07/2018 21:47	WG1105522
Xylenes, Total	U		0.316	1.50	1	05/01/2018 20:45	WG1105522
(S) Toluene-d8	*104*			*80.0-120*		*05/07/2018 21:47*	WG1105522
(S) Toluene-d8	*103*			*80.0-120*		*05/01/2018 20:45*	WG1105522
(S) Dibromofluoromethane	*98.7*			*76.0-123*		*05/07/2018 21:47*	WG1105522
(S) Dibromofluoromethane	*96.4*			*76.0-123*		*05/01/2018 20:45*	WG1105522
(S) 4-Bromofluorobenzene	*95.0*			*80.0-120*		*05/01/2018 20:45*	WG1105522
(S) 4-Bromofluorobenzene	*96.7*			*80.0-120*		*05/07/2018 21:47*	WG1105522

L990272-03 Original Sample (OS) • Duplicate (DUP)

(OS) L990272-03 05/07/18 16:12 • (DUP) R3307687-1 05/07/18 16:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	9430	7970	1	16.8	J	20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L990101-07 Original Sample (OS) • Duplicate (DUP)

(OS) L990101-07 05/08/18 09:32 • (DUP) R3307687-9 05/08/18 09:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	91400	94400	1	3.25		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307687-7 05/07/18 18:01 • (LCSD) R3307687-8 05/07/18 19:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Alkalinity	100000	102000	105000	102	105	85.0-115			2.96	20

Sample Narrative:

LCS: Endpoint pH 4.5

LCSD: Endpoint pH 4.5

Method Blank (MB)

(MB) R3307900-1 05/01/18 14:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L989895-06 Original Sample (OS) • Duplicate (DUP)

(OS) L989895-06 05/01/18 21:22 • (DUP) R3307900-4 05/01/18 21:37

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6480	6020	1	7.37		15
Nitrate	U	0.000	1	0.000		15
Sulfate	3470	3700	1	6.57	J	15

L989895-13 Original Sample (OS) • Duplicate (DUP)

(OS) L989895-13 05/02/18 00:11 • (DUP) R3307900-7 05/02/18 00:27

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	18600	18100	1	2.59		15
Nitrate	1140	1230	1	8.00		15
Sulfate	4240	4270	1	0.571	J	15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307900-2 05/01/18 14:19 • (LCSD) R3307900-3 05/01/18 14:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40000	40000	39900	100	99.9	80.0-120			0.116	15
Nitrate	8000	8100	8080	101	101	80.0-120			0.184	15
Sulfate	40000	39600	39900	99.0	99.7	80.0-120			0.672	15

L989895-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L989895-06 05/01/18 21:22 • (MS) R3307900-5 05/01/18 21:52 • (MSD) R3307900-6 05/01/18 22:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6480	56800	56100	101	99.3	1	80.0-120			1.20	15
Nitrate	5000	U	4750	4920	95.0	98.3	1	80.0-120			3.48	15
Sulfate	50000	3470	52000	52200	97.0	97.5	1	80.0-120			0.459	15

L989895-13 Original Sample (OS) • Matrix Spike (MS)

(OS) L989895-13 05/02/18 00:11 • (MS) R3307900-8 05/02/18 00:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	18600	68300	99.4	1	80.0-120	
Nitrate	5000	1140	6050	98.2	1	80.0-120	
Sulfate	50000	4240	52400	96.3	1	80.0-120	

Method Blank (MB)

(MB) R3306614-1 05/02/18 18:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
TOC (Total Organic Carbon)	U		102	1000

L989892-04 Original Sample (OS) • Duplicate (DUP)

(OS) L989892-04 05/02/18 22:15 • (DUP) R3306614-3 05/02/18 22:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
TOC (Total Organic Carbon)	7410	7650	1	3.27		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3306614-2 05/02/18 19:31 • (LCSD) R3306614-4 05/02/18 23:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
TOC (Total Organic Carbon)	75000	70500	71900	94.0	95.8	85.0-115			1.98	20

L989921-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L989921-01 05/03/18 00:43 • (MS) R3306614-5 05/03/18 01:04 • (MSD) R3306614-6 05/03/18 01:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
TOC (Total Organic Carbon)	50000	5520	57600	58100	104	105	1	80.0-120			0.881	20

Method Blank (MB)

(MB) R3306577-1 05/02/18 20:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3306577-2 05/02/18 20:57 • (LCSD) R3306577-3 05/02/18 21:01

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Iron	5000	4740	4690	94.9	93.9	80.0-120			1.03	20
Manganese	50.0	51.7	48.8	103	97.6	80.0-120			5.82	20

L990034-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L990034-21 05/02/18 21:05 • (MS) R3306577-5 05/02/18 21:14 • (MSD) R3306577-6 05/02/18 21:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	5000	U	4650	4650	93.0	93.1	1	75.0-125			0.0819	20
Manganese	50.0	12.6	60.4	60.7	95.6	96.3	1	75.0-125			0.549	20

Method Blank (MB)

(MB) R3306336-3 05/01/18 10:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	41.2	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3306336-1 05/01/18 08:57 • (LCSD) R3306336-2 05/01/18 09:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	4730	4810	86.0	87.4	72.0-134			1.64	20
(S) a,a,a-Trifluorotoluene(FID)				*93.8*	*93.3*	*77.0-122*				

Method Blank (MB)

(MB) R3307795-1 05/08/18 10:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L989898-02 Original Sample (OS) • Duplicate (DUP)

(OS) L989898-02 05/08/18 10:25 • (DUP) R3307795-2 05/08/18 10:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	352	349	1	0.900		20
Ethane	15.7	15.3	1	3.03		20
Ethene	11.0	11.2	1	1.60		20

L989972-09 Original Sample (OS) • Duplicate (DUP)

(OS) L989972-09 05/08/18 11:03 • (DUP) R3307795-3 05/08/18 11:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1080	1090	1	0.765		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307795-4 05/08/18 11:41 • (LCSD) R3307795-5 05/08/18 11:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	71.2	72.4	105	107	85.0-115			1.68	20
Ethane	129	115	115	89.1	89.0	85.0-115			0.0186	20
Ethene	127	116	116	91.6	91.6	85.0-115			0.0834	20

Method Blank (MB)

(MB) R3307876-1 05/08/18 13:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678

L990272-03 Original Sample (OS) • Duplicate (DUP)

(OS) L990272-03 05/08/18 13:35 • (DUP) R3307876-2 05/08/18 13:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20

L990458-06 Original Sample (OS) • Duplicate (DUP)

(OS) L990458-06 05/08/18 14:25 • (DUP) R3307876-3 05/08/18 14:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307876-4 05/08/18 14:45 • (LCSD) R3307876-5 05/08/18 14:48

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.2	71.3	107	105	85.0-115			1.28	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3307623-2 05/01/18 17:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Bromobenzene	U		0.133	0.500
Benzene	U		0.0896	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3307623-2 05/01/18 17:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	0.187	J	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Ethylbenzene	U		0.158	0.500
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
Naphthalene	U		0.174	2.50
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Toluene	U		0.412	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*102*			*80.0-120*
(S) Dibromofluoromethane	*96.4*			*76.0-123*
(S) 4-Bromofluorobenzene	*96.9*			*80.0-120*

Laboratory Control Sample (LCS)

(LCS) R3307623-1 05/01/18 16:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	127	102	10.0-160	
Acrylonitrile	125	121	96.6	60.0-142	
Bromobenzene	25.0	23.1	92.2	79.0-120	
Bromodichloromethane	25.0	23.8	95.2	76.0-120	
Bromochloromethane	25.0	23.3	93.2	76.0-122	
Bromoform	25.0	23.1	92.5	67.0-132	
Bromomethane	25.0	26.7	107	18.0-160	
n-Butylbenzene	25.0	25.0	100	72.0-126	
sec-Butylbenzene	25.0	25.2	101	74.0-121	
tert-Butylbenzene	25.0	24.9	99.7	75.0-122	
Carbon disulfide	25.0	25.7	103	55.0-127	
Carbon tetrachloride	25.0	22.6	90.5	63.0-122	
Chlorobenzene	25.0	24.2	96.8	79.0-121	
Chlorodibromomethane	25.0	23.4	93.8	75.0-125	
Chloroethane	25.0	27.0	108	47.0-152	
Chloroform	25.0	24.1	96.5	72.0-121	
Chloromethane	25.0	28.0	112	48.0-139	
2-Chlorotoluene	25.0	23.8	95.0	74.0-122	
4-Chlorotoluene	25.0	23.9	95.5	79.0-120	
1,2-Dibromo-3-Chloropropane	25.0	23.3	93.1	64.0-127	
1,2-Dibromoethane	25.0	23.6	94.5	77.0-123	
Dibromomethane	25.0	23.8	95.1	78.0-120	
1,2-Dichlorobenzene	25.0	23.0	91.9	80.0-120	
1,3-Dichlorobenzene	25.0	23.9	95.5	72.0-123	
1,4-Dichlorobenzene	25.0	23.4	93.8	77.0-120	
Dichlorodifluoromethane	25.0	23.6	94.5	49.0-155	
1,1-Dichloroethane	25.0	25.5	102	70.0-126	
1,2-Dichloroethane	25.0	24.3	97.2	67.0-126	
1,1-Dichloroethene	25.0	25.1	100	64.0-129	
cis-1,2-Dichloroethene	25.0	24.1	96.4	73.0-120	
trans-1,2-Dichloroethene	25.0	23.9	95.5	71.0-121	
1,2-Dichloropropane	25.0	24.9	99.5	75.0-125	
1,1-Dichloropropene	25.0	25.4	102	71.0-129	
1,3-Dichloropropane	25.0	24.3	97.2	80.0-121	
cis-1,3-Dichloropropene	25.0	24.7	98.7	79.0-123	
trans-1,3-Dichloropropene	25.0	24.1	96.3	74.0-127	
trans-1,4-Dichloro-2-butene	25.0	25.3	101	55.0-134	
2,2-Dichloropropane	25.0	22.4	89.4	60.0-125	
Di-isopropyl ether	25.0	26.6	107	59.0-133	
Hexachloro-1,3-butadiene	25.0	25.4	102	64.0-131	

Laboratory Control Sample (LCS)

(LCS) R3307623-1 05/01/18 16:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Hexanone	125	129	103	58.0-147	
n-Hexane	25.0	25.9	104	56.0-124	
Iodomethane	125	122	97.2	57.0-140	
Isopropylbenzene	25.0	24.1	96.5	75.0-120	
p-Isopropyltoluene	25.0	24.8	99.3	74.0-126	
2-Butanone (MEK)	125	130	104	37.0-158	
Methylene Chloride	25.0	23.4	93.7	66.0-121	
4-Methyl-2-pentanone (MIBK)	125	130	104	59.0-143	
Benzene	25.0	24.3	97.3	69.0-123	
Methyl tert-butyl ether	25.0	23.2	92.9	64.0-123	
n-Propylbenzene	25.0	23.9	95.8	79.0-120	
Styrene	25.0	23.7	94.8	78.0-124	
1,1,1,2-Tetrachloroethane	25.0	23.5	94.2	75.0-122	
1,1,2,2-Tetrachloroethane	25.0	21.5	85.8	71.0-122	
1,1,2-Trichlorotrifluoroethane	25.0	24.8	99.0	61.0-136	
Tetrachloroethene	25.0	23.6	94.3	70.0-127	
1,2,3-Trichlorobenzene	25.0	23.1	92.4	61.0-133	
1,2,4-Trichlorobenzene	25.0	23.0	92.1	69.0-129	
1,1,1-Trichloroethane	25.0	24.6	98.2	68.0-122	
1,1,2-Trichloroethane	25.0	22.9	91.7	78.0-120	
Trichloroethene	25.0	25.1	100	78.0-120	
Trichlorofluoromethane	25.0	27.1	109	56.0-137	
1,2,3-Trichloropropane	25.0	22.5	90.1	72.0-124	
1,2,4-Trimethylbenzene	25.0	24.1	96.4	75.0-120	
1,2,3-Trimethylbenzene	25.0	24.0	96.0	75.0-120	
1,3,5-Trimethylbenzene	25.0	23.8	95.4	75.0-120	
Vinyl acetate	125	105	84.2	46.0-160	
Vinyl chloride	25.0	28.8	115	64.0-133	
Ethylbenzene	25.0	24.2	96.6	77.0-120	
Naphthalene	25.0	22.3	89.2	62.0-128	
Toluene	25.0	23.7	94.8	77.0-120	
Xylenes, Total	75.0	72.3	96.4	77.0-120	
(S) Toluene-d8			*102*	*80.0-120*	
(S) Dibromofluoromethane			*96.7*	*76.0-123*	
(S) 4-Bromofluorobenzene			*97.9*	*80.0-120*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

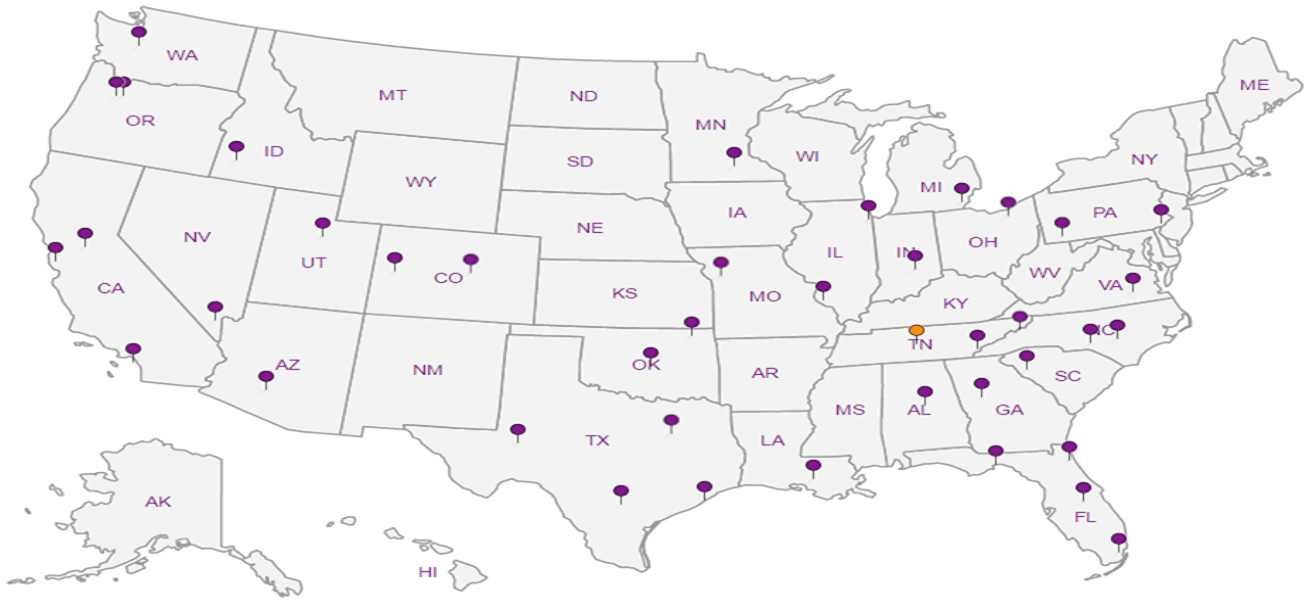
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



Chain of Custody Page 1 of 1

ESC LAB SCIENCES

a subsidiary of Pace Analytical

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L989898

D230

Acctnum: PESENVSWA
Template: T134663
Prelogin: P647547
TSR: 110 - Brian Ford
PB: 4-4-18 CW
Shipped Via: FedEX Ground

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Email To: boneal@pesenv.com; bhaldeman@pesenv.com

Report to: Brian O'Neal/Bill Haldeman

Project Description: American Linen

City/State Collected: Seattle, WA

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #

Lab Project # PESENVSWA-ALP

Collected by (print): Jeff Dobbins

Site/Facility ID #

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260C VOCs 40ml/NaHSO4/Syr/MeOH	dry wt,voc screen 2ozClr-NoPres	NO3, SO4, Cl, Alk 250ml HDPE NoPres	NWTPHGX 40ml Amb HCl	RSK175LL(EEM) 40ml Amb-HCl	TOC 250ml Amb-HCl	Total Fe Mn 6020 250ml HDPE-HNO3	V8260LLC VOCs 40ml Amb HCl			Remarks	Sample # (lab only)
MW-143-043018	Grab	~~SS~~ GW		4/30/18	0858	11			X	X	X	X	X	X				-01
MW-158-043018	↓	~~SS~~ GW		4/30/18	1114	11			X	X	X	X	X	X				-02
MW-154-043018		~~SS~~ GW		4/30/18	1246	6			~~X~~	X	~~X~~			X				-03
MW-146-043018	↓	~~SS~~ GW		4/30/18	1350	11			X	X	X	X	X	X				-04
		SS																
		SS																
		SS																
		SS																
		SS																
		SS																
		SS																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks:

pH ______ Temp ______

Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier __ ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: ✓Y _N
Preservation Correct/Checked: ✓Y _N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeOH TBR
[signature]	4/30/18	1445		

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C	Bottles Received:
				3.7	39

Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:
			[signature] 861	5/1/18	9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ESC Lab Sciences
Non-Conformance Form

Login #:L989898	Client:PESENVSWA	Date:05/01/18	Evaluated by: Myra "Katie" Ingram

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.	X	Improper handling by carrier (FedEx / UPS / Couri
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
X	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:

One vial received broken for ID: MW-143-043018

Client informed by:		Call		Email		Voice Mail		Date:	Time:
TSR Initials:bjf	Client Contact:								

Login Instructions:

Proceed with remaining sample containers.

ANALYTICAL REPORT

May 09, 2018

PES Environmental, Inc.- WA

Sample Delivery Group:	L990247
Samples Received:	05/02/2018
Project Number:	
Description:	American Linen
Report To:	Brian O'Neal/Bill Haldeman 1215 Fourth Ave., Suite 1350 Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Technical Service Representative

MW-148-050118 L990247-01 GW

Collected by: Jeff Dobbins | Collected date/time: 05/01/18 08:55 | Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107743	1	05/07/18 23:35	05/07/18 23:35	MCG
Wet Chemistry by Method 9056A	WG1105796	1	05/02/18 23:14	05/02/18 23:14	MAJ
Wet Chemistry by Method 9060A	WG1106959	1	05/04/18 20:23	05/04/18 20:23	EG
Metals (ICPMS) by Method 6020A	WG1106119	1	05/04/18 12:35	05/04/18 15:32	JPD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1106035	1	05/02/18 18:17	05/02/18 18:17	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107967	1	05/08/18 11:21	05/08/18 11:21	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 15:22	05/02/18 15:22	BMB

MW-153-050118 L990247-02 GW

Collected by: Jeff Dobbins | Collected date/time: 05/01/18 11:02 | Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107743	1	05/07/18 23:43	05/07/18 23:43	MCG
Wet Chemistry by Method 9056A	WG1105796	1	05/02/18 23:29	05/02/18 23:29	MAJ
Wet Chemistry by Method 9060A	WG1106959	1	05/04/18 20:40	05/04/18 20:40	EG
Metals (ICPMS) by Method 6020A	WG1106119	1	05/04/18 12:35	05/04/18 15:36	JPD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1106035	1	05/02/18 18:41	05/02/18 18:41	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107967	1	05/08/18 11:28	05/08/18 11:28	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 15:42	05/02/18 15:42	BMB

IW-11D-050118 L990247-03 GW

Collected by: Jeff Dobbins | Collected date/time: 05/01/18 12:43 | Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 16:01	05/02/18 16:01	BMB
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	50	05/07/18 19:46	05/07/18 19:46	DWR

MW-905-050118 L990247-04 GW

Collected by: Jeff Dobbins | Collected date/time: 05/01/18 11:08 | Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107743	1	05/07/18 23:51	05/07/18 23:51	MCG
Wet Chemistry by Method 9056A	WG1105796	1	05/02/18 23:45	05/02/18 23:45	MAJ
Wet Chemistry by Method 9060A	WG1106959	1	05/04/18 20:54	05/04/18 20:54	EG
Metals (ICPMS) by Method 6020A	WG1106119	1	05/04/18 12:35	05/04/18 15:55	JPD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1106035	1	05/02/18 19:05	05/02/18 19:05	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107969	1	05/08/18 13:26	05/08/18 13:26	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 16:21	05/02/18 16:21	BMB
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/07/18 20:05	05/07/18 20:05	DWR

MW-147-050118 L990247-05 GW

Collected by: Jeff Dobbins | Collected date/time: 05/01/18 13:53 | Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107743	1	05/07/18 23:58	05/07/18 23:58	MCG
Wet Chemistry by Method 9056A	WG1105796	1	05/03/18 00:00	05/03/18 00:00	MAJ
Wet Chemistry by Method 9056A	WG1105796	5	05/03/18 12:23	05/03/18 12:23	MAJ
Wet Chemistry by Method 9060A	WG1106959	1	05/04/18 21:13	05/04/18 21:13	EG
Metals (ICPMS) by Method 6020A	WG1106119	1	05/04/18 12:35	05/04/18 16:00	JPD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1106035	1	05/02/18 19:28	05/02/18 19:28	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107969	1	05/08/18 13:28	05/08/18 13:28	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 16:41	05/02/18 16:41	BMB

MW-147-050118 L990247-05 GW

Collected by: Jeff Dobbins
Collected date/time: 05/01/18 13:53
Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	25	05/07/18 20:25	05/07/18 20:25	DWR

EQ-050118 L990247-06 GW

Collected by: Jeff Dobbins
Collected date/time: 05/01/18 14:42
Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1107743	1	05/08/18 08:40	05/08/18 08:40	MCG
Wet Chemistry by Method 9056A	WG1105796	1	05/03/18 00:15	05/03/18 00:15	MAJ
Wet Chemistry by Method 9060A	WG1106959	1	05/04/18 21:25	05/04/18 21:25	EG
Metals (ICPMS) by Method 6020A	WG1106119	1	05/04/18 12:35	05/04/18 16:04	JPD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1106035	1	05/02/18 19:52	05/02/18 19:52	ACG
Volatile Organic Compounds (GC) by Method RSK175	WG1107969	1	05/08/18 13:33	05/08/18 13:33	BG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 17:01	05/02/18 17:01	BMB
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/07/18 20:45	05/07/18 20:45	DWR

TRIPBLANK-050118 L990247-07 GW

Collected by: Jeff Dobbins
Collected date/time: 05/01/18 00:00
Received date/time: 05/02/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1106035	1	05/02/18 17:53	05/02/18 17:53	ACG
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1105852	1	05/02/18 13:44	05/02/18 13:44	BMB

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	302000		2710	20000	1	05/07/2018 23:58	WG1107743

Sample Narrative:

L990247-05 WG1107743: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	40800		51.9	1000	1	05/03/2018 00:00	WG1105796
Nitrate	U		22.7	100	1	05/03/2018 00:00	WG1105796
Sulfate	183000		387	25000	5	05/03/2018 12:23	WG1105796

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	21300		102	1000	1	05/04/2018 21:13	WG1106959

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	17100		15.0	100	1	05/04/2018 16:00	WG1106119
Manganese	564		0.250	5.00	1	05/04/2018 16:00	WG1106119

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	484		31.6	100	1	05/02/2018 19:28	WG1106035
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-122*		*05/02/2018 19:28*	WG1106035

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5060		0.287	0.678	1	05/08/2018 13:28	WG1107969
Ethane	10.7		0.296	1.29	1	05/08/2018 13:28	WG1107969
Ethene	144		0.422	1.27	1	05/08/2018 13:28	WG1107969

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.16	J	1.05	25.0	1	05/02/2018 16:41	WG1105852
Acrylonitrile	U		0.873	5.00	1	05/02/2018 16:41	WG1105852
Benzene	U		0.0896	0.500	1	05/02/2018 16:41	WG1105852
Bromobenzene	U		0.133	0.500	1	05/02/2018 16:41	WG1105852
Bromodichloromethane	U		0.0800	0.500	1	05/02/2018 16:41	WG1105852
Bromochloromethane	U		0.145	0.500	1	05/02/2018 16:41	WG1105852
Bromoform	U		0.186	0.500	1	05/02/2018 16:41	WG1105852
Bromomethane	U		0.157	2.50	1	05/02/2018 16:41	WG1105852
n-Butylbenzene	U		0.143	0.500	1	05/02/2018 16:41	WG1105852
sec-Butylbenzene	U		0.134	0.500	1	05/02/2018 16:41	WG1105852
tert-Butylbenzene	U		0.183	0.500	1	05/02/2018 16:41	WG1105852
Carbon disulfide	6.02		0.101	0.500	1	05/02/2018 16:41	WG1105852
Carbon tetrachloride	U		0.159	0.500	1	05/02/2018 16:41	WG1105852

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	05/02/2018 16:41	WG1105852
Chlorodibromomethane	U		0.128	0.500	1	05/02/2018 16:41	WG1105852
Chloroethane	2.01	J	0.141	2.50	1	05/02/2018 16:41	WG1105852
Chloroform	U		0.0860	0.500	1	05/02/2018 16:41	WG1105852
Chloromethane	U		0.153	1.25	1	05/02/2018 16:41	WG1105852
2-Chlorotoluene	U		0.111	0.500	1	05/02/2018 16:41	WG1105852
4-Chlorotoluene	U		0.0972	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	05/02/2018 16:41	WG1105852
1,2-Dibromoethane	U		0.193	0.500	1	05/02/2018 16:41	WG1105852
Dibromomethane	U		0.117	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dichlorobenzene	U		0.101	0.500	1	05/02/2018 16:41	WG1105852
1,3-Dichlorobenzene	U		0.130	0.500	1	05/02/2018 16:41	WG1105852
1,4-Dichlorobenzene	U		0.121	0.500	1	05/02/2018 16:41	WG1105852
Dichlorodifluoromethane	U		0.127	2.50	1	05/02/2018 16:41	WG1105852
1,1-Dichloroethane	U		0.114	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dichloroethane	U		0.108	0.500	1	05/02/2018 16:41	WG1105852
1,1-Dichloroethene	4.59		0.188	0.500	1	05/02/2018 16:41	WG1105852
cis-1,2-Dichloroethene	399		2.33	12.5	25	05/07/2018 20:25	WG1105852
trans-1,2-Dichloroethene	2.09		0.152	0.500	1	05/02/2018 16:41	WG1105852
1,2-Dichloropropane	U		0.190	0.500	1	05/02/2018 16:41	WG1105852
1,1-Dichloropropene	U		0.128	0.500	1	05/02/2018 16:41	WG1105852
1,3-Dichloropropane	U		0.147	1.00	1	05/02/2018 16:41	WG1105852
cis-1,3-Dichloropropene	U		0.0976	0.500	1	05/02/2018 16:41	WG1105852
trans-1,3-Dichloropropene	U		0.222	0.500	1	05/02/2018 16:41	WG1105852
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	05/02/2018 16:41	WG1105852
2,2-Dichloropropane	U		0.0929	0.500	1	05/02/2018 16:41	WG1105852
Di-isopropyl ether	U		0.0924	0.500	1	05/02/2018 16:41	WG1105852
Ethylbenzene	U		0.158	0.500	1	05/02/2018 16:41	WG1105852
Hexachloro-1,3-butadiene	U		0.157	1.00	1	05/02/2018 16:41	WG1105852
2-Hexanone	U		0.757	5.00	1	05/02/2018 16:41	WG1105852
n-Hexane	U		0.305	5.00	1	05/02/2018 16:41	WG1105852
Iodomethane	U		0.377	10.0	1	05/02/2018 16:41	WG1105852
Isopropylbenzene	U		0.126	0.500	1	05/02/2018 16:41	WG1105852
p-Isopropyltoluene	U		0.138	0.500	1	05/02/2018 16:41	WG1105852
2-Butanone (MEK)	U		1.28	5.00	1	05/02/2018 16:41	WG1105852
Methylene Chloride	U		1.07	2.50	1	05/02/2018 16:41	WG1105852
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	05/02/2018 16:41	WG1105852
Methyl tert-butyl ether	U		0.102	0.500	1	05/02/2018 16:41	WG1105852
Naphthalene	U		0.174	2.50	1	05/02/2018 16:41	WG1105852
n-Propylbenzene	U		0.162	0.500	1	05/02/2018 16:41	WG1105852
Styrene	U		0.117	0.500	1	05/02/2018 16:41	WG1105852
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	05/02/2018 16:41	WG1105852
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	05/02/2018 16:41	WG1105852
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	05/02/2018 16:41	WG1105852
Tetrachloroethene	19.8		0.199	0.500	1	05/02/2018 16:41	WG1105852
Toluene	U		0.412	0.500	1	05/02/2018 16:41	WG1105852
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2018 16:41	WG1105852
1,2,4-Trichlorobenzene	U		0.355	0.500	1	05/02/2018 16:41	WG1105852
1,1,1-Trichloroethane	U		0.0940	0.500	1	05/02/2018 16:41	WG1105852
1,1,2-Trichloroethane	U		0.186	0.500	1	05/02/2018 16:41	WG1105852
Trichloroethene	83.4		0.153	0.500	1	05/02/2018 16:41	WG1105852
Trichlorofluoromethane	U		0.130	2.50	1	05/02/2018 16:41	WG1105852
1,2,3-Trichloropropane	U		0.247	2.50	1	05/02/2018 16:41	WG1105852
1,2,4-Trimethylbenzene	U		0.123	0.500	1	05/02/2018 16:41	WG1105852
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	05/02/2018 16:41	WG1105852
1,3,5-Trimethylbenzene	U		0.124	0.500	1	05/02/2018 16:41	WG1105852

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	05/02/2018 16:41	WG1105852
Vinyl chloride	1150		2.95	12.5	25	05/07/2018 20:25	WG1105852
Xylenes, Total	U		0.316	1.50	1	05/02/2018 16:41	WG1105852
(S) Toluene-d8	*106*			*80.0-120*		*05/02/2018 16:41*	WG1105852
(S) Toluene-d8	*99.7*			*80.0-120*		*05/07/2018 20:25*	WG1105852
(S) Dibromofluoromethane	*97.1*			*76.0-123*		*05/02/2018 16:41*	WG1105852
(S) Dibromofluoromethane	*95.1*			*76.0-123*		*05/07/2018 20:25*	WG1105852
(S) 4-Bromofluorobenzene	*81.1*			*80.0-120*		*05/02/2018 16:41*	WG1105852
(S) 4-Bromofluorobenzene	*94.1*			*80.0-120*		*05/07/2018 20:25*	WG1105852

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	05/02/2018 17:53	WG1106035
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-122*		*05/02/2018 17:53*	WG1106035

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	05/02/2018 13:44	WG1105852
Acrylonitrile	U		0.873	5.00	1	05/02/2018 13:44	WG1105852
Benzene	U		0.0896	0.500	1	05/02/2018 13:44	WG1105852
Bromobenzene	U		0.133	0.500	1	05/02/2018 13:44	WG1105852
Bromodichloromethane	U		0.0800	0.500	1	05/02/2018 13:44	WG1105852
Bromochloromethane	U		0.145	0.500	1	05/02/2018 13:44	WG1105852
Bromoform	U		0.186	0.500	1	05/02/2018 13:44	WG1105852
Bromomethane	U		0.157	2.50	1	05/02/2018 13:44	WG1105852
n-Butylbenzene	U		0.143	0.500	1	05/02/2018 13:44	WG1105852
sec-Butylbenzene	U		0.134	0.500	1	05/02/2018 13:44	WG1105852
tert-Butylbenzene	U		0.183	0.500	1	05/02/2018 13:44	WG1105852
Carbon disulfide	U		0.101	0.500	1	05/02/2018 13:44	WG1105852
Carbon tetrachloride	U		0.159	0.500	1	05/02/2018 13:44	WG1105852
Chlorobenzene	U		0.140	0.500	1	05/02/2018 13:44	WG1105852
Chlorodibromomethane	U		0.128	0.500	1	05/02/2018 13:44	WG1105852
Chloroethane	U		0.141	2.50	1	05/02/2018 13:44	WG1105852
Chloroform	U		0.0860	0.500	1	05/02/2018 13:44	WG1105852
Chloromethane	U		0.153	1.25	1	05/02/2018 13:44	WG1105852
2-Chlorotoluene	U		0.111	0.500	1	05/02/2018 13:44	WG1105852
4-Chlorotoluene	U		0.0972	0.500	1	05/02/2018 13:44	WG1105852
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	05/02/2018 13:44	WG1105852
1,2-Dibromoethane	U		0.193	0.500	1	05/02/2018 13:44	WG1105852
Dibromomethane	U		0.117	0.500	1	05/02/2018 13:44	WG1105852
1,2-Dichlorobenzene	U		0.101	0.500	1	05/02/2018 13:44	WG1105852
1,3-Dichlorobenzene	U		0.130	0.500	1	05/02/2018 13:44	WG1105852
1,4-Dichlorobenzene	U		0.121	0.500	1	05/02/2018 13:44	WG1105852
Dichlorodifluoromethane	U		0.127	2.50	1	05/02/2018 13:44	WG1105852
1,1-Dichloroethane	U		0.114	0.500	1	05/02/2018 13:44	WG1105852
1,2-Dichloroethane	U		0.108	0.500	1	05/02/2018 13:44	WG1105852
1,1-Dichloroethene	U		0.188	0.500	1	05/02/2018 13:44	WG1105852
cis-1,2-Dichloroethene	U		0.0933	0.500	1	05/02/2018 13:44	WG1105852
trans-1,2-Dichloroethene	U		0.152	0.500	1	05/02/2018 13:44	WG1105852
1,2-Dichloropropane	U		0.190	0.500	1	05/02/2018 13:44	WG1105852
1,1-Dichloropropene	U		0.128	0.500	1	05/02/2018 13:44	WG1105852
1,3-Dichloropropane	U		0.147	1.00	1	05/02/2018 13:44	WG1105852
cis-1,3-Dichloropropene	U		0.0976	0.500	1	05/02/2018 13:44	WG1105852
trans-1,3-Dichloropropene	U		0.222	0.500	1	05/02/2018 13:44	WG1105852
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	05/02/2018 13:44	WG1105852
2,2-Dichloropropane	U		0.0929	0.500	1	05/02/2018 13:44	WG1105852
Di-isopropyl ether	U		0.0924	0.500	1	05/02/2018 13:44	WG1105852
Ethylbenzene	U		0.158	0.500	1	05/02/2018 13:44	WG1105852
Hexachloro-1,3-butadiene	U		0.157	1.00	1	05/02/2018 13:44	WG1105852
2-Hexanone	U		0.757	5.00	1	05/02/2018 13:44	WG1105852
n-Hexane	U		0.305	5.00	1	05/02/2018 13:44	WG1105852
Iodomethane	U		0.377	10.0	1	05/02/2018 13:44	WG1105852
Isopropylbenzene	U		0.126	0.500	1	05/02/2018 13:44	WG1105852
p-Isopropyltoluene	U		0.138	0.500	1	05/02/2018 13:44	WG1105852
2-Butanone (MEK)	U		1.28	5.00	1	05/02/2018 13:44	WG1105852

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	05/02/2018 13:44	WG1105852
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	05/02/2018 13:44	WG1105852
Methyl tert-butyl ether	U		0.102	0.500	1	05/02/2018 13:44	WG1105852
Naphthalene	U		0.174	2.50	1	05/02/2018 13:44	WG1105852
n-Propylbenzene	U		0.162	0.500	1	05/02/2018 13:44	WG1105852
Styrene	U		0.117	0.500	1	05/02/2018 13:44	WG1105852
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	05/02/2018 13:44	WG1105852
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	05/02/2018 13:44	WG1105852
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	05/02/2018 13:44	WG1105852
Tetrachloroethene	U		0.199	0.500	1	05/02/2018 13:44	WG1105852
Toluene	U		0.412	0.500	1	05/02/2018 13:44	WG1105852
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2018 13:44	WG1105852
1,2,4-Trichlorobenzene	U		0.355	0.500	1	05/02/2018 13:44	WG1105852
1,1,1-Trichloroethane	U		0.0940	0.500	1	05/02/2018 13:44	WG1105852
1,1,2-Trichloroethane	U		0.186	0.500	1	05/02/2018 13:44	WG1105852
Trichloroethene	U		0.153	0.500	1	05/02/2018 13:44	WG1105852
Trichlorofluoromethane	U		0.130	2.50	1	05/02/2018 13:44	WG1105852
1,2,3-Trichloropropane	U		0.247	2.50	1	05/02/2018 13:44	WG1105852
1,2,4-Trimethylbenzene	U		0.123	0.500	1	05/02/2018 13:44	WG1105852
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	05/02/2018 13:44	WG1105852
1,3,5-Trimethylbenzene	U		0.124	0.500	1	05/02/2018 13:44	WG1105852
Vinyl acetate	U		0.645	5.00	1	05/02/2018 13:44	WG1105852
Vinyl chloride	U		0.118	0.500	1	05/02/2018 13:44	WG1105852
Xylenes, Total	U		0.316	1.50	1	05/02/2018 13:44	WG1105852
(S) Toluene-d8	*105*			*80.0-120*		*05/02/2018 13:44*	WG1105852
(S) Dibromofluoromethane	*95.2*			*76.0-123*		*05/02/2018 13:44*	WG1105852
(S) 4-Bromofluorobenzene	*82.0*			*80.0-120*		*05/02/2018 13:44*	WG1105852

L990458-02 Original Sample (OS) • Duplicate (DUP)

(OS) L990458-02 05/07/18 21:23 • (DUP) R3307763-1 05/07/18 21:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	549000	567000	1	3.22		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

L990272-16 Original Sample (OS) • Duplicate (DUP)

(OS) L990272-16 05/08/18 07:39 • (DUP) R3307763-6 05/08/18 07:45

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Alkalinity	286000	292000	1	1.96		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307763-4 05/07/18 23:03 • (LCSD) R3307763-5 05/08/18 00:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Alkalinity	100000	101000	97700	101	97.7	85.0-115			2.85	20

Sample Narrative:

LCS: Endpoint pH 4.5

LCSD: Endpoint pH 4.5

Method Blank (MB)

(MB) R3306774-1 05/02/18 13:21

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	109	J	77.4	5000

L990245-05 Original Sample (OS) • Duplicate (DUP)

(OS) L990245-05 05/02/18 20:40 • (DUP) R3306774-4 05/02/18 20:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	9870	9160	1	7.48		15
Nitrate	857	894	1	4.22		15
Sulfate	34300	34400	1	0.326		15

L990247-06 Original Sample (OS) • Duplicate (DUP)

(OS) L990247-06 05/03/18 00:15 • (DUP) R3306774-7 05/03/18 00:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	864	0.000	1	200	P1	15
Nitrate	U	0.000	1	0.000		15
Sulfate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3306774-2 05/02/18 13:37 • (LCSD) R3306774-3 05/02/18 13:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40000	39800	39800	99.4	99.5	80.0-120			0.117	15
Nitrate	8000	8180	8110	102	101	80.0-120			0.854	15
Sulfate	40000	40000	39800	100	99.6	80.0-120			0.429	15

L990245-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L990245-05 05/02/18 20:40 • (MS) R3306774-5 05/02/18 21:10 • (MSD) R3306774-6 05/02/18 21:26

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	9870	73600	59900	127	100	1	80.0-120	J5	J3	20.6	15
Nitrate	5000	857	5810	5890	99.0	101	1	80.0-120			1.41	15
Sulfate	50000	34300	83800	84100	99.0	99.6	1	80.0-120			0.352	15

L990247-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L990247-06 05/03/18 00:15 • (MS) R3306774-8 05/03/18 00:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	864	51200	101	1	80.0-120	
Nitrate	5000	U	4840	96.7	1	80.0-120	
Sulfate	50000	U	50400	101	1	80.0-120	

Method Blank (MB)

(MB) R3307261-1 05/04/18 11:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	U		102	1000

L990207-01 Original Sample (OS) • Duplicate (DUP)

(OS) L990207-01 05/04/18 16:12 • (DUP) R3307261-3 05/04/18 16:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	3240	3300	1	1.65		20

L990256-01 Original Sample (OS) • Duplicate (DUP)

(OS) L990256-01 05/04/18 22:50 • (DUP) R3307261-7 05/04/18 23:11

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	1500	1540	1	2.57		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307261-2 05/04/18 12:21 • (LCSD) R3307261-4 05/04/18 18:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	75000	68600	68300	91.5	91.1	85.0-115			0.424	20

L990245-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L990245-09 05/04/18 19:14 • (MS) R3307261-5 05/04/18 19:34 • (MSD) R3307261-6 05/04/18 19:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	522	46600	46800	92.1	92.5	1	80.0-120			0.450	20

Method Blank (MB)

(MB) R3307226-1 05/04/18 15:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307226-2 05/04/18 15:04 • (LCSD) R3307226-3 05/04/18 15:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Iron	5000	4980	4900	99.6	98.0	80.0-120			1.54	20
Manganese	50.0	48.4	47.8	96.9	95.6	80.0-120			1.30	20

L991047-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L991047-02 05/04/18 15:13 • (MS) R3307226-5 05/04/18 15:23 • (MSD) R3307226-6 05/04/18 15:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	5000	108	4960	4980	97.1	97.4	1	75.0-125			0.297	20
Manganese	50.0	5350	5330	5360	0.000	37.7	1	75.0-125	V	V	0.678	20

Method Blank (MB)

(MB) R3306868-3 05/02/18 12:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	35.5	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3306868-1 05/02/18 10:10 • (LCSD) R3306868-2 05/02/18 11:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5680	4750	103	86.3	72.0-134			17.8	20
(S) a,a,a-Trifluorotoluene(FID)				*93.5*	*93.9*	*77.0-122*				

Method Blank (MB)

(MB) R3307795-1 05/08/18 10:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L989898-02 Original Sample (OS) • Duplicate (DUP)

(OS) L989898-02 05/08/18 10:25 • (DUP) R3307795-2 05/08/18 10:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	352	349	1	0.900		20
Ethane	15.7	15.3	1	3.03		20
Ethene	11.0	11.2	1	1.60		20

L989972-09 Original Sample (OS) • Duplicate (DUP)

(OS) L989972-09 05/08/18 11:03 • (DUP) R3307795-3 05/08/18 11:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1080	1090	1	0.765		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307795-4 05/08/18 11:41 • (LCSD) R3307795-5 05/08/18 11:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	71.2	72.4	105	107	85.0-115			1.68	20
Ethane	129	115	115	89.1	89.0	85.0-115			0.0186	20
Ethene	127	116	116	91.6	91.6	85.0-115			0.0834	20

Method Blank (MB)

(MB) R3307876-1 05/08/18 13:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L990272-03 Original Sample (OS) • Duplicate (DUP)

(OS) L990272-03 05/08/18 13:35 • (DUP) R3307876-2 05/08/18 13:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L990458-06 Original Sample (OS) • Duplicate (DUP)

(OS) L990458-06 05/08/18 14:25 • (DUP) R3307876-3 05/08/18 14:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3307876-4 05/08/18 14:45 • (LCSD) R3307876-5 05/08/18 14:48

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.2	71.3	107	105	85.0-115			1.28	20
Ethane	129	115	116	88.8	90.3	85.0-115			1.70	20
Ethene	127	117	118	91.8	93.2	85.0-115			1.44	20

Method Blank (MB)

(MB) R3307630-2 05/02/18 13:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromochloromethane	U		0.145	0.500
Bromodichloromethane	U		0.0800	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
Carbon disulfide	U		0.101	0.500
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
2-Hexanone	U		0.757	5.00
cis-1,3-Dichloropropene	U		0.0976	0.500
n-Hexane	U		0.305	5.00
trans-1,3-Dichloropropene	U		0.222	0.500

Method Blank (MB)

(MB) R3307630-2 05/02/18 13:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
2,2-Dichloropropane	U		0.0929	0.500
Iodomethane	U		0.377	10.0
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
Vinyl acetate	U		0.645	5.00
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*104*			*80.0-120*
(S) Dibromofluoromethane	*96.9*			*76.0-123*
(S) 4-Bromofluorobenzene	*84.1*			*80.0-120*

Laboratory Control Sample (LCS)

(LCS) R3307630-1 05/02/18 12:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromochloromethane	25.0	28.0	112	76.0-122	
Carbon disulfide	25.0	27.7	111	55.0-127	
trans-1,4-Dichloro-2-butene	25.0	27.5	110	55.0-134	
2-Hexanone	125	135	108	58.0-147	
n-Hexane	25.0	28.5	114	56.0-124	
Iodomethane	125	142	113	57.0-140	
Acetone	125	88.3	70.6	10.0-160	
Acrylonitrile	125	118	94.6	60.0-142	
Benzene	25.0	27.0	108	69.0-123	
Bromobenzene	25.0	24.4	97.6	79.0-120	
Bromodichloromethane	25.0	24.1	96.4	76.0-120	
Bromoform	25.0	23.3	93.3	67.0-132	
Bromomethane	25.0	28.1	113	18.0-160	
n-Butylbenzene	25.0	27.9	112	72.0-126	
sec-Butylbenzene	25.0	28.5	114	74.0-121	
tert-Butylbenzene	25.0	27.1	109	75.0-122	
Carbon tetrachloride	25.0	27.4	110	63.0-122	
Chlorobenzene	25.0	28.5	114	79.0-121	
Chlorodibromomethane	25.0	27.3	109	75.0-125	
Chloroethane	25.0	27.4	109	47.0-152	
Chloroform	25.0	25.4	102	72.0-121	
Chloromethane	25.0	25.7	103	48.0-139	
2-Chlorotoluene	25.0	27.1	108	74.0-122	
Vinyl acetate	125	136	109	46.0-160	
4-Chlorotoluene	25.0	27.0	108	79.0-120	
1,2-Dibromo-3-Chloropropane	25.0	24.8	99.1	64.0-127	
1,2-Dibromoethane	25.0	26.6	107	77.0-123	
Dibromomethane	25.0	25.3	101	78.0-120	
1,2-Dichlorobenzene	25.0	27.2	109	80.0-120	
1,3-Dichlorobenzene	25.0	27.4	109	72.0-123	
1,4-Dichlorobenzene	25.0	26.9	108	77.0-120	
Dichlorodifluoromethane	25.0	28.8	115	49.0-155	
1,1-Dichloroethane	25.0	27.6	111	70.0-126	
1,2-Dichloroethane	25.0	27.7	111	67.0-126	
1,1-Dichloroethene	25.0	26.4	105	64.0-129	
cis-1,2-Dichloroethene	25.0	26.2	105	73.0-120	
trans-1,2-Dichloroethene	25.0	27.7	111	71.0-121	
1,2-Dichloropropane	25.0	27.0	108	75.0-125	
1,1-Dichloropropene	25.0	28.6	114	71.0-129	
1,3-Dichloropropane	25.0	27.1	108	80.0-121	

Laboratory Control Sample (LCS)

(LCS) R3307630-1 05/02/18 12:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,3-Dichloropropene	25.0	27.3	109	79.0-123	
trans-1,3-Dichloropropene	25.0	27.1	108	74.0-127	
2,2-Dichloropropane	25.0	25.9	104	60.0-125	
Di-isopropyl ether	25.0	25.8	103	59.0-133	
Ethylbenzene	25.0	28.3	113	77.0-120	
Hexachloro-1,3-butadiene	25.0	27.1	109	64.0-131	
Isopropylbenzene	25.0	23.2	93.0	75.0-120	
p-Isopropyltoluene	25.0	27.4	109	74.0-126	
2-Butanone (MEK)	125	119	94.9	37.0-158	
Methylene Chloride	25.0	25.4	102	66.0-121	
4-Methyl-2-pentanone (MIBK)	125	132	106	59.0-143	
Methyl tert-butyl ether	25.0	25.8	103	64.0-123	
Naphthalene	25.0	27.1	108	62.0-128	
n-Propylbenzene	25.0	25.6	102	79.0-120	
Styrene	25.0	23.2	92.9	78.0-124	
1,1,1,2-Tetrachloroethane	25.0	27.3	109	75.0-122	
1,1,2,2-Tetrachloroethane	25.0	23.5	94.0	71.0-122	
Tetrachloroethene	25.0	30.1	120	70.0-127	
Toluene	25.0	27.2	109	77.0-120	
1,1,2-Trichlorotrifluoroethane	25.0	29.5	118	61.0-136	
1,2,3-Trichlorobenzene	25.0	27.9	112	61.0-133	
1,2,4-Trichlorobenzene	25.0	28.9	116	69.0-129	
1,1,1-Trichloroethane	25.0	26.9	108	68.0-122	
1,1,2-Trichloroethane	25.0	26.0	104	78.0-120	
Trichloroethene	25.0	27.9	111	78.0-120	
Trichlorofluoromethane	25.0	28.4	114	56.0-137	
1,2,3-Trichloropropane	25.0	24.9	99.7	72.0-124	
1,2,3-Trimethylbenzene	25.0	26.7	107	75.0-120	
1,2,4-Trimethylbenzene	25.0	27.0	108	75.0-120	
1,3,5-Trimethylbenzene	25.0	27.2	109	75.0-120	
Vinyl chloride	25.0	29.3	117	64.0-133	
Xylenes, Total	75.0	84.8	113	77.0-120	
(S) Toluene-d8			*102*	*80.0-120*	
(S) Dibromofluoromethane			*97.6*	*76.0-123*	
(S) 4-Bromofluorobenzene			*84.5*	*80.0-120*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

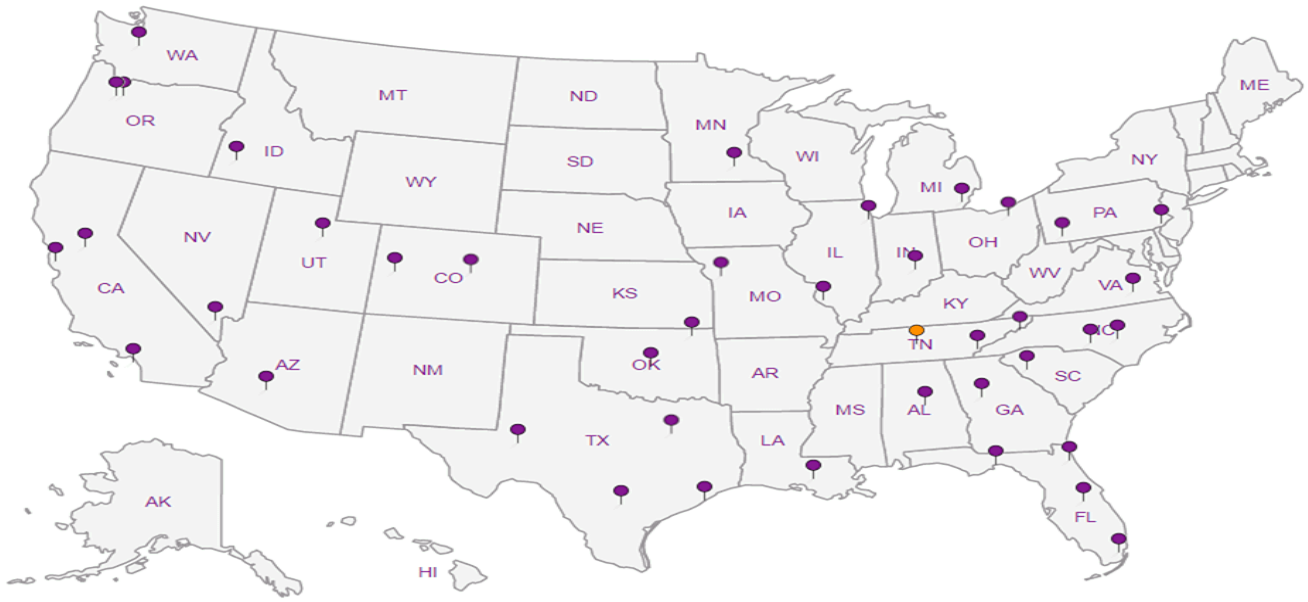
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com

Project Description: American Linen

City/State Collected: Seattle, WA

Phone: 206-529-3980
Fax: 206-529-3985

Client Project #

Lab Project # PESENVSWA-ALP

Collected by (print): Jeff Dobbins

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260C VOCs 40ml/NaHSO4/Syr/MeOH	dry wt,voc screen 2ozClr-NoPres	NO3,SO4,Cl,Alk 250mlHDPE-NoPres	NWTPHGX 40mlAmb HCl	RSK175LLEEM)40mlAmb HCl	TotalFe Mn6020 250mlHDPE HNO3	TOC 250mlAmb HCl	V8260LLC VOCs 40mlAmb HCl			Remarks	Sample # (lab only)
MW-148-050118	Grab	SS GW		5/1/18	0855	11			X	X	X	X	X	XX				-01
MW-153-050118		SS GW		5/1/18	1102	11			X	X	X	X	X	XX				-02
IW-11D-050118		SS GW		5/1/18	1243	3								X				-03
MW-905-050118		SS GW		5/1/18	1106	11			X	X	X	X	X	XX				-04
MW-147-050118		SS GW		5/1/18	1353	11			X	X	X	X	X	XX				-05
EQ-050118		SS GW		5/1/18	1442	4 10KH			X	X	X	X	X	XX				-06
TRIPBLANK-050118		SS GW		5/1/18	—	1				X				X				-07
		SS																
		SS																
		SS																

Chain of Custody Page 1 of 1

ESC LABSCIENCES
a subsidiary of Pace Analytical

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L990247

C097

Tat

Acctnum: PESENVSWA
Template: T134663
Prelogin: P647547
TSR: 110 - Brian Ford
PB: 4-4-18 ch

Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 4196 3258 7490

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5/1/18	1540	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Temp: 5.4 °C Bottles Received: 57

Date: 5/2/18 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ESC Lab Sciences
Non-Conformance Form

Login #:L990247	Client:PESENVSWA	Date:05/02/18	Evaluated by: Myra "Katie" Ingram

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
X	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:

One of the vials for the ID: EQ-050118 was received broken

Client informed by:		Call		Email		Voice Mail		Date:	Time:
TSR Initials:bjf	Client Contact:								

Login Instructions:

Proceed with remaining sample volume

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 30, 2019

PES Environmental, Inc.- WA

Sample Delivery Group:	L1063581
Samples Received:	01/23/2019
Project Number:	1413.001.05.601
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman 1215 Fourth Ave., Suite 1350 Seattle, WA 98161

Entire Report Reviewed By:

Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

MW-155-012119 L1063581-01 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/21/19 12:15	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 04:30	01/24/19 04:30	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 12:42	01/24/19 12:42	CAH

MW-154-012119 L1063581-02 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/21/19 10:45	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 04:52	01/24/19 04:52	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 13:02	01/24/19 13:02	CAH

MW-159-012119 L1063581-03 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/21/19 16:10	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 05:13	01/24/19 05:13	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 13:22	01/24/19 13:22	CAH

MW-9-012119 L1063581-04 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/21/19 15:15	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 05:35	01/24/19 05:35	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 13:42	01/24/19 13:42	CAH

MW-125-012119 L1063581-05 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/21/19 14:25	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 05:56	01/24/19 05:56	DWR
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 14:02	01/24/19 14:02	CAH

MW-119-012119 L1063581-06 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/21/19 13:05	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 14:21	01/24/19 14:21	CAH

MW-153-012219 L1063581-07 GW

Collected by	Collected date/time	Received date/time
Alyssa Witt	01/22/19 12:00	01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1228020	1	01/25/19 14:54	01/25/19 14:54	GB
Wet Chemistry by Method 9056A	WG1227335	1	01/23/19 20:20	01/23/19 20:20	ST
Wet Chemistry by Method 9060A	WG1227775	1	01/24/19 13:17	01/24/19 13:17	EEM
Metals (ICPMS) by Method 6020B	WG1227051	1	01/23/19 20:20	01/24/19 17:57	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 06:17	01/24/19 06:17	DWR
Volatile Organic Compounds (GC) by Method RSK175	WG1227529	1	01/25/19 11:47	01/25/19 11:47	MEL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 14:41	01/24/19 14:41	CAH

MW-147-012219 L1063581-08 GW

Collected by: Alyssa Witt | Collected date/time: 01/22/19 14:10 | Received date/time: 01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1228020	1	01/25/19 15:03	01/25/19 15:03	GB
Wet Chemistry by Method 9056A	WG1227335	1	01/23/19 20:30	01/23/19 20:30	ST
Wet Chemistry by Method 9060A	WG1229248	1	01/28/19 16:27	01/28/19 16:27	EEM
Metals (ICPMS) by Method 6020B	WG1227051	1	01/23/19 20:20	01/24/19 18:01	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 06:39	01/24/19 06:39	DWR
Volatile Organic Compounds (GC) by Method RSK175	WG1227529	1	01/25/19 12:13	01/25/19 12:13	MEL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 15:01	01/24/19 15:01	CAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1228835	10	01/27/19 21:34	01/27/19 21:34	ACG

MW-146-012219 L1063581-09 GW

Collected by: Alyssa Witt | Collected date/time: 01/22/19 13:10 | Received date/time: 01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1228020	1	01/25/19 15:19	01/25/19 15:19	GB
Wet Chemistry by Method 9056A	WG1227335	1	01/23/19 20:41	01/23/19 20:41	ST
Wet Chemistry by Method 9060A	WG1229248	1	01/28/19 16:56	01/28/19 16:56	EEM
Metals (ICPMS) by Method 6020B	WG1227051	1	01/23/19 20:20	01/24/19 18:06	LD
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1227572	1	01/24/19 07:00	01/24/19 07:00	DWR
Volatile Organic Compounds (GC) by Method RSK175	WG1227529	1	01/25/19 12:25	01/25/19 12:25	MEL
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 15:21	01/24/19 15:21	CAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1228835	10	01/27/19 21:55	01/27/19 21:55	ACG

MW-126-012219 L1063581-10 GW

Collected by: Alyssa Witt | Collected date/time: 01/22/19 09:00 | Received date/time: 01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 15:41	01/24/19 15:41	CAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1228835	1	01/27/19 20:54	01/27/19 20:54	ACG

MW-108-012219 L1063581-11 GW

Collected by: Alyssa Witt | Collected date/time: 01/22/19 09:50 | Received date/time: 01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 16:01	01/24/19 16:01	CAH
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1228835	50	01/27/19 22:15	01/27/19 22:15	ACG

TRIP BLANK-012219 L1063581-12 GW

Collected by: Alyssa Witt | Collected date/time: 01/22/19 00:00 | Received date/time: 01/23/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1227840	1	01/24/19 12:22	01/24/19 12:22	CAH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/24/2019 04:30	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.6*			*78.0-120*		*01/24/2019 04:30*	WG1227572

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	01/24/2019 12:42	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 12:42	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 12:42	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 12:42	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 12:42	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 12:42	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 12:42	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 12:42	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 12:42	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 12:42	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 12:42	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 12:42	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 12:42	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 12:42	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 12:42	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 12:42	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 12:42	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 12:42	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 12:42	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 12:42	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 12:42	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 12:42	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 12:42	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 12:42	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 12:42	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 12:42	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 12:42	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 12:42	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 12:42	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 12:42	WG1227840
cis-1,2-Dichloroethene	0.274	J	0.0933	0.500	1	01/24/2019 12:42	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 12:42	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 12:42	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 12:42	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 12:42	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 12:42	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 12:42	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 12:42	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 12:42	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 12:42	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 12:42	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 12:42	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 12:42	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 12:42	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 12:42	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 12:42	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 12:42	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 12:42	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	01/24/2019 12:42	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 12:42	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 12:42	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 12:42	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 12:42	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 12:42	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 12:42	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 12:42	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 12:42	WG1227840
Tetrachloroethene	3.72		0.199	0.500	1	01/24/2019 12:42	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 12:42	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 12:42	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 12:42	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 12:42	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 12:42	WG1227840
Trichloroethene	0.581		0.153	0.500	1	01/24/2019 12:42	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 12:42	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 12:42	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 12:42	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 12:42	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 12:42	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 12:42	WG1227840
Vinyl chloride	U		0.118	0.500	1	01/24/2019 12:42	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 12:42	WG1227840
(S) Toluene-d8	*102*			*80.0-120*		*01/24/2019 12:42*	WG1227840
(S) Dibromofluoromethane	*104*			*75.0-120*		*01/24/2019 12:42*	WG1227840
(S) a,a,a-Trifluorotoluene	*99.1*			*80.0-120*		*01/24/2019 12:42*	WG1227840
(S) 4-Bromofluorobenzene	*94.3*			*77.0-126*		*01/24/2019 12:42*	WG1227840

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/24/2019 04:52	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.4*			*78.0-120*		*01/24/2019 04:52*	WG1227572

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	01/24/2019 13:02	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 13:02	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 13:02	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 13:02	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 13:02	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 13:02	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 13:02	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 13:02	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 13:02	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 13:02	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 13:02	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 13:02	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 13:02	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 13:02	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 13:02	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 13:02	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 13:02	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 13:02	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 13:02	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 13:02	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 13:02	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 13:02	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 13:02	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 13:02	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 13:02	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 13:02	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 13:02	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 13:02	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 13:02	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 13:02	WG1227840
cis-1,2-Dichloroethene	2.03		0.0933	0.500	1	01/24/2019 13:02	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 13:02	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 13:02	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 13:02	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 13:02	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 13:02	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 13:02	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 13:02	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 13:02	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 13:02	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 13:02	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 13:02	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 13:02	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 13:02	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 13:02	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 13:02	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 13:02	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 13:02	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	01/24/2019 13:02	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 13:02	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 13:02	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 13:02	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 13:02	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 13:02	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 13:02	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 13:02	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 13:02	WG1227840
Tetrachloroethene	1.70		0.199	0.500	1	01/24/2019 13:02	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 13:02	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 13:02	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 13:02	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 13:02	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 13:02	WG1227840
Trichloroethene	0.330	J	0.153	0.500	1	01/24/2019 13:02	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 13:02	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 13:02	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 13:02	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 13:02	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 13:02	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 13:02	WG1227840
Vinyl chloride	3.52		0.118	0.500	1	01/24/2019 13:02	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 13:02	WG1227840
(S) Toluene-d8	*99.6*			*80.0-120*		*01/24/2019 13:02*	WG1227840
(S) Dibromofluoromethane	*103*			*75.0-120*		*01/24/2019 13:02*	WG1227840
(S) a,a,a-Trifluorotoluene	*98.4*			*80.0-120*		*01/24/2019 13:02*	WG1227840
(S) 4-Bromofluorobenzene	*92.3*			*77.0-126*		*01/24/2019 13:02*	WG1227840

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/24/2019 05:13	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*93.9*			*78.0-120*		*01/24/2019 05:13*	WG1227572

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.98	J	1.05	25.0	1	01/24/2019 13:22	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 13:22	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 13:22	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 13:22	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 13:22	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 13:22	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 13:22	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 13:22	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 13:22	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 13:22	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 13:22	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 13:22	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 13:22	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 13:22	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 13:22	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 13:22	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 13:22	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 13:22	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 13:22	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 13:22	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 13:22	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 13:22	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 13:22	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 13:22	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 13:22	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 13:22	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 13:22	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 13:22	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 13:22	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 13:22	WG1227840
cis-1,2-Dichloroethene	0.651		0.0933	0.500	1	01/24/2019 13:22	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 13:22	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 13:22	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 13:22	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 13:22	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 13:22	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 13:22	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 13:22	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 13:22	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 13:22	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 13:22	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 13:22	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 13:22	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 13:22	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 13:22	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 13:22	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 13:22	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 13:22	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	01/24/2019 13:22	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 13:22	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 13:22	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 13:22	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 13:22	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 13:22	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 13:22	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 13:22	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 13:22	WG1227840
Tetrachloroethene	U		0.199	0.500	1	01/24/2019 13:22	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 13:22	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 13:22	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 13:22	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 13:22	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 13:22	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 13:22	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 13:22	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 13:22	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 13:22	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 13:22	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 13:22	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 13:22	WG1227840
Vinyl chloride	0.666		0.118	0.500	1	01/24/2019 13:22	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 13:22	WG1227840
(S) Toluene-d8	*98.8*			*80.0-120*		*01/24/2019 13:22*	WG1227840
(S) Dibromofluoromethane	*105*			*75.0-120*		*01/24/2019 13:22*	WG1227840
(S) a,a,a-Trifluorotoluene	*97.0*			*80.0-120*		*01/24/2019 13:22*	WG1227840
(S) 4-Bromofluorobenzene	*92.6*			*77.0-126*		*01/24/2019 13:22*	WG1227840

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/24/2019 05:35	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.1*			*78.0-120*		*01/24/2019 05:35*	WG1227572

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	01/24/2019 13:42	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 13:42	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 13:42	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 13:42	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 13:42	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 13:42	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 13:42	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 13:42	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 13:42	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 13:42	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 13:42	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 13:42	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 13:42	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 13:42	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 13:42	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 13:42	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 13:42	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 13:42	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 13:42	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 13:42	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 13:42	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 13:42	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 13:42	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 13:42	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 13:42	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 13:42	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 13:42	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 13:42	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 13:42	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 13:42	WG1227840
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/24/2019 13:42	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 13:42	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 13:42	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 13:42	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 13:42	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 13:42	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 13:42	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 13:42	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 13:42	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 13:42	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 13:42	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 13:42	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 13:42	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 13:42	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 13:42	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 13:42	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 13:42	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 13:42	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	01/24/2019 13:42	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 13:42	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 13:42	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 13:42	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 13:42	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 13:42	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 13:42	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 13:42	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 13:42	WG1227840
Tetrachloroethene	U		0.199	0.500	1	01/24/2019 13:42	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 13:42	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 13:42	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 13:42	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 13:42	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 13:42	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 13:42	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 13:42	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 13:42	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 13:42	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 13:42	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 13:42	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 13:42	WG1227840
Vinyl chloride	U		0.118	0.500	1	01/24/2019 13:42	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 13:42	WG1227840
(S) Toluene-d8	*98.5*			*80.0-120*		*01/24/2019 13:42*	WG1227840
(S) Dibromofluoromethane	*103*			*75.0-120*		*01/24/2019 13:42*	WG1227840
(S) a,a,a-Trifluorotoluene	*99.2*			*80.0-120*		*01/24/2019 13:42*	WG1227840
(S) 4-Bromofluorobenzene	*94.9*			*77.0-126*		*01/24/2019 13:42*	WG1227840

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/24/2019 05:56	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.7*			*78.0-120*		*01/24/2019 05:56*	WG1227572

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.66	J	1.05	25.0	1	01/24/2019 14:02	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 14:02	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 14:02	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 14:02	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 14:02	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 14:02	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 14:02	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 14:02	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 14:02	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 14:02	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 14:02	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 14:02	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 14:02	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 14:02	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 14:02	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 14:02	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 14:02	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 14:02	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 14:02	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 14:02	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 14:02	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 14:02	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 14:02	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 14:02	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 14:02	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 14:02	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 14:02	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 14:02	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 14:02	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 14:02	WG1227840
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/24/2019 14:02	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 14:02	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 14:02	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 14:02	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 14:02	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 14:02	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 14:02	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 14:02	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 14:02	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 14:02	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 14:02	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 14:02	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 14:02	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 14:02	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 14:02	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 14:02	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 14:02	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 14:02	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	01/24/2019 14:02	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 14:02	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 14:02	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 14:02	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 14:02	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 14:02	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 14:02	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 14:02	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 14:02	WG1227840
Tetrachloroethene	U		0.199	0.500	1	01/24/2019 14:02	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 14:02	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 14:02	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 14:02	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 14:02	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 14:02	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 14:02	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 14:02	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 14:02	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 14:02	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 14:02	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 14:02	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 14:02	WG1227840
Vinyl chloride	U		0.118	0.500	1	01/24/2019 14:02	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 14:02	WG1227840
(S) Toluene-d8	*100*			*80.0-120*		*01/24/2019 14:02*	WG1227840
(S) Dibromofluoromethane	*104*			*75.0-120*		*01/24/2019 14:02*	WG1227840
(S) a,a,a-Trifluorotoluene	*98.3*			*80.0-120*		*01/24/2019 14:02*	WG1227840
(S) 4-Bromofluorobenzene	*94.5*			*77.0-126*		*01/24/2019 14:02*	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	4.46	J	1.05	25.0	1	01/24/2019 14:21	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 14:21	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 14:21	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 14:21	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 14:21	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 14:21	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 14:21	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 14:21	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 14:21	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 14:21	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 14:21	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 14:21	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 14:21	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 14:21	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 14:21	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 14:21	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 14:21	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 14:21	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 14:21	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 14:21	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 14:21	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 14:21	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 14:21	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 14:21	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 14:21	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 14:21	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 14:21	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 14:21	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 14:21	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 14:21	WG1227840
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/24/2019 14:21	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 14:21	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 14:21	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 14:21	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 14:21	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 14:21	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 14:21	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 14:21	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 14:21	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 14:21	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 14:21	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 14:21	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 14:21	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 14:21	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 14:21	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 14:21	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 14:21	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 14:21	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 14:21	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 14:21	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 14:21	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 14:21	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 14:21	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 14:21	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 14:21	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 14:21	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 14:21	WG1227840
Tetrachloroethene	1.24		0.199	0.500	1	01/24/2019 14:21	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 14:21	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 14:21	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 14:21	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 14:21	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 14:21	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 14:21	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 14:21	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 14:21	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 14:21	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 14:21	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 14:21	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 14:21	WG1227840
Vinyl chloride	U		0.118	0.500	1	01/24/2019 14:21	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 14:21	WG1227840
(S) Toluene-d8	*100*			*80.0-120*		*01/24/2019 14:21*	WG1227840
(S) Dibromofluoromethane	*103*			*75.0-120*		*01/24/2019 14:21*	WG1227840
(S) a,a,a-Trifluorotoluene	*98.1*			*80.0-120*		*01/24/2019 14:21*	WG1227840
(S) 4-Bromofluorobenzene	*90.8*			*77.0-126*		*01/24/2019 14:21*	WG1227840

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	156000		2710	20000	1	01/25/2019 14:54	WG1228020

Sample Narrative:

L1063581-07 WG1228020: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	9910		51.9	1000	1	01/23/2019 20:20	WG1227335
Nitrate	U		22.7	100	1	01/23/2019 20:20	WG1227335
Sulfate	13200		77.4	5000	1	01/23/2019 20:20	WG1227335

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1920	B	102	1000	1	01/24/2019 13:17	WG1227775

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	3010		15.0	100	1	01/24/2019 17:57	WG1227051
Manganese	299		0.250	5.00	1	01/24/2019 17:57	WG1227051

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/24/2019 06:17	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.2*			*78.0-120*		*01/24/2019 06:17*	WG1227572

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	387		0.287	0.678	1	01/25/2019 11:47	WG1227529
Ethane	U		0.296	1.29	1	01/25/2019 11:47	WG1227529
Ethene	4.89		0.422	1.27	1	01/25/2019 11:47	WG1227529

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	01/24/2019 14:41	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 14:41	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 14:41	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 14:41	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 14:41	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 14:41	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 14:41	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 14:41	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 14:41	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 14:41	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 14:41	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 14:41	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 14:41	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/24/2019 14:41	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 14:41	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 14:41	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 14:41	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 14:41	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 14:41	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 14:41	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 14:41	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 14:41	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 14:41	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 14:41	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 14:41	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 14:41	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 14:41	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 14:41	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 14:41	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 14:41	WG1227840
cis-1,2-Dichloroethene	1.41		0.0933	0.500	1	01/24/2019 14:41	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 14:41	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 14:41	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 14:41	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 14:41	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 14:41	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 14:41	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 14:41	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 14:41	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 14:41	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 14:41	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 14:41	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 14:41	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 14:41	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 14:41	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 14:41	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 14:41	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 14:41	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 14:41	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 14:41	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 14:41	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 14:41	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 14:41	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 14:41	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 14:41	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 14:41	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 14:41	WG1227840
Tetrachloroethene	U		0.199	0.500	1	01/24/2019 14:41	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 14:41	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 14:41	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 14:41	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 14:41	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 14:41	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 14:41	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 14:41	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 14:41	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 14:41	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 14:41	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 14:41	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	01/24/2019 14:41	WG1227840
Vinyl chloride	15.9		0.118	0.500	1	01/24/2019 14:41	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 14:41	WG1227840
(S) Toluene-d8	*100*			*80.0-120*		*01/24/2019 14:41*	WG1227840
(S) Dibromofluoromethane	*104*			*75.0-120*		*01/24/2019 14:41*	WG1227840
(S) a,a,a-Trifluorotoluene	*98.7*			*80.0-120*		*01/24/2019 14:41*	WG1227840
(S) 4-Bromofluorobenzene	*93.9*			*77.0-126*		*01/24/2019 14:41*	WG1227840

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	302000		2710	20000	1	01/25/2019 15:03	WG1228020

Sample Narrative:

L1063581-08 WG1228020: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	56200		51.9	1000	1	01/23/2019 20:30	WG1227335
Nitrate	U		22.7	100	1	01/23/2019 20:30	WG1227335
Sulfate	43200		77.4	5000	1	01/23/2019 20:30	WG1227335

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5200		102	1000	1	01/28/2019 16:27	WG1229248

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	6010		15.0	100	1	01/24/2019 18:01	WG1227051
Manganese	646		0.250	5.00	1	01/24/2019 18:01	WG1227051

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	663		31.6	100	1	01/24/2019 06:39	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*95.0*			*78.0-120*		*01/24/2019 06:39*	WG1227572

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	4210		0.287	0.678	1	01/25/2019 12:13	WG1227529
Ethane	2.10		0.296	1.29	1	01/25/2019 12:13	WG1227529
Ethene	100		0.422	1.27	1	01/25/2019 12:13	WG1227529

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.51	J	1.05	25.0	1	01/24/2019 15:01	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 15:01	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 15:01	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 15:01	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 15:01	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 15:01	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 15:01	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 15:01	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 15:01	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 15:01	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 15:01	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 15:01	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 15:01	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/24/2019 15:01	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 15:01	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 15:01	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 15:01	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 15:01	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 15:01	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 15:01	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 15:01	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 15:01	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 15:01	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 15:01	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 15:01	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 15:01	WG1227840
1,1-Dichloroethene	6.83		0.188	0.500	1	01/24/2019 15:01	WG1227840
cis-1,2-Dichloroethene	1230		0.933	5.00	10	01/27/2019 21:34	WG1228835
trans-1,2-Dichloroethene	2.88		0.152	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 15:01	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 15:01	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 15:01	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 15:01	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 15:01	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 15:01	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 15:01	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 15:01	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 15:01	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 15:01	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 15:01	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 15:01	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 15:01	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 15:01	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 15:01	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 15:01	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 15:01	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 15:01	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 15:01	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 15:01	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 15:01	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 15:01	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 15:01	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 15:01	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 15:01	WG1227840
Tetrachloroethene	98.2		0.199	0.500	1	01/24/2019 15:01	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 15:01	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 15:01	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 15:01	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 15:01	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 15:01	WG1227840
Trichloroethene	179		0.153	0.500	1	01/24/2019 15:01	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 15:01	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 15:01	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 15:01	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 15:01	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 15:01	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	01/24/2019 15:01	WG1227840
Vinyl chloride	738		1.18	5.00	10	01/27/2019 21:34	WG1228835
Xylenes, Total	U		0.316	1.50	1	01/24/2019 15:01	WG1227840
(S) Toluene-d8	*106*			*80.0-120*		*01/27/2019 21:34*	WG1228835
(S) Dibromofluoromethane	*99.6*			*75.0-120*		*01/27/2019 21:34*	WG1228835
(S) 4-Bromofluorobenzene	*89.5*			*77.0-126*		*01/27/2019 21:34*	WG1228835
(S) Toluene-d8	*99.3*			*80.0-120*		*01/24/2019 15:01*	WG1227840
(S) Dibromofluoromethane	*104*			*75.0-120*		*01/24/2019 15:01*	WG1227840
(S) a,a,a-Trifluorotoluene	*91.6*			*80.0-120*		*01/24/2019 15:01*	WG1227840
(S) 4-Bromofluorobenzene	*95.0*			*77.0-126*		*01/24/2019 15:01*	WG1227840

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	249000		2710	20000	1	01/25/2019 15:19	WG1228020

Sample Narrative:

L1063581-09 WG1228020: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	15800		51.9	1000	1	01/23/2019 20:41	WG1227335
Nitrate	U		22.7	100	1	01/23/2019 20:41	WG1227335
Sulfate	32100		77.4	5000	1	01/23/2019 20:41	WG1227335

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3430		102	1000	1	01/28/2019 16:56	WG1229248

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1760		15.0	100	1	01/24/2019 18:06	WG1227051
Manganese	560		0.250	5.00	1	01/24/2019 18:06	WG1227051

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	509		31.6	100	1	01/24/2019 07:00	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.7*			*78.0-120*		*01/24/2019 07:00*	WG1227572

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	2460		0.287	0.678	1	01/25/2019 12:25	WG1227529
Ethane	1.84		0.296	1.29	1	01/25/2019 12:25	WG1227529
Ethene	107		0.422	1.27	1	01/25/2019 12:25	WG1227529

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.98	J	1.05	25.0	1	01/24/2019 15:21	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 15:21	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 15:21	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 15:21	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 15:21	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 15:21	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 15:21	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 15:21	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 15:21	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 15:21	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 15:21	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 15:21	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 15:21	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/24/2019 15:21	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 15:21	WG1227840
Chloroethane	1.60	J	0.141	2.50	1	01/24/2019 15:21	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 15:21	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 15:21	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 15:21	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 15:21	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 15:21	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 15:21	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 15:21	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 15:21	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 15:21	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 15:21	WG1227840
1,1-Dichloroethene	4.44		0.188	0.500	1	01/24/2019 15:21	WG1227840
cis-1,2-Dichloroethene	1080		0.933	5.00	10	01/27/2019 21:55	WG1228835
trans-1,2-Dichloroethene	7.25		0.152	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 15:21	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 15:21	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 15:21	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 15:21	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 15:21	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 15:21	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 15:21	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 15:21	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 15:21	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 15:21	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 15:21	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 15:21	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 15:21	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 15:21	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 15:21	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 15:21	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 15:21	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 15:21	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 15:21	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 15:21	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 15:21	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 15:21	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 15:21	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 15:21	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 15:21	WG1227840
Tetrachloroethene	2.29		0.199	0.500	1	01/24/2019 15:21	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 15:21	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 15:21	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 15:21	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 15:21	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 15:21	WG1227840
Trichloroethene	21.6		0.153	0.500	1	01/24/2019 15:21	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 15:21	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 15:21	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 15:21	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 15:21	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 15:21	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	01/24/2019 15:21	WG1227840
Vinyl chloride	1370		1.18	5.00	10	01/27/2019 21:55	WG1228835
Xylenes, Total	U		0.316	1.50	1	01/24/2019 15:21	WG1227840
(S) Toluene-d8	*103*			*80.0-120*		*01/27/2019 21:55*	WG1228835
(S) Dibromofluoromethane	*98.9*			*75.0-120*		*01/27/2019 21:55*	WG1228835
(S) 4-Bromofluorobenzene	*88.8*			*77.0-126*		*01/27/2019 21:55*	WG1228835
(S) Toluene-d8	*101*			*80.0-120*		*01/24/2019 15:21*	WG1227840
(S) Dibromofluoromethane	*101*			*75.0-120*		*01/24/2019 15:21*	WG1227840
(S) a,a,a-Trifluorotoluene	*97.2*			*80.0-120*		*01/24/2019 15:21*	WG1227840
(S) 4-Bromofluorobenzene	*94.7*			*77.0-126*		*01/24/2019 15:21*	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	01/24/2019 15:41	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 15:41	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 15:41	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 15:41	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 15:41	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 15:41	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 15:41	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 15:41	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 15:41	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 15:41	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 15:41	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 15:41	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 15:41	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 15:41	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 15:41	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 15:41	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 15:41	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 15:41	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 15:41	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 15:41	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 15:41	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 15:41	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 15:41	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 15:41	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 15:41	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 15:41	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 15:41	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 15:41	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 15:41	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 15:41	WG1227840
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/27/2019 20:54	WG1228835
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 15:41	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 15:41	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 15:41	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 15:41	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 15:41	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 15:41	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 15:41	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 15:41	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 15:41	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 15:41	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 15:41	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 15:41	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 15:41	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 15:41	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 15:41	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 15:41	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 15:41	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 15:41	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 15:41	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 15:41	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 15:41	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 15:41	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 15:41	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 15:41	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 15:41	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 15:41	WG1227840
Tetrachloroethene	U		0.199	0.500	1	01/24/2019 15:41	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 15:41	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 15:41	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 15:41	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 15:41	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 15:41	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 15:41	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 15:41	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 15:41	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 15:41	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 15:41	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 15:41	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 15:41	WG1227840
Vinyl chloride	U		0.118	0.500	1	01/27/2019 20:54	WG1228835
Xylenes, Total	U		0.316	1.50	1	01/24/2019 15:41	WG1227840
(S) Toluene-d8	*107*			*80.0-120*		*01/27/2019 20:54*	WG1228835
(S) Dibromofluoromethane	*97.4*			*75.0-120*		*01/27/2019 20:54*	WG1228835
(S) 4-Bromofluorobenzene	*86.2*			*77.0-126*		*01/27/2019 20:54*	WG1228835
(S) Toluene-d8	*101*			*80.0-120*		*01/24/2019 15:41*	WG1227840
(S) Dibromofluoromethane	*105*			*75.0-120*		*01/24/2019 15:41*	WG1227840
(S) α,α,α-Trifluorotoluene	*99.0*			*80.0-120*		*01/24/2019 15:41*	WG1227840
(S) 4-Bromofluorobenzene	*93.6*			*77.0-126*		*01/24/2019 15:41*	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	01/24/2019 16:01	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 16:01	WG1227840
Benzene	1.67		0.0896	0.500	1	01/24/2019 16:01	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 16:01	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 16:01	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 16:01	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 16:01	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 16:01	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 16:01	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 16:01	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 16:01	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 16:01	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 16:01	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 16:01	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 16:01	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 16:01	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 16:01	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 16:01	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 16:01	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 16:01	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 16:01	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 16:01	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 16:01	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 16:01	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 16:01	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 16:01	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 16:01	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 16:01	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 16:01	WG1227840
1,1-Dichloroethene	10.1		0.188	0.500	1	01/24/2019 16:01	WG1227840
cis-1,2-Dichloroethene	1180		4.66	25.0	50	01/27/2019 22:15	WG1228835
trans-1,2-Dichloroethene	6.03		0.152	0.500	1	01/24/2019 16:01	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 16:01	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 16:01	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 16:01	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 16:01	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 16:01	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 16:01	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 16:01	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 16:01	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 16:01	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 16:01	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 16:01	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 16:01	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 16:01	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 16:01	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 16:01	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 16:01	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 16:01	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 16:01	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 16:01	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 16:01	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 16:01	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 16:01	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 16:01	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 16:01	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 16:01	WG1227840
Tetrachloroethene	4190		9.95	25.0	50	01/27/2019 22:15	WG1228835
Toluene	0.562		0.412	0.500	1	01/24/2019 16:01	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 16:01	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 16:01	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 16:01	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 16:01	WG1227840
Trichloroethene	587		7.65	25.0	50	01/27/2019 22:15	WG1228835
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 16:01	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 16:01	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 16:01	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 16:01	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 16:01	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 16:01	WG1227840
Vinyl chloride	90.8		0.118	0.500	1	01/24/2019 16:01	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 16:01	WG1227840
(S) Toluene-d8	*106*			*80.0-120*		*01/27/2019 22:15*	WG1228835
(S) Dibromofluoromethane	*96.3*			*75.0-120*		*01/27/2019 22:15*	WG1228835
(S) 4-Bromofluorobenzene	*85.1*			*77.0-126*		*01/27/2019 22:15*	WG1228835
(S) Toluene-d8	*108*			*80.0-120*		*01/24/2019 16:01*	WG1227840
(S) Dibromofluoromethane	*102*			*75.0-120*		*01/24/2019 16:01*	WG1227840
(S) α,α,α-Trifluorotoluene	*80.0*			*80.0-120*		*01/24/2019 16:01*	WG1227840
(S) 4-Bromofluorobenzene	*93.7*			*77.0-126*		*01/24/2019 16:01*	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	01/24/2019 12:22	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 12:22	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 12:22	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 12:22	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 12:22	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 12:22	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 12:22	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 12:22	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 12:22	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 12:22	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 12:22	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 12:22	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 12:22	WG1227840
Chlorobenzene	U		0.140	0.500	1	01/24/2019 12:22	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 12:22	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 12:22	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 12:22	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 12:22	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 12:22	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 12:22	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 12:22	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 12:22	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 12:22	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 12:22	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 12:22	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 12:22	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 12:22	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 12:22	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 12:22	WG1227840
1,1-Dichloroethene	U		0.188	0.500	1	01/24/2019 12:22	WG1227840
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/24/2019 12:22	WG1227840
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/24/2019 12:22	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 12:22	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 12:22	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 12:22	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 12:22	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 12:22	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 12:22	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 12:22	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 12:22	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 12:22	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 12:22	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 12:22	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 12:22	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 12:22	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 12:22	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 12:22	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 12:22	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 12:22	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 12:22	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 12:22	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 12:22	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 12:22	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 12:22	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 12:22	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 12:22	WG1227840

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 12:22	WG1227840
Tetrachloroethene	U		0.199	0.500	1	01/24/2019 12:22	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 12:22	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 12:22	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 12:22	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 12:22	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 12:22	WG1227840
Trichloroethene	U		0.153	0.500	1	01/24/2019 12:22	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 12:22	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 12:22	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 12:22	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 12:22	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 12:22	WG1227840
Vinyl acetate	U		0.645	5.00	1	01/24/2019 12:22	WG1227840
Vinyl chloride	U		0.118	0.500	1	01/24/2019 12:22	WG1227840
Xylenes, Total	U		0.316	1.50	1	01/24/2019 12:22	WG1227840
(S) Toluene-d8	*101*			*80.0-120*		*01/24/2019 12:22*	WG1227840
(S) Dibromofluoromethane	*104*			*75.0-120*		*01/24/2019 12:22*	WG1227840
(S) a,a,a-Trifluorotoluene	*97.7*			*80.0-120*		*01/24/2019 12:22*	WG1227840
(S) 4-Bromofluorobenzene	*94.6*			*77.0-126*		*01/24/2019 12:22*	WG1227840

Method Blank (MB)

(MB) R3378729-1 01/25/19 12:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	2880	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1063023-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063023-01 01/25/19 12:34 • (DUP) R3378729-3 01/25/19 12:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	46200	46300	1	0.173		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1063515-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063515-01 01/25/19 15:26 • (DUP) R3378729-6 01/25/19 15:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	113000	113000	1	0.555		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3378729-4 01/25/19 13:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	98900	98.9	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3378322-1 01/23/19 13:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1063281-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063281-01 01/23/19 15:26 • (DUP) R3378322-3 01/23/19 15:37

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	210000	210000	1	0.286	E	15
Nitrate	33800	33800	1	0.144	E	15
Sulfate	583000	585000	1	0.383	E	15

L1063281-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063281-01 01/23/19 16:10 • (DUP) R3378322-6 01/23/19 16:20

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate	31500	31600	5	0.285		15

L1063326-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1063326-06 01/23/19 19:14 • (DUP) R3378322-7 01/23/19 19:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	20500	20900	1	1.89		15
Nitrate	U	0.000	1	0.000		15
Sulfate	364	0.000	1	200	P1	15

Laboratory Control Sample (LCS)

(LCS) R3378322-2 01/23/19 13:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	37500	93.7	80.0-120	
Nitrate	8000	7630	95.4	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3378322-2 01/23/19 13:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	38500	96.3	80.0-120	

L1063281-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1063281-01 01/23/19 15:26 • (MS) R3378322-4 01/23/19 15:48 • (MSD) R3378322-5 01/23/19 15:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	210000	248000	243000	76.8	66.6	1	80.0-120	E V	E V	2.08	15
Nitrate	5000	33800	38300	35000	91.5	24.2	1	80.0-120	E	E V	9.18	15
Sulfate	50000	583000	642000	622000	118	77.6	1	80.0-120	E	E V	3.18	15

L1063326-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1063326-06 01/23/19 19:14 • (MS) R3378322-8 01/23/19 19:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	20500	66500	92.0	1	80.0-120	
Nitrate	5000	U	4270	85.3	1	80.0-120	
Sulfate	50000	364	45100	89.5	1	80.0-120	

Method Blank (MB)

(MB) R3378475-1 01/24/19 11:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	258	J	102	1000

L1063259-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1063259-04 01/24/19 12:46 • (DUP) R3378475-3 01/24/19 13:06

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	7860	7580	2	3.56		20

Laboratory Control Sample (LCS)

(LCS) R3378475-2 01/24/19 12:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	78200	104	85.0-115	

L1063581-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1063581-07 01/24/19 13:17 • (MS) R3378475-4 01/24/19 13:33 • (MSD) R3378475-5 01/24/19 13:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	1920	52600	52900	101	102	1	80.0-120			0.626	20

Method Blank (MB)

(MB) R3379231-1 01/28/19 12:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	222	J	102	1000

L1063581-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1063581-08 01/28/19 16:27 • (DUP) R3379231-3 01/28/19 16:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	5200	5260	1	1.13		20

L1064289-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1064289-02 01/28/19 20:02 • (DUP) R3379231-6 01/28/19 20:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	4820	4810	1	0.332		20

Laboratory Control Sample (LCS)

(LCS) R3379231-2 01/28/19 13:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	79200	106	85.0-115	

L1063697-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1063697-09 01/28/19 17:50 • (MS) R3379231-4 01/28/19 18:08 • (MSD) R3379231-5 01/28/19 18:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	555	56500	56900	112	113	1	80.0-120			0.653	20

L1064289-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1064289-03 01/28/19 20:30 • (MS) R3379231-7 01/28/19 20:48 • (MSD) R3379231-8 01/28/19 21:05

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	4890	59500	59600	109	110	1	80.0-120			0.235	20

Method Blank (MB)

(MB) R3378464-1 01/24/19 14:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Iron	17.4	J	15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378464-2 01/24/19 14:56 • (LCSD) R3378464-3 01/24/19 15:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Iron	5000	4930	4660	98.6	93.2	80.0-120			5.57	20
Manganese	50.0	48.8	47.4	97.5	94.8	80.0-120			2.79	20

L1063106-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1063106-17 01/24/19 15:06 • (MS) R3378464-5 01/24/19 15:15 • (MSD) R3378464-6 01/24/19 15:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Iron	5000	50800	54100	54300	66.3	70.2	1	75.0-125	V	V	0.359	20
Manganese	50.0	500	535	535	71.0	70.0	1	75.0-125	V	V	0.0989	20

Method Blank (MB)

(MB) R3379464-3 01/24/19 00:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*94.4*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3379464-1 01/23/19 22:31 • (LCSD) R3379464-2 01/23/19 23:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	5330	4800	96.9	87.3	70.0-124			10.5	20
(S) a,a,a-Trifluorotoluene(FID)				*111*	*109*	*78.0-120*				

L1063581-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1063581-09 01/24/19 07:00 • (MS) R3379464-4 01/24/19 07:21 • (MSD) R3379464-5 01/24/19 07:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	509	2220	2100	31.1	29.0	1	10.0-155			5.46	21
(S) a,a,a-Trifluorotoluene(FID)					*94.5*	*94.8*		*78.0-120*				

Method Blank (MB)

(MB) R3378764-1 01/25/19 11:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1063310-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063310-01 01/25/19 11:40 • (DUP) R3378764-2 01/25/19 13:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	66.9	65.5	1	2.06		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1063312-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063312-01 01/25/19 11:43 • (DUP) R3378764-3 01/25/19 13:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	78.5	76.4	1	2.79		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1063700-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1063700-01 01/25/19 14:19 • (DUP) R3378764-4 01/25/19 14:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378764-5 01/25/19 14:51 • (LCSD) R3378764-6 01/25/19 15:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	71.3	70.4	105	104	85.0-115			1.24	20
Ethane	129	112	113	86.9	87.5	85.0-115			0.741	20
Ethene	127	111	112	87.1	88.2	85.0-115			1.27	20

Method Blank (MB)

(MB) R3378860-3 01/24/19 09:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3378860-3 01/24/19 09:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	0.260	J	0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*103*			*80.0-120*
(S) Dibromofluoromethane	*102*			*75.0-120*
(S) a,a,a-Trifluorotoluene	*98.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*93.1*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378860-1 01/24/19 08:56 • (LCSD) R3378860-2 01/24/19 09:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	193	168	155	134	19.0-160			14.0	27
Acrylonitrile	125	155	144	124	115	55.0-149			7.57	20
Benzene	25.0	26.2	24.8	105	99.1	70.0-123			5.66	20
Bromobenzene	25.0	24.9	23.9	99.7	95.5	73.0-121			4.32	20
Bromodichloromethane	25.0	27.9	26.1	112	104	75.0-120			6.74	20
Bromochloromethane	25.0	27.1	25.4	109	102	76.0-122			6.60	20
Bromoform	25.0	24.9	23.7	99.5	94.8	68.0-132			4.87	20
Bromomethane	25.0	28.2	26.4	113	105	10.0-160			6.67	25
n-Butylbenzene	25.0	26.8	25.2	107	101	73.0-125			6.14	20
sec-Butylbenzene	25.0	26.8	25.5	107	102	75.0-125			5.21	20
tert-Butylbenzene	25.0	26.1	25.0	104	100	76.0-124			4.01	20
Carbon disulfide	25.0	26.5	25.6	106	102	61.0-128			3.53	20
Carbon tetrachloride	25.0	24.4	23.8	97.6	95.2	68.0-126			2.48	20
Chlorobenzene	25.0	25.2	24.5	101	98.0	80.0-121			2.74	20
Chlorodibromomethane	25.0	26.1	25.3	104	101	77.0-125			3.06	20
Chloroethane	25.0	30.5	28.3	122	113	47.0-150			7.58	20
Chloroform	25.0	27.4	26.1	110	105	73.0-120			4.83	20
Chloromethane	25.0	27.8	27.1	111	108	41.0-142			2.71	20
2-Chlorotoluene	25.0	25.5	24.4	102	97.5	76.0-123			4.34	20
4-Chlorotoluene	25.0	25.8	24.8	103	99.2	75.0-122			3.92	20
1,2-Dibromo-3-Chloropropane	25.0	25.2	24.3	101	97.3	58.0-134			3.35	20
1,2-Dibromoethane	25.0	26.6	25.7	106	103	80.0-122			3.38	20
Dibromomethane	25.0	28.7	27.6	115	111	80.0-120			3.94	20
1,2-Dichlorobenzene	25.0	26.3	24.9	105	99.5	79.0-121			5.75	20
1,3-Dichlorobenzene	25.0	25.6	24.4	102	97.5	79.0-120			5.00	20
1,4-Dichlorobenzene	25.0	25.5	24.7	102	98.8	79.0-120			3.19	20
Dichlorodifluoromethane	25.0	25.4	24.8	101	99.2	51.0-149			2.26	20
1,1-Dichloroethane	25.0	27.7	26.3	111	105	70.0-126			5.23	20
1,2-Dichloroethane	25.0	28.6	27.1	115	108	70.0-128			5.57	20
1,1-Dichloroethene	25.0	25.6	25.3	102	101	71.0-124			1.17	20
cis-1,2-Dichloroethene	25.0	27.5	26.5	110	106	73.0-120			3.74	20
trans-1,2-Dichloroethene	25.0	26.9	26.1	108	104	73.0-120			3.00	20
1,2-Dichloropropane	25.0	28.1	26.7	112	107	77.0-125			4.96	20
1,1-Dichloropropene	25.0	27.8	26.3	111	105	74.0-126			5.36	20
1,3-Dichloropropane	25.0	26.6	25.5	107	102	80.0-120			4.55	20
cis-1,3-Dichloropropene	25.0	26.0	25.0	104	100	80.0-123			4.04	20
trans-1,3-Dichloropropene	25.0	26.8	25.5	107	102	78.0-124			4.72	20
trans-1,4-Dichloro-2-butene	25.0	21.7	20.7	86.9	82.7	33.0-144			4.97	20
2,2-Dichloropropane	25.0	24.0	22.8	96.2	91.3	58.0-130			5.21	20
Di-isopropyl ether	25.0	28.8	27.2	115	109	58.0-138			5.73	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378860-1 01/24/19 08:56 • (LCSD) R3378860-2 01/24/19 09:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	25.8	24.4	103	97.8	79.0-123			5.38	20
Hexachloro-1,3-butadiene	25.0	24.1	22.9	96.4	91.7	54.0-138			4.97	20
2-Hexanone	125	144	138	115	110	67.0-149			4.22	20
n-Hexane	25.0	25.5	24.3	102	97.0	57.0-133			4.91	20
Iodomethane	125	123	120	98.1	96.0	33.0-147			2.11	26
Isopropylbenzene	25.0	25.1	24.1	101	96.6	76.0-127			3.99	20
p-Isopropyltoluene	25.0	26.4	25.1	106	101	76.0-125			4.95	20
2-Butanone (MEK)	125	149	138	119	110	44.0-160			7.94	20
Methylene Chloride	25.0	26.4	25.7	106	103	67.0-120			2.62	20
4-Methyl-2-pentanone (MIBK)	125	143	135	114	108	68.0-142			5.88	20
Methyl tert-butyl ether	25.0	27.6	26.3	111	105	68.0-125			4.92	20
Naphthalene	25.0	23.6	23.4	94.3	93.5	54.0-135			0.895	20
n-Propylbenzene	25.0	25.1	24.1	100	96.2	77.0-124			4.12	20
Styrene	25.0	25.8	25.2	103	101	73.0-130			2.29	20
1,1,1,2-Tetrachloroethane	25.0	25.0	24.1	100	96.6	75.0-125			3.49	20
1,1,2,2-Tetrachloroethane	25.0	24.4	23.7	97.6	94.7	65.0-130			3.07	20
1,1,2-Trichlorotrifluoroethane	25.0	24.9	24.1	99.7	96.4	69.0-132			3.42	20
Tetrachloroethene	25.0	23.6	23.0	94.4	92.2	72.0-132			2.39	20
Toluene	25.0	24.9	24.0	99.7	96.2	79.0-120			3.64	20
1,2,3-Trichlorobenzene	25.0	23.3	22.5	93.2	89.9	50.0-138			3.69	20
1,2,4-Trichlorobenzene	25.0	24.5	23.9	98.0	95.5	57.0-137			2.58	20
1,1,1-Trichloroethane	25.0	27.5	26.2	110	105	73.0-124			4.63	20
1,1,2-Trichloroethane	25.0	26.6	25.7	106	103	80.0-120			3.33	20
Trichloroethene	25.0	26.5	25.1	106	100	78.0-124			5.54	20
Trichlorofluoromethane	25.0	25.8	24.7	103	98.6	59.0-147			4.58	20
1,2,3-Trichloropropane	25.0	26.0	25.3	104	101	73.0-130			2.65	20
1,2,4-Trimethylbenzene	25.0	26.1	24.7	104	98.9	76.0-121			5.51	20
1,2,3-Trimethylbenzene	25.0	25.6	24.4	102	97.7	77.0-120			4.62	20
1,3,5-Trimethylbenzene	25.0	25.4	24.6	101	98.4	76.0-122			3.07	20
Vinyl acetate	125	86.7	93.7	69.3	74.9	11.0-160			7.76	20
Vinyl chloride	25.0	28.0	26.5	112	106	67.0-131			5.34	20
Xylenes, Total	75.0	77.4	74.2	103	98.9	79.0-123			4.22	20
(S) Toluene-d8				*97.8*	*98.7*	*80.0-120*				
(S) Dibromofluoromethane				*102*	*102*	*75.0-120*				
(S) a,a,a-Trifluorotoluene				*96.7*	*96.7*	*80.0-120*				
(S) 4-Bromofluorobenzene				*93.1*	*95.3*	*77.0-126*				

Method Blank (MB)

(MB) R3379557-4 01/27/19 12:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*105*			*80.0-120*
(S) Dibromofluoromethane	*94.1*			*75.0-120*
(S) 4-Bromofluorobenzene	*86.4*			*77.0-126*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3379557-1 01/27/19 11:18 • (LCSD) R3379557-2 01/27/19 11:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	25.8	25.7	103	103	73.0-120			0.361	20
Tetrachloroethene	25.0	28.1	29.8	112	119	72.0-132			5.82	20
Trichloroethene	25.0	27.6	27.8	110	111	78.0-124			0.679	20
Vinyl chloride	25.0	24.5	24.4	97.9	97.5	67.0-131			0.438	20
(S) Toluene-d8				*101*	*106*	*80.0-120*				
(S) Dibromofluoromethane				*97.4*	*98.9*	*75.0-120*				
(S) 4-Bromofluorobenzene				*82.3*	*86.2*	*77.0-126*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

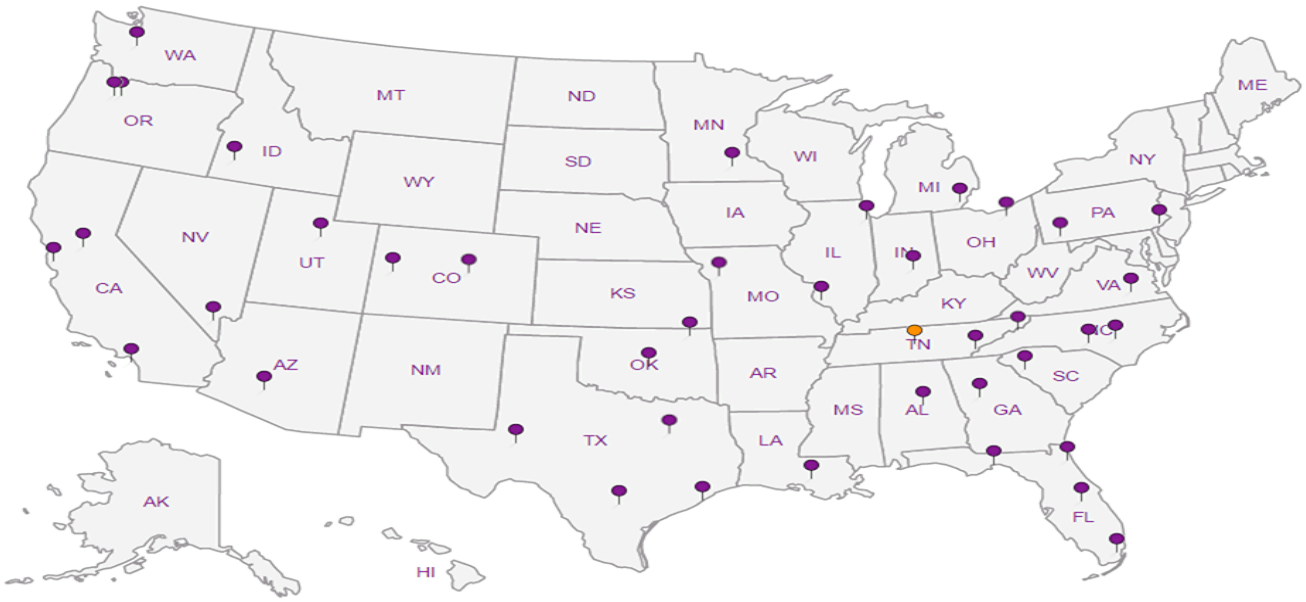
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected:

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.05.601

Lab Project # PESENVSWA-ALP

Collected by (print): Alyssa Witt

Site/Facility ID # American Linen

P.O. #

Collected by (signature): Alyssa Witt

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175LL) 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs (8260LLC) 40mlAmb-HCl				Remarks	Sample # (lab only)
MW-155-012119	Grab	GW	25'	1/21/19	1215	6				X			X					-01
MW-154-012119		GW	30'	1/21/19	1045	6				X			X					-02
MW-159-012119		GW	25'	1/21/19	1610	6				X			X					-03
MW-9-012119		GW	15'	1/21/19	1515	6				X			X					-04
MW-125-012119		GW	23'	1/21/19	1425	6				X			X					-05
MW-119-012119		GW	40	1/21/19	1305	3							X					-06
MW-153-012219		GW	125	1/22/19	1200	12	X	X	X	X	X	X	X					-07
MW-147-012219		GW	75	1/22/19	1410	12	X	X	X	X	X	X	X					-08
MW-146-012219		GW	44	1/22/19	1310	12	X	X	X	X	X	X	X					-09
MW-126-012219	↓	GW	90	1/22/19	0900	3							X					-10

Chain of Custody Page ___ of ___

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1063581
D212

Acctnum: PESENVSWA
Template: T143845
Prelogin: P685358
TSR: 110 - Brian Ford
PB: 12/13 18 mrb
Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

RAD SCREEN: <0.5 mR/hr ___ Temp ___ Flow ___ Other ___

Samples returned via: __ UPS ✓ FedEx __ Courier ___

Tracking # 4757 5076 4520

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Alyssa Witt	1/22/19	1700			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 41 °C 1.410	Bottles Received: 75
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/23/19	Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected:

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.05.601

Lab Project # PESENVSWA-ALP

Collected by (print): Alyssa Witt

Site/Facility ID # American Linen

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175LL) 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs (8260LLC) 40mlAmb-HCl				Remarks	Sample # (lab only)
MW108-012219	Grab	GW	45	1/22/19	0950	3							X					-11
		GW																
		GW																
		GW																
		GW																
		GW																
		GW																
		GW																
		GW																
		GW																

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: PESENVSWA
Template: T143845
Prelogin: P685358
TSR: 110 - Brian Ford
PB: 12/13/18 MW6
Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

RAD SCREEN: <0.5 mR/hr ___ Temp ___ Flow ___ Other ___

Samples returned via:
__UPS ✓FedEx __Courier __ _____

Tracking # 4757 5076 9520

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
	1/22/19	1700		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1 BF °C 1.1 20 Bottles Received: 75
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/23/19 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Brian Ford

From: Alyssa Witt <AWitt@pesenv.com>
Sent: Tuesday, January 22, 2019 8:18 PM
To: Brian Ford
Cc: Karsten Springstead; Brian O'Neal; Kim Vik
Attachments: new doc 2019-01-22 18.16.26_20190122181649.pdf

Categories: update login/report

Hello,

I shipped samples this afternoon but forgot to include the trip blank on the CoC. See attached for updated carbon copy.

Alyssa

Get Outlook for iOS

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected:

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.05.601

Lab Project # PESENVSWA-ALP

Collected by (print): Alyssa Witt

Site/Facility ID # American Linen

P.O. #

Collected by (signature):

Immediately Packed on Ice N___ Y___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical®

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: PESENVSWA
Template: T143845
Prelogin: P685358
TSR: 110 - Brian Ford
PB:

Shipped Via: FedEX Ground

Remarks | Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175LL) 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs (8260LLC) 40mlAmb-HCl					
MW108-012219	Grab	GW	45	1/22/19	0950	3							X					
Trip Blank-012219	-	GW	-	-	-	1							X					
		GW																
		GW																
		GW																
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		GW																
		GW																
		GW																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	1/22/19	1700		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

MEMORANDUM

TO: Project File **DATE:** March 26, 2019

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.601

TASK: EIM Data Validation Level EPA2A for December 2018 through February 2019 - Groundwater Samples

LAB: Pace Sample Delivery Groups (SDGs): L1055718, L1057965, L1063581, L1063697, L1064133, L1064711, L1064837, L1065152, L1065595, L1066228, and L1068057

Fifty-eight (58) groundwater samples including two field duplicates, two (2) equipment blanks, and eleven (11) trip blanks were collected as Round 3 Interim Action Compliance Monitoring sampling event at the Former American Linen Supply Site, in Seattle, Washington, on December 21, 2018 to February 7, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (Chloride, Nitrate, and Sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020A.

The sampling event is ongoing and associated groundwater sample data are reported in eleven Pace SDGs (L1055718, L1057965, L1063581, L1063697, L1064133, L1064711, L1064837, L1065152, L1065595, L1066228, and L1068057). The quality assurance review of the sample data is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory

Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1055718: Review of the chain of custody (COC) form shows that no analytical request was made for the Trip Blank. The Trip Blank was analyzed for VOCs though no communications are included. No action was taken other than to note this.

- SDG L1063581: Review of the COC form shows that the Trip Blank was not listed. On January 22, 2019 PES contacted Pace with a corrected copy of the COC which included the Trip Blank and request for analysis. A copy of PES's email communication is included in the laboratory report.

- SDG L1065595: Review of the COC form and email communications between Pace and PES indicate that per client request sample MW-149-013019 (SDG L1065595-07) should not be analyzed. PES email shows sample MW-**14**-013019 instead of sample MW-**149**-013019 but no action is necessary since the correct Pace number (SDG L1065595-07) was referenced.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation less than 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:
All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria were met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria were met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria were met.

USEPA Method 6020A:
All samples were analyzed within the USEPA recommended holding time for arsenic of 180 days for preserved waters from the date of sample collection. All holding time criteria were met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria were met with the following exception:

- SDG L1064711: Nitrate was analyzed two days past the recommended holding time. **Nitrate results for samples MW-160-012519, W-MW-02-012519, MW-161-012519, and W-MW-01-012519 are estimated and qualified (UJ/J) due to a holding time exceedance.**

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace's notes indicate the following:

- SDG L1057965 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issue is noted by Pace for trans-1,4-dichloro-2-butene associated with analytical batch WG1219077 (analyzed on January 4, 2019). Associated sample results for this compound are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **Associated sample trans-1,4-dichloro-2-butene results are estimated and qualified (UJ/J).**

- SDG L1064133 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for acetone, trans-1,4-dichloro-2-butene, and 1,2,3-trimethylbenzene associated with analytical batches WG1228529 and WG1229442 (analyzed on January 25 and 28, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCVs are outside of laboratory acceptance criteria. **Associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1064711 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by Pace for 1,1,2,2-tetrachloroethane and vinyl acetate associated with, respectively, analytical batches WG1229314 and WG1229419 (both analyzed on January 28, 2018). Associated sample results are qualified by the laboratory "J0" to indicate that percent difference CCVs are outside of laboratory acceptance criteria. **Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

- SDG L1065595 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by PACE for multiple compounds associated with analytical batch WG1231554 (analyzed on February 1, 2019). Associated sample results for this

compound are qualified by the laboratory "J0" to indicate that percent difference CCVs are outside of laboratory acceptance criteria. **Associated sample results for these compounds are estimated and qualified (UJ/J).**

Method Blank Results

USEPA Method 8260C:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1055718 - Analytical batch WG1215942: Low levels of naphthalene and 1,2,4-trimethylbenzene are detected in the method blank. No action was necessary since these compounds are not detected in the associated sample (MW-112-122118). A low level of naphthalene was detected in the Trip Blank. Refer to the Trip Blank section for more discussion.

- SDG L1057965 - Analytical batch WG1219077: A low level of naphthalene is detected in the method blank. No action was necessary since naphthalene is not detected in the associated sample.

- SDGs L1063581 and L1063697 - Analytical batch WG1227840: A low level of naphthalene is detected in the method blank. No action was necessary since naphthalene is not detected in the associated samples.

- SDG L1063697 - Analytical batch WG1228162: Low levels of cis-1,2-dichloroethene, hexachloro-1,3-butadiene, naphthalene, and 1,2,3-trichlorobenzene are detected in the method blank. Associated results are not qualified for the following reasons:

    - No action is necessary for hexachloro-1,3-butadiene, naphthalene, and 1,2,3-trichlorobenzene since these compounds are not detected in the associated samples.

    - No action is taken for the cis-1,2-dichloroethene detection in sample MW-905-012319 as the result is far greater than the detection in the associated blank.

    - No action was taken for cis-1,2-dichloroethene detection in the associated QC sample (Trip Blank) as is it is not required.

- SDG L1064133 - Analytical batch WG1228529: A low level of naphthalene is detected in the method blank. No action was necessary since naphthalene is not detected in the associated samples.

- SDG L1064837 - Analytical batch WG1229700: A low level of chloroform is detected in the method blank. No action was necessary since this compound is not detected in the associated samples.

- SDGs L1065152 and L1065595 - Analytical batch WG1231554: Low levels of chloroform and hexachloro-1,3-butadiene are detected in the method blank. No action was necessary since these compounds are not detected in the associated samples.

- SDG L1066228 - Analytical batch WG1231972: A low level of tetrachloroethene is detected in the method blank. No action was necessary since this compound is either detected above the detection in the blank or not detected in the associated samples.

- SDG L1068057 – Analytical batch WG1234600: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since this compound is either detected above the detection in the blank or not detected in the associated samples.

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exception:

- SDG L1064837 - Analytical batch WG1230033: Gasoline is detected at a low level (below the RDL) in the method blank. No action was taken since gasoline is not detected in associated samples.

- SDG L1066228 - Analytical batches WG1231937, WG1234228, and WG1234465: Gasoline is detected at a low level (below the RDL) in the method blanks. **Gasoline results in samples MW-121-013119, MW-137-020119, MW-136-020119, and MW-133-020119 are detected below the RDL are qualified (U) as non-detects due to blank contamination.**

- SDG L1068057 – Analytical batch WG1234480: Gasoline is detected at a low level (below the RDL) in the method blank. No action was taken since gasoline is detected at a level significantly greater than the associated sample.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020A and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL.

SDG	Batch	Method	Analyte	Result	Qualifier	MRL	Units	Associated Result(s) Qualified
L1055718	WG1218198	SM2320B	Alkalinity as CaCO3, Total	3390	J	20000	ug/L	NO
L1055718	WG1218534	9060A	TOC	141	J	1000	ug/L	NO
L1057965	WG1220272	SM2320B	Alkalinity as CaCO3, Total	4960	J	20000	ug/L	NO
L1057965	WG1220033	9060A	TOC	156	J	1000	ug/L	NO
L1063581	WG1228020	SM2320B	Alkalinity as CaCO3, Total	2880	J	20000	ug/L	NO
L1063581	WG1227775	9060A	TOC	258	J	1000	ug/L	NO
L1063581	WG1229248	9060A	TOC	222	J	1000	ug/L	NO
L1063581	WG1227051	6020B	Iron	17.4	J	100	ug/L	NO
L1063697	WG1229337	SM2320B	Alkalinity as CaCO3, Total	7300	J	20000	ug/L	NO
L1063697	WG1229248	9060A	TOC	222	J	1000	ug/L	NO
L1064133	WG1228505	SM2320B	Alkalinity as CaCO3, Total	3070	J	20000	ug/L	NO
L1064133	WG1229248	9060A	TOC	222	J	1000	ug/L	NO
L1064133	WG1228813	6020B	Iron	22.2	J	100	ug/L	NO
L1064711	WG1229541	9060A	TOC	196	J	1000	ug/L	NO
L1064711	WG1228505	SM2320B	Alkalinity as CaCO3, Total	3070	J	20000	ug/L	NO
L1064711	WG1229248	9060A	TOC	222	J	1000	ug/L	NO
L1064837	WG1230036	6020B	Iron	83.1	J	100	ug/L	NO
L1064837	WG1230036	6020B	Manganese	0.650	J	5.00	ug/L	NO
L1064837	WG1229541	9060A	TOC	196	J	1000	ug/L	NO
L1064837	WG1230371	SM2320B	Alkalinity as CaCO3, Total	4270	J	20000	ug/L	NO
L1065152	WG1230357	9060A	TOC	232	J	1000	ug/L	NO
L1065152	WG1231115	SM2320B	Alkalinity as CaCO3, Total	3150	J	20000	ug/L	NO
L1065595	WG1230357	9060A	TOC	232	J	1000	ug/L	NO
L1066228	WG1233465	SM2320B	Alkalinity as CaCO3, Total	3040	J	20000	ug/L	NO
L1066228	WG1231328	9060A	TOC	133	J	1000	ug/L	NO
L1068057	WG1234334	9060A	TOC	133	J	1000	ug/L	NO
L1068057	WG1235757	6020B	Iron	28.3	J	100	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:
Eleven trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1055718 - Analytical batch WG1215942: Low levels of benzene, naphthalene and trichloroethene are detected in the trip blank. No action was necessary as these compounds are not detected in the associated sample.

- SDG L1064711 – Analytical batch WG1229314: Low levels of acetone and naphthalene are detected in the trip blank. No action was necessary as these compounds were not detected in the associated samples.

- SDG L1063697 - Analytical batch WG1228162: Low levels of cis-1,2-dichloroethene and toluene are detected in the trip blank. No action is taken for cis-1,2-dichloroethene or toluene since associated sample concentrations are either greater than the RDL or not detected.

- SDG L1064133 - Analytical batch WG1228529: A low level of toluene is detected in the trip blank. No action was necessary as this compound was not detected in the associated samples.

- SDG L1065152: Analytical batch WG1231554: Toluene is detected in the trip blank at 1.29 ug/L and greater than the RDL of 0.500 ug/L. Toluene was detected at 0.516 ug/L in sample MW-131-012919. **Per Guidance, professional judgement was used and the toluene detection in sample MW-131-012919 is qualified with high bias (J+) due to trip blank contamination.**

- SDG L1064837 - Analytical batch WG1230033: Gasoline is detected at a low level (below the RDL) in the trip blank. No action was necessary as this compound was not detected in the associated samples.

- SDG L1064837 - Analytical batch WG1229700: Acetone and toluene are detected at a low level (below the RDL) in the trip blank. **Associated acetone detections in samples MW-142-012819, MW-906-012819, MW-139-012819, and MW-134-012819 are qualified as not detected (U).** No action was needed for toluene since it was not detected in the associated samples.

- SDG L1065595: Analytical batch WG1231554: Toluene is detected in the trip blank at 0.700 ug/L and greater than the RDL of 0.500 ug/L. Toluene was detected at 0.715 ug/L a similar level in sample MW-107-013019. **Per Guidance, professional judgement was used and the toluene detection in sample MW-107-013019 is estimated with high bias (J+) due to trip blank contamination.**

- SDG L1066228 - Analytical batch WG1231972: Toluene and trichloroethene are detected in the trip blank at low levels above and below respective RDLs. **Trichloroethene was detected in sample MW-136-020119 below the RDL and is estimated and qualified (U) as not detected. Toluene is detected in samples MW-130-013119, MW-152-013119, and MW-135-013119. Toluene results for these samples are estimated with high bias (J+) due to trip blank contamination.**

- SDG L1068057 – Analytical batch WG1234600: 1,2,4-Trimethylbenzene is detected at a low level (below the RDL) in the trip blank. No action was necessary as this compound is not detected in the associated sample.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:
Two equipment blanks (EQ-012319 and EQ-013019) were collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), wet chemistry parameters (alkalinity,

chloride, nitrate, sulfate, and TOC), and metals (iron and manganese). Review of the two equipment blank results are as follows:

SDG L1063697: Equipment blank sample (EQ-012319) was collected on January 23, 2019 from the bladder pump and is associated with samples MW-148-012319 and MW-105-012319. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

- Low levels of acetone and chloroform (below the RDL) are detected in the equipment blank. No action was needed for chloroform as it was not detected in the associated samples. **Sample MW-148-012319 and MW-105-012319 acetone detections are less than the RDL and are qualified (U) as not detected due to equipment blank contamination.** Low levels of alkalinity, chloride, nitrate, TOC, iron and manganese were also detected in the equipment blank. No action was taken on this basis since associated detections in sample MW-105-012319 are either above the RDL or not detected.

SDG L1065595: Equipment blank sample (EQ-013019) was collected on January 30, 2019 from the bladder pump and is associated with samples MW-116-013019 and MW-141-013019. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

- Low levels of bromodichloromethane and chloroform are detected (below the RDL) in the equipment blank. No action was needed for these compounds as these were not detected in the associated samples. Low levels of alkalinity, chloride, nitrate, TOC, iron and manganese were also detected in the equipment blank. No action was taken on this basis since remaining parameters were not analyzed for in associated samples MW-116-013019 and MW-141-013019.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1063697: Samples MW-110-012319 and MW-905-012319
- SDG L1064837: Samples MW-142-012819 and MW-906-012819

VOC target analyte results are comparable and within a relative percent difference (RPD) of 30% for the field duplicate pair.

Laboratory Duplicate Analyses

USEPA Method 8260C:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

NWTPH-Gx Method:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020A:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
A laboratory duplicate sample was performed on client samples and on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits.

Surrogate Recoveries

USEPA Method 8260C:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blank, and the method blanks are within the laboratory surrogate control limits for all the analyses with the following exception:

- L1066228: Sample MW-135-013119 surrogate (toluene-d8) recovery (analytical batch WG1231972) is above laboratory control limit criteria. All associated positively detected results associated with analytical batch WG1231972 are estimated and qualified (J) due to the elevated surrogate recovery. Refer to sections on Trip Blank and Other Quality Control Issues for additional information on the toluene and 1,1-dichloroethene.

NWTPH-Gx Method:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS %Rs or

LCS/LCSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions and exceptions:

- SDG L1063697 - Analytical batch WG1228162: LCS/LCSD recoveries for acetone are above control limit criteria and laboratory qualified (J4). No action is required since this compound is not detected in the associated sample (MW-905-012319). Acetone was detected at a low level in the equipment blank (EQ-12319). For further discussion refer to the section under the Field, Rinsate, or Equipment Blank Results.

- SDG L1064133 - Analytical batch WG1228529: LCS/LCSD recoveries for 1,2,3-trimethylbenzene are below control limit criteria and laboratory qualified (J4). **All associated sample results for 1,2,3-trimethylbenzene are already estimated and qualified (UJ/J) due to poor CCV recoveries with one exception. Sample MW-157-012419 1,2,3-trimethylbenzene result is estimated and qualified (UJ) due to low LCS/LCSD recoveries.**

- SDGs L1065152 and L1065595 - Analytical batch WG1231554: LCS/LCSD recoveries for 1,2,3-trimethylbenzene are below control limit criteria and laboratory qualified (J4). All associated sample results for 1,2,3-trimethylbenzene are already estimated and qualified (UJ/J) due to poor CCV recoveries. No further action is required.

- SDG L1068057 – Analytical batch WG1234600: LCS/LCSD recoveries for acetone and iodomethane (methyl iodide) are within criteria but were recovered wide and qualified (J3) by the laboratory. No action is taken since LCS/LCSD recoveries are within.

NWTPH-Gx Method:

The LCS/LCSD %Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD %Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020A:
The LCS/LCSD %Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS or LCS/LCSD %Rs and RPDs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD and/or field duplicate data for accuracy and precision data.

NWTPH-Gx Method:
MS/MSD analyses were performed on client or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data.

USEPA Method 6020A:
MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exception:

- SDG L1064711 - Analytical batch WG1229560: MS/MSD was performed on sample W-MW-01-012519. Sample W-MW-01-012519 sulfate MS/MSD results are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that duplicate and LCS results are within criteria and that the sample concentration is within the calibration range.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussion:

- SDG L1063697: A serial dilution was performed on sample BB-8-012319 and acceptance criteria were not met (laboratory qualified O1). Sample BB-8-012319 manganese result is estimated and qualified (J) due to the poor serial dilution result.

- SDG L1066228 - Analytical batch WG1231972: Sample MW-135-013119 1,1-dichloroethene results are qualified (E) by the laboratory to indicate that reported result exceeded the upper calibration range. **Sample MW-135-013119 1,1-dichloroethene is estimated and qualified (J) because the result is greater than the upper calibration range.**

- Multiple SDGs: Sample narratives for certain alkalinity results indicate that sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

PES requested additional supporting data from Pace on select sample results due to high gasoline range organic results which coincide with elevated chlorinated VOC results greater than the RDL in fifteen samples. Per Pace, certain chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, tetrachloroethene, and trichloroethene) elute within the gasoline retention time range, are considered gasoline range organics due to the elution time, and therefore likely contribute to the gasoline range organic result. Chromatograms were reviewed by Pace and PES to compare gasoline patterns with sample results. Based on this review no discernible gasoline patterns were reported. **All gasoline range organic results above the RDL are qualified as estimated with possible high bias (J+).** Qualified samples are as follows:

Sample Identification	Laboratory Identification	Result Parameter Name	Result Value (µg/L)	Qualified Result	Sample Chromatogram matches Gasoline Standard?
MW-107-013019	L1065595-01	Gasoline Range Organics	663	J+	No discernable gasoline pattern
MW-149-012919	L1065152-03	Gasoline Range Organics	14400	J+	No discernable gasoline pattern
MW-150-012919	L1065152-05	Gasoline Range Organics	11900	J+	No discernable gasoline pattern
MW-120-012419	L1064133-05	Gasoline Range Organics	105	J+	No discernable gasoline pattern
MW-156-012419	L1064133-04	Gasoline Range Organics	1480	J+	No discernable gasoline pattern
MW-157-012419	L1064133-03	Gasoline Range Organics	1870	J+	No discernable gasoline pattern
MW-146-012219	L1063581-09	Gasoline Range Organics	509	J+	No discernable gasoline pattern
MW-147-012219	L1063581-08	Gasoline Range Organics	663	J+	No discernable gasoline pattern
MW-130-013119	L1066228-01	Gasoline Range Organics	22400	J+	No discernable gasoline pattern
MW-152-013119	L1066228-02	Gasoline Range Organics	44300	J+	No discernable gasoline pattern
MW-135-013119	L1066228-05	Gasoline Range Organics	42700	J+	No discernable gasoline pattern
MW-113-020719	L1068057-01	Gasoline Range Organics	3100	J+	No discernable gasoline pattern

SDG L1066228: Three sample results (MW-151-013119, MW-132-013119, and MW-104-02119) and associated chromatograms were overlooked during the review. **Based on the gasoline and chlorinated VOC results these sample results are estimated with possible high bias (J+) due to the possible contribution of chlorinated VOCs within the elution range.**

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. Though no action is taken other than to note that Pace sample narrative notes indicate that VOC target compounds were too high to run at lower dilution for seven (including a field duplicate) samples.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	302000		2710	20000	1	01/25/2019 15:03	WG1228020

Sample Narrative:

L1063581-08 WG1228020: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	56200		51.9	1000	1	01/23/2019 20:30	WG1227335
Nitrate	U		22.7	100	1	01/23/2019 20:30	WG1227335
Sulfate	43200		77.4	5000	1	01/23/2019 20:30	WG1227335

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5200		102	1000	1	01/28/2019 16:27	WG1229248

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	6010		15.0	100	1	01/24/2019 18:01	WG1227051
Manganese	646		0.250	5.00	1	01/24/2019 18:01	WG1227051

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	663		31.6	100	1	01/24/2019 06:39	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*95.0*			*78.0-120*		*01/24/2019 06:39*	WG1227572

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	4210		0.287	0.678	1	01/25/2019 12:13	WG1227529
Ethane	2.10		0.296	1.29	1	01/25/2019 12:13	WG1227529
Ethene	100		0.422	1.27	1	01/25/2019 12:13	WG1227529

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.51 J	J	1.05	25.0	1	01/24/2019 15:01	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 15:01	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 15:01	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 15:01	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 15:01	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 15:01	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 15:01	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 15:01	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 15:01	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 15:01	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 15:01	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 15:01	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 15:01	WG1227840

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/24/2019 15:01	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 15:01	WG1227840
Chloroethane	U		0.141	2.50	1	01/24/2019 15:01	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 15:01	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 15:01	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 15:01	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 15:01	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 15:01	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 15:01	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 15:01	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 15:01	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 15:01	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 15:01	WG1227840
1,1-Dichloroethene	6.83		0.188	0.500	1	01/24/2019 15:01	WG1227840
cis-1,2-Dichloroethene	1230		0.933	5.00	10	01/27/2019 21:34	WG1228835
trans-1,2-Dichloroethene	2.88		0.152	0.500	1	01/24/2019 15:01	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 15:01	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 15:01	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 15:01	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 15:01	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 15:01	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 15:01	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 15:01	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 15:01	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 15:01	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 15:01	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 15:01	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 15:01	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 15:01	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 15:01	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 15:01	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 15:01	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 15:01	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 15:01	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 15:01	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 15:01	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 15:01	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 15:01	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 15:01	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 15:01	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 15:01	WG1227840
Tetrachloroethene	98.2		0.199	0.500	1	01/24/2019 15:01	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 15:01	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 15:01	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 15:01	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 15:01	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 15:01	WG1227840
Trichloroethene	179		0.153	0.500	1	01/24/2019 15:01	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 15:01	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 15:01	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 15:01	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 15:01	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 15:01	WG1227840

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	01/24/2019 15:01	WG1227840
Vinyl chloride	738		1.18	5.00	10	01/27/2019 21:34	WG1228835
Xylenes, Total	U		0.316	1.50	1	01/24/2019 15:01	WG1227840
(S) Toluene-d8	*106*			*80.0-120*		*01/27/2019 21:34*	WG1228835
(S) Dibromofluoromethane	*99.6*			*75.0-120*		*01/27/2019 21:34*	WG1228835
(S) 4-Bromofluorobenzene	*89.5*			*77.0-126*		*01/27/2019 21:34*	WG1228835
(S) Toluene-d8	*99.3*			*80.0-120*		*01/24/2019 15:01*	WG1227840
(S) Dibromofluoromethane	*104*			*75.0-120*		*01/24/2019 15:01*	WG1227840
(S) a,a,a-Trifluorotoluene	*91.6*			*80.0-120*		*01/24/2019 15:01*	WG1227840
(S) 4-Bromofluorobenzene	*95.0*			*77.0-126*		*01/24/2019 15:01*	WG1227840

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Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	249000		2710	20000	1	01/25/2019 15:19	WG1228020

Sample Narrative:

L1063581-09 WG1228020: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	15800		51.9	1000	1	01/23/2019 20:41	WG1227335
Nitrate	U		22.7	100	1	01/23/2019 20:41	WG1227335
Sulfate	32100		77.4	5000	1	01/23/2019 20:41	WG1227335

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3430		102	1000	1	01/28/2019 16:56	WG1229248

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	1760		15.0	100	1	01/24/2019 18:06	WG1227051
Manganese	560		0.250	5.00	1	01/24/2019 18:06	WG1227051

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	509		31.6	100	1	01/24/2019 07:00	WG1227572
(S) a,a,a-Trifluorotoluene(FID)	*94.7*			*78.0-120*		*01/24/2019 07:00*	WG1227572

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	2460		0.287	0.678	1	01/25/2019 12:25	WG1227529
Ethane	1.84		0.296	1.29	1	01/25/2019 12:25	WG1227529
Ethene	107		0.422	1.27	1	01/25/2019 12:25	WG1227529

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.98 J	J	1.05	25.0	1	01/24/2019 15:21	WG1227840
Acrylonitrile	U		0.873	5.00	1	01/24/2019 15:21	WG1227840
Benzene	U		0.0896	0.500	1	01/24/2019 15:21	WG1227840
Bromobenzene	U		0.133	0.500	1	01/24/2019 15:21	WG1227840
Bromodichloromethane	U		0.0800	0.500	1	01/24/2019 15:21	WG1227840
Bromochloromethane	U		0.145	0.500	1	01/24/2019 15:21	WG1227840
Bromoform	U		0.186	0.500	1	01/24/2019 15:21	WG1227840
Bromomethane	U		0.157	2.50	1	01/24/2019 15:21	WG1227840
n-Butylbenzene	U		0.143	0.500	1	01/24/2019 15:21	WG1227840
sec-Butylbenzene	U		0.134	0.500	1	01/24/2019 15:21	WG1227840
tert-Butylbenzene	U		0.183	0.500	1	01/24/2019 15:21	WG1227840
Carbon disulfide	U		0.101	0.500	1	01/24/2019 15:21	WG1227840
Carbon tetrachloride	U		0.159	0.500	1	01/24/2019 15:21	WG1227840

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	01/24/2019 15:21	WG1227840
Chlorodibromomethane	U		0.128	0.500	1	01/24/2019 15:21	WG1227840
Chloroethane	1.60 J	J	0.141	2.50	1	01/24/2019 15:21	WG1227840
Chloroform	U		0.0860	0.500	1	01/24/2019 15:21	WG1227840
Chloromethane	U		0.153	1.25	1	01/24/2019 15:21	WG1227840
2-Chlorotoluene	U		0.111	0.500	1	01/24/2019 15:21	WG1227840
4-Chlorotoluene	U		0.0972	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/24/2019 15:21	WG1227840
1,2-Dibromoethane	U		0.193	0.500	1	01/24/2019 15:21	WG1227840
Dibromomethane	U		0.117	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dichlorobenzene	U		0.101	0.500	1	01/24/2019 15:21	WG1227840
1,3-Dichlorobenzene	U		0.130	0.500	1	01/24/2019 15:21	WG1227840
1,4-Dichlorobenzene	U		0.121	0.500	1	01/24/2019 15:21	WG1227840
Dichlorodifluoromethane	U		0.127	2.50	1	01/24/2019 15:21	WG1227840
1,1-Dichloroethane	U		0.114	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dichloroethane	U		0.108	0.500	1	01/24/2019 15:21	WG1227840
1,1-Dichloroethene	4.44		0.188	0.500	1	01/24/2019 15:21	WG1227840
cis-1,2-Dichloroethene	1080		0.933	5.00	10	01/27/2019 21:55	WG1228835
trans-1,2-Dichloroethene	7.25		0.152	0.500	1	01/24/2019 15:21	WG1227840
1,2-Dichloropropane	U		0.190	0.500	1	01/24/2019 15:21	WG1227840
1,1-Dichloropropene	U		0.128	0.500	1	01/24/2019 15:21	WG1227840
1,3-Dichloropropane	U		0.147	1.00	1	01/24/2019 15:21	WG1227840
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/24/2019 15:21	WG1227840
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/24/2019 15:21	WG1227840
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/24/2019 15:21	WG1227840
2,2-Dichloropropane	U		0.0929	0.500	1	01/24/2019 15:21	WG1227840
Di-isopropyl ether	U		0.0924	0.500	1	01/24/2019 15:21	WG1227840
Ethylbenzene	U		0.158	0.500	1	01/24/2019 15:21	WG1227840
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/24/2019 15:21	WG1227840
2-Hexanone	U		0.757	5.00	1	01/24/2019 15:21	WG1227840
n-Hexane	U		0.305	5.00	1	01/24/2019 15:21	WG1227840
Iodomethane	U		0.377	10.0	1	01/24/2019 15:21	WG1227840
Isopropylbenzene	U		0.126	0.500	1	01/24/2019 15:21	WG1227840
p-Isopropyltoluene	U		0.138	0.500	1	01/24/2019 15:21	WG1227840
2-Butanone (MEK)	U		1.28	5.00	1	01/24/2019 15:21	WG1227840
Methylene Chloride	U		1.07	2.50	1	01/24/2019 15:21	WG1227840
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/24/2019 15:21	WG1227840
Methyl tert-butyl ether	U		0.102	0.500	1	01/24/2019 15:21	WG1227840
Naphthalene	U		0.174	2.50	1	01/24/2019 15:21	WG1227840
n-Propylbenzene	U		0.162	0.500	1	01/24/2019 15:21	WG1227840
Styrene	U		0.117	0.500	1	01/24/2019 15:21	WG1227840
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/24/2019 15:21	WG1227840
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/24/2019 15:21	WG1227840
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/24/2019 15:21	WG1227840
Tetrachloroethene	2.29		0.199	0.500	1	01/24/2019 15:21	WG1227840
Toluene	U		0.412	0.500	1	01/24/2019 15:21	WG1227840
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/24/2019 15:21	WG1227840
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/24/2019 15:21	WG1227840
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/24/2019 15:21	WG1227840
1,1,2-Trichloroethane	U		0.186	0.500	1	01/24/2019 15:21	WG1227840
Trichloroethene	21.6		0.153	0.500	1	01/24/2019 15:21	WG1227840
Trichlorofluoromethane	U		0.130	2.50	1	01/24/2019 15:21	WG1227840
1,2,3-Trichloropropane	U		0.247	2.50	1	01/24/2019 15:21	WG1227840
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/24/2019 15:21	WG1227840
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/24/2019 15:21	WG1227840
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/24/2019 15:21	WG1227840

JC 3/11/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	01/24/2019 15:21	WG1227840
Vinyl chloride	1370		1.18	5.00	10	01/27/2019 21:55	WG1228835
Xylenes, Total	U		0.316	1.50	1	01/24/2019 15:21	WG1227840
(S) Toluene-d8	*103*			*80.0-120*		*01/27/2019 21:55*	WG1228835
(S) Dibromofluoromethane	*98.9*			*75.0-120*		*01/27/2019 21:55*	WG1228835
(S) 4-Bromofluorobenzene	*88.8*			*77.0-126*		*01/27/2019 21:55*	WG1228835
(S) Toluene-d8	*101*			*80.0-120*		*01/24/2019 15:21*	WG1227840
(S) Dibromofluoromethane	*101*			*75.0-120*		*01/24/2019 15:21*	WG1227840
(S) a,a,a-Trifluorotoluene	*97.2*			*80.0-120*		*01/24/2019 15:21*	WG1227840
(S) 4-Bromofluorobenzene	*94.7*			*77.0-126*		*01/24/2019 15:21*	WG1227840

JC 3/11/19

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_26.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 24 Jan 2019 0:13 am
Operator :
Sample : BLANK 1x WG1227572 (Sig #1); L1063524-01 1x WG1227572 (Sig #2)
Misc : water
ALS Vial : 26 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 29 13:12:34 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Fluorobenzene (FID)	6.74	358290519	200.0000000 ppb
7) I Fluorobenzene (PID)	6.74	89776013	200.0000000 ppb
System Monitoring Compounds			
5) S A,A,A-TRIFLUOROTOLUEN...	7.23	273903090	188.7768535 ppb
Spiked Amount 200.0000	Range 62 - 128	Recovery = 94.39%	
Target Compounds			
2) H,M TPHG C5 - C12	9.14	47397908	0.0205207 ppm
3) H,M TPHG C6 - C12	8.66	44052915	0.0203435 ppm
4) h,m TPH (GC/FID) Low Frac...	8.66	28408234	0.0154361 ppm
SemiQuant Compounds - Not Calibrated on this Instrument			

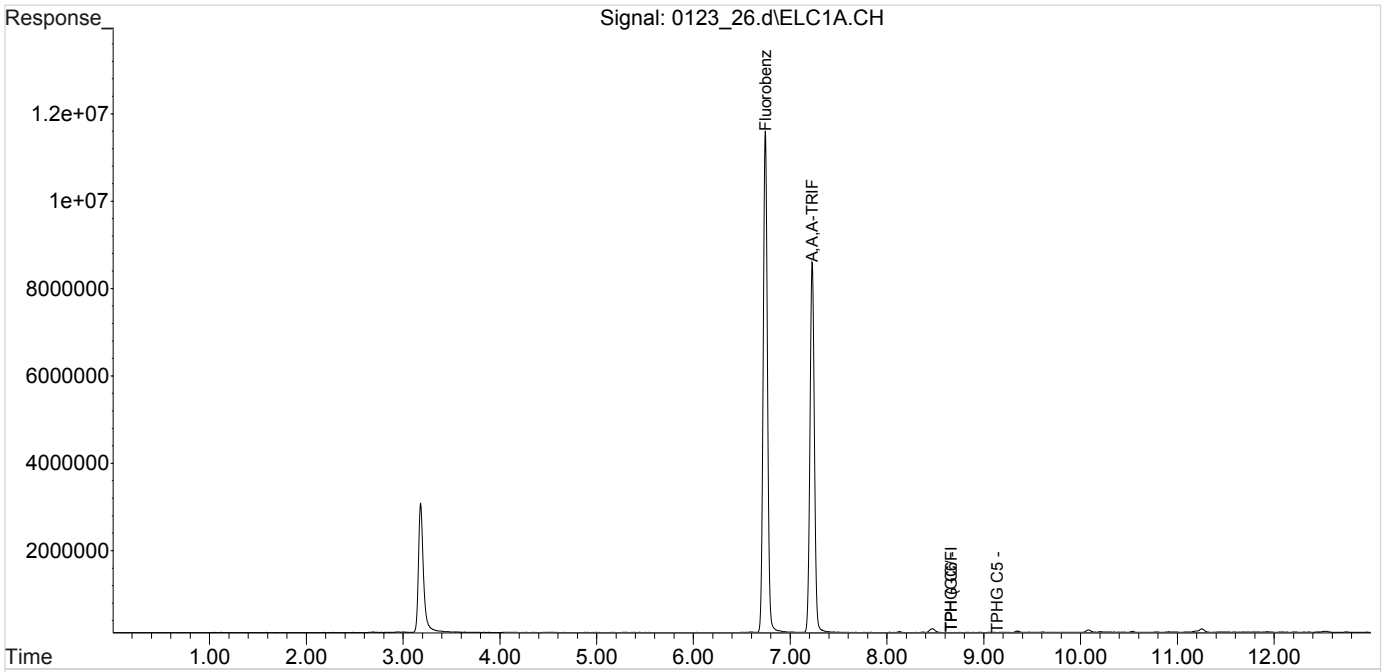
(f)=RT Delta > 1/2 Window (m)=manual int.

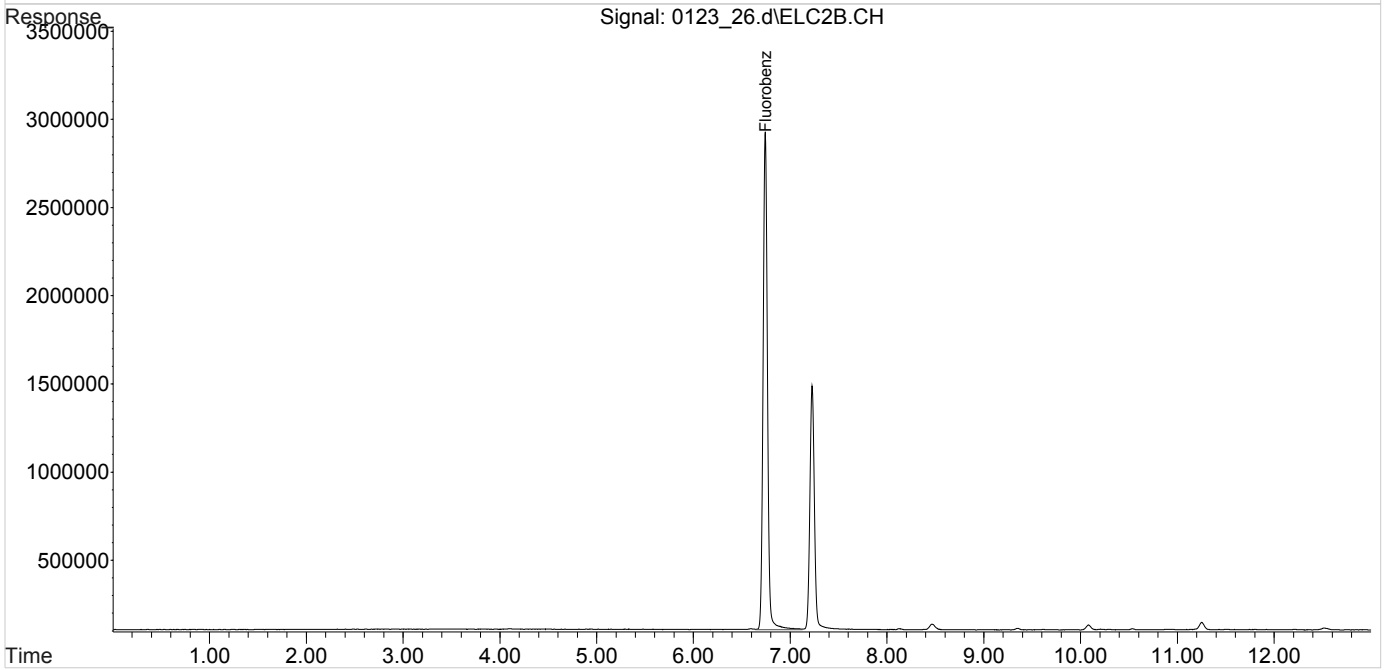
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_26.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 24 Jan 2019 0:13 am
Operator :
Sample : BLANK 1x WG1227572 (Sig #1); L1063524-01 1x WG1227572 (Sig #2)
Misc : water
ALS Vial : 26 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 29 13:12:34 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_22.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 23 Jan 2019 22:31 pm
Operator :
Sample : LCSGRO 1x WG1227572
Misc : water
ALS Vial : 22 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 23 23:57:42 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Fluorobenzene (FID)	6.74	359055611	200.0000000 ppb
7) I Fluorobenzene (PID)	6.74	89896840	200.0000000 ppb
System Monitoring Compounds			
5) S A,A,A-TRIFLUOROTOLUEN...	7.23	322898663	222.0709025 ppb
Spiked Amount 200.0000	Range 62 - 128	Recovery = 111.04%	
Target Compounds			
2) H,M TPHG C5 - C12	9.14	11795627169	5.0959717 ppm
3) H,M TPHG C6 - C12	8.66	11566418243	5.3299585 ppm
4) h,m TPH (GC/FID) Low Frac...	8.66	9785517138	5.3057969 ppm
SemiQuant Compounds - Not Calibrated on this Instrument			

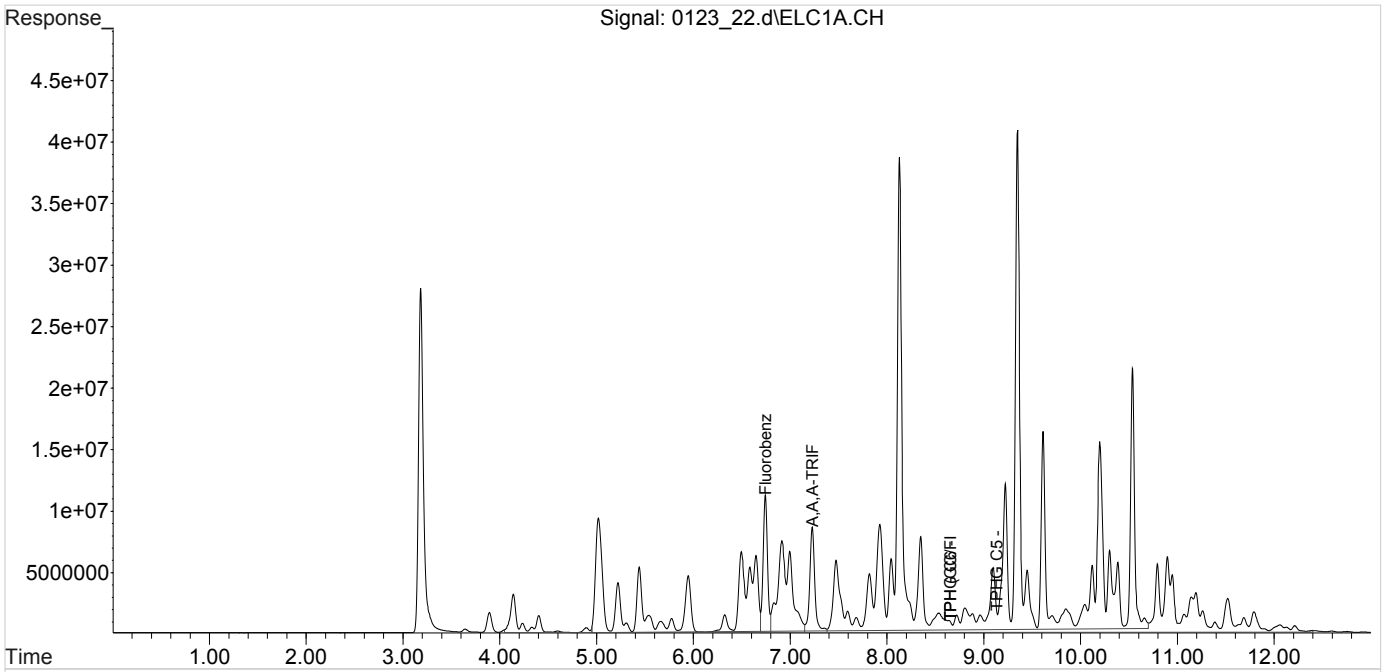
(f)=RT Delta > 1/2 Window (m)=manual int.

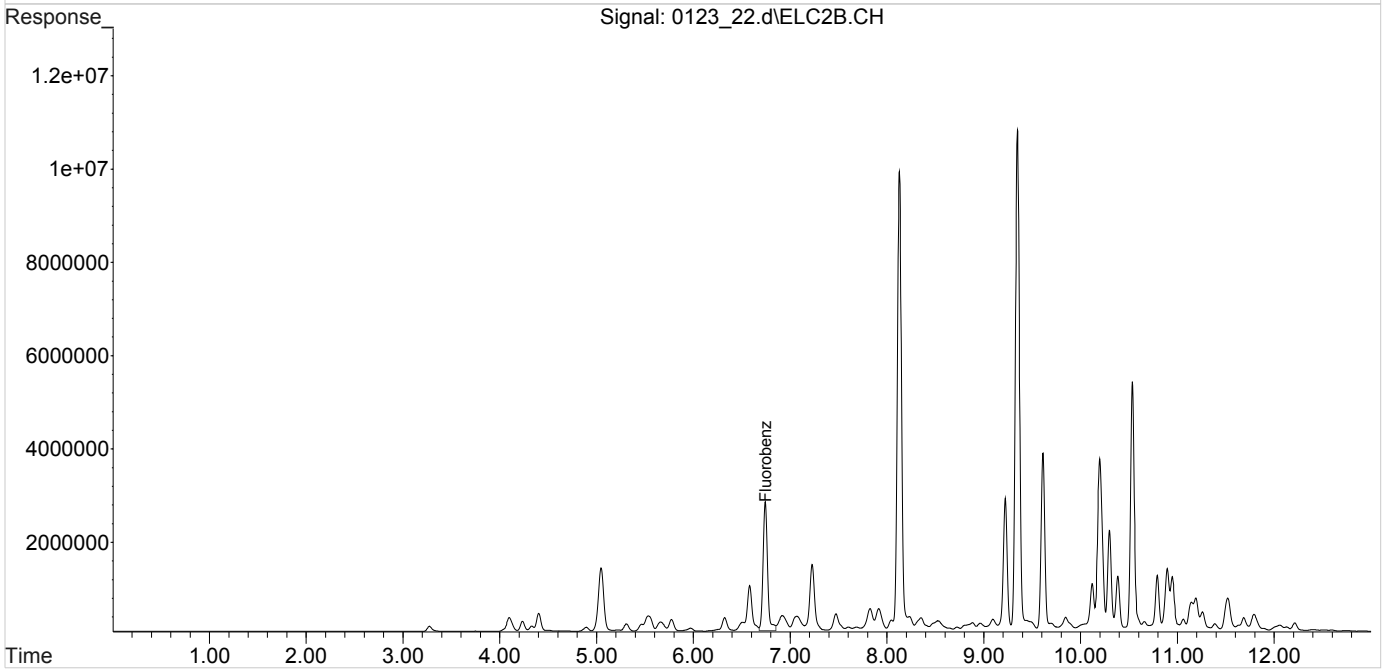
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_22.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 23 Jan 2019 22:31 pm
Operator :
Sample : LCSGRO 1x WG1227572
Misc : water
ALS Vial : 22 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 23 23:57:42 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_24.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 23 Jan 2019 23:17 pm
Operator :
Sample : LCSDGRO 1x WG1227572 (Sig #1); instblk (Sig #2)
Misc : water
ALS Vial : 24 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 24 08:08:32 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

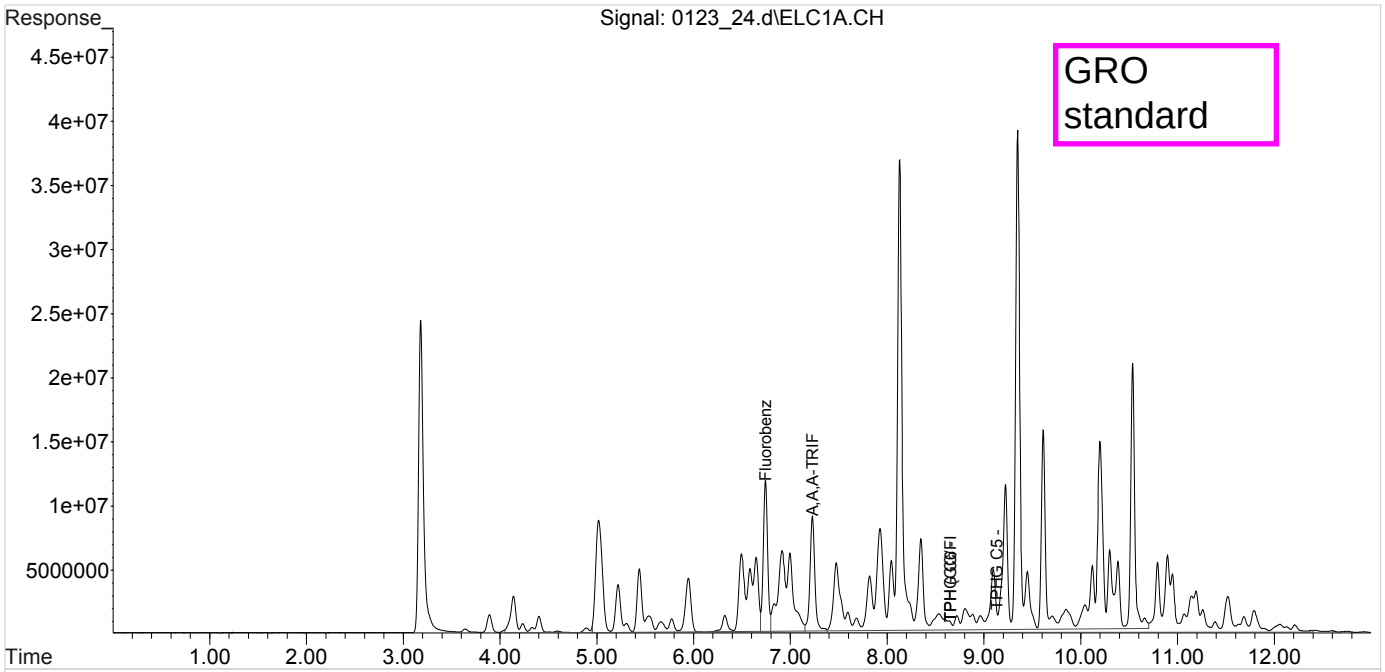
Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Fluorobenzene (FID)	6.74	377669704	200.0000000 ppb
7) I Fluorobenzene (PID)	6.74	95274650	200.0000000 ppb
System Monitoring Compounds			
5) S A,A,A-TRIFLUOROTOLUEN...	7.23	333128984	217.8148069 ppb
Spiked Amount 200.0000	Range 62 - 128	Recovery = 108.91%	
Target Compounds			
2) H,M TPHG C5 - C12	9.14	11163383059	4.5851270 ppm
3) H,M TPHG C6 - C12	8.66	10954276928	4.7990826 ppm
4) h,m TPH (GC/FID) Low Frac...	8.66	9202243690	4.7436227 ppm
SemiQuant Compounds - Not Calibrated on this Instrument			

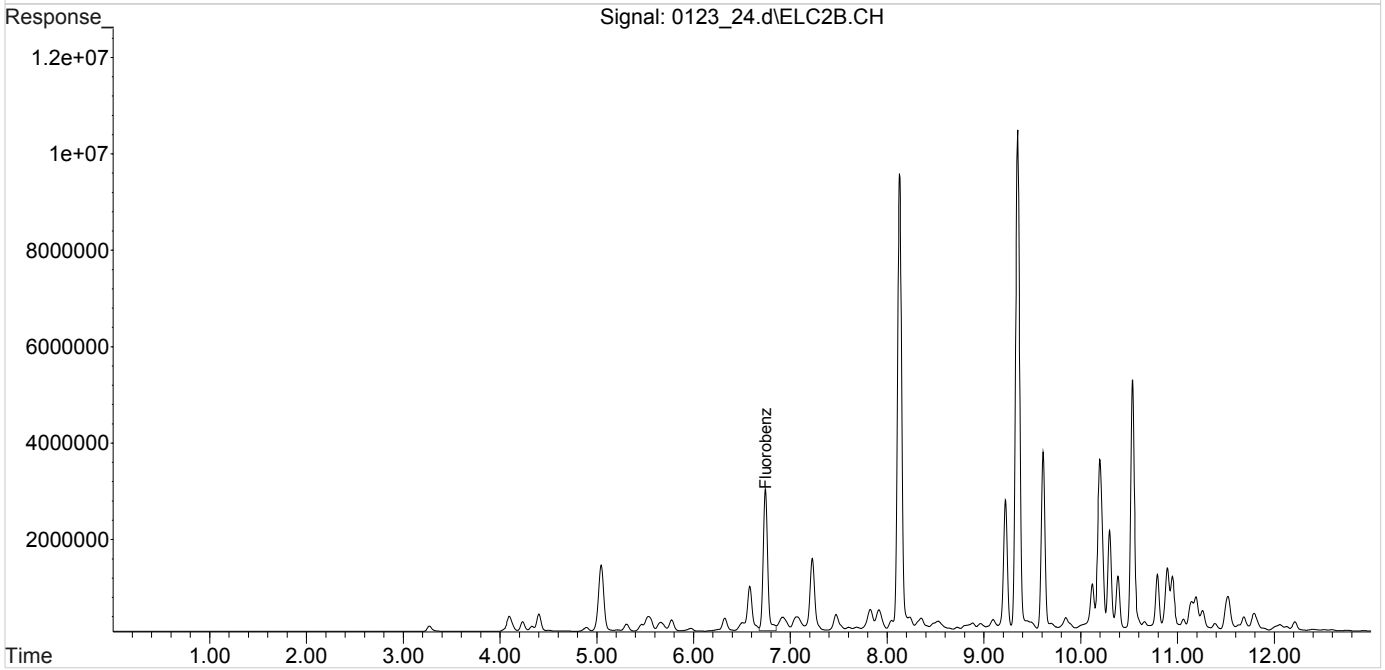
(f)=RT Delta > 1/2 Window (m)=manual int.

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_24.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 23 Jan 2019 23:17 pm
Operator :
Sample : LCSDGRO 1x WG1227572 (Sig #1); instblk (Sig #2)
Misc : water
ALS Vial : 24 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 24 08:08:32 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_44.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 24 Jan 2019 6:39 am
Operator :
Sample : L1063581-08 1x WG1227572
Misc : water
ALS Vial : 44 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 29 13:14:18 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Fluorobenzene (FID)	6.74	351215494	200.0000000 ppb
7) I Fluorobenzene (PID)	6.74	91066066	200.0000000 ppb
System Monitoring Compounds			
5) S A,A,A-TRIFLUOROTOLUEN...	7.23	270313206	190.0556231 ppb
Spiked Amount 200.0000	Range 62 - 128	Recovery = 95.03%	
Target Compounds			
2) H,M TPHG C5 - C12	9.14	1419550776	0.6269674 ppm
3) H,M TPHG C6 - C12	8.66	1407116528	0.6628924 ppm
4) h,m TPH (GC/FID) Low Frac...	8.66	1396192037	0.7739271 ppm
SemiQuant Compounds - Not Calibrated on this Instrument			

(f)=RT Delta > 1/2 Window (m)=manual int.

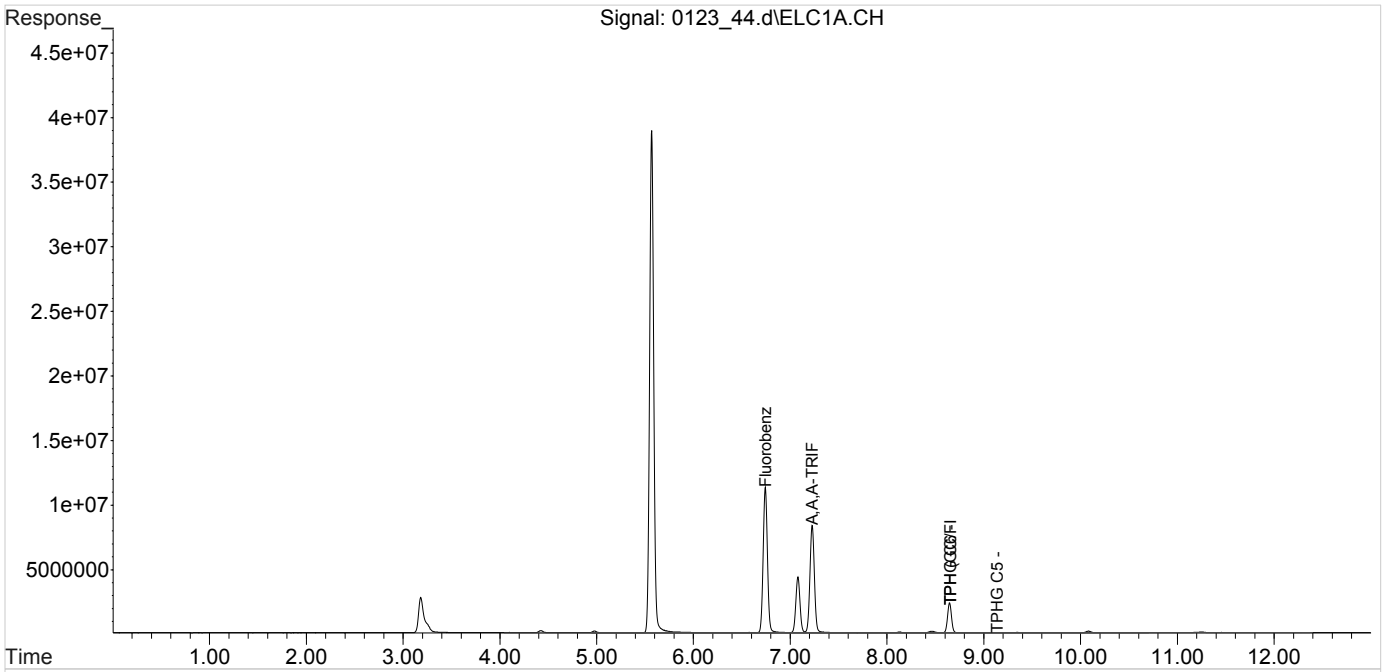
Quantitation Report (QT Reviewed)

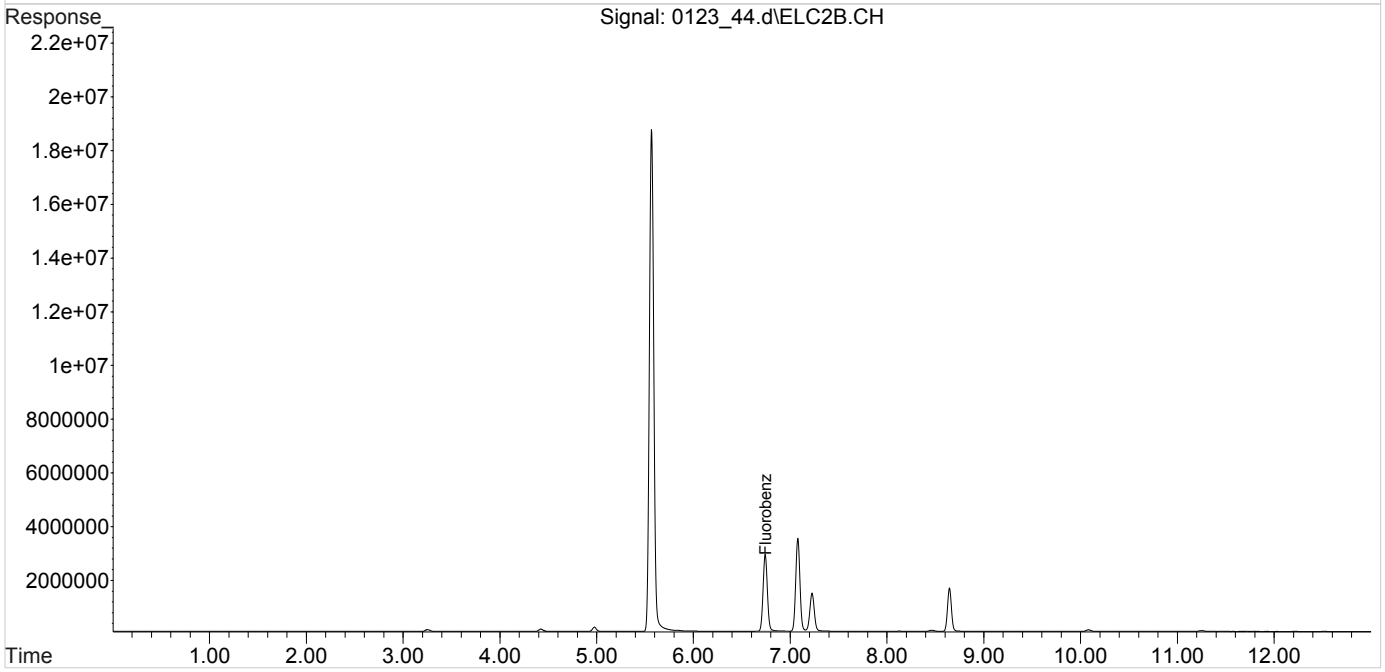
Data Path : C:\msdchem\1\data\012319\
Data File : 0123_44.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 24 Jan 2019 6:39 am
Operator :
Sample : L1063581-08 1x WG1227572
Misc : water
ALS Vial : 44 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

MW-147
1/22/19

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 29 13:14:18 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012319\
Data File : 0123_45.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 24 Jan 2019 7:00 am
Operator :
Sample : L1063581-09 1x WG1227572
Misc : water
ALS Vial : 45 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 29 13:14:22 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

Compound	R.T.	Response	Conc Units
Internal Standards			
1) I Fluorobenzene (FID)	6.74	349268504	200.0000000 ppb
7) I Fluorobenzene (PID)	6.74	90741928	200.0000000 ppb
System Monitoring Compounds			
5) S A,A,A-TRIFLUOROTOLUEN...	7.23	267965594	189.4552914 ppb
Spiked Amount 200.0000	Range 62 - 128	Recovery = 94.73%	
Target Compounds			
2) H,M TPHG C5 - C12	9.14	1087363886	0.4829289 ppm
3) H,M TPHG C6 - C12	8.66	1074870000	0.5091939 ppm
4) h,m TPH (GC/FID) Low Frac...	8.66	1063139560	0.5925970 ppm
SemiQuant Compounds - Not Calibrated on this Instrument			

(f)=RT Delta > 1/2 Window (m)=manual int.

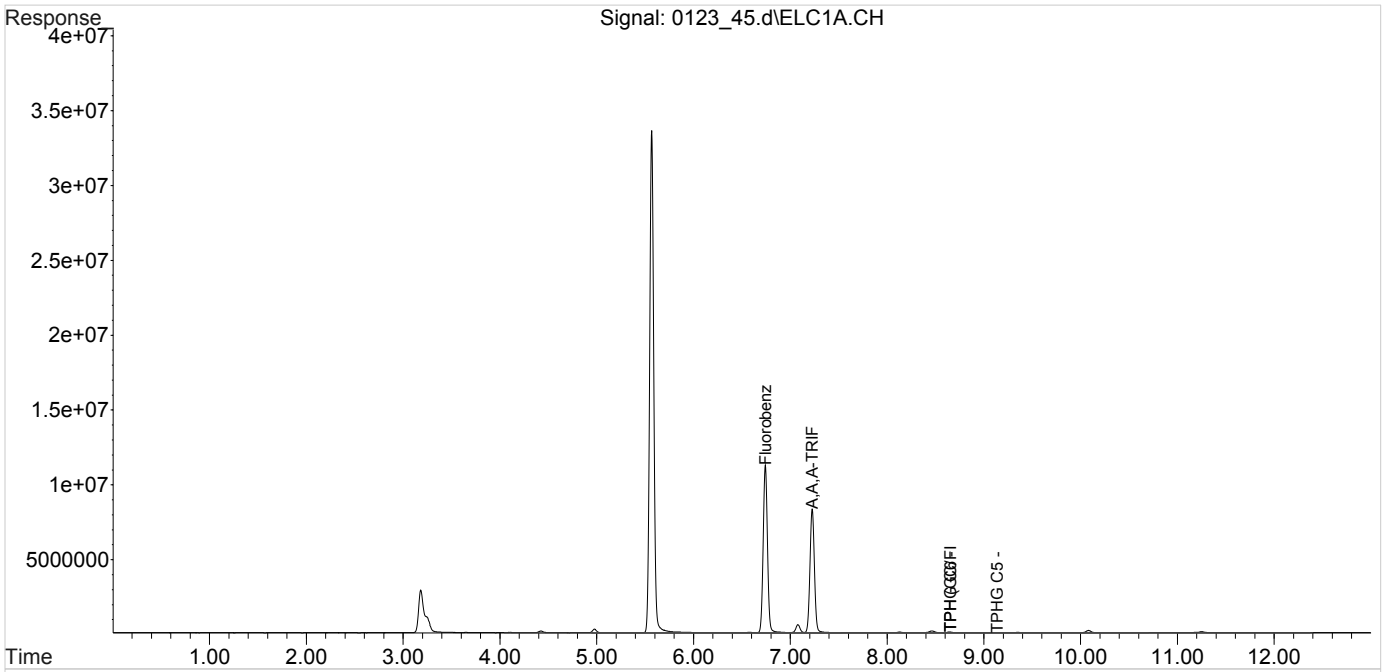
Quantitation Report (QT Reviewed)

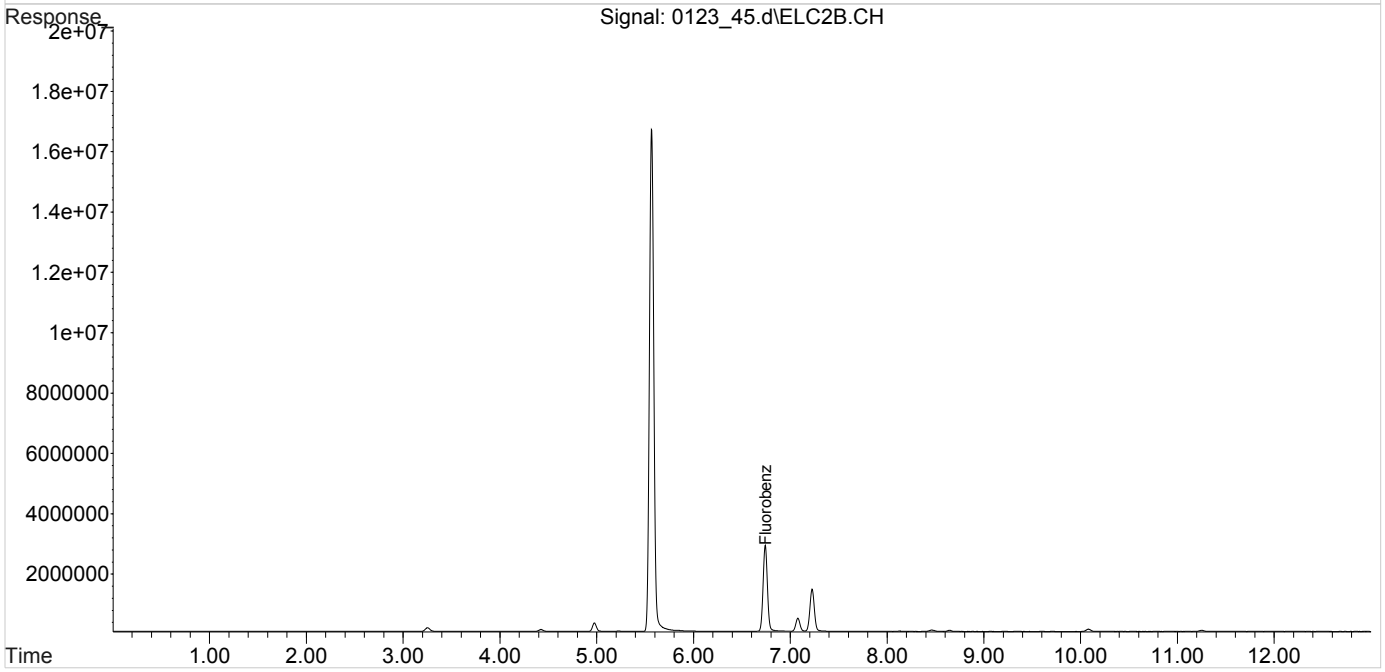
Data Path : C:\msdchem\1\data\012319\
Data File : 0123_45.d
Signal(s) : Signal #1: ELC1A.CH Signal #2: ELC2B.CH
Acq On : 24 Jan 2019 7:00 am
Operator :
Sample : L1063581-09 1x WG1227572
Misc : water
ALS Vial : 45 (Sig #1); 0 (Sig #2) Sample Multiplier: 1

MW-146
1/22/19

Integration File signal 1: BTEX.E
Integration File signal 2: EVENTS3.E
Quant Time: Jan 29 13:14:22 2019
Quant Method : C:\msdchem\1\methods\BG15A15S.M
Quant Title : BTEX/GRO VOCGC15
QLast Update : Wed Jan 16 09:19:05 2019
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_05.D
Acq On : 24 Jan 2019 9:55 am
Operator : 605
Sample : BLANK 1x WG1227840
Misc : water
ALS Vial : 5 Sample Multiplier: 1
InstName : VOCMS35

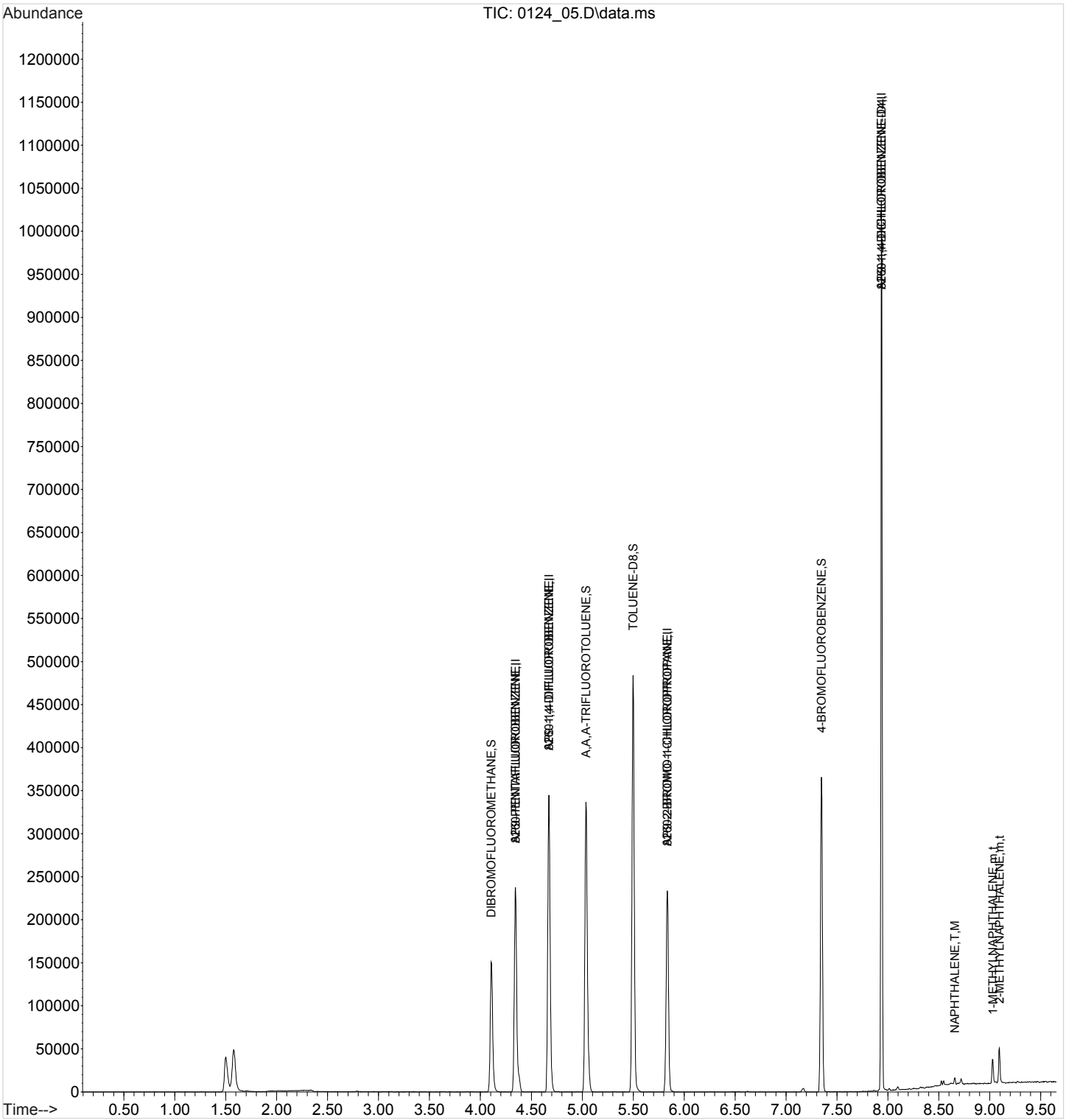
Quant Time: Jan 26 10:56:50 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 8260-PENTAFLUOROBENZENE	4.345	168	135023	40.0000000	ppb	0.00
48) 8260-1,4-DIFLUOROBENZENE	4.673	114	227538	40.0000000	ppb	0.00
56) 8260-2-BROMO-1-CHLOROP...	5.833	79	36643	40.0000000	ppb	0.00
76) 8260-1,4-DICHLOROBENZE...	7.936	152	134577	40.0000000	ppb	0.00
107) AP9-PENTAFLUOROBENZENE	4.345	168	135023	40.0000000	ppb	0.00
119) AP9-1,4-DIFLUOROBENZENE	4.673	114	227538	40.0000000	ppb	0.00
124) AP9-2-BROMO-1-CHLOROPR...	5.833	79	36643	40.0000000	ppb	# 0.00
128) AP9-1,4-DICHLOROBENZEN...	7.936	152	134577	40.0000000	ppb	0.00
System Monitoring Compounds						
38) DIBROMOFLUOROMETHANE	4.107	111	77883	40.9033890	ppb	0.00
Spiked Amount 40.000	Range 79 - 121		Recovery = 102.26%			
55) A,A,A-TRIFLUOROTOLUENE	5.036	146	117609	39.5711177	ppb	0.00
Spiked Amount 40.000	Range 90 - 116		Recovery = 98.93%			
60) TOLUENE-D8	5.499	98	271763	41.1876507	ppb	0.00
Spiked Amount 40.000	Range 90 - 115		Recovery = 102.97%			
80) 4-BROMOFLUOROBENZENE	7.348	95	95577	37.2507953	ppb	0.00
Spiked Amount 40.000	Range 80 - 120		Recovery = 93.13%			
Target Compounds						Qvalue
103) NAPHTHALENE	8.656	128	2884	0.2601277	ppb	96
105) 1-METHYLNAPHTHALENE	9.029	142	8478	1.5978462	ppb	97
106) 2-METHYLNAPHTHALENE	9.094	142	11028	2.3449477	ppb	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_05.D
Acq On : 24 Jan 2019 9:55 am
Operator : 605
Sample : BLANK 1x WG1227840
Misc : water
ALS Vial : 5 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 26 10:56:50 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_02.D
Acq On : 24 Jan 2019 8:56 am
Operator : 605
Sample : ICVLCS VMS 25 ppb
Misc : water IS/SURR 19A06423
ALS Vial : 2 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 25 09:25:14 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 8260-PENTAFLUOROBENZENE	4.341	168	145445	40.0000000	ppb		0.00
48) 8260-1,4-DIFLUOROBENZENE	4.669	114	245496	40.0000000	ppb		0.00
56) 8260-2-BROMO-1-CHLOROP...	5.830	79	40148	40.0000000	ppb		0.00
76) 8260-1,4-DICHLOROBENZE...	7.936	152	146267	40.0000000	ppb		0.00
107) AP9-PENTAFLUOROBENZENE	4.341	168	145445	40.0000000	ppb		0.00
119) AP9-1,4-DIFLUOROBENZENE	4.669	114	245496	40.0000000	ppb		0.00
124) AP9-2-BROMO-1-CHLOROPR...	5.830	79	40148	40.0000000	ppb	#	0.00
128) AP9-1,4-DICHLOROBENZEN...	7.936	152	146267	40.0000000	ppb		0.00
System Monitoring Compounds							
38) DIBROMOFLUOROMETHANE	4.107	111	83568	40.7441804	ppb		0.00
Spiked Amount 40.000	Range 79 - 121		Recovery = 101.86%				
55) A,A,A-TRIFLUOROTOLUENE	5.036	146	124059	38.6879352	ppb		0.00
Spiked Amount 40.000	Range 90 - 116		Recovery = 96.72%				
60) TOLUENE-D8	5.496	98	282931	39.1367119	ppb		0.00
Spiked Amount 40.000	Range 90 - 115		Recovery = 97.84%				
80) 4-BROMOFLUOROBENZENE	7.345	95	103901	37.2585862	ppb		0.00
Spiked Amount 40.000	Range 80 - 120		Recovery = 93.15%				
Target Compounds							Qvalue
4) PROPENE	1.676	41	32020	21.3507977	ppb		99
5) DICHLORODIFLUOROMETHANE	1.715	85	53506	25.3728827	ppb		99
6) CHLOROMETHANE	1.898	50	78002	27.8393155	ppb		98
7) VINYL CHLORIDE	1.972	62	98350	27.9980684	ppb		100
8) 1,3-BUTADIENE	1.959	39	75124	25.2935359	ppb		96
9) BROMOMETHANE	2.219	94	74114	28.1804597	ppb		100
10) CHLOROETHANE	2.313	64	64779	30.4933210	ppb		99
11) TRICHLOROFLUOROMETHANE	2.406	101	94875	25.8096161	ppb		100
12) DICHLOROFLUOROMETHANE	2.441	67	92933	21.7708721	ug/l		99
13) ETHYL ETHER	2.599	59	58408	28.8950492	ppb		98
14) ACROLEIN	2.956	56	38075	86.3590989	ppb		97
15) 1,1-DICHLOROETHENE	2.750	96	45789	25.5685315	ppb		92
16) 1,1,2-TRICHLOROTRIFLUO...	2.776	101	48252	24.9329740	ppb		95
17) ACETONE	3.126	43	110213	193.3733495	ppb		97
18) IODOMETHANE	2.853	142	454033	122.5981198	ppb		98
19) CARBON DISULFIDE	2.788	76	145791	26.5056904	ppb		98
20) ALLYL CHLORIDE	3.039	76	155148	134.7818181	ppb		96
21) METHYLENE CHLORIDE	3.104	84	56261	26.3768692	ppb		93
22) METHYL ACETATE	3.187	43	312759	147.9762372	ppb	#	99
23) ACRYLONITRILE	3.586	53	162299	154.9255601	ppb		99
24) n-HEXANE	3.232	56	46026	25.4745830	ppb		97
25) TRANS-1,2-DICHLOROETHENE	3.200	96	54187	26.9172961	ppb		95
26) METHYL TERT-BUTYL ETHER	3.245	73	160515	27.6328199	ppb		95
27) 1,1-DICHLOROETHANE	3.560	63	115419	27.6963274	ppb		99
28) VINYL ACETATE	3.666	43	467316	86.6594853	ppb		98
29) DI-ISOPROPYL ETHER	3.448	45	205842	28.7823042	ppb		100
30) ETHYL TERT-BUTYL ETHER	3.653	59	207552	28.3645261	ppb		99
31) 2,2-DICHLOROPROPANE	3.927	77	49774	24.0458456	ppb		98
32) CIS-1,2-DICHLOROETHENE	3.862	96	62311	27.5158204	ppb		96
33) 2-BUTANONE (MEK)	4.165	43	208634	149.2937053	ppb		99
34) BROMOCHLOROMETHANE	3.978	130	40285	27.1482707	ppb		87
35) TETRAHYDROFURAN	4.107	42	25297	26.6872730	ppb		95
36) CHLOROFORM	4.001	83	105643	27.4190987	ppb		99
37) CYCLOHEXANE	3.991	84	71913	25.9329616	ppb		94

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_02.D
Acq On : 24 Jan 2019 8:56 am
Operator : 605
Sample : ICVLCS VMS 25 ppb
Misc : water IS/SURR 19A06423
ALS Vial : 2 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 25 09:25:14 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
39) 1,1,1-TRICHLOROETHANE	4.139	97	87817	27.4828687	ppb		98
40) CARBON TETRACHLORIDE	4.100	117	77401	24.3927088	ppb		100
41) 1,1-DICHLOROPROPENE	4.200	75	73392	27.7531248	ppb		98
42) 2,2,4-TRIMETHYLPENTANE	4.242	57	165851	24.5142293	ppb		98
43) n-Heptane	4.277	71	33469	23.2305350	ppb	#	98
44) BENZENE	4.345	78	226571	26.2253367	ppb		98
45) TERT-AMYL METHYL ETHER	4.370	73	171786	27.2565884	ppb		98
46) 1,2-DICHLOROETHANE	4.457	62	93736	28.6499095	ppb		100
47) T-AMYL ALCOHOL	4.454	59	48263	182.2404716	ppb		90
49) TRICHLOROETHENE	4.669	130	61918	26.5019318	ppb	#	99
50) METHYL CYCLOHEXANE	4.673	83	85267	25.0636962	ppb		96
51) TERT-AMYL ETHYL ETHER	4.756	59	157268	28.7392911	ppb		97
52) 1,2-DICHLOROPROPANE	4.981	62	46291	28.0737015	ppb		99
53) DIBROMOMETHANE	4.927	93	44016	28.7358728	ppb		95
54) BROMODICHLOROMETHANE	5.004	83	81093	27.9188079	ppb		98
57) 2-CHLOROETHYL VINYL ETHER	5.313	63	264534	133.8300620	ppb		97
58) CIS-1,3-DICHLOROPROPENE	5.380	75	94534	26.0313331	ppb		99
59) 4-METHYL-2-PENTANONE (...	5.740	43	458767	142.8260190	ppb		99
61) TOLUENE	5.528	91	249664	24.9282290	ppb		100
62) TRANS-1,3-DICHLOROPROPENE	5.779	75	91587	26.7574497	ppb		99
63) 1,1,2-TRICHLOROETHANE	5.888	97	55904	26.5652394	ppb		98
64) TETRACHLOROETHENE	5.785	164	46302	23.5999280	ppb		98
65) 1,3-DICHLOROPROPANE	6.075	76	93659	26.6452244	ppb		100
66) 2-HEXANONE	6.277	58	189254	143.7377102	ppb		100
67) CHLORODIBROMOMETHANE	6.013	129	61895	26.0676178	ppb		99
68) 1,2-DIBROMOETHANE	6.194	107	60456	26.5948120	ppb		100
69) CHLOROBENZENE	6.528	112	159513	25.1755305	ppb		97
70) 1,1,1,2-TETRACHLOROETHANE	6.560	133	54150	24.9991653	ppb	#	100
71) ETHYLBENZENE	6.521	106	83249	25.7952863	ppb		98
72) M&P-XYLENE	6.615	106	203739	50.7520004	ppb		99
73) O-XYLENE	6.923	106	99281	26.6393682	ppb		99
77) STYRENE	6.959	104	163412	25.7707026	ppb		100
78) BROMOFORM	7.001	173	46144	24.8837248	ppb		99
79) ISOPROPYLBENZENE	7.136	105	251516	25.1298941	ppb		100
81) BROMOBENZENE	7.422	77	114380	24.9234963	ppb		93
82) 1,1,2,2-TETRACHLOROETHANE	7.454	83	79812	24.4084184	ppb		99
83) 1,2,3-TRICHLOROPROPANE	7.554	110	25000	26.0281241	ppb		92
84) TRANS-1,4-DICHLORO-2-B...	7.566	53	22117	21.7335915	ppb		94
85) N-PROPYLBENZENE	7.409	91	310188	25.0717927	ppb		99
86) 4-ETHYLTOLUENE	7.473	105	250667	25.0611723	ppb		100
87) 2-CHLOROTOLUENE	7.528	91	207736	25.4580159	ppb		98
88) 4-CHLOROTOLUENE	7.628	91	191975	25.7967961	ppb		98
89) 1,3,5-TRIMETHYLBENZENE	7.525	105	213769	25.3715941	ppb		100
90) TERT-BUTYLBENZENE	7.721	119	195889	26.0544294	ppb		100
91) 1,2,4-TRIMETHYLBENZENE	7.756	105	233542	26.1223768	ppb		100
92) SEC-BUTYLBENZENE	7.808	105	298828	26.8343334	ppb		99
93) 1,3-DICHLOROBENZENE	7.910	146	154401	25.6132515	ppb		100
94) P-ISOPROPYLTOLUENE	7.862	119	275206	26.4047568	ppb		100
95) DICYCLOPENTADIENE	7.872	66	349082	27.5168901	ppb		99
96) 1,4-DICHLOROBENZENE	7.943	146	163961	25.4952857	ppb		92
97) 1,2,3-TRIMETHYLBENZENE	7.939	105	223796	25.5764106	ppb		99
98) 1,2-DICHLOROBENZENE	8.084	146	162906	26.3490399	ppb		99
99) N-BUTYLBENZENE	8.013	91	277305	26.8138182	ppb		98
100) 1,2-DIBROMO-3-CHLOROPR...	8.335	157	26103	25.1507454	ppb		97
101) 1,2,4-TRICHLOROBENZENE	8.544	180	100991	24.4985609	ppb		100

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_02.D
Acq On : 24 Jan 2019 8:56 am
Operator : 605
Sample : ICVLCS VMS 25 ppb
Misc : water IS/SURR 19A06423
ALS Vial : 2 Sample Multiplier: 1
InstName : VOCMS35

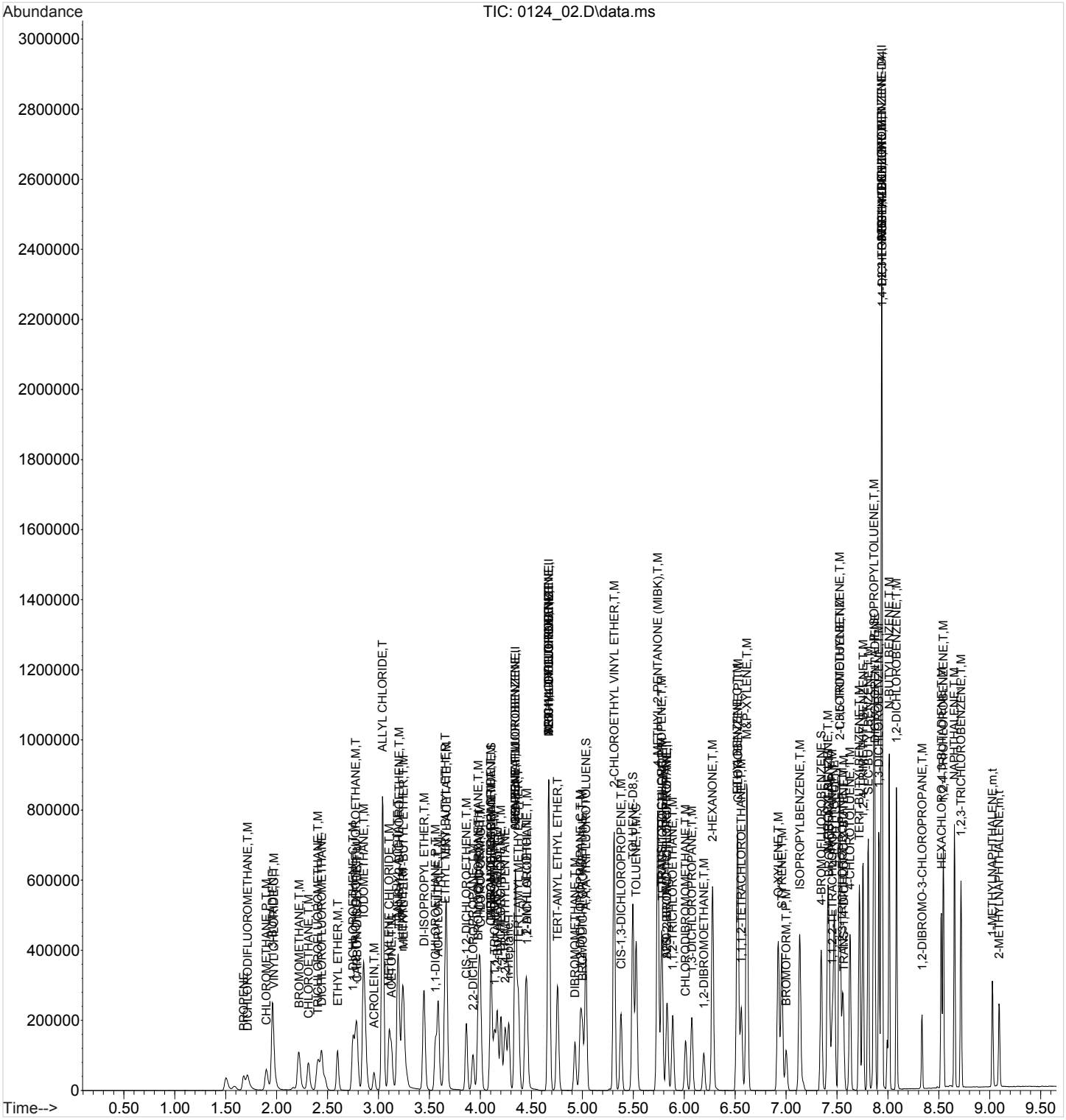
Quant Time: Jan 25 09:25:14 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) HEXACHLORO-1,3-BUTADIENE	8.525	225	48585	24.0982639	ppb	99
103) NAPHTHALENE	8.653	128	284120	23.5785758	ppb	99
104) 1,2,3-TRICHLOROBENZENE	8.718	180	91564	23.3073183	ppb	99
105) 1-METHYLNAPHTHALENE	9.026	142	81730	14.1725358	ppb	98
106) 2-METHYLNAPHTHALENE	9.090	142	64399	12.5991146	ppb	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_02.D
Acq On : 24 Jan 2019 8:56 am
Operator : 605
Sample : ICVLCS VMS 25 ppb
Misc : water IS/SURR 19A06423
ALS Vial : 2 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 25 09:25:14 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_03.D
Acq On : 24 Jan 2019 9:16 am
Operator : 605
Sample : LCSD 1x WG1227840
Misc : water IS/SURR 19A06423
ALS Vial : 3 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 25 09:25:19 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 8260-PENTAFLUOROBENZENE	4.345	168	156282	40.0000000	ppb		0.00
48) 8260-1,4-DIFLUOROBENZENE	4.673	114	261423	40.0000000	ppb		0.00
56) 8260-2-BROMO-1-CHLOROP...	5.833	79	42521	40.0000000	ppb		0.00
76) 8260-1,4-DICHLOROBENZE...	7.936	152	154078	40.0000000	ppb		0.00
107) AP9-PENTAFLUOROBENZENE	4.345	168	156282	40.0000000	ppb		0.00
119) AP9-1,4-DIFLUOROBENZENE	4.673	114	261423	40.0000000	ppb		0.00
124) AP9-2-BROMO-1-CHLOROPR...	5.833	79	42521	40.0000000	ppb	#	0.00
128) AP9-1,4-DICHLOROBENZEN...	7.936	152	154078	40.0000000	ppb		0.00
System Monitoring Compounds							
38) DIBROMOFLUOROMETHANE	4.107	111	89716	40.7085202	ppb		0.00
Spiked Amount 40.000	Range 79 - 121		Recovery = 101.77%				
55) A,A,A-TRIFLUOROTOLUENE	5.036	146	132068	38.6763519	ppb		0.00
Spiked Amount 40.000	Range 90 - 116		Recovery = 96.69%				
60) TOLUENE-D8	5.499	98	302371	39.4915684	ppb		0.00
Spiked Amount 40.000	Range 90 - 115		Recovery = 98.73%				
80) 4-BROMOFLUOROBENZENE	7.348	95	112033	38.1380365	ppb		0.00
Spiked Amount 40.000	Range 80 - 120		Recovery = 95.35%				
Target Compounds							Qvalue
4) PROPENE	1.673	41	33282	20.6534226	ppb		95
5) DICHLORODIFLUOROMETHANE	1.711	85	56206	24.8050348	ppb		97
6) CHLOROMETHANE	1.895	50	81576	27.0959921	ppb		100
7) VINYL CHLORIDE	1.969	62	100186	26.5430350	ppb		100
8) 1,3-BUTADIENE	1.959	39	76019	23.8200588	ppb		95
9) BROMOMETHANE	2.216	94	74494	26.3608221	ppb		98
10) CHLOROETHANE	2.313	64	64522	28.2662466	ppb		98
11) TRICHLOROFLUOROMETHANE	2.409	101	97376	24.6530991	ppb		99
12) DICHLOROFLUOROMETHANE	2.441	67	95108	20.7354160	ug/l		99
13) ETHYL ETHER	2.599	59	59359	27.3292374	ppb		98
14) ACROLEIN	2.956	56	36842	77.7680526	ppb		93
15) 1,1-DICHLOROETHENE	2.750	96	48629	25.2714290	ppb		96
16) 1,1,2-TRICHLOROTRIFLUO...	2.776	101	50106	24.0956327	ppb		97
17) ACETONE	3.126	43	102953	168.1096476	ppb		100
18) IODOMETHANE	2.853	142	477678	120.0387504	ppb		99
19) CARBON DISULFIDE	2.788	76	151221	25.5864685	ppb		99
20) ALLYL CHLORIDE	3.039	76	160401	129.6826976	ppb		98
21) METHYLENE CHLORIDE	3.104	84	58890	25.6949152	ppb		97
22) METHYL ACETATE	3.187	43	312039	137.3981473	ppb	#	99
23) ACRYLONITRILE	3.586	53	161664	143.6185001	ppb		99
24) n-HEXANE	3.232	56	47086	24.2541179	ppb		91
25) TRANS-1,2-DICHLOROETHENE	3.203	96	56505	26.1223978	ppb		98
26) METHYL TERT-BUTYL ETHER	3.248	73	164199	26.3069154	ppb		94
27) 1,1-DICHLOROETHANE	3.560	63	117698	26.2847466	ppb		99
28) VINYL ACETATE	3.666	43	542678	93.6564099	ppb		98
29) DI-ISOPROPYL ETHER	3.448	45	208864	27.1797208	ppb		99
30) ETHYL TERT-BUTYL ETHER	3.653	59	216305	27.5109130	ppb		98
31) 2,2-DICHLOROPROPANE	3.927	77	50768	22.8253476	ppb		100
32) CIS-1,2-DICHLOROETHENE	3.862	96	64497	26.5061771	ppb		96
33) 2-BUTANONE (MEK)	4.168	43	207056	137.8904115	ppb		99
34) BROMOCHLOROMETHANE	3.978	130	40521	25.4137523	ppb		87
35) TETRAHYDROFURAN	4.107	42	25120	24.6629287	ppb		95
36) CHLOROFORM	4.001	83	108165	26.1269696	ppb		100
37) CYCLOHEXANE	3.991	84	73021	24.5065582	ppb		93

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_03.D
Acq On : 24 Jan 2019 9:16 am
Operator : 605
Sample : LCSD 1x WG1227840
Misc : water IS/SURR 19A06423
ALS Vial : 3 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 25 09:25:19 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
39)	1,1,1-TRICHLOROETHANE	4.139	97	90092	26.2397402	ppb		99
40)	CARBON TETRACHLORIDE	4.103	117	81133	23.7958284	ppb		99
41)	1,1-DICHLOROPROPENE	4.203	75	74744	26.3044567	ppb		98
42)	2,2,4-TRIMETHYLPENTANE	4.245	57	171397	23.5772528	ppb		100
43)	n-Heptane	4.280	71	33116	21.3916451	ppb	#	95
44)	BENZENE	4.348	78	230057	24.7823245	ppb		98
45)	TERT-AMYL METHYL ETHER	4.374	73	176559	26.0713443	ppb		99
46)	1,2-DICHLOROETHANE	4.460	62	95259	27.0964684	ppb		99
47)	T-AMYL ALCOHOL	4.454	59	50195	176.3927824	ppb		92
49)	TRICHLOROETHENE	4.673	130	62383	25.0742236	ppb	#	100
50)	METHYL CYCLOHEXANE	4.676	83	86326	23.7826454	ppb		97
51)	TERT-AMYL ETHYL ETHER	4.759	59	159050	27.2941760	ppb		97
52)	1,2-DICHLOROPROPANE	4.984	62	46908	26.7147220	ppb		99
53)	DIBROMOMETHANE	4.930	93	45061	27.6258260	ppb		95
54)	BROMODICHLOROMETHANE	5.004	83	80723	26.0982521	ppb		99
57)	2-CHLOROETHYL VINYL ETHER	5.312	63	271500	129.6887964	ppb		97
58)	CIS-1,3-DICHLOROPROPENE	5.380	75	96160	25.0013394	ppb		99
59)	4-METHYL-2-PENTANONE (...	5.740	43	458131	134.6682717	ppb		99
61)	TOLUENE	5.531	91	254975	24.0377352	ppb		99
62)	TRANS-1,3-DICHLOROPROPENE	5.779	75	92532	25.5248547	ppb		99
63)	1,1,2-TRICHLOROETHANE	5.888	97	57270	25.6955832	ppb		98
64)	TETRACHLOROETHENE	5.785	164	47881	23.0427647	ppb		99
65)	1,3-DICHLOROPROPANE	6.078	76	94779	25.4590640	ppb		99
66)	2-HEXANONE	6.280	58	192147	137.7906373	ppb		100
67)	CHLORODIBROMOMETHANE	6.017	129	63576	25.2813012	ppb		99
68)	1,2-DIBROMOETHANE	6.193	107	61898	25.7095561	ppb		100
69)	CHLOROBENZENE	6.531	112	164371	24.4944782	ppb		98
70)	1,1,1,2-TETRACHLOROETHANE	6.563	133	55384	24.1419203	ppb		100
71)	ETHYLBENZENE	6.525	106	83552	24.4443573	ppb		95
72)	M&P-XYLENE	6.618	106	209042	49.1669187	ppb		100
73)	O-XYLENE	6.923	106	98760	25.0206913	ppb		98
77)	STYRENE	6.959	104	168238	25.1867500	ppb		99
78)	BROMOFORM	7.004	173	46299	23.7015901	ppb		99
79)	ISOPROPYLBENZENE	7.136	105	254571	24.1456939	ppb		100
81)	BROMOBENZENE	7.425	77	115395	23.8699542	ppb		96
82)	1,1,2,2-TETRACHLOROETHANE	7.454	83	81532	23.6703818	ppb		99
83)	1,2,3-TRICHLOROPROPANE	7.557	110	25647	25.3480849	ppb		89
84)	TRANS-1,4-DICHLORO-2-B...	7.566	53	22169	20.6803129	ppb		96
85)	N-PROPYLBENZENE	7.412	91	313553	24.0589726	ppb		99
86)	4-ETHYLTOLUENE	7.476	105	254630	24.1668201	ppb		100
87)	2-CHLOROTOLUENE	7.528	91	209541	24.3774078	ppb		98
88)	4-CHLOROTOLUENE	7.627	91	194446	24.8042346	ppb		98
89)	1,3,5-TRIMETHYLBENZENE	7.525	105	218383	24.6052384	ppb		99
90)	TERT-BUTYLBENZENE	7.721	119	198237	25.0300637	ppb		98
91)	1,2,4-TRIMETHYLBENZENE	7.756	105	232829	24.7223921	ppb		99
92)	SEC-BUTYLBENZENE	7.808	105	298794	25.4710658	ppb		99
93)	1,3-DICHLOROBENZENE	7.914	146	154706	24.3628160	ppb		99
94)	P-ISOPROPYLTOLUENE	7.862	119	275903	25.1296487	ppb		99
95)	DICYCLOPENTADIENE	7.872	66	346490	25.9279583	ppb		100
96)	1,4-DICHLOROBENZENE	7.943	146	167292	24.6944990	ppb		94
97)	1,2,3-TRIMETHYLBENZENE	7.939	105	225091	24.4203075	ppb		99
98)	1,2-DICHLOROBENZENE	8.084	146	162021	24.8773860	ppb		100
99)	N-BUTYLBENZENE	8.013	91	274703	25.2156451	ppb		99
100)	1,2-DIBROMO-3-CHLOROPR...	8.335	157	26592	24.3230012	ppb		98
101)	1,2,4-TRICHLOROBENZENE	8.544	180	103676	23.8749162	ppb		99

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_03.D
Acq On : 24 Jan 2019 9:16 am
Operator : 605
Sample : LCSD 1x WG1227840
Misc : water IS/SURR 19A06423
ALS Vial : 3 Sample Multiplier: 1
InstName : VOCMS35

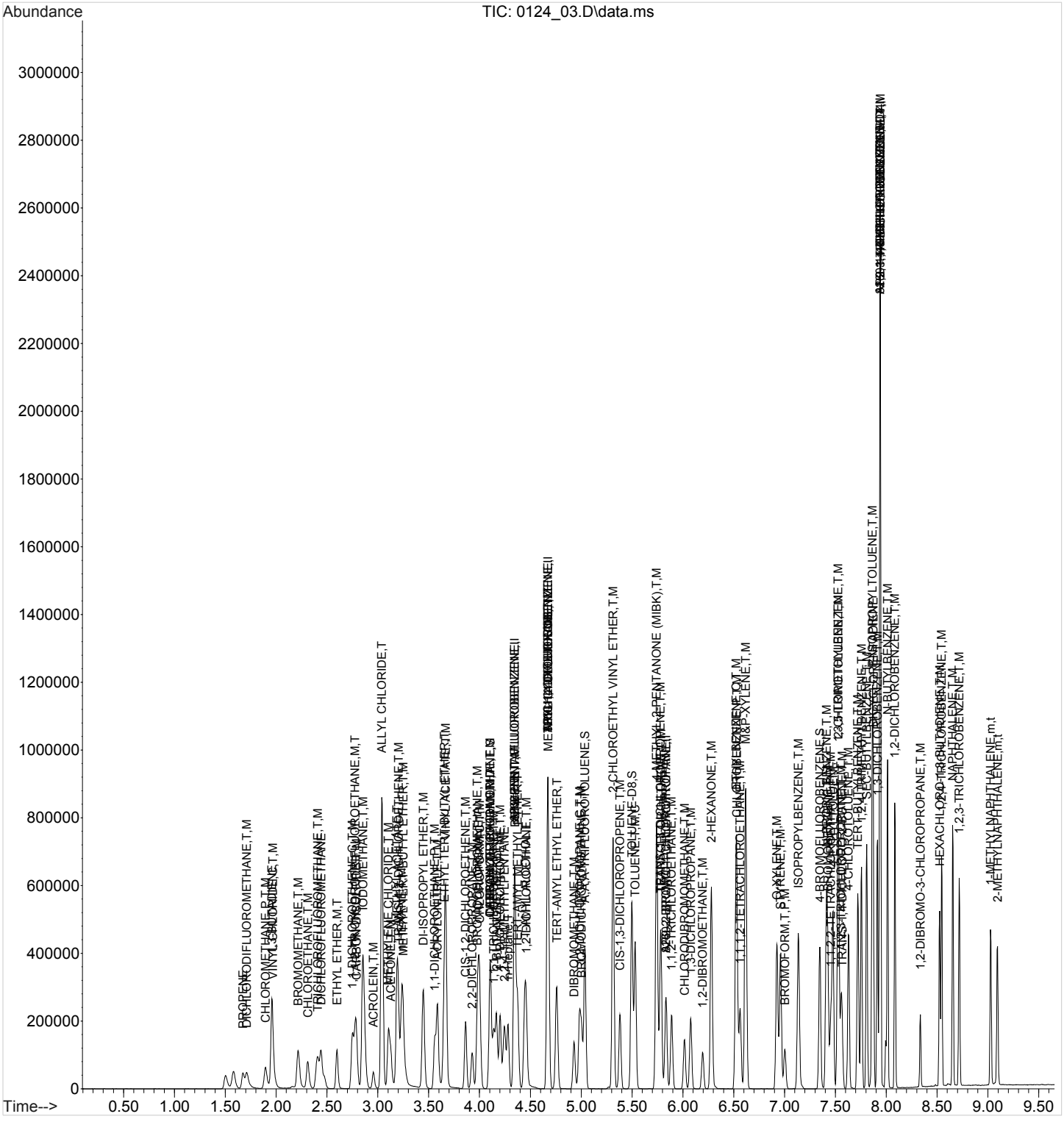
Quant Time: Jan 25 09:25:19 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) HEXACHLORO-1,3-BUTADIENE	8.525	225	48698	22.9298068	ppb	98
103) NAPHTHALENE	8.653	128	296626	23.3684926	ppb	100
104) 1,2,3-TRICHLOROBENZENE	8.717	180	92959	22.4628427	ppb	98
105) 1-METHYLNAPHTHALENE	9.026	142	123287	20.2950006	ppb	100
106) 2-METHYLNAPHTHALENE	9.094	142	111313	20.6734287	ppb	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_03.D
Acq On : 24 Jan 2019 9:16 am
Operator : 605
Sample : LCSD 1x WG1227840
Misc : water IS/SURR 19A06423
ALS Vial : 3 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 25 09:25:19 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_16.D
Acq On : 24 Jan 2019 3:01 pm
Operator : 605
Sample : L1063581-08 1x WG1227840
Misc : water
ALS Vial : 16 Sample Multiplier: 1
InstName : VOCMS35

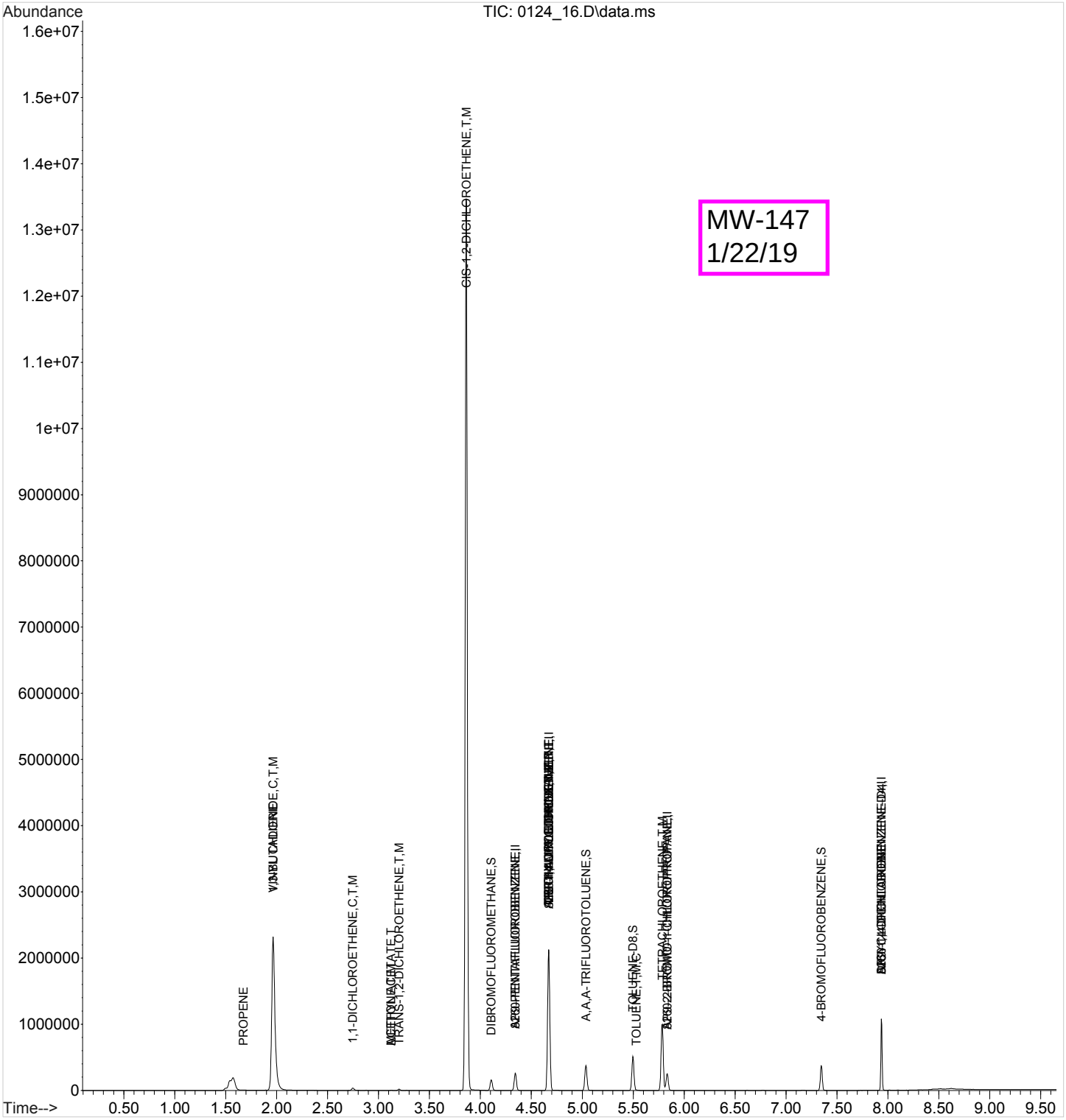
Quant Time: Jan 26 11:04:07 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 8260-PENTAFLUOROBENZENE	4.342	168	132966	40.0000000	ppb		0.00
48) 8260-1,4-DIFLUOROBENZENE	4.673	114	243789	40.0000000	ppb		0.00
56) 8260-2-BROMO-1-CHLOROP...	5.833	79	38446	40.0000000	ppb		0.00
76) 8260-1,4-DICHLOROBENZE...	7.936	152	136193	40.0000000	ppb		0.00
107) AP9-PENTAFLUOROBENZENE	4.342	168	132966	40.0000000	ppb		0.00
119) AP9-1,4-DIFLUOROBENZENE	4.673	114	243789	40.0000000	ppb		0.00
124) AP9-2-BROMO-1-CHLOROPR...	5.833	79	38446	40.0000000	ppb	#	0.00
128) AP9-1,4-DICHLOROBENZEN...	7.936	152	136193	40.0000000	ppb		0.00
System Monitoring Compounds							
38) DIBROMOFLUOROMETHANE	4.107	111	77690	41.4332395	ppb		0.00
Spiked Amount 40.000	Range 79 - 121		Recovery = 103.58%				
55) A,A,A-TRIFLUOROTOLUENE	5.036	146	116685	36.6431349	ppb		0.00
Spiked Amount 40.000	Range 90 - 116		Recovery = 91.61%				
60) TOLUENE-D8	5.496	98	275069	39.7336263	ppb		0.00
Spiked Amount 40.000	Range 90 - 115		Recovery = 99.33%				
80) 4-BROMOFLUOROBENZENE	7.345	95	98620	37.9807214	ppb		0.00
Spiked Amount 40.000	Range 80 - 120		Recovery = 94.95%				
Target Compounds							Qvalue
4) PROPENE	1.673	41	1732	1.2632778	ppb	#	83
7) VINYL CHLORIDE	1.965	62	3120729	971.7799962	ppb		100
8) 1,3-BUTADIENE	1.965	39	1013	0.3730770	ppb	#	1
15) 1,1-DICHLOROETHENE	2.747	96	11182	6.8300252	ppb		92
17) ACETONE	3.123	43	789	1.5142549	ppb	#	79
22) METHYL ACETATE	3.123	43	789	0.4083357	ppb	#	56
25) TRANS-1,2-DICHLOROETHENE	3.200	96	5298	2.8787667	ppb		93
32) CIS-1,2-DICHLOROETHENE	3.862	96	4061666	1961.9148066	ppb		96
49) TRICHLOROETHENE	4.670	130	415683	179.1650071	ppb	#	99
50) METHYL CYCLOHEXANE	4.670	83	8374	1.6302201	ppb	#	23
51) TERT-AMYL ETHYL ETHER	4.670	59	47636	8.7659964	ppb	#	41
61) TOLUENE	5.531	91	2105	0.2194827	ppb		96
64) TETRACHLOROETHENE	5.785	164	184506	98.2051301	ppb		98
95) DICYCLOPENTADIENE	7.936	66	3911	0.3310940	ppb	#	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_16.D
Acq On : 24 Jan 2019 3:01 pm
Operator : 605
Sample : L1063581-08 1x WG1227840
Misc : water
ALS Vial : 16 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 26 11:04:07 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_17.D
Acq On : 24 Jan 2019 3:21 pm
Operator : 605
Sample : L1063581-09 1x WG1227840
Misc : water
ALS Vial : 17 Sample Multiplier: 1
InstName : VOCMS35

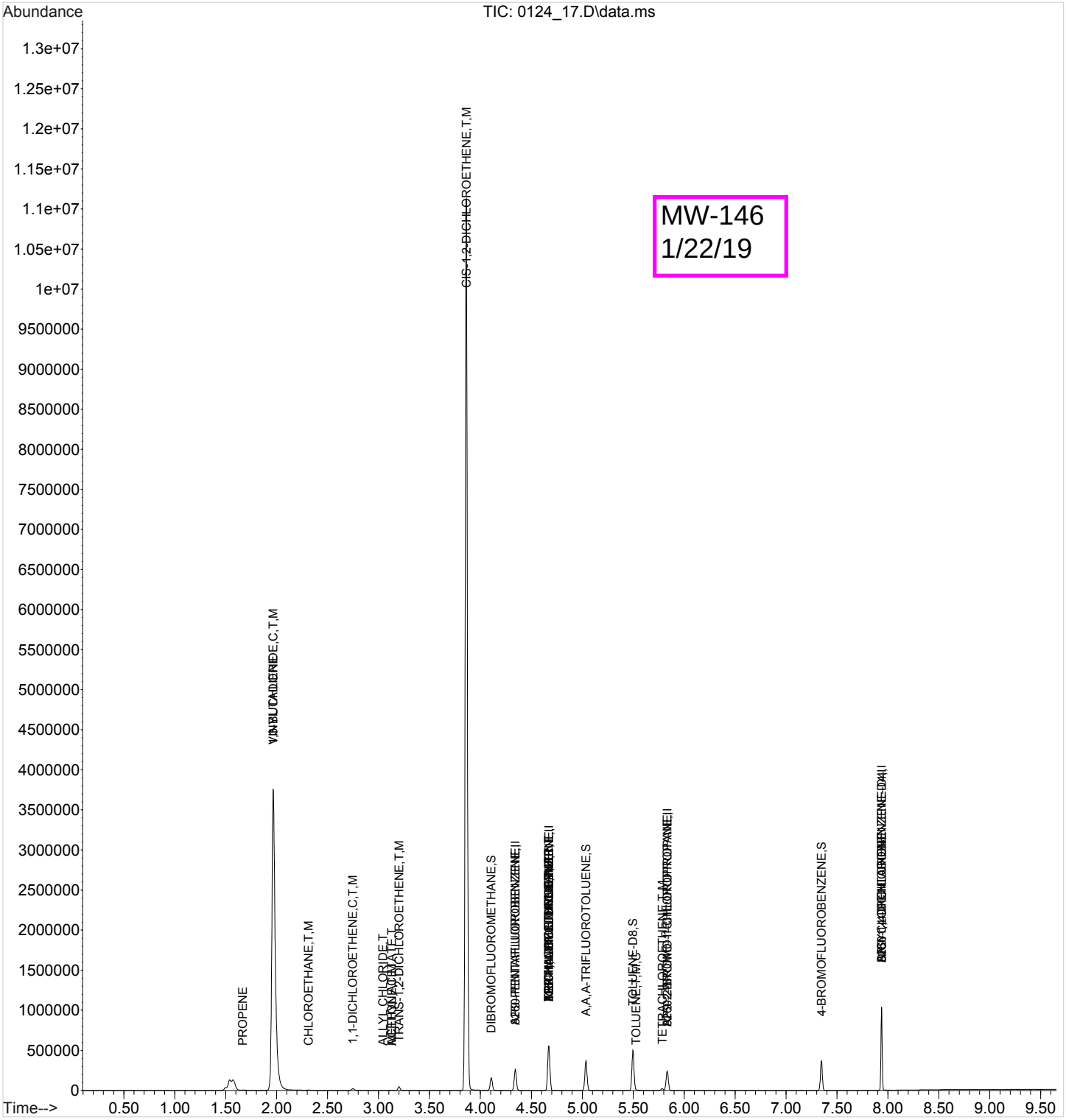
Quant Time: Jan 26 11:05:33 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) 8260-PENTAFLUOROBENZENE	4.341	168	133644	40.0000000	ppb		0.00
48) 8260-1,4-DIFLUOROBENZENE	4.673	114	227943	40.0000000	ppb		0.00
56) 8260-2-BROMO-1-CHLOROP...	5.833	79	37021	40.0000000	ppb		0.00
76) 8260-1,4-DICHLOROBENZE...	7.936	152	132383	40.0000000	ppb		0.00
107) AP9-PENTAFLUOROBENZENE	4.341	168	133644	40.0000000	ppb		0.00
119) AP9-1,4-DIFLUOROBENZENE	4.673	114	227943	40.0000000	ppb		0.00
124) AP9-2-BROMO-1-CHLOROPR...	5.833	79	37021	40.0000000	ppb	#	0.00
128) AP9-1,4-DICHLOROBENZEN...	7.936	152	132383	40.0000000	ppb		0.00
System Monitoring Compounds							
38) DIBROMOFLUOROMETHANE	4.107	111	76435	40.5571265	ppb		0.00
Spiked Amount 40.000	Range 79 - 121		Recovery = 101.39%				
55) A,A,A-TRIFLUOROTOLUENE	5.036	146	115767	38.8821450	ppb		0.00
Spiked Amount 40.000	Range 90 - 116		Recovery = 97.21%				
60) TOLUENE-D8	5.496	98	270527	40.5816954	ppb		0.00
Spiked Amount 40.000	Range 90 - 115		Recovery = 101.45%				
80) 4-BROMOFLUOROBENZENE	7.348	95	95588	37.8725156	ppb		0.00
Spiked Amount 40.000	Range 80 - 120		Recovery = 94.68%				
Target Compounds							Qvalue
4) PROPENE	1.666	41	2405	1.7452482	ppb	#	80
7) VINYL CHLORIDE	1.965	62	5273282	1633.7441047	ppb		99
8) 1,3-BUTADIENE	1.965	39	1955	0.7163528	ppb	#	1
10) CHLOROETHANE	2.313	64	3127	1.6019454	ppb	#	88
15) 1,1-DICHLOROETHENE	2.747	96	7309	4.4417276	ppb		88
17) ACETONE	3.129	43	1038	1.9820312	ppb	#	66
20) ALLYL CHLORIDE	3.042	76	187	0.1767975	ppb	#	1
22) METHYL ACETATE	3.129	43	1038	0.5344768	ppb	#	56
25) TRANS-1,2-DICHLOROETHENE	3.200	96	13414	7.2517689	ppb		95
32) CIS-1,2-DICHLOROETHENE	3.862	96	3390701	1629.5082744	ppb		96
49) TRICHLOROETHENE	4.669	130	46932	21.6345485	ppb	#	99
50) METHYL CYCLOHEXANE	4.673	83	3548	0.2237983	ppb	#	34
51) TERT-AMYL ETHYL ETHER	4.669	59	5682	1.1182916	ppb	#	78
61) TOLUENE	5.528	91	3107	0.3364283	ppb		98
64) TETRACHLOROETHENE	5.785	164	4134	2.2850577	ppb		95
95) DICYCLOPENTADIENE	7.936	66	3553	0.3094434	ppb	#	70

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\012419\
Data File : 0124_17.D
Acq On : 24 Jan 2019 3:21 pm
Operator : 605
Sample : L1063581-09 1x WG1227840
Misc : water
ALS Vial : 17 Sample Multiplier: 1
InstName : VOCMS35

Quant Time: Jan 26 11:05:33 2019
Quant Method : C:\msdchem\1\methods\V835A18S.M
Quant Title : Env. Science Corp. 8260B/6210D/624 - VOCMS35
QLast Update : Sun Jan 20 11:26:33 2019
Response via : Initial Calibration



Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 08, 2019

PES Environmental, Inc.- WA

Sample Delivery Group:	L1091936
Samples Received:	04/24/2019
Project Number:	1413.001.05.601
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman
	1215 Fourth Ave., Suite 1350
	Seattle, WA 98161

Entire Report Reviewed By: Brian Ford

Brian Ford
Project Manager

MW103-042219 L1091936-01 GW

Collected by: KZ/BH | Collected date/time: 04/22/19 15:05 | Received date/time: 04/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 16:48	04/25/19 16:48	BMB	Mt. Juliet, TN

MW111-042219 L1091936-02 GW

Collected by: KZ/BH | Collected date/time: 04/22/19 15:05 | Received date/time: 04/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 17:08	04/25/19 17:08	BMB	Mt. Juliet, TN

MW104-042319 L1091936-03 GW

Collected by: KZ/BH | Collected date/time: 04/23/19 08:35 | Received date/time: 04/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1273424	1	04/29/19 17:35	04/29/19 17:35	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1271082	1	04/24/19 19:20	04/24/19 19:20	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1271094	1	04/24/19 22:37	04/24/19 22:37	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271169	5	04/26/19 14:47	05/07/19 00:32	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1271515	1	04/25/19 14:32	04/25/19 14:32	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1271298	1	04/26/19 13:42	04/26/19 13:42	MEL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271083	1	04/24/19 18:16	04/24/19 18:16	JCP	Mt. Juliet, TN

MW105-042319 L1091936-04 GW

Collected by: KZ/BH | Collected date/time: 04/23/19 10:35 | Received date/time: 04/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1273424	1	04/29/19 17:43	04/29/19 17:43	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1271082	1	04/24/19 19:35	04/24/19 19:35	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1271094	1	04/24/19 23:17	04/24/19 23:17	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271169	5	04/26/19 14:47	05/07/19 00:37	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1271515	1	04/25/19 14:56	04/25/19 14:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1271298	1	04/26/19 13:45	04/26/19 13:45	MEL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271083	1	04/24/19 18:36	04/24/19 18:36	JCP	Mt. Juliet, TN

MW147-042319 L1091936-05 GW

Collected by: KZ/BH | Collected date/time: 04/23/19 14:00 | Received date/time: 04/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1273424	1	04/29/19 17:50	04/29/19 17:50	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1271082	1	04/24/19 19:49	04/24/19 19:49	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1271094	1	04/24/19 23:34	04/24/19 23:34	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271169	5	04/26/19 14:47	05/07/19 00:43	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1271515	1	04/25/19 15:20	04/25/19 15:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1271298	1	04/26/19 13:49	04/26/19 13:49	MEL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1271298	10	04/26/19 14:59	04/26/19 14:59	MEL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271083	1	04/24/19 18:56	04/24/19 18:56	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1272362	10	04/26/19 12:43	04/26/19 12:43	ACG	Mt. Juliet, TN

TRIP BLANK-042319 L1091936-06 GW

Collected by	Collected date/time	Received date/time
KZ/BH	04/23/19 00:00	04/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1271515	1	04/25/19 12:32	04/25/19 12:32	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271083	1	04/24/19 16:36	04/24/19 16:36	JCP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.66	J J0 J3 J4	1.05	25.0	1	04/25/2019 16:48	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 16:48	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 16:48	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 16:48	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 16:48	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 16:48	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 16:48	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 16:48	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 16:48	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 16:48	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 16:48	WG1271705
Carbon disulfide	U		0.101	0.500	1	04/25/2019 16:48	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 16:48	WG1271705
Chlorobenzene	U		0.140	0.500	1	04/25/2019 16:48	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 16:48	WG1271705
Chloroethane	U	J0	0.141	2.50	1	04/25/2019 16:48	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 16:48	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 16:48	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 16:48	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 16:48	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 16:48	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 16:48	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 16:48	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 16:48	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 16:48	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 16:48	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 16:48	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 16:48	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 16:48	WG1271705
1,1-Dichloroethene	1.22		0.188	0.500	1	04/25/2019 16:48	WG1271705
cis-1,2-Dichloroethene	88.0		0.0933	0.500	1	04/25/2019 16:48	WG1271705
trans-1,2-Dichloroethene	0.209	J	0.152	0.500	1	04/25/2019 16:48	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 16:48	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 16:48	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 16:48	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 16:48	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 16:48	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 16:48	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 16:48	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 16:48	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 16:48	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 16:48	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 16:48	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 16:48	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 16:48	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 16:48	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 16:48	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 16:48	WG1271705
Methylene Chloride	U		1.07	2.50	1	04/25/2019 16:48	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 16:48	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 16:48	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 16:48	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 16:48	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 16:48	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 16:48	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 16:48	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 16:48	WG1271705
Tetrachloroethene	U		0.199	0.500	1	04/25/2019 16:48	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 16:48	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 16:48	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 16:48	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 16:48	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 16:48	WG1271705
Trichloroethene	3.09		0.153	0.500	1	04/25/2019 16:48	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 16:48	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 16:48	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 16:48	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 16:48	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 16:48	WG1271705
Vinyl acetate	U		0.645	5.00	1	04/25/2019 16:48	WG1271705
Vinyl chloride	32.3	J0	0.118	0.500	1	04/25/2019 16:48	WG1271705
Xylenes, Total	U		0.316	1.50	1	04/25/2019 16:48	WG1271705
(S) Toluene-d8	*100*			*80.0-120*		*04/25/2019 16:48*	WG1271705
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*04/25/2019 16:48*	WG1271705
(S) 1,2-Dichloroethane-d4	*91.6*			*70.0-130*		*04/25/2019 16:48*	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.17	J J0 J3 J4	1.05	25.0	1	04/25/2019 17:08	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 17:08	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 17:08	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 17:08	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 17:08	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 17:08	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 17:08	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 17:08	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 17:08	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 17:08	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 17:08	WG1271705
Carbon disulfide	U		0.101	0.500	1	04/25/2019 17:08	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 17:08	WG1271705
Chlorobenzene	U		0.140	0.500	1	04/25/2019 17:08	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 17:08	WG1271705
Chloroethane	0.255	J J0	0.141	2.50	1	04/25/2019 17:08	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 17:08	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 17:08	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 17:08	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 17:08	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 17:08	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 17:08	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 17:08	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 17:08	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 17:08	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 17:08	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 17:08	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 17:08	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 17:08	WG1271705
1,1-Dichloroethene	U		0.188	0.500	1	04/25/2019 17:08	WG1271705
cis-1,2-Dichloroethene	3.18		0.0933	0.500	1	04/25/2019 17:08	WG1271705
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/25/2019 17:08	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 17:08	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 17:08	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 17:08	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 17:08	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 17:08	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 17:08	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 17:08	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 17:08	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 17:08	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 17:08	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 17:08	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 17:08	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 17:08	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 17:08	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 17:08	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 17:08	WG1271705
Methylene Chloride	U		1.07	2.50	1	04/25/2019 17:08	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 17:08	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 17:08	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 17:08	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 17:08	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 17:08	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 17:08	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 17:08	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 17:08	WG1271705
Tetrachloroethene	U		0.199	0.500	1	04/25/2019 17:08	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 17:08	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 17:08	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 17:08	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 17:08	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 17:08	WG1271705
Trichloroethene	U		0.153	0.500	1	04/25/2019 17:08	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 17:08	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 17:08	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 17:08	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 17:08	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 17:08	WG1271705
Vinyl acetate	U		0.645	5.00	1	04/25/2019 17:08	WG1271705
Vinyl chloride	19.5	J0	0.118	0.500	1	04/25/2019 17:08	WG1271705
Xylenes, Total	U		0.316	1.50	1	04/25/2019 17:08	WG1271705
(S) Toluene-d8	*100*			*80.0-120*		*04/25/2019 17:08*	WG1271705
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*04/25/2019 17:08*	WG1271705
(S) 1,2-Dichloroethane-d4	*93.3*			*70.0-130*		*04/25/2019 17:08*	WG1271705

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	196000		2710	20000	1	04/29/2019 17:35	WG1273424

Sample Narrative:

L1091936-03 WG1273424: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18600		51.9	1000	1	04/24/2019 19:20	WG1271082
Nitrate	U		22.7	100	1	04/24/2019 19:20	WG1271082
Sulfate	5960		77.4	5000	1	04/24/2019 19:20	WG1271082

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5970		102	1000	1	04/24/2019 22:37	WG1271094

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5030		75.0	500	5	05/07/2019 00:32	WG1271169
Manganese	285		1.25	25.0	5	05/07/2019 00:32	WG1271169

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	174		31.6	100	1	04/25/2019 14:32	WG1271515
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/25/2019 14:32*	WG1271515

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	437		0.287	0.678	1	04/26/2019 13:42	WG1271298
Ethane	2.60		0.296	1.29	1	04/26/2019 13:42	WG1271298
Ethene	17.7		0.422	1.27	1	04/26/2019 13:42	WG1271298

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	23.4	J J0	1.05	25.0	1	04/24/2019 18:16	WG1271083
Acrylonitrile	U		0.873	5.00	1	04/24/2019 18:16	WG1271083
Benzene	U		0.0896	0.500	1	04/24/2019 18:16	WG1271083
Bromobenzene	U		0.133	0.500	1	04/24/2019 18:16	WG1271083
Bromodichloromethane	U		0.0800	0.500	1	04/24/2019 18:16	WG1271083
Bromochloromethane	U		0.145	0.500	1	04/24/2019 18:16	WG1271083
Bromoform	U		0.186	0.500	1	04/24/2019 18:16	WG1271083
Bromomethane	U	J0	0.157	2.50	1	04/24/2019 18:16	WG1271083
n-Butylbenzene	U		0.143	0.500	1	04/24/2019 18:16	WG1271083
sec-Butylbenzene	U		0.134	0.500	1	04/24/2019 18:16	WG1271083
tert-Butylbenzene	U		0.183	0.500	1	04/24/2019 18:16	WG1271083
Carbon disulfide	U		0.101	0.500	1	04/24/2019 18:16	WG1271083
Carbon tetrachloride	U		0.159	0.500	1	04/24/2019 18:16	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	04/24/2019 18:16	WG1271083
Chlorodibromomethane	U		0.128	0.500	1	04/24/2019 18:16	WG1271083
Chloroethane	U	J0	0.141	2.50	1	04/24/2019 18:16	WG1271083
Chloroform	U		0.0860	0.500	1	04/24/2019 18:16	WG1271083
Chloromethane	U		0.153	1.25	1	04/24/2019 18:16	WG1271083
2-Chlorotoluene	U		0.111	0.500	1	04/24/2019 18:16	WG1271083
4-Chlorotoluene	U		0.0972	0.500	1	04/24/2019 18:16	WG1271083
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/24/2019 18:16	WG1271083
1,2-Dibromoethane	U		0.193	0.500	1	04/24/2019 18:16	WG1271083
Dibromomethane	U		0.117	0.500	1	04/24/2019 18:16	WG1271083
1,2-Dichlorobenzene	U		0.101	0.500	1	04/24/2019 18:16	WG1271083
1,3-Dichlorobenzene	U		0.130	0.500	1	04/24/2019 18:16	WG1271083
1,4-Dichlorobenzene	U		0.121	0.500	1	04/24/2019 18:16	WG1271083
Dichlorodifluoromethane	U		0.127	2.50	1	04/24/2019 18:16	WG1271083
1,1-Dichloroethane	U		0.114	0.500	1	04/24/2019 18:16	WG1271083
1,2-Dichloroethane	U		0.108	0.500	1	04/24/2019 18:16	WG1271083
1,1-Dichloroethene	5.86		0.188	0.500	1	04/24/2019 18:16	WG1271083
cis-1,2-Dichloroethene	162		0.0933	0.500	1	04/24/2019 18:16	WG1271083
trans-1,2-Dichloroethene	2.49		0.152	0.500	1	04/24/2019 18:16	WG1271083
1,2-Dichloropropane	U		0.190	0.500	1	04/24/2019 18:16	WG1271083
1,1-Dichloropropene	U		0.128	0.500	1	04/24/2019 18:16	WG1271083
1,3-Dichloropropane	U		0.147	1.00	1	04/24/2019 18:16	WG1271083
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/24/2019 18:16	WG1271083
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/24/2019 18:16	WG1271083
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/24/2019 18:16	WG1271083
2,2-Dichloropropane	U		0.0929	0.500	1	04/24/2019 18:16	WG1271083
Di-isopropyl ether	U		0.0924	0.500	1	04/24/2019 18:16	WG1271083
Ethylbenzene	U		0.158	0.500	1	04/24/2019 18:16	WG1271083
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/24/2019 18:16	WG1271083
2-Hexanone	U		0.757	5.00	1	04/24/2019 18:16	WG1271083
n-Hexane	U		0.305	5.00	1	04/24/2019 18:16	WG1271083
Iodomethane	U		0.377	10.0	1	04/24/2019 18:16	WG1271083
Isopropylbenzene	U		0.126	0.500	1	04/24/2019 18:16	WG1271083
p-Isopropyltoluene	U		0.138	0.500	1	04/24/2019 18:16	WG1271083
2-Butanone (MEK)	4.72	J	1.28	5.00	1	04/24/2019 18:16	WG1271083
Methylene Chloride	U		1.07	2.50	1	04/24/2019 18:16	WG1271083
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/24/2019 18:16	WG1271083
Methyl tert-butyl ether	U		0.102	0.500	1	04/24/2019 18:16	WG1271083
Naphthalene	U		0.174	2.50	1	04/24/2019 18:16	WG1271083
n-Propylbenzene	U		0.162	0.500	1	04/24/2019 18:16	WG1271083
Styrene	U		0.117	0.500	1	04/24/2019 18:16	WG1271083
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/24/2019 18:16	WG1271083
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/24/2019 18:16	WG1271083
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/24/2019 18:16	WG1271083
Tetrachloroethene	15.9		0.199	0.500	1	04/24/2019 18:16	WG1271083
Toluene	U		0.412	0.500	1	04/24/2019 18:16	WG1271083
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/24/2019 18:16	WG1271083
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/24/2019 18:16	WG1271083
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/24/2019 18:16	WG1271083
1,1,2-Trichloroethane	U		0.186	0.500	1	04/24/2019 18:16	WG1271083
Trichloroethene	56.9		0.153	0.500	1	04/24/2019 18:16	WG1271083
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/24/2019 18:16	WG1271083
1,2,3-Trichloropropane	U		0.247	2.50	1	04/24/2019 18:16	WG1271083
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/24/2019 18:16	WG1271083
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/24/2019 18:16	WG1271083
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/24/2019 18:16	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	04/24/2019 18:16	WG1271083
Vinyl chloride	21.1	J0	0.118	0.500	1	04/24/2019 18:16	WG1271083
Xylenes, Total	U		0.316	1.50	1	04/24/2019 18:16	WG1271083
(S) Toluene-d8	*100*			*80.0-120*		*04/24/2019 18:16*	WG1271083
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*04/24/2019 18:16*	WG1271083
(S) 1,2-Dichloroethane-d4	*92.0*			*70.0-130*		*04/24/2019 18:16*	WG1271083

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	275000		2710	20000	1	04/29/2019 17:43	WG1273424

Sample Narrative:

L1091936-04 WG1273424: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	37900		51.9	1000	1	04/24/2019 19:35	WG1271082
Nitrate	U		22.7	100	1	04/24/2019 19:35	WG1271082
Sulfate	5810		77.4	5000	1	04/24/2019 19:35	WG1271082

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4060		102	1000	1	04/24/2019 23:17	WG1271094

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5270		75.0	500	5	05/07/2019 00:37	WG1271169
Manganese	893		1.25	25.0	5	05/07/2019 00:37	WG1271169

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	04/25/2019 14:56	WG1271515
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/25/2019 14:56*	WG1271515

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1660		0.287	0.678	1	04/26/2019 13:45	WG1271298
Ethane	U		0.296	1.29	1	04/26/2019 13:45	WG1271298
Ethene	U		0.422	1.27	1	04/26/2019 13:45	WG1271298

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.22	J J0	1.05	25.0	1	04/24/2019 18:36	WG1271083
Acrylonitrile	U		0.873	5.00	1	04/24/2019 18:36	WG1271083
Benzene	U		0.0896	0.500	1	04/24/2019 18:36	WG1271083
Bromobenzene	U		0.133	0.500	1	04/24/2019 18:36	WG1271083
Bromodichloromethane	U		0.0800	0.500	1	04/24/2019 18:36	WG1271083
Bromochloromethane	U		0.145	0.500	1	04/24/2019 18:36	WG1271083
Bromoform	U		0.186	0.500	1	04/24/2019 18:36	WG1271083
Bromomethane	U	J0	0.157	2.50	1	04/24/2019 18:36	WG1271083
n-Butylbenzene	U		0.143	0.500	1	04/24/2019 18:36	WG1271083
sec-Butylbenzene	U		0.134	0.500	1	04/24/2019 18:36	WG1271083
tert-Butylbenzene	U		0.183	0.500	1	04/24/2019 18:36	WG1271083
Carbon disulfide	U		0.101	0.500	1	04/24/2019 18:36	WG1271083
Carbon tetrachloride	U		0.159	0.500	1	04/24/2019 18:36	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	04/24/2019 18:36	WG1271083
Chlorodibromomethane	U		0.128	0.500	1	04/24/2019 18:36	WG1271083
Chloroethane	U	J0	0.141	2.50	1	04/24/2019 18:36	WG1271083
Chloroform	U		0.0860	0.500	1	04/24/2019 18:36	WG1271083
Chloromethane	U		0.153	1.25	1	04/24/2019 18:36	WG1271083
2-Chlorotoluene	U		0.111	0.500	1	04/24/2019 18:36	WG1271083
4-Chlorotoluene	U		0.0972	0.500	1	04/24/2019 18:36	WG1271083
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/24/2019 18:36	WG1271083
1,2-Dibromoethane	U		0.193	0.500	1	04/24/2019 18:36	WG1271083
Dibromomethane	U		0.117	0.500	1	04/24/2019 18:36	WG1271083
1,2-Dichlorobenzene	U		0.101	0.500	1	04/24/2019 18:36	WG1271083
1,3-Dichlorobenzene	U		0.130	0.500	1	04/24/2019 18:36	WG1271083
1,4-Dichlorobenzene	U		0.121	0.500	1	04/24/2019 18:36	WG1271083
Dichlorodifluoromethane	U		0.127	2.50	1	04/24/2019 18:36	WG1271083
1,1-Dichloroethane	U		0.114	0.500	1	04/24/2019 18:36	WG1271083
1,2-Dichloroethane	U		0.108	0.500	1	04/24/2019 18:36	WG1271083
1,1-Dichloroethene	U		0.188	0.500	1	04/24/2019 18:36	WG1271083
cis-1,2-Dichloroethene	0.917		0.0933	0.500	1	04/24/2019 18:36	WG1271083
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/24/2019 18:36	WG1271083
1,2-Dichloropropane	U		0.190	0.500	1	04/24/2019 18:36	WG1271083
1,1-Dichloropropene	U		0.128	0.500	1	04/24/2019 18:36	WG1271083
1,3-Dichloropropane	U		0.147	1.00	1	04/24/2019 18:36	WG1271083
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/24/2019 18:36	WG1271083
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/24/2019 18:36	WG1271083
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/24/2019 18:36	WG1271083
2,2-Dichloropropane	U		0.0929	0.500	1	04/24/2019 18:36	WG1271083
Di-isopropyl ether	U		0.0924	0.500	1	04/24/2019 18:36	WG1271083
Ethylbenzene	U		0.158	0.500	1	04/24/2019 18:36	WG1271083
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/24/2019 18:36	WG1271083
2-Hexanone	U		0.757	5.00	1	04/24/2019 18:36	WG1271083
n-Hexane	U		0.305	5.00	1	04/24/2019 18:36	WG1271083
Iodomethane	U		0.377	10.0	1	04/24/2019 18:36	WG1271083
Isopropylbenzene	U		0.126	0.500	1	04/24/2019 18:36	WG1271083
p-Isopropyltoluene	U		0.138	0.500	1	04/24/2019 18:36	WG1271083
2-Butanone (MEK)	U		1.28	5.00	1	04/24/2019 18:36	WG1271083
Methylene Chloride	U		1.07	2.50	1	04/24/2019 18:36	WG1271083
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/24/2019 18:36	WG1271083
Methyl tert-butyl ether	U		0.102	0.500	1	04/24/2019 18:36	WG1271083
Naphthalene	U		0.174	2.50	1	04/24/2019 18:36	WG1271083
n-Propylbenzene	U		0.162	0.500	1	04/24/2019 18:36	WG1271083
Styrene	U		0.117	0.500	1	04/24/2019 18:36	WG1271083
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/24/2019 18:36	WG1271083
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/24/2019 18:36	WG1271083
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/24/2019 18:36	WG1271083
Tetrachloroethene	U		0.199	0.500	1	04/24/2019 18:36	WG1271083
Toluene	U		0.412	0.500	1	04/24/2019 18:36	WG1271083
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/24/2019 18:36	WG1271083
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/24/2019 18:36	WG1271083
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/24/2019 18:36	WG1271083
1,1,2-Trichloroethane	U		0.186	0.500	1	04/24/2019 18:36	WG1271083
Trichloroethene	U		0.153	0.500	1	04/24/2019 18:36	WG1271083
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/24/2019 18:36	WG1271083
1,2,3-Trichloropropane	U		0.247	2.50	1	04/24/2019 18:36	WG1271083
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/24/2019 18:36	WG1271083
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/24/2019 18:36	WG1271083
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/24/2019 18:36	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	04/24/2019 18:36	WG1271083
Vinyl chloride	0.238	J J0	0.118	0.500	1	04/24/2019 18:36	WG1271083
Xylenes, Total	U		0.316	1.50	1	04/24/2019 18:36	WG1271083
(S) Toluene-d8	*101*			*80.0-120*		*04/24/2019 18:36*	WG1271083
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*04/24/2019 18:36*	WG1271083
(S) 1,2-Dichloroethane-d4	*93.1*			*70.0-130*		*04/24/2019 18:36*	WG1271083

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	346000		2710	20000	1	04/29/2019 17:50	WG1273424

Sample Narrative:

L1091936-05 WG1273424: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26900		51.9	1000	1	04/24/2019 19:49	WG1271082
Nitrate	U		22.7	100	1	04/24/2019 19:49	WG1271082
Sulfate	28100		77.4	5000	1	04/24/2019 19:49	WG1271082

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	13700		102	1000	1	04/24/2019 23:34	WG1271094

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4390		75.0	500	5	05/07/2019 00:43	WG1271169
Manganese	787		1.25	25.0	5	05/07/2019 00:43	WG1271169

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	139		31.6	100	1	04/25/2019 15:20	WG1271515
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/25/2019 15:20*	WG1271515

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	8110		2.87	6.78	10	04/26/2019 14:59	WG1271298
Ethane	U		0.296	1.29	1	04/26/2019 13:49	WG1271298
Ethene	158		0.422	1.27	1	04/26/2019 13:49	WG1271298

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.91	J JO	1.05	25.0	1	04/24/2019 18:56	WG1271083
Acrylonitrile	U		0.873	5.00	1	04/24/2019 18:56	WG1271083
Benzene	U		0.0896	0.500	1	04/24/2019 18:56	WG1271083
Bromobenzene	U		0.133	0.500	1	04/24/2019 18:56	WG1271083
Bromodichloromethane	U		0.0800	0.500	1	04/24/2019 18:56	WG1271083
Bromochloromethane	U		0.145	0.500	1	04/24/2019 18:56	WG1271083
Bromoform	U		0.186	0.500	1	04/24/2019 18:56	WG1271083
Bromomethane	U	JO	0.157	2.50	1	04/24/2019 18:56	WG1271083
n-Butylbenzene	U		0.143	0.500	1	04/24/2019 18:56	WG1271083
sec-Butylbenzene	U		0.134	0.500	1	04/24/2019 18:56	WG1271083
tert-Butylbenzene	U		0.183	0.500	1	04/24/2019 18:56	WG1271083
Carbon disulfide	U		0.101	0.500	1	04/24/2019 18:56	WG1271083
Carbon tetrachloride	U		0.159	0.500	1	04/24/2019 18:56	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	04/24/2019 18:56	WG1271083
Chlorodibromomethane	U		0.128	0.500	1	04/24/2019 18:56	WG1271083
Chloroethane	U	J0	0.141	2.50	1	04/24/2019 18:56	WG1271083
Chloroform	U		0.0860	0.500	1	04/24/2019 18:56	WG1271083
Chloromethane	U		0.153	1.25	1	04/24/2019 18:56	WG1271083
2-Chlorotoluene	U		0.111	0.500	1	04/24/2019 18:56	WG1271083
4-Chlorotoluene	U		0.0972	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/24/2019 18:56	WG1271083
1,2-Dibromoethane	U		0.193	0.500	1	04/24/2019 18:56	WG1271083
Dibromomethane	U		0.117	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dichlorobenzene	U		0.101	0.500	1	04/24/2019 18:56	WG1271083
1,3-Dichlorobenzene	U		0.130	0.500	1	04/24/2019 18:56	WG1271083
1,4-Dichlorobenzene	U		0.121	0.500	1	04/24/2019 18:56	WG1271083
Dichlorodifluoromethane	U		0.127	2.50	1	04/24/2019 18:56	WG1271083
1,1-Dichloroethane	U		0.114	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dichloroethane	U		0.108	0.500	1	04/24/2019 18:56	WG1271083
1,1-Dichloroethene	1.75		0.188	0.500	1	04/24/2019 18:56	WG1271083
cis-1,2-Dichloroethene	322		0.933	5.00	10	04/26/2019 12:43	WG1272362
trans-1,2-Dichloroethene	1.47		0.152	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dichloropropane	U		0.190	0.500	1	04/24/2019 18:56	WG1271083
1,1-Dichloropropene	U		0.128	0.500	1	04/24/2019 18:56	WG1271083
1,3-Dichloropropane	U		0.147	1.00	1	04/24/2019 18:56	WG1271083
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/24/2019 18:56	WG1271083
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/24/2019 18:56	WG1271083
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/24/2019 18:56	WG1271083
2,2-Dichloropropane	U		0.0929	0.500	1	04/24/2019 18:56	WG1271083
Di-isopropyl ether	U		0.0924	0.500	1	04/24/2019 18:56	WG1271083
Ethylbenzene	U		0.158	0.500	1	04/24/2019 18:56	WG1271083
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/24/2019 18:56	WG1271083
2-Hexanone	U		0.757	5.00	1	04/24/2019 18:56	WG1271083
n-Hexane	U		0.305	5.00	1	04/24/2019 18:56	WG1271083
Iodomethane	U		0.377	10.0	1	04/24/2019 18:56	WG1271083
Isopropylbenzene	U		0.126	0.500	1	04/24/2019 18:56	WG1271083
p-Isopropyltoluene	U		0.138	0.500	1	04/24/2019 18:56	WG1271083
2-Butanone (MEK)	U		1.28	5.00	1	04/24/2019 18:56	WG1271083
Methylene Chloride	U		1.07	2.50	1	04/24/2019 18:56	WG1271083
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/24/2019 18:56	WG1271083
Methyl tert-butyl ether	U		0.102	0.500	1	04/24/2019 18:56	WG1271083
Naphthalene	U		0.174	2.50	1	04/24/2019 18:56	WG1271083
n-Propylbenzene	U		0.162	0.500	1	04/24/2019 18:56	WG1271083
Styrene	U		0.117	0.500	1	04/24/2019 18:56	WG1271083
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/24/2019 18:56	WG1271083
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/24/2019 18:56	WG1271083
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/24/2019 18:56	WG1271083
Tetrachloroethene	U		0.199	0.500	1	04/24/2019 18:56	WG1271083
Toluene	U		0.412	0.500	1	04/24/2019 18:56	WG1271083
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/24/2019 18:56	WG1271083
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/24/2019 18:56	WG1271083
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/24/2019 18:56	WG1271083
1,1,2-Trichloroethane	U		0.186	0.500	1	04/24/2019 18:56	WG1271083
Trichloroethene	5.13		0.153	0.500	1	04/24/2019 18:56	WG1271083
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/24/2019 18:56	WG1271083
1,2,3-Trichloropropane	U		0.247	2.50	1	04/24/2019 18:56	WG1271083
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/24/2019 18:56	WG1271083
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/24/2019 18:56	WG1271083
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/24/2019 18:56	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	04/24/2019 18:56	WG1271083
Vinyl chloride	499		1.18	5.00	10	04/26/2019 12:43	WG1272362
Xylenes, Total	U	J0	0.316	1.50	1	04/24/2019 18:56	WG1271083
(S) Toluene-d8	*100*			*80.0-120*		*04/24/2019 18:56*	WG1271083
(S) Toluene-d8	*98.8*			*80.0-120*		*04/26/2019 12:43*	WG1272362
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*04/24/2019 18:56*	WG1271083
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*		*04/26/2019 12:43*	WG1272362
(S) 1,2-Dichloroethane-d4	*94.2*			*70.0-130*		*04/24/2019 18:56*	WG1271083
(S) 1,2-Dichloroethane-d4	*89.2*			*70.0-130*		*04/26/2019 12:43*	WG1272362

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	04/25/2019 12:32	WG1271515
(S) a,a,a-Trifluorotoluene(FID)	*112*			*78.0-120*		*04/25/2019 12:32*	WG1271515

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	04/24/2019 16:36	WG1271083
Acrylonitrile	U		0.873	5.00	1	04/24/2019 16:36	WG1271083
Benzene	U		0.0896	0.500	1	04/24/2019 16:36	WG1271083
Bromobenzene	U		0.133	0.500	1	04/24/2019 16:36	WG1271083
Bromodichloromethane	U		0.0800	0.500	1	04/24/2019 16:36	WG1271083
Bromochloromethane	U		0.145	0.500	1	04/24/2019 16:36	WG1271083
Bromoform	U		0.186	0.500	1	04/24/2019 16:36	WG1271083
Bromomethane	U	J0	0.157	2.50	1	04/24/2019 16:36	WG1271083
n-Butylbenzene	U		0.143	0.500	1	04/24/2019 16:36	WG1271083
sec-Butylbenzene	U		0.134	0.500	1	04/24/2019 16:36	WG1271083
tert-Butylbenzene	U		0.183	0.500	1	04/24/2019 16:36	WG1271083
Carbon disulfide	U		0.101	0.500	1	04/24/2019 16:36	WG1271083
Carbon tetrachloride	U		0.159	0.500	1	04/24/2019 16:36	WG1271083
Chlorobenzene	U		0.140	0.500	1	04/24/2019 16:36	WG1271083
Chlorodibromomethane	U		0.128	0.500	1	04/24/2019 16:36	WG1271083
Chloroethane	U	J0	0.141	2.50	1	04/24/2019 16:36	WG1271083
Chloroform	U		0.0860	0.500	1	04/24/2019 16:36	WG1271083
Chloromethane	U		0.153	1.25	1	04/24/2019 16:36	WG1271083
2-Chlorotoluene	U		0.111	0.500	1	04/24/2019 16:36	WG1271083
4-Chlorotoluene	U		0.0972	0.500	1	04/24/2019 16:36	WG1271083
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/24/2019 16:36	WG1271083
1,2-Dibromoethane	U		0.193	0.500	1	04/24/2019 16:36	WG1271083
Dibromomethane	U		0.117	0.500	1	04/24/2019 16:36	WG1271083
1,2-Dichlorobenzene	U		0.101	0.500	1	04/24/2019 16:36	WG1271083
1,3-Dichlorobenzene	U		0.130	0.500	1	04/24/2019 16:36	WG1271083
1,4-Dichlorobenzene	U		0.121	0.500	1	04/24/2019 16:36	WG1271083
Dichlorodifluoromethane	U		0.127	2.50	1	04/24/2019 16:36	WG1271083
1,1-Dichloroethane	U		0.114	0.500	1	04/24/2019 16:36	WG1271083
1,2-Dichloroethane	U		0.108	0.500	1	04/24/2019 16:36	WG1271083
1,1-Dichloroethene	U		0.188	0.500	1	04/24/2019 16:36	WG1271083
cis-1,2-Dichloroethene	U		0.0933	0.500	1	04/24/2019 16:36	WG1271083
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/24/2019 16:36	WG1271083
1,2-Dichloropropane	U		0.190	0.500	1	04/24/2019 16:36	WG1271083
1,1-Dichloropropene	U		0.128	0.500	1	04/24/2019 16:36	WG1271083
1,3-Dichloropropane	U		0.147	1.00	1	04/24/2019 16:36	WG1271083
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/24/2019 16:36	WG1271083
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/24/2019 16:36	WG1271083
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/24/2019 16:36	WG1271083
2,2-Dichloropropane	U		0.0929	0.500	1	04/24/2019 16:36	WG1271083
Di-isopropyl ether	U		0.0924	0.500	1	04/24/2019 16:36	WG1271083
Ethylbenzene	U		0.158	0.500	1	04/24/2019 16:36	WG1271083
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/24/2019 16:36	WG1271083
2-Hexanone	U		0.757	5.00	1	04/24/2019 16:36	WG1271083
n-Hexane	U		0.305	5.00	1	04/24/2019 16:36	WG1271083
Iodomethane	U		0.377	10.0	1	04/24/2019 16:36	WG1271083
Isopropylbenzene	U		0.126	0.500	1	04/24/2019 16:36	WG1271083
p-Isopropyltoluene	U		0.138	0.500	1	04/24/2019 16:36	WG1271083
2-Butanone (MEK)	U		1.28	5.00	1	04/24/2019 16:36	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	04/24/2019 16:36	WG1271083
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/24/2019 16:36	WG1271083
Methyl tert-butyl ether	U		0.102	0.500	1	04/24/2019 16:36	WG1271083
Naphthalene	U		0.174	2.50	1	04/24/2019 16:36	WG1271083
n-Propylbenzene	U		0.162	0.500	1	04/24/2019 16:36	WG1271083
Styrene	U		0.117	0.500	1	04/24/2019 16:36	WG1271083
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/24/2019 16:36	WG1271083
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/24/2019 16:36	WG1271083
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/24/2019 16:36	WG1271083
Tetrachloroethene	U		0.199	0.500	1	04/24/2019 16:36	WG1271083
Toluene	U		0.412	0.500	1	04/24/2019 16:36	WG1271083
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/24/2019 16:36	WG1271083
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/24/2019 16:36	WG1271083
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/24/2019 16:36	WG1271083
1,1,2-Trichloroethane	U		0.186	0.500	1	04/24/2019 16:36	WG1271083
Trichloroethene	U		0.153	0.500	1	04/24/2019 16:36	WG1271083
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/24/2019 16:36	WG1271083
1,2,3-Trichloropropane	U		0.247	2.50	1	04/24/2019 16:36	WG1271083
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/24/2019 16:36	WG1271083
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/24/2019 16:36	WG1271083
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/24/2019 16:36	WG1271083
Vinyl acetate	U	J0	0.645	5.00	1	04/24/2019 16:36	WG1271083
Vinyl chloride	U	J0	0.118	0.500	1	04/24/2019 16:36	WG1271083
Xylenes, Total	U		0.316	1.50	1	04/24/2019 16:36	WG1271083
(S) Toluene-d8	*100*			*80.0-120*		*04/24/2019 16:36*	WG1271083
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*04/24/2019 16:36*	WG1271083
(S) 1,2-Dichloroethane-d4	*92.9*			*70.0-130*		*04/24/2019 16:36*	WG1271083

Method Blank (MB)

(MB) R3406609-1 04/29/19 15:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	3140	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1091051-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1091051-02 04/29/19 15:25 • (DUP) R3406609-3 04/29/19 15:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	171000	172000	1	0.927		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1091709-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1091709-05 04/29/19 18:19 • (DUP) R3406609-6 04/29/19 18:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	1070000	1070000	1	0.269		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3406609-5 04/29/19 16:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	102000	102	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3405147-1 04/24/19 16:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	26.3	J	22.7	100
Sulfate	U		77.4	5000

L1091917-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1091917-03 04/24/19 18:23 • (DUP) R3405147-3 04/24/19 18:37

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	8410	8430	1	0.285		15
Nitrate	893	900	1	0.714		15
Sulfate	7530	7540	1	0.0770		15

L1091941-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1091941-04 04/24/19 21:44 • (DUP) R3405147-6 04/24/19 21:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	U	0.000	1	0.000		15
Nitrate	U	0.000	1	0.000		15
Sulfate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3405147-2 04/24/19 17:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40200	101	80.0-120	
Nitrate	8000	8290	104	80.0-120	
Sulfate	40000	41100	103	80.0-120	

L1091917-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1091917-03 04/24/19 18:23 • (MS) R3405147-4 04/24/19 18:51 • (MSD) R3405147-5 04/24/19 19:06

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	8410	58800	58300	101	99.7	1	80.0-120			0.943	15
Nitrate	5000	893	5880	5830	99.6	98.7	1	80.0-120			0.777	15
Sulfate	50000	7530	57300	56700	99.5	98.4	1	80.0-120			0.931	15

L1091941-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1091941-04 04/24/19 21:44 • (MS) R3405147-7 04/24/19 22:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	U	50700	101	1	80.0-120	
Nitrate	5000	U	5050	101	1	80.0-120	
Sulfate	50000	U	50400	101	1	80.0-120	

Method Blank (MB)

(MB) R3405168-1 04/24/19 13:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	229	J	102	1000

L1091876-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1091876-03 04/24/19 18:04 • (DUP) R3405168-5 04/24/19 18:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	9410	7860	1	18.1		20

L1091936-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1091936-03 04/24/19 22:37 • (DUP) R3405168-8 04/24/19 22:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	5970	5780	1	3.10		20

Laboratory Control Sample (LCS)

(LCS) R3405168-2 04/24/19 14:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	76900	102	85.0-115	

L1091790-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1091790-03 04/24/19 15:28 • (MS) R3405168-3 04/24/19 15:44 • (MSD) R3405168-4 04/24/19 16:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	1580	49600	49500	96.0	95.8	1	80.0-120			0.202	20

L1091908-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1091908-04 04/24/19 19:56 • (MS) R3405168-6 04/24/19 20:12 • (MSD) R3405168-7 04/24/19 20:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	1230	52000	52500	101	102	1	80.0-120			0.919	20

Method Blank (MB)

(MB) R3408542-1 05/06/19 10:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3408542-2 05/06/19 11:00 • (LCSD) R3408542-3 05/06/19 11:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Iron	500	492	486	98.4	97.2	80.0-120			1.22	20
Manganese	50.0	48.2	49.8	96.4	99.5	80.0-120			3.23	20

L1091790-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1091790-01 05/06/19 11:09 • (MS) R3408542-5 05/06/19 11:18 • (MSD) R3408542-6 05/06/19 11:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	500	ND	544	548	96.5	97.4	1	75.0-125			0.780	20
Manganese	50.0	5.40	55.3	54.8	99.9	98.7	1	75.0-125			1.07	20

Method Blank (MB)

(MB) R3405596-2 04/25/19 09:45

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3405596-1 04/25/19 08:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5310	96.5	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*103*	*78.0-120*	

Method Blank (MB)

(MB) R3405886-1 04/26/19 13:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1091915-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1091915-02 04/26/19 13:40 • (DUP) R3405886-2 04/26/19 14:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	248	245	1	1.48		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1091952-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1091952-01 04/26/19 14:46 • (DUP) R3405886-3 04/26/19 15:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3405886-4 04/26/19 15:04 • (LCSD) R3405886-5 04/26/19 15:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	75.7	76.9	112	113	85.0-115			1.59	20
Ethane	129	121	119	93.4	92.5	85.0-115			0.991	20
Ethene	127	120	121	94.1	95.5	85.0-115			1.51	20

Method Blank (MB)

(MB) R3405761-3 04/24/19 10:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
Carbon disulfide	U		0.101	0.500
sec-Butylbenzene	U		0.134	0.500
Carbon tetrachloride	U		0.159	0.500
tert-Butylbenzene	U		0.183	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3405761-3 04/24/19 10:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	0.275	J	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Ethylbenzene	U		0.158	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Isopropylbenzene	U		0.126	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
p-Isopropyltoluene	U		0.138	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
Methyl tert-butyl ether	U		0.102	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Naphthalene	U		0.174	2.50
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
n-Propylbenzene	U		0.162	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Toluene	U		0.412	0.500
Xylenes, Total	U		0.316	1.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
(S) Toluene-d8	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*107*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*91.2*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3405761-1 04/24/19 09:19 • (LCSD) R3405761-2 04/24/19 09:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	156	148	124	119	19.0-160			4.69	27
Acrylonitrile	125	150	158	120	126	55.0-149			4.93	20
Bromobenzene	25.0	23.2	23.5	92.9	94.2	73.0-121			1.38	20
Bromodichloromethane	25.0	22.3	22.2	89.3	89.0	75.0-120			0.350	20
Bromochloromethane	25.0	23.7	23.6	94.9	94.5	76.0-122			0.414	20
Bromoform	25.0	27.4	26.8	110	107	68.0-132			2.18	20
Bromomethane	25.0	17.9	17.6	71.5	70.3	10.0-160			1.67	25
Carbon disulfide	25.0	27.9	28.1	111	113	61.0-128			1.03	20
Carbon tetrachloride	25.0	23.3	23.4	93.1	93.6	68.0-126			0.508	20
Chlorobenzene	25.0	23.9	23.7	95.8	94.7	80.0-121			1.19	20
Chlorodibromomethane	25.0	24.3	23.9	97.1	95.6	77.0-125			1.64	20
Chloroethane	25.0	16.6	16.5	66.5	66.1	47.0-150			0.641	20
Chloroform	25.0	21.9	21.9	87.7	87.7	73.0-120			0.0865	20
Chloromethane	25.0	25.8	26.7	103	107	41.0-142			3.31	20
2-Chlorotoluene	25.0	22.1	23.1	88.3	92.4	76.0-123			4.55	20
4-Chlorotoluene	25.0	22.5	23.3	90.2	93.0	75.0-122			3.15	20
1,2-Dibromo-3-Chloropropane	25.0	26.5	28.6	106	114	58.0-134			7.78	20
1,2-Dibromoethane	25.0	23.7	23.5	94.9	94.0	80.0-122			1.05	20
Dibromomethane	25.0	22.8	22.7	91.2	90.7	80.0-120			0.460	20
1,2-Dichlorobenzene	25.0	23.0	23.4	91.9	93.7	79.0-121			1.90	20
1,3-Dichlorobenzene	25.0	22.6	23.1	90.4	92.5	79.0-120			2.30	20
1,4-Dichlorobenzene	25.0	22.0	22.0	88.0	87.9	79.0-120			0.0272	20
Dichlorodifluoromethane	25.0	25.9	25.8	104	103	51.0-149			0.138	20
1,1-Dichloroethane	25.0	24.4	24.7	97.4	98.8	70.0-126			1.36	20
1,2-Dichloroethane	25.0	20.9	21.0	83.4	83.9	70.0-128			0.549	20
1,1-Dichloroethene	25.0	24.6	24.4	98.3	97.6	71.0-124			0.735	20
cis-1,2-Dichloroethene	25.0	24.0	23.7	95.9	94.7	73.0-120			1.21	20
Benzene	25.0	25.9	25.8	104	103	70.0-123			0.330	20
trans-1,2-Dichloroethene	25.0	24.2	24.7	96.8	98.9	73.0-120			2.14	20
1,2-Dichloropropane	25.0	26.3	26.3	105	105	77.0-125			0.163	20
1,1-Dichloropropene	25.0	24.3	24.2	97.0	96.7	74.0-126			0.352	20
1,3-Dichloropropane	25.0	25.1	25.0	101	99.9	80.0-120			0.653	20
cis-1,3-Dichloropropene	25.0	23.5	23.1	93.8	92.5	80.0-123			1.45	20
trans-1,3-Dichloropropene	25.0	22.6	22.5	90.5	89.9	78.0-124			0.668	20
trans-1,4-Dichloro-2-butene	25.0	20.8	21.7	83.3	86.9	33.0-144			4.23	20
2,2-Dichloropropane	25.0	25.9	25.9	104	104	58.0-130			0.0126	20
n-Butylbenzene	25.0	21.5	21.8	85.9	87.4	73.0-125			1.72	20
Di-isopropyl ether	25.0	27.9	28.3	111	113	58.0-138			1.53	20
sec-Butylbenzene	25.0	22.4	23.0	89.5	91.9	75.0-125			2.67	20
tert-Butylbenzene	25.0	23.1	24.1	92.3	96.5	76.0-124			4.41	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3405761-1 04/24/19 09:19 • (LCSD) R3405761-2 04/24/19 09:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	25.0	27.6	29.3	110	117	54.0-138			6.19	20
2-Hexanone	125	146	148	117	119	67.0-149			1.62	20
n-Hexane	25.0	26.0	24.9	104	99.4	57.0-133			4.59	20
Iodomethane	125	133	133	106	106	33.0-147			0.179	26
2-Butanone (MEK)	125	155	160	124	128	44.0-160			3.27	20
Methylene Chloride	25.0	24.5	25.0	98.1	100	67.0-120			2.09	20
4-Methyl-2-pentanone (MIBK)	125	143	145	115	116	68.0-142			1.19	20
Styrene	25.0	27.4	26.7	110	107	73.0-130			2.64	20
1,1,1,2-Tetrachloroethane	25.0	24.1	24.1	96.3	96.5	75.0-125			0.203	20
1,1,2,2-Tetrachloroethane	25.0	20.9	21.7	83.7	87.0	65.0-130			3.84	20
1,1,2-Trichlorotrifluoroethane	25.0	22.8	22.6	91.1	90.6	69.0-132			0.600	20
Tetrachloroethene	25.0	25.2	24.6	101	98.6	72.0-132			2.13	20
1,2,3-Trichlorobenzene	25.0	23.4	25.1	93.7	100	50.0-138			6.79	20
1,2,4-Trichlorobenzene	25.0	23.9	25.3	95.5	101	57.0-137			6.02	20
1,1,1-Trichloroethane	25.0	23.6	23.6	94.3	94.3	73.0-124			0.0116	20
1,1,2-Trichloroethane	25.0	23.1	22.9	92.6	91.4	80.0-120			1.26	20
Trichloroethene	25.0	26.1	25.9	104	104	78.0-124			0.572	20
Trichlorofluoromethane	25.0	16.0	15.8	64.0	63.3	59.0-147			1.09	20
1,2,3-Trichloropropane	25.0	20.6	21.9	82.6	87.4	73.0-130			5.66	20
1,2,3-Trimethylbenzene	25.0	21.6	22.1	86.6	88.6	77.0-120			2.31	20
Vinyl acetate	125	72.4	73.4	57.9	58.7	11.0-160			1.37	20
Vinyl chloride	25.0	18.3	18.2	73.2	72.7	67.0-131			0.636	20
Xylenes, Total	75.0	73.5	73.4	98.0	97.9	79.0-123			0.136	20
Ethylbenzene	25.0	24.2	24.2	96.8	96.9	79.0-123			0.119	20
Isopropylbenzene	25.0	25.4	25.3	102	101	76.0-127			0.180	20
p-Isopropyltoluene	25.0	22.5	23.2	90.1	92.7	76.0-125			2.85	20
Methyl tert-butyl ether	25.0	23.5	23.7	94.1	94.8	68.0-125			0.771	20
Naphthalene	25.0	23.2	24.8	92.7	99.1	54.0-135			6.76	20
n-Propylbenzene	25.0	22.1	22.4	88.4	89.7	77.0-124			1.48	20
Toluene	25.0	25.8	25.4	103	102	79.0-120			1.62	20
1,2,4-Trimethylbenzene	25.0	22.1	22.5	88.5	90.0	76.0-121			1.68	20
1,3,5-Trimethylbenzene	25.0	22.2	23.0	88.7	92.0	76.0-122			3.67	20
(S) Toluene-d8				*101*	*100*	*80.0-120*				
(S) 4-Bromofluorobenzene				*107*	*106*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*92.9*	*91.6*	*70.0-130*				

Method Blank (MB)

(MB) R3406794-3 04/25/19 10:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3406794-3 04/25/19 10:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.239	J	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*94.7*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406794-1 04/25/19 09:03 • (LCSD) R3406794-2 04/25/19 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	205	144	164	115	19.0-160	J4	J3	34.8	27
Acrylonitrile	125	160	156	128	125	55.0-149			2.36	20
Benzene	25.0	26.0	26.1	104	104	70.0-123			0.383	20
Bromobenzene	25.0	23.4	23.6	93.5	94.5	73.0-121			1.10	20
Bromodichloromethane	25.0	22.3	22.3	89.3	89.2	75.0-120			0.142	20
Bromochloromethane	25.0	23.5	23.3	94.2	93.0	76.0-122			1.20	20
Bromoform	25.0	26.4	27.0	106	108	68.0-132			2.26	20
Bromomethane	25.0	17.7	17.6	70.8	70.5	10.0-160			0.433	25
n-Butylbenzene	25.0	23.2	22.8	92.7	91.2	73.0-125			1.67	20
sec-Butylbenzene	25.0	23.9	23.3	95.6	93.1	75.0-125			2.69	20
tert-Butylbenzene	25.0	24.5	24.0	98.0	96.1	76.0-124			1.94	20
Carbon disulfide	25.0	28.4	31.0	113	124	61.0-128			8.82	20
Carbon tetrachloride	25.0	23.9	23.9	95.5	95.5	68.0-126			0.0359	20
Chlorobenzene	25.0	24.0	24.2	96.1	96.6	80.0-121			0.523	20
Chlorodibromomethane	25.0	23.5	24.0	94.2	96.0	77.0-125			1.90	20
Chloroethane	25.0	15.0	17.2	60.1	69.0	47.0-150			13.7	20
Chloroform	25.0	22.0	21.9	87.8	87.8	73.0-120			0.0352	20
Chloromethane	25.0	26.3	26.2	105	105	41.0-142			0.338	20
2-Chlorotoluene	25.0	23.1	22.8	92.6	91.0	76.0-123			1.66	20
4-Chlorotoluene	25.0	23.4	23.2	93.5	93.0	75.0-122			0.522	20
1,2-Dibromo-3-Chloropropane	25.0	28.4	27.7	114	111	58.0-134			2.76	20
1,2-Dibromoethane	25.0	23.3	23.7	93.0	94.8	80.0-122			1.90	20
Dibromomethane	25.0	22.7	22.5	90.7	90.0	80.0-120			0.716	20
1,2-Dichlorobenzene	25.0	23.9	23.4	95.5	93.5	79.0-121			2.08	20
1,3-Dichlorobenzene	25.0	23.5	23.2	94.0	93.0	79.0-120			1.05	20
1,4-Dichlorobenzene	25.0	22.7	22.5	91.0	89.9	79.0-120			1.15	20
Dichlorodifluoromethane	25.0	26.3	26.2	105	105	51.0-149			0.238	20
1,1-Dichloroethane	25.0	24.8	24.6	99.4	98.3	70.0-126			1.12	20
1,2-Dichloroethane	25.0	20.8	20.8	83.1	83.1	70.0-128			0.0641	20
1,1-Dichloroethene	25.0	25.0	25.4	100	102	71.0-124			1.62	20
cis-1,2-Dichloroethene	25.0	23.9	23.7	95.7	94.7	73.0-120			1.11	20
trans-1,2-Dichloroethene	25.0	24.9	24.9	99.6	99.4	73.0-120			0.115	20
1,2-Dichloropropane	25.0	26.5	26.5	106	106	77.0-125			0.267	20
1,1-Dichloropropene	25.0	24.9	24.8	99.4	99.1	74.0-126			0.298	20
1,3-Dichloropropane	25.0	24.6	25.1	98.6	100	80.0-120			1.86	20
cis-1,3-Dichloropropene	25.0	24.0	24.2	96.2	96.7	80.0-123			0.513	20
trans-1,3-Dichloropropene	25.0	23.3	23.5	93.2	94.1	78.0-124			0.936	20
trans-1,4-Dichloro-2-butene	25.0	20.7	19.7	83.0	78.6	33.0-144			5.42	20
2,2-Dichloropropane	25.0	32.0	31.4	128	126	58.0-130			2.05	20
Di-isopropyl ether	25.0	27.7	27.6	111	110	58.0-138			0.601	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406794-1 04/25/19 09:03 • (LCSD) R3406794-2 04/25/19 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	24.4	24.7	97.5	98.9	79.0-123			1.46	20
Hexachloro-1,3-butadiene	25.0	31.2	30.4	125	122	54.0-138			2.57	20
2-Hexanone	125	147	146	117	117	67.0-149			0.700	20
n-Hexane	25.0	29.2	28.6	117	114	57.0-133			2.29	20
Iodomethane	125	134	128	107	102	33.0-147			4.64	26
Isopropylbenzene	25.0	25.6	26.1	103	104	76.0-127			1.66	20
p-Isopropyltoluene	25.0	24.2	23.8	96.8	95.1	76.0-125			1.85	20
2-Butanone (MEK)	125	165	156	132	125	44.0-160			5.34	20
Methylene Chloride	25.0	24.7	24.5	98.8	98.1	67.0-120			0.726	20
4-Methyl-2-pentanone (MIBK)	125	143	142	114	114	68.0-142			0.369	20
Methyl tert-butyl ether	25.0	23.7	23.4	94.7	93.6	68.0-125			1.16	20
Naphthalene	25.0	25.1	24.5	100	98.1	54.0-135			2.40	20
n-Propylbenzene	25.0	23.0	23.0	92.1	91.9	77.0-124			0.261	20
Styrene	25.0	26.6	27.4	106	110	73.0-130			3.12	20
1,1,1,2-Tetrachloroethane	25.0	24.1	24.0	96.2	96.2	75.0-125			0.0553	20
1,1,2,2-Tetrachloroethane	25.0	22.8	22.7	91.3	90.8	65.0-130			0.553	20
1,1,2-Trichlorotrifluoroethane	25.0	23.4	24.1	93.6	96.5	69.0-132			3.14	20
Tetrachloroethene	25.0	25.8	25.8	103	103	72.0-132			0.287	20
Toluene	25.0	25.9	26.1	103	104	79.0-120			0.981	20
1,2,3-Trichlorobenzene	25.0	25.7	24.4	103	97.5	50.0-138			5.36	20
1,2,4-Trichlorobenzene	25.0	26.6	25.2	107	101	57.0-137			5.53	20
1,1,1-Trichloroethane	25.0	23.7	23.8	94.9	95.3	73.0-124			0.433	20
1,1,2-Trichloroethane	25.0	22.8	22.6	91.3	90.4	80.0-120			0.971	20
Trichloroethene	25.0	25.1	25.2	100	101	78.0-124			0.572	20
Trichlorofluoromethane	25.0	15.2	16.5	60.9	65.9	59.0-147			7.93	20
1,2,3-Trichloropropane	25.0	21.1	20.9	84.4	83.5	73.0-130			1.11	20
1,2,4-Trimethylbenzene	25.0	22.8	22.6	91.2	90.5	76.0-121			0.774	20
1,2,3-Trimethylbenzene	25.0	22.4	21.8	89.8	87.2	77.0-120			2.96	20
1,3,5-Trimethylbenzene	25.0	23.4	22.6	93.5	90.5	76.0-122			3.16	20
Vinyl acetate	125	119	120	95.4	95.7	11.0-160			0.361	20
Vinyl chloride	25.0	17.8	17.9	71.3	71.7	67.0-131			0.499	20
Xylenes, Total	75.0	74.9	75.0	99.9	100	79.0-123			0.133	20
(S) Toluene-d8				*101*	*100*	*80.0-120*				
(S) 4-Bromofluorobenzene				*105*	*107*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*92.7*	*99.9*	*70.0-130*				

Method Blank (MB)

(MB) R3405838-4 04/26/19 11:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*98.0*			*80.0-120*
(S) 4-Bromofluorobenzene	*100*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*90.2*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3405838-1 04/26/19 09:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	25.0	26.4	105	73.0-120	
Vinyl chloride	25.0	27.1	108	67.0-131	
(S) Toluene-d8			*95.5*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*89.3*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

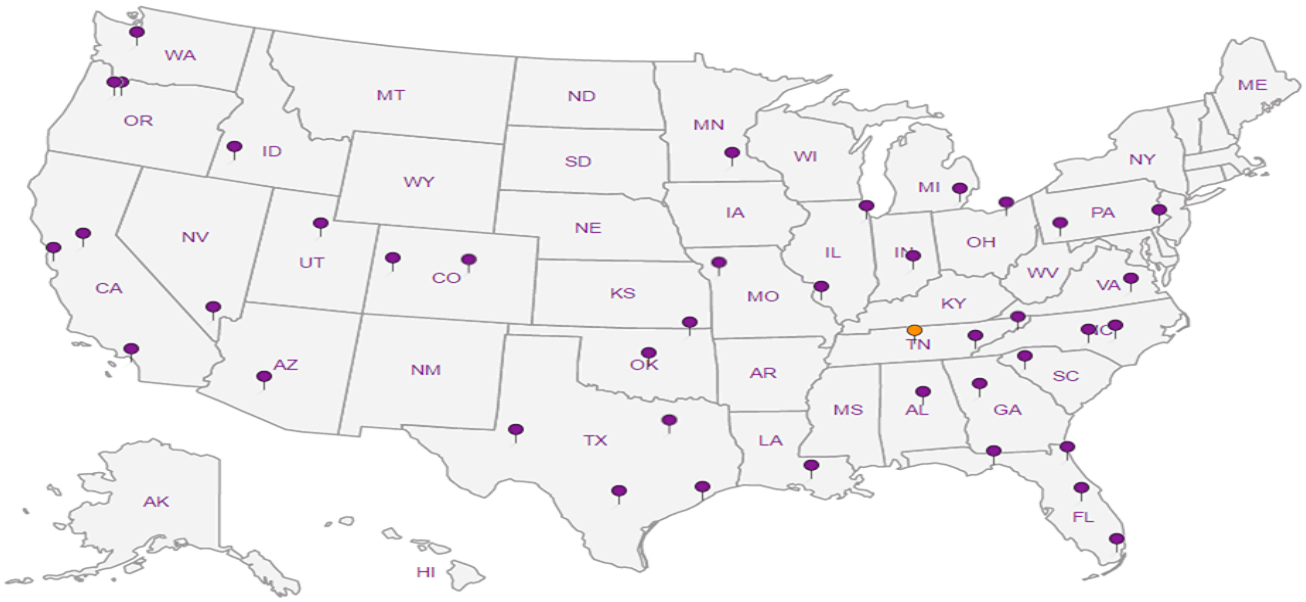
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Report to: Brian O'Neal/Bill Haldeman

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Email To: boneal@pesenv.com; KVIK@PESENV.com; bhaldeman@pesenv.com; KSPRINGSTEAD@PESENV.com

Project Description: American Linen
Phone: 206-529-3980
Fax: 206-529-3985
Client Project # 1413.001.05.601
Site/Facility ID # American Linen
Collected by (print): K. Zyss / B. Hecht
Collected by (signature):
Immediately Packed on Ice N ___ Y X
City/State Collected:
Lab Project # PESENVSWA-ALP
P.O. #
Quote #

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day Standard TAT
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175LL) 40mlAmb-HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs (8260C)	NWTPH-Gx	Remarks	Sample # (lab only)
MW103-042319	Grab	GW	108	4-22-19	1505	3	X	X	X	X	X	X			-01
MW111-042319		GW	75	4-22-19	1505	3	X	X	X	X	X	X			-02
MW104-042319		GW	75	4-23-19	0835	11	X	X	X	X	X	X			-03
MW105-042319		GW	135		1035	11	X	X	X	X	X	X			-04
MW147-042319		GW	75		1400	11	X	X	X	X	X	X			-05
TRIP BLANK-042319	—	GW	—		—	1						X	X		-06
		GW													
		GW													
		GW													
		GW													

RAD SCREEN: <0.5 mR/hr

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: Tier 2 QA/QC for all

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS _X_ FedEx __ Courier __ _____
Tracking # 4836 1086 1910

Trip Blank Received: Yes / No (HCL / MeoH / TBR)

Temp: 0.9 °C Bottles Received: PP 39

Date: 4/24/19 Time: 0845

Received by: (Signature)

Relinquished by : (Signature) — Date: 04-23-19 Time: 1700

Relinquished by : (Signature) — Date: Time:

Relinquished by : (Signature) — Date: Time:

Received for lab by: (Signature)

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Chain of Custody Page 1 of ___

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1091936
B103
Acctnum: PESENVSWA
Template: T143845
Prelogin: P701221
TSR: 110 - Brian Ford
PB: TB 4-1-19
Shipped Via: FedEX Ground

Brian Ford

From: Kim Vik <KVik@pesenv.com>
Sent: Wednesday, April 24, 2019 11:51 AM
To: Brian Ford
Cc: Bill Haldeman; Karsten Springstead
Subject: American Linen - Groundwater Samples - COC - CORRECTION
Attachments: COC_20190424.pdf

Importance: High

Hi Brian,
I was reviewing the COC for the samples that were shipped to you yesterday (see attached) and I need to make some corrections. They are shown on the mark up attached, but will write them here too:

Sample MW-155-042319 should be analyzed for VOCs and gasoline only
Sample MW103-042219 should be analyzed for VOCs only
Sample MW111-042219 should be analyzed for VOCs only
Sample MW104-042319 should also be analyzed for gasoline (add that analysis)
Sample MW105-042319 should also be analyzed for gasoline (add that analysis)
Sample MW147-042319 should also be analyzed for gasoline (add that analysis)

Let me know if you have any questions.

Thanks!

Kim Vik, L.G.
Senior Geologist

PES Environmental, Inc.
1215 Fourth Avenue, Suite 1350
Seattle, Washington 98161-1012
kvik@pesenv.com

Office: (206) 529-3980, Ext. 110

Pace Analytical®
National Center for Testing & Innovation

Login #: L1091936	Client: PESENVSWA	Date: 4/24/19	Evaluated by: Troy Dunlap.

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	X	Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: For ID MW103 and MW111 the client marked all analysis but only sent three 40ml-HCL vials.

Client informed by:		Call		Email X		Voice Mail		Date:04/24/19	Time:1220
TSR Initials:bjf	Client Contact: Kim Vik								

Login Instructions:

Log MW103 and MW111 for V8260LLC only.
Add NWTPHGX to MW104, MW105, MW147.

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 03, 2019

PES Environmental, Inc.- WA

Sample Delivery Group:	L1092400
Samples Received:	04/25/2019
Project Number:	1413.001.05.601
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman
	1215 Fourth Ave., Suite 1350
	Seattle, WA 98161

Entire Report Reviewed By:

Jared Starkey
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

MW-909-042419 L1092400-01 GW

Collected by: Ben Hecht | Collected date/time: 04/24/19 08:00 | Received date/time: 04/25/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1273429	1	04/30/19 14:55	04/30/19 14:55	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1271706	1	04/26/19 02:48	04/26/19 02:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1272243	1	04/29/19 19:31	04/29/19 19:31	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271843	1	04/26/19 07:59	04/29/19 15:46	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271843	5	04/26/19 07:59	04/29/19 17:16	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1272107	1	04/26/19 02:05	04/26/19 02:05	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1272501	1	05/02/19 14:17	05/02/19 14:17	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 18:49	04/25/19 18:49	BMB	Mt. Juliet, TN

MW-146-042419 L1092400-02 GW

Collected by: Ben Hecht | Collected date/time: 04/24/19 09:55 | Received date/time: 04/25/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1273429	1	04/30/19 15:03	04/30/19 15:03	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1271706	1	04/26/19 02:59	04/26/19 02:59	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1272243	1	04/29/19 19:49	04/29/19 19:49	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271843	5	04/26/19 07:59	04/29/19 17:21	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1272107	1	04/26/19 02:29	04/26/19 02:29	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1272501	1	05/02/19 14:20	05/02/19 14:20	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 19:09	04/25/19 19:09	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1274056	10	05/01/19 03:04	05/01/19 03:04	JHH	Mt. Juliet, TN

MW-154-042419 L1092400-03 GW

Collected by: Ben Hecht | Collected date/time: 04/24/19 11:40 | Received date/time: 04/25/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1272107	1	04/26/19 02:53	04/26/19 02:53	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 19:29	04/25/19 19:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1274056	1	05/01/19 01:58	05/01/19 01:58	JHH	Mt. Juliet, TN

MW-153-042419 L1092400-04 GW

Collected by: Ben Hecht | Collected date/time: 04/24/19 12:55 | Received date/time: 04/25/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1273429	1	04/30/19 15:10	04/30/19 15:10	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1271706	1	04/26/19 03:10	04/26/19 03:10	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1272243	1	04/29/19 20:49	04/29/19 20:49	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1271843	5	04/26/19 07:59	04/29/19 17:27	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1272107	1	04/26/19 03:17	04/26/19 03:17	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1272501	1	05/02/19 15:36	05/02/19 15:36	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 19:49	04/25/19 19:49	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1274056	1	05/01/19 02:20	05/01/19 02:20	JHH	Mt. Juliet, TN

TRIP BLANK-042419 L1092400-05 GW

Collected by: Ben Hecht | Collected date/time: 04/24/19 00:00 | Received date/time: 04/25/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1272107	1	04/26/19 01:41	04/26/19 01:41	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1271705	1	04/25/19 16:28	04/25/19 16:28	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jared Starkey
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	170000		2710	20000	1	04/30/2019 14:55	WG1273429

Sample Narrative:
L1092400-01 WG1273429: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	9160		51.9	1000	1	04/26/2019 02:48	WG1271706
Nitrate	U		22.7	100	1	04/26/2019 02:48	WG1271706
Sulfate	8910		77.4	5000	1	04/26/2019 02:48	WG1271706

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4620	B	102	1000	1	04/29/2019 19:31	WG1272243

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1590		15.0	100	1	04/29/2019 15:46	WG1271843
Manganese	305		1.25	25.0	5	04/29/2019 17:16	WG1271843

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	04/26/2019 02:05	WG1272107
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/26/2019 02:05*	WG1272107

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	434		0.287	0.678	1	05/02/2019 14:17	WG1272501
Ethane	U		0.296	1.29	1	05/02/2019 14:17	WG1272501
Ethene	U		0.422	1.27	1	05/02/2019 14:17	WG1272501

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.21	J J0 J3 J4	1.05	25.0	1	04/25/2019 18:49	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 18:49	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 18:49	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 18:49	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 18:49	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 18:49	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 18:49	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 18:49	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 18:49	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 18:49	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 18:49	WG1271705
Carbon disulfide	0.303	J	0.101	0.500	1	04/25/2019 18:49	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 18:49	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	04/25/2019 18:49	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 18:49	WG1271705
Chloroethane	U	J0	0.141	2.50	1	04/25/2019 18:49	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 18:49	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 18:49	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 18:49	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 18:49	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 18:49	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 18:49	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 18:49	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 18:49	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 18:49	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 18:49	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 18:49	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 18:49	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 18:49	WG1271705
1,1-Dichloroethene	U		0.188	0.500	1	04/25/2019 18:49	WG1271705
cis-1,2-Dichloroethene	0.975		0.0933	0.500	1	04/25/2019 18:49	WG1271705
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/25/2019 18:49	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 18:49	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 18:49	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 18:49	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 18:49	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 18:49	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 18:49	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 18:49	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 18:49	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 18:49	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 18:49	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 18:49	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 18:49	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 18:49	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 18:49	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 18:49	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 18:49	WG1271705
Methylene Chloride	U		1.07	2.50	1	04/25/2019 18:49	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 18:49	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 18:49	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 18:49	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 18:49	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 18:49	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 18:49	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 18:49	WG1271705
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 18:49	WG1271705
Tetrachloroethene	U		0.199	0.500	1	04/25/2019 18:49	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 18:49	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 18:49	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 18:49	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 18:49	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 18:49	WG1271705
Trichloroethene	U		0.153	0.500	1	04/25/2019 18:49	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 18:49	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 18:49	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 18:49	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 18:49	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 18:49	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	04/25/2019 18:49	WG1271705
Vinyl chloride	1.66	J0	0.118	0.500	1	04/25/2019 18:49	WG1271705
Xylenes, Total	U		0.316	1.50	1	04/25/2019 18:49	WG1271705
(S) Toluene-d8	*101*			*80.0-120*		*04/25/2019 18:49*	WG1271705
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*04/25/2019 18:49*	WG1271705
(S) 1,2-Dichloroethane-d4	*93.8*			*70.0-130*		*04/25/2019 18:49*	WG1271705

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	310000		2710	20000	1	04/30/2019 15:03	WG1273429

Sample Narrative:
L1092400-02 WG1273429: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14800		51.9	1000	1	04/26/2019 02:59	WG1271706
Nitrate	U		22.7	100	1	04/26/2019 02:59	WG1271706
Sulfate	23300		77.4	5000	1	04/26/2019 02:59	WG1271706

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4950	B	102	1000	1	04/29/2019 19:49	WG1272243

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2870		75.0	500	5	04/29/2019 17:21	WG1271843
Manganese	770		1.25	25.0	5	04/29/2019 17:21	WG1271843

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	88.0	J	31.6	100	1	04/26/2019 02:29	WG1272107
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/26/2019 02:29*	WG1272107

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5090		0.287	0.678	1	05/02/2019 14:20	WG1272501
Ethane	4.00		0.296	1.29	1	05/02/2019 14:20	WG1272501
Ethene	347		0.422	1.27	1	05/02/2019 14:20	WG1272501

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.58	J J0 J3 J4	1.05	25.0	1	04/25/2019 19:09	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 19:09	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 19:09	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 19:09	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 19:09	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 19:09	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 19:09	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 19:09	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 19:09	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 19:09	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 19:09	WG1271705
Carbon disulfide	U		0.101	0.500	1	04/25/2019 19:09	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 19:09	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	04/25/2019 19:09	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 19:09	WG1271705
Chloroethane	0.719	J J0	0.141	2.50	1	04/25/2019 19:09	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 19:09	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 19:09	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 19:09	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 19:09	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 19:09	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 19:09	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 19:09	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 19:09	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 19:09	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 19:09	WG1271705
1,1-Dichloroethene	1.04		0.188	0.500	1	04/25/2019 19:09	WG1271705
cis-1,2-Dichloroethene	257		0.933	5.00	10	05/01/2019 03:04	WG1274056
trans-1,2-Dichloroethene	1.94		0.152	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 19:09	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 19:09	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 19:09	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 19:09	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 19:09	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 19:09	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 19:09	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 19:09	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 19:09	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 19:09	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 19:09	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 19:09	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 19:09	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 19:09	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 19:09	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 19:09	WG1271705
Methylene Chloride	U		1.07	2.50	1	04/25/2019 19:09	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 19:09	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 19:09	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 19:09	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 19:09	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 19:09	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 19:09	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 19:09	WG1271705
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 19:09	WG1271705
Tetrachloroethene	1.50		0.199	0.500	1	04/25/2019 19:09	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 19:09	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 19:09	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 19:09	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 19:09	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 19:09	WG1271705
Trichloroethene	12.4		0.153	0.500	1	04/25/2019 19:09	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 19:09	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 19:09	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 19:09	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 19:09	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 19:09	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	04/25/2019 19:09	WG1271705
Vinyl chloride	383		1.18	5.00	10	05/01/2019 03:04	WG1274056
Xylenes, Total	U		0.316	1.50	1	04/25/2019 19:09	WG1271705
(S) Toluene-d8	*97.1*			*80.0-120*		*04/25/2019 19:09*	WG1271705
(S) Toluene-d8	*103*			*80.0-120*		*05/01/2019 03:04*	WG1274056
(S) 4-Bromofluorobenzene	*99.8*			*77.0-126*		*04/25/2019 19:09*	WG1271705
(S) 4-Bromofluorobenzene	*99.5*			*77.0-126*		*05/01/2019 03:04*	WG1274056
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*04/25/2019 19:09*	WG1271705
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*05/01/2019 03:04*	WG1274056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	04/26/2019 02:53	WG1272107
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/26/2019 02:53*	WG1272107

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.68	J J0 J3 J4	1.05	25.0	1	04/25/2019 19:29	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 19:29	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 19:29	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 19:29	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 19:29	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 19:29	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 19:29	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 19:29	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 19:29	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 19:29	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 19:29	WG1271705
Carbon disulfide	U		0.101	0.500	1	04/25/2019 19:29	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 19:29	WG1271705
Chlorobenzene	U		0.140	0.500	1	04/25/2019 19:29	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 19:29	WG1271705
Chloroethane	0.369	J J0	0.141	2.50	1	04/25/2019 19:29	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 19:29	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 19:29	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 19:29	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 19:29	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 19:29	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 19:29	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 19:29	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 19:29	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 19:29	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 19:29	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 19:29	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 19:29	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 19:29	WG1271705
1,1-Dichloroethene	U		0.188	0.500	1	04/25/2019 19:29	WG1271705
cis-1,2-Dichloroethene	1.76		0.0933	0.500	1	05/01/2019 01:58	WG1274056
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/25/2019 19:29	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 19:29	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 19:29	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 19:29	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 19:29	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 19:29	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 19:29	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 19:29	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 19:29	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 19:29	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 19:29	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 19:29	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 19:29	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 19:29	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 19:29	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 19:29	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 19:29	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	04/25/2019 19:29	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 19:29	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 19:29	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 19:29	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 19:29	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 19:29	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 19:29	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 19:29	WG1271705
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 19:29	WG1271705
Tetrachloroethene	1.02		0.199	0.500	1	04/25/2019 19:29	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 19:29	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 19:29	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 19:29	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 19:29	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 19:29	WG1271705
Trichloroethene	0.214	J	0.153	0.500	1	04/25/2019 19:29	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 19:29	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 19:29	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 19:29	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 19:29	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 19:29	WG1271705
Vinyl acetate	U		0.645	5.00	1	04/25/2019 19:29	WG1271705
Vinyl chloride	0.797		0.118	0.500	1	05/01/2019 01:58	WG1274056
Xylenes, Total	U		0.316	1.50	1	04/25/2019 19:29	WG1271705
(S) Toluene-d8	*94.9*			*80.0-120*		*04/25/2019 19:29*	WG1271705
(S) Toluene-d8	*103*			*80.0-120*		*05/01/2019 01:58*	WG1274056
(S) 4-Bromofluorobenzene	*98.6*			*77.0-126*		*04/25/2019 19:29*	WG1271705
(S) 4-Bromofluorobenzene	*99.7*			*77.0-126*		*05/01/2019 01:58*	WG1274056
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*04/25/2019 19:29*	WG1271705
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*05/01/2019 01:58*	WG1274056

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	174000		2710	20000	1	04/30/2019 15:10	WG1273429

Sample Narrative:
L1092400-04 WG1273429: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	9400		51.9	1000	1	04/26/2019 03:10	WG1271706
Nitrate	U		22.7	100	1	04/26/2019 03:10	WG1271706
Sulfate	9230		77.4	5000	1	04/26/2019 03:10	WG1271706

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3860	B	102	1000	1	04/29/2019 20:49	WG1272243

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3600		75.0	500	5	04/29/2019 17:27	WG1271843
Manganese	385		1.25	25.0	5	04/29/2019 17:27	WG1271843

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	04/26/2019 03:17	WG1272107
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/26/2019 03:17*	WG1272107

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	412		0.287	0.678	1	05/02/2019 15:36	WG1272501
Ethane	U		0.296	1.29	1	05/02/2019 15:36	WG1272501
Ethene	1.79		0.422	1.27	1	05/02/2019 15:36	WG1272501

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	3.82	J J0 J3 J4	1.05	25.0	1	04/25/2019 19:49	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 19:49	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 19:49	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 19:49	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 19:49	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 19:49	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 19:49	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 19:49	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 19:49	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 19:49	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 19:49	WG1271705
Carbon disulfide	0.394	J	0.101	0.500	1	04/25/2019 19:49	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 19:49	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	04/25/2019 19:49	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 19:49	WG1271705
Chloroethane	U	J0	0.141	2.50	1	04/25/2019 19:49	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 19:49	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 19:49	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 19:49	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 19:49	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 19:49	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 19:49	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 19:49	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 19:49	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 19:49	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 19:49	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 19:49	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 19:49	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 19:49	WG1271705
1,1-Dichloroethene	U		0.188	0.500	1	04/25/2019 19:49	WG1271705
cis-1,2-Dichloroethene	1.07		0.0933	0.500	1	05/01/2019 02:20	WG1274056
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/25/2019 19:49	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 19:49	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 19:49	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 19:49	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 19:49	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 19:49	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 19:49	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 19:49	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 19:49	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 19:49	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 19:49	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 19:49	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 19:49	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 19:49	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 19:49	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 19:49	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 19:49	WG1271705
Methylene Chloride	U		1.07	2.50	1	04/25/2019 19:49	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 19:49	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 19:49	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 19:49	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 19:49	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 19:49	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 19:49	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 19:49	WG1271705
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 19:49	WG1271705
Tetrachloroethene	U		0.199	0.500	1	04/25/2019 19:49	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 19:49	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 19:49	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 19:49	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 19:49	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 19:49	WG1271705
Trichloroethene	U		0.153	0.500	1	04/25/2019 19:49	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 19:49	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 19:49	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 19:49	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 19:49	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 19:49	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	04/25/2019 19:49	WG1271705
Vinyl chloride	2.69		0.118	0.500	1	05/01/2019 02:20	WG1274056
Xylenes, Total	U		0.316	1.50	1	04/25/2019 19:49	WG1271705
(S) Toluene-d8	*103*			*80.0-120*		*04/25/2019 19:49*	WG1271705
(S) Toluene-d8	*103*			*80.0-120*		*05/01/2019 02:20*	WG1274056
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*04/25/2019 19:49*	WG1271705
(S) 4-Bromofluorobenzene	*97.4*			*77.0-126*		*05/01/2019 02:20*	WG1274056
(S) 1,2-Dichloroethane-d4	*97.4*			*70.0-130*		*04/25/2019 19:49*	WG1271705
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*05/01/2019 02:20*	WG1274056

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	04/26/2019 01:41	WG1272107
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/26/2019 01:41*	WG1272107

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.76	J J0 J3 J4	1.05	25.0	1	04/25/2019 16:28	WG1271705
Acrylonitrile	U		0.873	5.00	1	04/25/2019 16:28	WG1271705
Benzene	U		0.0896	0.500	1	04/25/2019 16:28	WG1271705
Bromobenzene	U		0.133	0.500	1	04/25/2019 16:28	WG1271705
Bromodichloromethane	U		0.0800	0.500	1	04/25/2019 16:28	WG1271705
Bromochloromethane	U		0.145	0.500	1	04/25/2019 16:28	WG1271705
Bromoform	U		0.186	0.500	1	04/25/2019 16:28	WG1271705
Bromomethane	U	J0	0.157	2.50	1	04/25/2019 16:28	WG1271705
n-Butylbenzene	U		0.143	0.500	1	04/25/2019 16:28	WG1271705
sec-Butylbenzene	U		0.134	0.500	1	04/25/2019 16:28	WG1271705
tert-Butylbenzene	U		0.183	0.500	1	04/25/2019 16:28	WG1271705
Carbon disulfide	U		0.101	0.500	1	04/25/2019 16:28	WG1271705
Carbon tetrachloride	U		0.159	0.500	1	04/25/2019 16:28	WG1271705
Chlorobenzene	U		0.140	0.500	1	04/25/2019 16:28	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 16:28	WG1271705
Chloroethane	U	J0	0.141	2.50	1	04/25/2019 16:28	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 16:28	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 16:28	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 16:28	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 16:28	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 16:28	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 16:28	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 16:28	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 16:28	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 16:28	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 16:28	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 16:28	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 16:28	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 16:28	WG1271705
1,1-Dichloroethene	U		0.188	0.500	1	04/25/2019 16:28	WG1271705
cis-1,2-Dichloroethene	U		0.0933	0.500	1	04/25/2019 16:28	WG1271705
trans-1,2-Dichloroethene	U		0.152	0.500	1	04/25/2019 16:28	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 16:28	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 16:28	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 16:28	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 16:28	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 16:28	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 16:28	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 16:28	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 16:28	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 16:28	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 16:28	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 16:28	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 16:28	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 16:28	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 16:28	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 16:28	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 16:28	WG1271705

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	U		1.07	2.50	1	04/25/2019 16:28	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 16:28	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 16:28	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 16:28	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 16:28	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 16:28	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 16:28	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 16:28	WG1271705
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 16:28	WG1271705
Tetrachloroethene	U		0.199	0.500	1	04/25/2019 16:28	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 16:28	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 16:28	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 16:28	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 16:28	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 16:28	WG1271705
Trichloroethene	U		0.153	0.500	1	04/25/2019 16:28	WG1271705
Trichlorofluoromethane	U	J0	0.130	2.50	1	04/25/2019 16:28	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 16:28	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 16:28	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 16:28	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 16:28	WG1271705
Vinyl acetate	U		0.645	5.00	1	04/25/2019 16:28	WG1271705
Vinyl chloride	U	J0	0.118	0.500	1	04/25/2019 16:28	WG1271705
Xylenes, Total	U		0.316	1.50	1	04/25/2019 16:28	WG1271705
(S) Toluene-d8	*101*			*80.0-120*		*04/25/2019 16:28*	WG1271705
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*04/25/2019 16:28*	WG1271705
(S) 1,2-Dichloroethane-d4	*92.8*			*70.0-130*		*04/25/2019 16:28*	WG1271705

Method Blank (MB)

(MB) R3406816-1 04/30/19 12:58

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	3160	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1092253-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1092253-04 04/30/19 13:12 • (DUP) R3406816-5 04/30/19 13:18

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	50900	52200	1	2.61		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1092421-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1092421-01 04/30/19 15:52 • (DUP) R3406816-10 04/30/19 15:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	61300	57900	1	5.61		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3406816-9 04/30/19 14:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	99300	99.3	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3405679-1 04/25/19 23:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1092353-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1092353-01 04/26/19 00:27 • (DUP) R3405679-3 04/26/19 00:38

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	16600	16100	1	3.08		15
Nitrate	U	0.000	1	0.000		15
Sulfate	20000	19200	1	4.16		15

L1092400-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1092400-04 04/26/19 03:10 • (DUP) R3405679-6 04/26/19 03:21

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	9400	9560	1	1.76		15
Nitrate	U	0.000	1	0.000		15
Sulfate	9230	9330	1	1.03		15

Laboratory Control Sample (LCS)

(LCS) R3405679-2 04/25/19 23:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40100	100	80.0-120	
Nitrate	8000	7890	98.7	80.0-120	
Sulfate	40000	40900	102	80.0-120	

L1092353-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1092353-01 04/26/19 00:27 • (MS) R3405679-4 04/26/19 00:49 • (MSD) R3405679-5 04/26/19 00:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	16600	65100	65100	97.0	96.9	1	80.0-120			0.0978	15
Nitrate	5000	U	4610	4610	92.1	92.2	1	80.0-120			0.126	15
Sulfate	50000	20000	67300	67100	94.7	94.3	1	80.0-120			0.292	15

L1092400-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1092400-04 04/26/19 03:10 • (MS) R3405679-7 04/26/19 03:32

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	9400	59000	99.1	1	80.0-120	
Nitrate	5000	U	4710	94.2	1	80.0-120	
Sulfate	50000	9230	58100	97.8	1	80.0-120	

Method Blank (MB)

(MB) R3406579-1 04/29/19 14:21

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	568	J	102	1000

L1092307-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1092307-01 04/29/19 16:13 • (DUP) R3406579-3 04/29/19 16:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	48600	48400	1	0.516		20

L1092431-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1092431-08 04/30/19 01:31 • (DUP) R3406579-8 04/30/19 01:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	8550	8900	1	3.99		20

Laboratory Control Sample (LCS)

(LCS) R3406579-2 04/29/19 14:58

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	78700	105	85.0-115	

L1092400-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1092400-02 04/29/19 19:49 • (MS) R3406579-4 04/29/19 20:11 • (MSD) R3406579-5 04/29/19 20:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	4950	56200	55400	102	101	1	80.0-120			1.36	20

L1092412-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1092412-06 04/30/19 00:16 • (MS) R3406579-6 04/30/19 00:34 • (MSD) R3406579-7 04/30/19 00:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	ND	50800	51000	101	101	1	80.0-120			0.314	20

Method Blank (MB)

(MB) R3406378-1 04/29/19 13:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406378-2 04/29/19 13:07 • (LCSD) R3406378-3 04/29/19 13:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Iron	500	490	480	98.0	96.1	80.0-120			1.92	20
Manganese	50.0	48.4	47.0	96.7	94.0	80.0-120			2.85	20

L1092217-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1092217-01 04/29/19 13:18 • (MS) R3406378-5 04/29/19 13:28 • (MSD) R3406378-6 04/29/19 13:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	500	2630	2940	3550	61.9	185	1	75.0-125	V	V	19.0	20
Manganese	50.0	2630	2730	2770	195	272	1	75.0-125	V	V	1.38	20

Method Blank (MB)

(MB) R3406246-2 04/25/19 22:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3406246-1 04/25/19 21:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6260	114	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*94.6*	*78.0-120*	

Method Blank (MB)

(MB) R3407661-1 05/02/19 12:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

Method Blank (MB)

(MB) R3407661-2 05/02/19 13:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3407661-4 05/02/19 15:40 • (LCSD) R3407661-5 05/02/19 15:49

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.0	77.7	106	115	85.0-115			7.60	20
Ethane	129	117	120	90.5	93.2	85.0-115			2.96	20
Ethene	127	116	119	91.7	93.5	85.0-115			1.95	20

Method Blank (MB)

(MB) R3406794-3 04/25/19 10:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3406794-3 04/25/19 10:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	0.239	J	0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*94.7*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406794-1 04/25/19 09:03 • (LCSD) R3406794-2 04/25/19 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	205	144	164	115	19.0-160	J4	J3	34.8	27
Acrylonitrile	125	160	156	128	125	55.0-149			2.36	20
Benzene	25.0	26.0	26.1	104	104	70.0-123			0.383	20
Bromobenzene	25.0	23.4	23.6	93.5	94.5	73.0-121			1.10	20
Bromodichloromethane	25.0	22.3	22.3	89.3	89.2	75.0-120			0.142	20
Bromochloromethane	25.0	23.5	23.3	94.2	93.0	76.0-122			1.20	20
Bromoform	25.0	26.4	27.0	106	108	68.0-132			2.26	20
Bromomethane	25.0	17.7	17.6	70.8	70.5	10.0-160			0.433	25
n-Butylbenzene	25.0	23.2	22.8	92.7	91.2	73.0-125			1.67	20
sec-Butylbenzene	25.0	23.9	23.3	95.6	93.1	75.0-125			2.69	20
tert-Butylbenzene	25.0	24.5	24.0	98.0	96.1	76.0-124			1.94	20
Carbon disulfide	25.0	28.4	31.0	113	124	61.0-128			8.82	20
Carbon tetrachloride	25.0	23.9	23.9	95.5	95.5	68.0-126			0.0359	20
Chlorobenzene	25.0	24.0	24.2	96.1	96.6	80.0-121			0.523	20
Chlorodibromomethane	25.0	23.5	24.0	94.2	96.0	77.0-125			1.90	20
Chloroethane	25.0	15.0	17.2	60.1	69.0	47.0-150			13.7	20
Chloroform	25.0	22.0	21.9	87.8	87.8	73.0-120			0.0352	20
Chloromethane	25.0	26.3	26.2	105	105	41.0-142			0.338	20
2-Chlorotoluene	25.0	23.1	22.8	92.6	91.0	76.0-123			1.66	20
4-Chlorotoluene	25.0	23.4	23.2	93.5	93.0	75.0-122			0.522	20
1,2-Dibromo-3-Chloropropane	25.0	28.4	27.7	114	111	58.0-134			2.76	20
1,2-Dibromoethane	25.0	23.3	23.7	93.0	94.8	80.0-122			1.90	20
Dibromomethane	25.0	22.7	22.5	90.7	90.0	80.0-120			0.716	20
1,2-Dichlorobenzene	25.0	23.9	23.4	95.5	93.5	79.0-121			2.08	20
1,3-Dichlorobenzene	25.0	23.5	23.2	94.0	93.0	79.0-120			1.05	20
1,4-Dichlorobenzene	25.0	22.7	22.5	91.0	89.9	79.0-120			1.15	20
Dichlorodifluoromethane	25.0	26.3	26.2	105	105	51.0-149			0.238	20
1,1-Dichloroethane	25.0	24.8	24.6	99.4	98.3	70.0-126			1.12	20
1,2-Dichloroethane	25.0	20.8	20.8	83.1	83.1	70.0-128			0.0641	20
1,1-Dichloroethene	25.0	25.0	25.4	100	102	71.0-124			1.62	20
cis-1,2-Dichloroethene	25.0	23.9	23.7	95.7	94.7	73.0-120			1.11	20
trans-1,2-Dichloroethene	25.0	24.9	24.9	99.6	99.4	73.0-120			0.115	20
1,2-Dichloropropane	25.0	26.5	26.5	106	106	77.0-125			0.267	20
1,1-Dichloropropene	25.0	24.9	24.8	99.4	99.1	74.0-126			0.298	20
1,3-Dichloropropane	25.0	24.6	25.1	98.6	100	80.0-120			1.86	20
cis-1,3-Dichloropropene	25.0	24.0	24.2	96.2	96.7	80.0-123			0.513	20
trans-1,3-Dichloropropene	25.0	23.3	23.5	93.2	94.1	78.0-124			0.936	20
trans-1,4-Dichloro-2-butene	25.0	20.7	19.7	83.0	78.6	33.0-144			5.42	20
2,2-Dichloropropane	25.0	32.0	31.4	128	126	58.0-130			2.05	20
Di-isopropyl ether	25.0	27.7	27.6	111	110	58.0-138			0.601	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3406794-1 04/25/19 09:03 • (LCSD) R3406794-2 04/25/19 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	25.0	24.4	24.7	97.5	98.9	79.0-123			1.46	20
Hexachloro-1,3-butadiene	25.0	31.2	30.4	125	122	54.0-138			2.57	20
2-Hexanone	125	147	146	117	117	67.0-149			0.700	20
n-Hexane	25.0	29.2	28.6	117	114	57.0-133			2.29	20
Iodomethane	125	134	128	107	102	33.0-147			4.64	26
Isopropylbenzene	25.0	25.6	26.1	103	104	76.0-127			1.66	20
p-Isopropyltoluene	25.0	24.2	23.8	96.8	95.1	76.0-125			1.85	20
2-Butanone (MEK)	125	165	156	132	125	44.0-160			5.34	20
Methylene Chloride	25.0	24.7	24.5	98.8	98.1	67.0-120			0.726	20
4-Methyl-2-pentanone (MIBK)	125	143	142	114	114	68.0-142			0.369	20
Methyl tert-butyl ether	25.0	23.7	23.4	94.7	93.6	68.0-125			1.16	20
Naphthalene	25.0	25.1	24.5	100	98.1	54.0-135			2.40	20
n-Propylbenzene	25.0	23.0	23.0	92.1	91.9	77.0-124			0.261	20
Styrene	25.0	26.6	27.4	106	110	73.0-130			3.12	20
1,1,1,2-Tetrachloroethane	25.0	24.1	24.0	96.2	96.2	75.0-125			0.0553	20
1,1,2,2-Tetrachloroethane	25.0	22.8	22.7	91.3	90.8	65.0-130			0.553	20
1,1,2-Trichlorotrifluoroethane	25.0	23.4	24.1	93.6	96.5	69.0-132			3.14	20
Tetrachloroethene	25.0	25.8	25.8	103	103	72.0-132			0.287	20
Toluene	25.0	25.9	26.1	103	104	79.0-120			0.981	20
1,2,3-Trichlorobenzene	25.0	25.7	24.4	103	97.5	50.0-138			5.36	20
1,2,4-Trichlorobenzene	25.0	26.6	25.2	107	101	57.0-137			5.53	20
1,1,1-Trichloroethane	25.0	23.7	23.8	94.9	95.3	73.0-124			0.433	20
1,1,2-Trichloroethane	25.0	22.8	22.6	91.3	90.4	80.0-120			0.971	20
Trichloroethene	25.0	25.1	25.2	100	101	78.0-124			0.572	20
Trichlorofluoromethane	25.0	15.2	16.5	60.9	65.9	59.0-147			7.93	20
1,2,3-Trichloropropane	25.0	21.1	20.9	84.4	83.5	73.0-130			1.11	20
1,2,4-Trimethylbenzene	25.0	22.8	22.6	91.2	90.5	76.0-121			0.774	20
1,2,3-Trimethylbenzene	25.0	22.4	21.8	89.8	87.2	77.0-120			2.96	20
1,3,5-Trimethylbenzene	25.0	23.4	22.6	93.5	90.5	76.0-122			3.16	20
Vinyl acetate	125	119	120	95.4	95.7	11.0-160			0.361	20
Vinyl chloride	25.0	17.8	17.9	71.3	71.7	67.0-131			0.499	20
Xylenes, Total	75.0	74.9	75.0	99.9	100	79.0-123			0.133	20
(S) Toluene-d8				*101*	*100*	*80.0-120*				
(S) 4-Bromofluorobenzene				*105*	*107*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*92.7*	*99.9*	*70.0-130*				

Method Blank (MB)

(MB) R3406890-2 05/01/19 01:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3406890-1 05/01/19 00:32

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
cis-1,2-Dichloroethene	25.0	29.9	120	73.0-120	
Vinyl chloride	25.0	32.6	131	67.0-131	
(S) Toluene-d8			*102*	*80.0-120*	
(S) 4-Bromofluorobenzene			*100*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

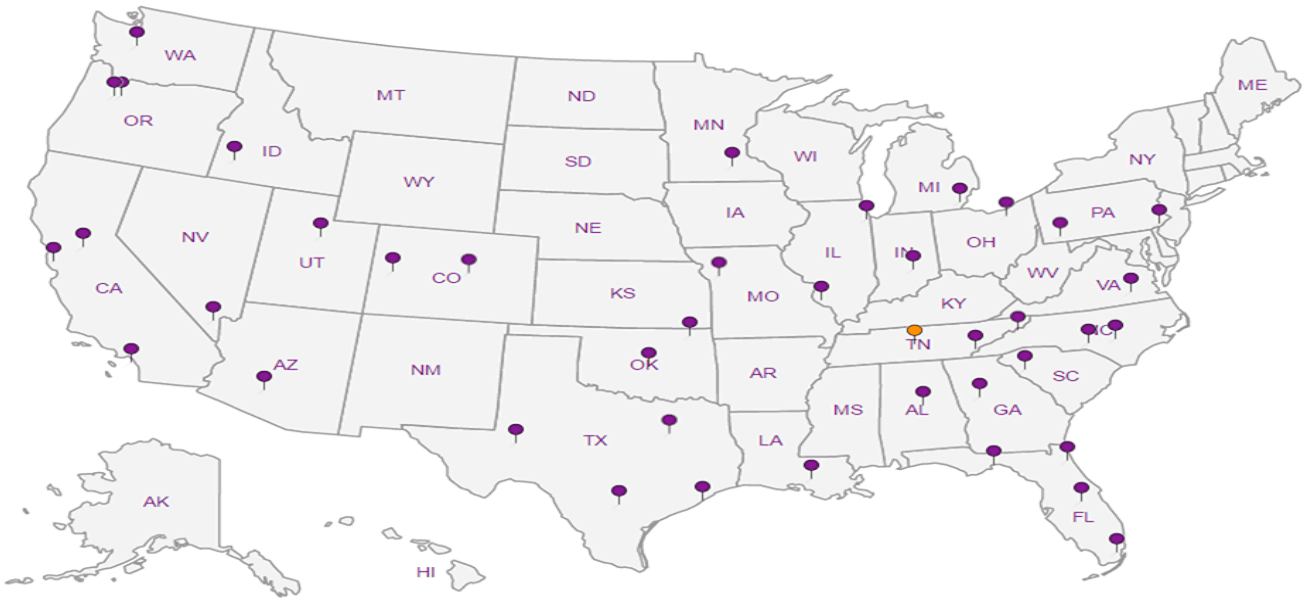
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:

Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected: Seattle, WA

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.05.601

Lab Project # PESENVSWA-ALP

Collected by (print): Ben Hecht

Site/Facility ID # American Linen

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page

Pace Analytical
National Center for Testing

L1092400

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# C229

Acctnum: PESENVSWA
Template: T143845
Prelogin: P701221
TSR: 110 - Brian Ford
PB: JB 4-1-19
Shipped Via: FedEx Ground

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125ml HDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175) 40mlAmb-HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOC 8260 (WATER)	GRO (WATER)	Remarks	Sample # (lab only)
MW-909-042419	Grab	GW	130	0820	4/24/19	12	X	X	X	X	X	X	X	-01	
MW-146-042419		GW	45	0955	"	12	X	X	X	X	X	X	X	-02	
MW-154-042419		GW	30	1140		6						X	X	-03	
MW-153-042419		GW	125	1255		9	X	X	X	X	X	X	X	-04	
TRIP BLANK-042419	-	GW	-	-	-	1	X	X				X	X	VOC GRO only	-05
		GW													
		GW													
		GW													
		GW													
		GW													

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Biossay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: SCREEN <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier

Tracking # Fedex 4876 1086 2011

Sample Receipt Checklist
COC Seal Present/Intact: NP
COC Signed/Accurate:
Bottles arrive intact:
Correct bottles used:
Sufficient volume sent:
If Applicable
VOA Zero Headspace:
Preservation Correct/Checked:

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	4-24-19	1615	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 1.7 °C Bottles Received: 37

Date: 4/25/19 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF

PES Environmental, Inc.- WA

2211 5 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Report to: Brian O'Neal/Bill Haldeman
Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen
City/State Collected: Seattle, WA

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.05.601
Lab Project # PESENVSWA-ALP

Collected by (print): Ben Heath
Site/Facility ID # American Linen
P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed

Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM (RSK175LL) 40mlAmb-HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	8260 VOC	GRO (NWTPH-Gx)	Remarks	Sample # (lab only)
MW-909-042419	Grab	GW	130	0820	4/24/19	12	X	X	X	X	X	X	X		
MW-146-042419		GW	45	0955		12	X	X	X	X	X	X	X		
MW-154-042419		GW	30	1140		6						X	X		
MW-153-042419		GW	125	1255		12	X	X	X	X	X	X	X		
TRIP BLANK-042419	-	GW	-	-	-	1	X	X				X	X	VOC, GRO only	
		GW													
		GW													
		GW													
		GW													
		GW													

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1092490
Table #
Acctnum: PESENVSWA
Template: T143845
Prelogin: P701221
TSR: 110 - Brian Ford
PB: JG 4-1-19
Shipped Via: FedEX Ground

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ___

Remarks:
SCREEN: <0.5 mm
pH ___ Temp ___
Flow ___ Other ___

Samples returned via:
__ UPS __ FedEx __ Courier

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Ben Heath	4-24-19	1615		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.7 °C Bottles Received:
				If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				Hold: Condition: NCF / OK

MEMORANDUM

TO: Project File **DATE:** May 23, 2019

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.601

TASK: EIM Data Validation Level EPA2A for April and May 2019 – Groundwater and Soil Vapor Samples

LAB: Pace Sample Delivery Groups (SDGs): L1091511, L1091936, L1091958, L1092400, L1092440, L1092880, L1093242, L1094387, L1094414, L1095166, and L1095349

Fifty-one (51) groundwater samples (including four field duplicates), four (4) soil vapor samples (including one field duplicate), one (1) equipment blank, and ten (10) trip blanks were collected as Round 2 Quarterly Monitoring sampling event at the Former American Linen Supply Site, in Seattle, Washington, between April 22, 2019 and May 3, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- VOCs by USEPA Method TO-15;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (Chloride, Nitrate, and Sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020A.

Samples were collected between April 22 and May 3, 2019 and results are reported in eleven Pace SDGs (L1091511, L1091936, L1091958, L1092400, L1092440, L1092880, L1093242, L1094387, L1094414, L1095166, and L1095349). The quality assurance review of the sample data is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with PACE control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for

Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1091936: Review of the chain of custody (COC) and email communication between Pace and PES indicate that analyses requests were revised on April 24, 2019 for the following:
    - Sample MW155- 042319 analyses request was limited to VOCs by USEPA Method 8260 and gasoline by NWTPH-Gx.
    - Samples MW103- 042219 and MW111-042219 analyses requests were limited to VOCs by USEPA Method 8260.
    - Samples MW104-042319, MW105-042319, and MW147-042319 analyses requests included gasoline by NWTPH-Gx.
- SDG L1091958: Review of the chain of custody (COC) and email communication between Pace and PES indicate that analyses requests were revised on April 24, 2019 for the following:
    - Sample MW155- 042319 analyses request was limited to VOCs by USEPA Method 8260 and gasoline by NWTPH-Gx.
- SDG L1092400: Two copies of the COC form are provided for review. Pace was contacted to clarify illegible laboratory condition of sample receipt notes recorded on the COC. COC date and time entries are switched but no action is taken other than to note this.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation less than 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

USEPA Method TO-15:
The analyses for VOCs by Method TO-15 were performed within the 30-day recommended holding time limit for the air samples collected in Summa canisters. All holding time criteria are met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020A:
All samples were analyzed within the USEPA recommended holding time for arsenic of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however PACE's notes indicate the following:

- SDGs L1091511 and L1091936 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for acetone, bromomethane, chloroethane, trichlorofluoromethane, vinyl acetate, and vinyl chloride associated with analytical batch WG1271083 (analyzed on April 24, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1092400 - *USEPA Method 8260C:* CCV issues are noted by Pace for acetone, bromomethane, chloroethane, trichlorofluoromethane, and vinyl chloride associated with analytical batch WG1271083 (analyzed on April 25, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDGs L1092440 and L1092880 - *USEPA Method 8260C:* CCV issues are noted by Pace for acetone, bromomethane, chloroethane, trichlorofluoromethane, and vinyl chloride associated with analytical batch WG1272563 (analyzed on April 26, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDGs L1091936 and L1091958 - *USEPA Method 8260C:* CCV issues are noted by Pace for acetone, bromomethane, chloroethane, trichlorofluoromethane, and vinyl chloride associated with analytical batch WG1271705 (analyzed on April 25, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1094387 - *USEPA Method 8260C:* CCV issues are noted by Pace for chloroethane, chloromethane, naphthalene, trichlorofluoromethane, vinyl acetate, and vinyl chloride associated with analytical batch WG1275813 (analyzed on May 3, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1094414 - *USEPA Method 8260C:* CCV issues are noted by Pace for acetone, bromomethane, chloroethane, trichlorofluoromethane, and vinyl chloride associated with analytical batch WG1275905 (analyzed on May 3, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

Method Blank Results

USEPA Method 8260C:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDGs L1091511 and L1091936 - Analytical batch WG1271083: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since hexachloro-1,3-butadiene is not detected in the associated samples.

- SDGs L1092400, L1091936, and L1091958 - Analytical batch WG1271705: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since hexachloro-1,3-butadiene is not detected in the associated samples.

- SDG L1093242 - Analytical batch WG1272804: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since hexachloro-1,3-butadiene is not detected in the associated samples.

- SDG L1094414 - Analytical batch WG1275905: A low level of acetone is detected in the method blank. Low levels of acetone are also detected in the Trip Blank and associated equipment blank. **Acetone detections in samples MW102-050119 and MW160-050119 are detected below the RDL are qualified (U) as non-detects due to trip, equipment, and/or method blank contamination.**

- SDG L1094387 - Analytical batch WG1275813: Low levels of carbon disulfide, hexachloro-1,3-butadiene, and 1,2,3-trichlorobenzne are detected in the method blank. No action was necessary since these compounds are not detected in the associated samples.

USEPA Method TO-15:
A laboratory method blank is included with the analytical batch per method requirement. The target analytes were not detected in the method blank at or above the RDLs.

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exception:

- SDG L1095349 - Analytical batch WG1277188: Gasoline is detected at a low level (below the RDL) in the method blank. No action is taken since gasoline is detected but not detected below the RDLs in associated samples.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020A and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL.

SDG	Batch	Method	Analyte	Result	Qualifier	MRL	Units	Associated Result(s) Qualified
L1091511	WG1273424	SM2320B	Alkalinity as CaCO3, Total	3140	J	20000	ug/L	NO
L1091511	WG1270623	9060A	TOC	258	J	1000	ug/L	NO
L1091936	WG1273424	SM2320B	Alkalinity as CaCO3, Total	3140	J	20000	ug/L	NO
L1091936	WG1271082	9056A	Nitrate	26.3	J	100	ug/L	NO
L1091936	WG1271094	9060A	TOC	229	J	1000	ug/L	NO
L1091958	WG1273427	SM2320B	Alkalinity as CaCO3, Total	3360	J	20000	ug/L	NO

L1091958	WG1271082	9056A	Nitrate	26.3	J	100	ug/L	NO
L1091958	WG1271096	9060A	TOC	485	J	1000	ug/L	NO
L1092400	WG1273429	SM2320B	Alkalinity as CaCO3, Total	3160	J	20000	ug/L	NO
L1092400	WG1272243	9060A	TOC	568	J	1000	ug/L	NO
L1092440	WG1271844	6020B	Iron	87.3	J	100	ug/L	NO
L1092440	WG1271844	6020B	Manganese	1.84	J	5.00	ug/L	NO
L1092880	WG1274856	SM2320B	Alkalinity as CaCO3, Total	3100	J	20000	ug/L	NO
L1092880	WG1271844	6020B	Iron	87.3	J	100	ug/L	NO
L1092880	WG1271844	6020B	Manganese	1.84	J	5.00	ug/L	NO
L1092880	WG1273394	9060A	TOC	284	J	1000	ug/L	NO
L1093242	WG1275809	SM2320B	Alkalinity as CaCO3, Total	3110	J	20000	ug/L	NO
L1093242	WG1273394	9060A	TOC	284	J	1000	ug/L	NO
L1093242	WG1271844	6020B	Iron	87.3	J	100	ug/L	NO
L1093242	WG1271844	6020B	Manganese	1.84	J	5.00	ug/L	NO
L1094387	WG1276578	SM2320B	Alkalinity as CaCO3, Total	5510	J	20000	ug/L	NO
L1094387	WG1276578	9060A	TOC	198	J	1000	ug/L	NO
L1094414	WG1276579	SM2320B	Alkalinity as CaCO3, Total	3670	J	20000	ug/L	NO
L1094414	WG1275310	9060A	TOC	205	J	1000	ug/L	NO
L1095349	WG1278682	SM2320B	Alkalinity as CaCO3, Total	3040	J	20000	ug/L	NO
L1095349	WG1276616	9060A	TOC	349	J	1000	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:
Ten trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1092400 - Analytical batch WG1271705: A low level of acetone is detected (below the RDL) in the trip blank. **Associated low level acetone detections, below the RDL, in samples MW-153-042419, MW-909-042419, MW-146-042419, and MW-154-042419 are qualified as not detected (U).**

- SDG L1092440 - Analytical batch WG1272563: A low level of acetone is detected (below the RDL) in the trip blank. **Associated low level acetone detections, below the RDL, in samples MW-125-042319, MW-143-042419, MW-908-042419, MW-142-042419, MW-156-042419, and MW-157-042419 are qualified as not detected (U).**

- SDG L1092880 - Analytical batch WG1272563: A low level of acetone is detected (below the RDL) in the trip blank. **Associated low level acetone detections, below the RDL, in samples MW-158-042519, W-MW-01-042519, and R-MW6-042519 are qualified as not detected (U).**

- SDG L1093242 - Analytical batch WG1272804: A low level of acetone is detected (below the RDL) in the trip blank. **Associated low level acetone detections, below the RDL, in samples MW106-042619, MW145-042619, MW-910-042619, and MW-178-042619 are qualified as not detected (U).**

- SDG L1094387 - Analytical batch WG1275813: A low level of acetone is detected (below the RDL) in the trip blank. **Associated low level acetone detections, below the RDL, are detected in all samples and are qualified as not detected (U).**

- SDG L1094414 - Analytical batch WG1277193: A low level of acetone is detected (below the RDL) in the trip blank. **Associated low level acetone detections, below the RDL, in samples MW102-050119 and MW160-050119 are qualified as not detected (U) due to trip, equipment, and/or method blank contamination.**

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:
One equipment blank (EQ-050119) was collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), wet chemistry parameters (alkalinity, chloride, nitrate, sulfate, and TOC), and metals (iron and manganese). Review of the equipment blank results are as follows:

- SDG L1094414: An equipment blank sample (EQ-050119) was collected on May 1, 2019 from the bladder pump associated with samples MW102-050119 and MW160-050119. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

    - Low levels of acetone, bromodichloromethane, chlorodibromomethane, and chloroform (below the RDL) are detected in the equipment blank. No action was needed for chloroform as it was not detected in the associated samples. **Sample MW102-050119 and MW160-050119 acetone detections are less than the RDL and are qualified (U) as not detected due to equipment, trip and/or method blank contamination.** Low levels of alkalinity, chloride, TOC, iron, and manganese were also detected in the equipment blank. No action was taken on this basis since associated detections in samples MW102-050119 and MW160-050119 are either above the RDL or are not detected.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1092400: Samples MW153-042419 and MW909-042419
- SDG L1092440: Samples MW156-042419 and MW908-042419
- SDG L1093242: Samples MW159-042619 and MW910-042619
- SDG L1095349: Samples MW120-050319 and MW911-050319
- SDG L1095166: Samples SV01-042919 and SV01-042919-D

Target analyte results are comparable and within a relative percent difference (RPD) of 30% for the field duplicate pair with the following exceptions:

- SDG L1092400: Samples MW153-042419 and MW909-042419: Iron and vinyl chloride results are not comparable with RPDs greater than 30% (for results < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for iron and vinyl chloride are estimated and qualified (J).**

- SDG L1092440: Samples MW156-042419 and MW908-042419: Nitrate results are not comparable with RPDs greater than 30% (for results < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for nitrate are estimated and qualified (J).**

- SDG L1095349: Samples MW120-050319 and MW911-050319: Iron and methane results are not comparable with RPDs greater than 30% (for results < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for iron and methane are estimated and qualified (J).**

Laboratory Duplicate Analyses

USEPA Method 8260C:
Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

NWTPH-Gx Method:
A laboratory duplicate sample was not analyzed. Refer to LCS/LCSD or MS/MSDs results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020A:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
A laboratory duplicate sample was performed on client samples and on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussions:

- SDG L1092440: Non client sample alkalinity RPD result exceeds 20%. No action is taken since the duplicate was performed on a non-client sample refer to field duplicate results for precision data.

- SDGs L1094414 and L1094387: A laboratory duplicate was performed on the equipment blank (EQ-050119) with a low-level chloride RPD result greater than laboratory QC

criteria of 15%. No action is taken since the results are less than the RDL and the duplicate was performed on the equipment blank.

Surrogate Recoveries

USEPA Method 8260C:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all the analyses.

USEPA Method TO-15:
The surrogate recovery results for the samples, laboratory control samples, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions and exceptions:

- SDG L1092400 - Analytical batch WG1271705: LCSD recovery for acetone is above control limit criteria and laboratory qualified (J4). LCS/LCSD recoveries for acetone are wide and the RPD is above control limit criteria and laboratory qualified (J3). No action was taken on this basis since acetone was detected at a low level in the trip blank (Trip Blank). For further discussion refer to the Trip Blank Results section for details.

- SDGs L1091936 and L1091958 - Analytical batch WG1271705: LCSD recovery for acetone is above control limit criteria and laboratory qualified (J4). LCS/LCSD recoveries for acetone are wide and the RPD is above control limit criteria and laboratory qualified (J3). **Associated acetone results are already estimated and qualified (J) due to calibration issues.** Refer to the Initial and Continuing Calibration section for additional details.

- SDGs L1092440 and L1092880 - Analytical batch WG1272563: LCS/LCSD recoveries for 2-hexanone are within but are recovered wide, the RPD is above control limit criteria, and results are laboratory qualified (J3). No action is taken other than to note this.

- SDG L1092400 - Analytical batch WG1274056. No LCSD was analyzed for cis-1,2-dichloroethene. Refer to field duplicate results for precision data.

- SDG L1092400 - Analytical batch WG1274056. No LCSD was analyzed for cis-1,2-dichloroethene. Refer to field duplicate results for precision data.

- SDG L1094387 - Analytical batch WG1275813. LCSD recovery for acetone is above control limit criteria and laboratory qualified (J4). No action is taken on this basis since associated acetone results are qualified (U) as not detected due to trip blank contamination. For further discussion refer to the section on Trip Blank Results. LCS/LCSD recoveries for vinyl chloride are below control limit criteria and laboratory qualified (J4). **All associated vinyl chloride results are estimated and qualified (J/UJ) due to low LCS/LCSD recoveries.**

- SDG L1095349 - Analytical batch WG1277852. No LCSD was analyzed for VOCs. Refer to field duplicate results for precision data.

USEPA Method TO-15:
Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were analyzed for the VOCs by TO-15 along with each analytical batch. LCS/LCSD %Rs and relative percent differences (RPDs) are within QC criteria.

NWTPH-Gx Method:

The LCS or LCS/LCSD %Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters with the following discussions:

- SDG L1092400 - Analytical batch WG1272107. No LCSD was analyzed. Refer to field duplicate results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD %Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020A:
The LCS/LCSD %Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS or LCS/LCSD %Rs and RPDs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD and/or field duplicate data for accuracy and precision data.

USEPA Method TO-15:

Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD and/or field duplicate data for accuracy and precision data.

NWTPH-Gx Method:
MS/MSD analyses were performed on client or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data.

USEPA Method 6020A:
MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDG L1092400 - Analytical batch WG1271843: MS/MSDs were performed on non-client samples. The sample amount is greater than the spike amount and MS/MSD results are qualified (V) by the laboratory. No action was taken other than to note that the spike was performed on a non-client sample and LCS/LCSD results are within criteria.

- SDGs L1092440 and L1092880 - Analytical batch WG1271844: MS/MSDs were performed on client sample MW-158-042419 (SDG L1092880). The sample amount for iron is greater than the spike amount and MS/MSD results are qualified (V) by the laboratory. No action was taken other than to note that the spike was performed on a non-client sample and LCS/LCSD results are within criteria.

- SDGs L1094387 and L1094414 - Analytical batch WG1275858: MS/MSDs were performed on non-client sample. The sample amount for iron is greater than the spike amount and MS/MSD results are qualified (V) by the laboratory. No action was taken other than to note that the spike was performed on a non-client sample and LCS/LCSD results are within criteria.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exception:

- SDG L1092440 - Analytical batch WG1271815: The MS was performed on client sample MW-157-042419. MS results for sulfate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that the laboratory duplicate and LCS recovery results are

within criteria. Sample MW157-042419 sulfate concentration is within the calibration range.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussion:

- SDG L1095349: A serial dilution was performed on field duplicate sample MW911-050319. Serial dilution criteria were not met (laboratory qualified O1) for iron. **Sample MW911-050319 and field duplicate sample MW120-050319 iron results are estimated and qualified (J) due to the high serial dilution result.** Refer to the Field Duplicate section for additional information on this field duplicate pair.

- SDG L1095349: A serial dilution was performed on field duplicate sample MW911-050319 (field duplicate sample MW120-050319). Serial dilution criteria were not met (laboratory qualified O1) for manganese at the 5X dilution. For sample MW911-050319 Pace reported two sets of results (10X and 5X) for manganese. **Sample MW911-050319 manganese result at the 5X dilution, while acceptable as estimated is rejected (R) because sample MW911-050319 manganese at the higher dilution (10X) has the higher concentration result and is reported as this result is the most conservative.** Field duplicate sample RPD results are less than 30% RPD.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and tetrachloroethene) elute within the GRO retention time range. Elevated chlorinated VOC compounds likely contribute to the GRO result and associated GRO results are likely biased high (J+). Qualified samples are as follows:

Sample ID	Laboratory Identification	Result Parameter Name	Result Value (µg/L)	Qualified Result	Comments
MW104-042319	L1091936-03	Gasoline Range Organics	174	J+	Elevated chlorinated VOCs within the GRO elution range
MW147-042319	L1091936-05	Gasoline Range Organics	139	J+	Elevated chlorinated VOCs within the GRO elution range
W-MW-02-042319	L1091958-01	Gasoline Range Organics	429	J+	Elevated chlorinated VOCs within the GRO elution range
MW-908-042419	L1092440-03	Gasoline Range Organics	2600	J+	Elevated chlorinated VOCs within the GRO elution range
MW-156-042419	L1092440-05	Gasoline Range Organics	2570	J+	Elevated chlorinated VOCs within the GRO elution range
MW-157-042419	L1092440-06	Gasoline Range Organics	3210	J+	Elevated chlorinated VOCs within the GRO elution range

MW-9-042619	L1093242-08	Gasoline Range Organics	121	J+	Elevated chlorinated VOCs within the GRO elution range
MW107-050119	L1094387-09	Gasoline Range Organics	481	J+	Elevated chlorinated VOCs within the GRO elution range
MW120-050319	L1095349-01	Gasoline Range Organics	111	J+	Elevated chlorinated VOCs within the GRO elution range
MW911-050319	L1095349-02	Gasoline Range Organics	138	J+	Elevated chlorinated VOCs within the GRO elution range

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note that Pace sample narrative notes indicate that VOC target compounds were too high to run at lower dilution for two samples as follows:

- MW-157-042419 (SDG L1092440); and
- FMW-129-050119 (SDG L1094387).

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use with the following exception:

- SDG L1095349: **Sample MW911-050319 manganese result at the 5X dilution, while acceptable as estimated is rejected (R) because sample MW911-050319 manganese at the higher dilution (10X) has the higher concentration result and is reported as the result is the most conservative.**

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	346000		2710	20000	1	04/29/2019 17:50	WG1273424

Sample Narrative:

L1091936-05 WG1273424: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26900		51.9	1000	1	04/24/2019 19:49	WG1271082
Nitrate	U		22.7	100	1	04/24/2019 19:49	WG1271082
Sulfate	28100		77.4	5000	1	04/24/2019 19:49	WG1271082

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	13700		102	1000	1	04/24/2019 23:34	WG1271094

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4390		75.0	500	5	05/07/2019 00:43	WG1271169
Manganese	787		1.25	25.0	5	05/07/2019 00:43	WG1271169

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	139 J+		31.6	100	1	04/25/2019 15:20	WG1271515
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*04/25/2019 15:20*	WG1271515

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	8110		2.87	6.78	10	04/26/2019 14:59	WG1271298
Ethane	U		0.296	1.29	1	04/26/2019 13:49	WG1271298
Ethene	158		0.422	1.27	1	04/26/2019 13:49	WG1271298

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.91 J	J J0	1.05	25.0	1	04/24/2019 18:56	WG1271083
Acrylonitrile	U		0.873	5.00	1	04/24/2019 18:56	WG1271083
Benzene	U		0.0896	0.500	1	04/24/2019 18:56	WG1271083
Bromobenzene	U		0.133	0.500	1	04/24/2019 18:56	WG1271083
Bromodichloromethane	U		0.0800	0.500	1	04/24/2019 18:56	WG1271083
Bromochloromethane	U		0.145	0.500	1	04/24/2019 18:56	WG1271083
Bromoform	U		0.186	0.500	1	04/24/2019 18:56	WG1271083
Bromomethane	U UJ	J0	0.157	2.50	1	04/24/2019 18:56	WG1271083
n-Butylbenzene	U		0.143	0.500	1	04/24/2019 18:56	WG1271083
sec-Butylbenzene	U		0.134	0.500	1	04/24/2019 18:56	WG1271083
tert-Butylbenzene	U		0.183	0.500	1	04/24/2019 18:56	WG1271083
Carbon disulfide	U		0.101	0.500	1	04/24/2019 18:56	WG1271083
Carbon tetrachloride	U		0.159	0.500	1	04/24/2019 18:56	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	04/24/2019 18:56	WG1271083
Chlorodibromomethane	U		0.128	0.500	1	04/24/2019 18:56	WG1271083
Chloroethane	U	UJ J0	0.141	2.50	1	04/24/2019 18:56	WG1271083
Chloroform	U		0.0860	0.500	1	04/24/2019 18:56	WG1271083
Chloromethane	U		0.153	1.25	1	04/24/2019 18:56	WG1271083
2-Chlorotoluene	U		0.111	0.500	1	04/24/2019 18:56	WG1271083
4-Chlorotoluene	U		0.0972	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/24/2019 18:56	WG1271083
1,2-Dibromoethane	U		0.193	0.500	1	04/24/2019 18:56	WG1271083
Dibromomethane	U		0.117	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dichlorobenzene	U		0.101	0.500	1	04/24/2019 18:56	WG1271083
1,3-Dichlorobenzene	U		0.130	0.500	1	04/24/2019 18:56	WG1271083
1,4-Dichlorobenzene	U		0.121	0.500	1	04/24/2019 18:56	WG1271083
Dichlorodifluoromethane	U		0.127	2.50	1	04/24/2019 18:56	WG1271083
1,1-Dichloroethane	U		0.114	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dichloroethane	U		0.108	0.500	1	04/24/2019 18:56	WG1271083
1,1-Dichloroethene	1.75		0.188	0.500	1	04/24/2019 18:56	WG1271083
cis-1,2-Dichloroethene	322		0.933	5.00	10	04/26/2019 12:43	WG1272362
trans-1,2-Dichloroethene	1.47		0.152	0.500	1	04/24/2019 18:56	WG1271083
1,2-Dichloropropane	U		0.190	0.500	1	04/24/2019 18:56	WG1271083
1,1-Dichloropropene	U		0.128	0.500	1	04/24/2019 18:56	WG1271083
1,3-Dichloropropane	U		0.147	1.00	1	04/24/2019 18:56	WG1271083
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/24/2019 18:56	WG1271083
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/24/2019 18:56	WG1271083
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/24/2019 18:56	WG1271083
2,2-Dichloropropane	U		0.0929	0.500	1	04/24/2019 18:56	WG1271083
Di-isopropyl ether	U		0.0924	0.500	1	04/24/2019 18:56	WG1271083
Ethylbenzene	U		0.158	0.500	1	04/24/2019 18:56	WG1271083
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/24/2019 18:56	WG1271083
2-Hexanone	U		0.757	5.00	1	04/24/2019 18:56	WG1271083
n-Hexane	U		0.305	5.00	1	04/24/2019 18:56	WG1271083
Iodomethane	U		0.377	10.0	1	04/24/2019 18:56	WG1271083
Isopropylbenzene	U		0.126	0.500	1	04/24/2019 18:56	WG1271083
p-Isopropyltoluene	U		0.138	0.500	1	04/24/2019 18:56	WG1271083
2-Butanone (MEK)	U		1.28	5.00	1	04/24/2019 18:56	WG1271083
Methylene Chloride	U		1.07	2.50	1	04/24/2019 18:56	WG1271083
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/24/2019 18:56	WG1271083
Methyl tert-butyl ether	U		0.102	0.500	1	04/24/2019 18:56	WG1271083
Naphthalene	U		0.174	2.50	1	04/24/2019 18:56	WG1271083
n-Propylbenzene	U		0.162	0.500	1	04/24/2019 18:56	WG1271083
Styrene	U		0.117	0.500	1	04/24/2019 18:56	WG1271083
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/24/2019 18:56	WG1271083
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/24/2019 18:56	WG1271083
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/24/2019 18:56	WG1271083
Tetrachloroethene	U		0.199	0.500	1	04/24/2019 18:56	WG1271083
Toluene	U		0.412	0.500	1	04/24/2019 18:56	WG1271083
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/24/2019 18:56	WG1271083
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/24/2019 18:56	WG1271083
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/24/2019 18:56	WG1271083
1,1,2-Trichloroethane	U		0.186	0.500	1	04/24/2019 18:56	WG1271083
Trichloroethene	5.13		0.153	0.500	1	04/24/2019 18:56	WG1271083
Trichlorofluoromethane	U	UJ J0	0.130	2.50	1	04/24/2019 18:56	WG1271083
1,2,3-Trichloropropane	U		0.247	2.50	1	04/24/2019 18:56	WG1271083
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/24/2019 18:56	WG1271083
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/24/2019 18:56	WG1271083
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/24/2019 18:56	WG1271083

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	04/24/2019 18:56	WG1271083
Vinyl chloride	499			1.18	5.00	10	04/26/2019 12:43	WG1272362
Xylenes, Total	U	UJ	J0	0.316	1.50	1	04/24/2019 18:56	WG1271083
(S) Toluene-d8	*100*				*80.0-120*		*04/24/2019 18:56*	WG1271083
(S) Toluene-d8	*98.8*				*80.0-120*		*04/26/2019 12:43*	WG1272362
(S) 4-Bromofluorobenzene	*105*				*77.0-126*		*04/24/2019 18:56*	WG1271083
(S) 4-Bromofluorobenzene	*99.9*				*77.0-126*		*04/26/2019 12:43*	WG1272362
(S) 1,2-Dichloroethane-d4	*94.2*				*70.0-130*		*04/24/2019 18:56*	WG1271083
(S) 1,2-Dichloroethane-d4	*89.2*				*70.0-130*		*04/26/2019 12:43*	WG1272362

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	310000		2710	20000	1	04/30/2019 15:03	WG1273429

Sample Narrative:
L1092400-02 WG1273429: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	14800		51.9	1000	1	04/26/2019 02:59	WG1271706
Nitrate	U		22.7	100	1	04/26/2019 02:59	WG1271706
Sulfate	23300		77.4	5000	1	04/26/2019 02:59	WG1271706

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4950	~~B~~	102	1000	1	04/29/2019 19:49	WG1272243

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2870		75.0	500	5	04/29/2019 17:21	WG1271843
Manganese	770		1.25	25.0	5	04/29/2019 17:21	WG1271843

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l		Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	88.0	J	J	31.6	100	1	04/26/2019 02:29	WG1272107
(S) a,a,a-Trifluorotoluene(FID)	*111*				*78.0-120*		*04/26/2019 02:29*	WG1272107

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5090		0.287	0.678	1	05/02/2019 14:20	WG1272501
Ethane	4.00		0.296	1.29	1	05/02/2019 14:20	WG1272501
Ethene	347		0.422	1.27	1	05/02/2019 14:20	WG1272501

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l		Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch	
Acetone	1.58	U	J J0 J3 J4	1.05	25.0	1	04/25/2019 19:09	WG1271705	
Acrylonitrile	U			0.873	5.00	1	04/25/2019 19:09	WG1271705	
Benzene	U			0.0896	0.500	1	04/25/2019 19:09	WG1271705	
Bromobenzene	U			0.133	0.500	1	04/25/2019 19:09	WG1271705	
Bromodichloromethane	U			0.0800	0.500	1	04/25/2019 19:09	WG1271705	
Bromochloromethane	U			0.145	0.500	1	04/25/2019 19:09	WG1271705	JC 5/9/19
Bromoform	U			0.186	0.500	1	04/25/2019 19:09	WG1271705	
Bromomethane	U	UJ	J0	0.157	2.50	1	04/25/2019 19:09	WG1271705	
n-Butylbenzene	U			0.143	0.500	1	04/25/2019 19:09	WG1271705	
sec-Butylbenzene	U			0.134	0.500	1	04/25/2019 19:09	WG1271705	
tert-Butylbenzene	U			0.183	0.500	1	04/25/2019 19:09	WG1271705	
Carbon disulfide	U			0.101	0.500	1	04/25/2019 19:09	WG1271705	
Carbon tetrachloride	U			0.159	0.500	1	04/25/2019 19:09	WG1271705	

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	04/25/2019 19:09	WG1271705
Chlorodibromomethane	U		0.128	0.500	1	04/25/2019 19:09	WG1271705
Chloroethane	0.719 J	J J0	0.141	2.50	1	04/25/2019 19:09	WG1271705
Chloroform	U		0.0860	0.500	1	04/25/2019 19:09	WG1271705
Chloromethane	U		0.153	1.25	1	04/25/2019 19:09	WG1271705
2-Chlorotoluene	U		0.111	0.500	1	04/25/2019 19:09	WG1271705
4-Chlorotoluene	U		0.0972	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	04/25/2019 19:09	WG1271705
1,2-Dibromoethane	U		0.193	0.500	1	04/25/2019 19:09	WG1271705
Dibromomethane	U		0.117	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dichlorobenzene	U		0.101	0.500	1	04/25/2019 19:09	WG1271705
1,3-Dichlorobenzene	U		0.130	0.500	1	04/25/2019 19:09	WG1271705
1,4-Dichlorobenzene	U		0.121	0.500	1	04/25/2019 19:09	WG1271705
Dichlorodifluoromethane	U		0.127	2.50	1	04/25/2019 19:09	WG1271705
1,1-Dichloroethane	U		0.114	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dichloroethane	U		0.108	0.500	1	04/25/2019 19:09	WG1271705
1,1-Dichloroethene	1.04		0.188	0.500	1	04/25/2019 19:09	WG1271705
cis-1,2-Dichloroethene	257		0.933	5.00	10	05/01/2019 03:04	WG1274056
trans-1,2-Dichloroethene	1.94		0.152	0.500	1	04/25/2019 19:09	WG1271705
1,2-Dichloropropane	U		0.190	0.500	1	04/25/2019 19:09	WG1271705
1,1-Dichloropropene	U		0.128	0.500	1	04/25/2019 19:09	WG1271705
1,3-Dichloropropane	U		0.147	1.00	1	04/25/2019 19:09	WG1271705
cis-1,3-Dichloropropene	U		0.0976	0.500	1	04/25/2019 19:09	WG1271705
trans-1,3-Dichloropropene	U		0.222	0.500	1	04/25/2019 19:09	WG1271705
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	04/25/2019 19:09	WG1271705
2,2-Dichloropropane	U		0.0929	0.500	1	04/25/2019 19:09	WG1271705
Di-isopropyl ether	U		0.0924	0.500	1	04/25/2019 19:09	WG1271705
Ethylbenzene	U		0.158	0.500	1	04/25/2019 19:09	WG1271705
Hexachloro-1,3-butadiene	U		0.157	1.00	1	04/25/2019 19:09	WG1271705
2-Hexanone	U		0.757	5.00	1	04/25/2019 19:09	WG1271705
n-Hexane	U		0.305	5.00	1	04/25/2019 19:09	WG1271705
Iodomethane	U		0.377	10.0	1	04/25/2019 19:09	WG1271705
Isopropylbenzene	U		0.126	0.500	1	04/25/2019 19:09	WG1271705
p-Isopropyltoluene	U		0.138	0.500	1	04/25/2019 19:09	WG1271705
2-Butanone (MEK)	U		1.28	5.00	1	04/25/2019 19:09	WG1271705
Methylene Chloride	U		1.07	2.50	1	04/25/2019 19:09	WG1271705
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	04/25/2019 19:09	WG1271705
Methyl tert-butyl ether	U		0.102	0.500	1	04/25/2019 19:09	WG1271705
Naphthalene	U		0.174	2.50	1	04/25/2019 19:09	WG1271705
n-Propylbenzene	U		0.162	0.500	1	04/25/2019 19:09	WG1271705
Styrene	U		0.117	0.500	1	04/25/2019 19:09	WG1271705
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	04/25/2019 19:09	WG1271705
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	04/25/2019 19:09	WG1271705
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	04/25/2019 19:09	WG1271705
Tetrachloroethene	1.50		0.199	0.500	1	04/25/2019 19:09	WG1271705
Toluene	U		0.412	0.500	1	04/25/2019 19:09	WG1271705
1,2,3-Trichlorobenzene	U		0.164	0.500	1	04/25/2019 19:09	WG1271705
1,2,4-Trichlorobenzene	U		0.355	0.500	1	04/25/2019 19:09	WG1271705
1,1,1-Trichloroethane	U		0.0940	0.500	1	04/25/2019 19:09	WG1271705
1,1,2-Trichloroethane	U		0.186	0.500	1	04/25/2019 19:09	WG1271705
Trichloroethene	12.4		0.153	0.500	1	04/25/2019 19:09	WG1271705
Trichlorofluoromethane	U UJ	J0	0.130	2.50	1	04/25/2019 19:09	WG1271705
1,2,3-Trichloropropane	U		0.247	2.50	1	04/25/2019 19:09	WG1271705
1,2,4-Trimethylbenzene	U		0.123	0.500	1	04/25/2019 19:09	WG1271705
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	04/25/2019 19:09	WG1271705
1,3,5-Trimethylbenzene	U		0.124	0.500	1	04/25/2019 19:09	WG1271705

JC 5/9/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	04/25/2019 19:09	WG1271705
Vinyl chloride	383		1.18	5.00	10	05/01/2019 03:04	WG1274056
Xylenes, Total	U		0.316	1.50	1	04/25/2019 19:09	WG1271705
(S) Toluene-d8	*97.1*			*80.0-120*		*04/25/2019 19:09*	WG1271705
(S) Toluene-d8	*103*			*80.0-120*		*05/01/2019 03:04*	WG1274056
(S) 4-Bromofluorobenzene	*99.8*			*77.0-126*		*04/25/2019 19:09*	WG1271705
(S) 4-Bromofluorobenzene	*99.5*			*77.0-126*		*05/01/2019 03:04*	WG1274056
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*04/25/2019 19:09*	WG1271705
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*05/01/2019 03:04*	WG1274056

JC 5/9/19

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 26, 2019

PES Environmental, Inc.- WA

Sample Delivery Group:	L1120206
Samples Received:	07/19/2019
Project Number:	1413.001.05.601
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman
	1215 Fourth Ave., Suite 1350
	Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Project Manager

MW-126-071819 L1120206-01 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 07:15 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 15:50	07/20/19 15:50	BMB	Mt. Juliet, TN

MW-8-071819 L1120206-02 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 09:35 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 16:47	07/23/19 16:47	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 16:10	07/20/19 16:10	BMB	Mt. Juliet, TN

MW-912-071819 L1120206-03 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 08:00 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1315391	1	07/23/19 13:14	07/23/19 13:14	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314262	1	07/19/19 21:56	07/19/19 21:56	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315213	1	07/22/19 15:59	07/22/19 15:59	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1314861	1	07/20/19 15:39	07/21/19 16:55	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 17:07	07/23/19 17:07	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1316411	1	07/24/19 16:28	07/24/19 16:28	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 16:31	07/20/19 16:31	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1316884	20	07/24/19 23:00	07/24/19 23:00	ACG	Mt. Juliet, TN

MW-914-071819 L1120206-04 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 08:20 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 17:28	07/23/19 17:28	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 16:51	07/20/19 16:51	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1316884	1	07/24/19 20:36	07/24/19 20:36	ACG	Mt. Juliet, TN

SCS-2-071819 L1120206-05 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 10:35 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 17:48	07/23/19 17:48	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 17:12	07/20/19 17:12	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1316884	10	07/24/19 23:22	07/24/19 23:22	ACG	Mt. Juliet, TN

MW-147-071819 L1120206-06 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 10:45 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1315970	1	07/24/19 16:46	07/24/19 16:46	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314262	1	07/19/19 22:13	07/19/19 22:13	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315213	1	07/22/19 16:13	07/22/19 16:13	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1314861	1	07/20/19 15:39	07/21/19 16:58	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 18:09	07/23/19 18:09	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1316410	1	07/24/19 12:36	07/24/19 12:36	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 17:32	07/20/19 17:32	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1316884	20	07/24/19 23:44	07/24/19 23:44	ACG	Mt. Juliet, TN

MW-102-071819 L1120206-07 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 12:15 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1315970	1	07/24/19 16:56	07/24/19 16:56	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314262	1	07/19/19 22:31	07/19/19 22:31	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315213	1	07/22/19 16:25	07/22/19 16:25	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1314861	1	07/20/19 15:39	07/21/19 17:01	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 18:29	07/23/19 18:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1316410	1	07/24/19 12:40	07/24/19 12:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 17:53	07/20/19 17:53	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1316884	1	07/24/19 20:58	07/24/19 20:58	ACG	Mt. Juliet, TN

MW-161-071819 L1120206-08 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 14:15 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1315970	1	07/24/19 17:04	07/24/19 17:04	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314262	1	07/19/19 23:24	07/19/19 23:24	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315213	1	07/22/19 16:38	07/22/19 16:38	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1314861	1	07/20/19 15:39	07/21/19 17:21	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316070	1	07/23/19 18:50	07/23/19 18:50	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1316410	1	07/24/19 12:58	07/24/19 12:58	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 18:13	07/20/19 18:13	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1316884	1	07/24/19 21:46	07/24/19 21:46	ACG	Mt. Juliet, TN

MW-128-071819 L1120206-09 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 14:15 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1315970	1	07/24/19 20:29	07/24/19 20:29	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314262	1	07/19/19 23:41	07/19/19 23:41	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315213	1	07/22/19 17:30	07/22/19 17:30	EEM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1314861	1	07/20/19 15:39	07/21/19 17:24	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1316410	1	07/24/19 13:08	07/24/19 13:08	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317135	10	07/25/19 11:17	07/25/19 11:17	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 18:33	07/20/19 18:33	BMB	Mt. Juliet, TN

TRIP-071819 L1120206-10 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 16:30 | Received date/time: 07/19/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 14:34	07/24/19 14:34	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1314770	1	07/20/19 12:25	07/20/19 12:25	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.96	J J0	1.05	25.0	1	07/20/2019 15:50	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 15:50	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 15:50	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 15:50	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 15:50	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 15:50	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 15:50	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 15:50	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 15:50	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 15:50	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 15:50	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 15:50	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 15:50	WG1314770
Chlorobenzene	U		0.140	0.500	1	07/20/2019 15:50	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 15:50	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 15:50	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 15:50	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 15:50	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 15:50	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 15:50	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 15:50	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 15:50	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 15:50	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 15:50	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 15:50	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 15:50	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 15:50	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 15:50	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 15:50	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 15:50	WG1314770
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/20/2019 15:50	WG1314770
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 15:50	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 15:50	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 15:50	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 15:50	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 15:50	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 15:50	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 15:50	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 15:50	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 15:50	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 15:50	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 15:50	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 15:50	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 15:50	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 15:50	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 15:50	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 15:50	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 15:50	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 15:50	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 15:50	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 15:50	WG1314770
Naphthalene	U	J0	0.174	2.50	1	07/20/2019 15:50	WG1314770
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 15:50	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 15:50	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 15:50	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 15:50	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 15:50	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 15:50	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 15:50	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 15:50	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 15:50	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 15:50	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 15:50	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 15:50	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 15:50	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 15:50	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 15:50	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 15:50	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 15:50	WG1314770
Vinyl acetate	U		0.645	5.00	1	07/20/2019 15:50	WG1314770
Vinyl chloride	U		0.118	0.500	1	07/20/2019 15:50	WG1314770
Xylenes, Total	U		0.316	1.50	1	07/20/2019 15:50	WG1314770
(S) Toluene-d8	*101*			*80.0-120*		*07/20/2019 15:50*	WG1314770
(S) 4-Bromofluorobenzene	*93.0*			*77.0-126*		*07/20/2019 15:50*	WG1314770
(S) 1,2-Dichloroethane-d4	*98.3*			*70.0-130*		*07/20/2019 15:50*	WG1314770

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/23/2019 16:47	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*07/23/2019 16:47*	WG1316070

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.98	J J0	1.05	25.0	1	07/20/2019 16:10	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 16:10	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 16:10	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 16:10	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 16:10	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 16:10	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 16:10	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 16:10	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 16:10	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 16:10	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 16:10	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 16:10	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 16:10	WG1314770
Chlorobenzene	U		0.140	0.500	1	07/20/2019 16:10	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 16:10	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 16:10	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 16:10	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 16:10	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 16:10	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 16:10	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 16:10	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 16:10	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 16:10	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 16:10	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 16:10	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 16:10	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 16:10	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 16:10	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 16:10	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 16:10	WG1314770
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/20/2019 16:10	WG1314770
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 16:10	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 16:10	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 16:10	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 16:10	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 16:10	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 16:10	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 16:10	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 16:10	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 16:10	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 16:10	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 16:10	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 16:10	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 16:10	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 16:10	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 16:10	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 16:10	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 16:10	WG1314770

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/20/2019 16:10	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 16:10	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 16:10	WG1314770
Naphthalene	U	J0	0.174	2.50	1	07/20/2019 16:10	WG1314770
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 16:10	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 16:10	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 16:10	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 16:10	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 16:10	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 16:10	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 16:10	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 16:10	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 16:10	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 16:10	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 16:10	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 16:10	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 16:10	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 16:10	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 16:10	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 16:10	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 16:10	WG1314770
Vinyl acetate	U		0.645	5.00	1	07/20/2019 16:10	WG1314770
Vinyl chloride	U		0.118	0.500	1	07/20/2019 16:10	WG1314770
Xylenes, Total	U		0.316	1.50	1	07/20/2019 16:10	WG1314770
(S) Toluene-d8	*99.9*			*80.0-120*		*07/20/2019 16:10*	WG1314770
(S) 4-Bromofluorobenzene	*93.9*			*77.0-126*		*07/20/2019 16:10*	WG1314770
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*07/20/2019 16:10*	WG1314770

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	310000		2710	20000	1	07/23/2019 13:14	WG1315391

Sample Narrative:

L1120206-03 WG1315391: Endpoint pH 4.5 HEADSPACE

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	18800		51.9	1000	1	07/19/2019 21:56	WG1314262
Nitrate	89.0	J	22.7	100	1	07/19/2019 21:56	WG1314262
Sulfate	29400		77.4	5000	1	07/19/2019 21:56	WG1314262

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	11700		102	1000	1	07/22/2019 15:59	WG1315213

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2400		15.0	100	1	07/21/2019 16:55	WG1314861
Manganese	724		0.250	5.00	1	07/21/2019 16:55	WG1314861

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	170		31.6	100	1	07/23/2019 17:07	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*105*			*78.0-120*		*07/23/2019 17:07*	WG1316070

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5830		0.287	0.678	1	07/24/2019 16:28	WG1316411
Ethane	U		0.296	1.29	1	07/24/2019 16:28	WG1316411
Ethene	202		0.422	1.27	1	07/24/2019 16:28	WG1316411

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.34	J JO	1.05	25.0	1	07/20/2019 16:31	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 16:31	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 16:31	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 16:31	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 16:31	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 16:31	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 16:31	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 16:31	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 16:31	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 16:31	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 16:31	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 16:31	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 16:31	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/20/2019 16:31	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 16:31	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 16:31	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 16:31	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 16:31	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 16:31	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 16:31	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 16:31	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 16:31	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 16:31	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 16:31	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 16:31	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 16:31	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 16:31	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 16:31	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 16:31	WG1314770
1,1-Dichloroethene	1.30		0.188	0.500	1	07/20/2019 16:31	WG1314770
cis-1,2-Dichloroethene	286		1.87	10.0	20	07/24/2019 23:00	WG1316884
trans-1,2-Dichloroethene	2.12		0.152	0.500	1	07/20/2019 16:31	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 16:31	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 16:31	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 16:31	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 16:31	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 16:31	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 16:31	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 16:31	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 16:31	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 16:31	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 16:31	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 16:31	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 16:31	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 16:31	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 16:31	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 16:31	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 16:31	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 16:31	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 16:31	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 16:31	WG1314770
Naphthalene	U	J0	0.174	2.50	1	07/20/2019 16:31	WG1314770
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 16:31	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 16:31	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 16:31	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 16:31	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 16:31	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 16:31	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 16:31	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 16:31	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 16:31	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 16:31	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 16:31	WG1314770
Trichloroethene	4.72		0.153	0.500	1	07/20/2019 16:31	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 16:31	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 16:31	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 16:31	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 16:31	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 16:31	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	07/20/2019 16:31	WG1314770
Vinyl chloride	425		2.36	10.0	20	07/24/2019 23:00	WG1316884
Xylenes, Total	U		0.316	1.50	1	07/20/2019 16:31	WG1314770
(S) Toluene-d8	*97.0*			*80.0-120*		*07/20/2019 16:31*	WG1314770
(S) Toluene-d8	*105*			*80.0-120*		*07/24/2019 23:00*	WG1316884
(S) 4-Bromofluorobenzene	*94.8*			*77.0-126*		*07/20/2019 16:31*	WG1314770
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*		*07/24/2019 23:00*	WG1316884
(S) 1,2-Dichloroethane-d4	*98.8*			*70.0-130*		*07/20/2019 16:31*	WG1314770
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*07/24/2019 23:00*	WG1316884

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2320		31.6	100	1	07/23/2019 17:28	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*07/23/2019 17:28*	WG1316070

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	07/20/2019 16:51	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 16:51	WG1314770
Benzene	15.0		0.0896	0.500	1	07/20/2019 16:51	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 16:51	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 16:51	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 16:51	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 16:51	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 16:51	WG1314770
n-Butylbenzene	3.05		0.143	0.500	1	07/20/2019 16:51	WG1314770
sec-Butylbenzene	2.44		0.134	0.500	1	07/20/2019 16:51	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 16:51	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 16:51	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 16:51	WG1314770
Chlorobenzene	U		0.140	0.500	1	07/20/2019 16:51	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 16:51	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 16:51	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 16:51	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 16:51	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 16:51	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 16:51	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 16:51	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 16:51	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 16:51	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 16:51	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 16:51	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 16:51	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 16:51	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 16:51	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 16:51	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 16:51	WG1314770
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/24/2019 20:36	WG1316884
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 16:51	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 16:51	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 16:51	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 16:51	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 16:51	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 16:51	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 16:51	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 16:51	WG1314770
Di-isopropyl ether	0.854		0.0924	0.500	1	07/20/2019 16:51	WG1314770
Ethylbenzene	187		0.158	0.500	1	07/20/2019 16:51	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 16:51	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 16:51	WG1314770
n-Hexane	12.2		0.305	5.00	1	07/20/2019 16:51	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 16:51	WG1314770
Isopropylbenzene	17.5		0.126	0.500	1	07/20/2019 16:51	WG1314770
p-Isopropyltoluene	0.698		0.138	0.500	1	07/20/2019 16:51	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 16:51	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/20/2019 16:51	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 16:51	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 16:51	WG1314770
Naphthalene	104	J0	0.174	2.50	1	07/20/2019 16:51	WG1314770
n-Propylbenzene	43.2		0.162	0.500	1	07/20/2019 16:51	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 16:51	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 16:51	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 16:51	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 16:51	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 16:51	WG1314770
Toluene	3.37		0.412	0.500	1	07/20/2019 16:51	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 16:51	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 16:51	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 16:51	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 16:51	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 16:51	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 16:51	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 16:51	WG1314770
1,2,4-Trimethylbenzene	145		0.123	0.500	1	07/20/2019 16:51	WG1314770
1,2,3-Trimethylbenzene	82.3		0.0739	0.500	1	07/20/2019 16:51	WG1314770
1,3,5-Trimethylbenzene	11.6		0.124	0.500	1	07/20/2019 16:51	WG1314770
Vinyl acetate	U		0.645	5.00	1	07/20/2019 16:51	WG1314770
Vinyl chloride	0.242	J	0.118	0.500	1	07/20/2019 16:51	WG1314770
Xylenes, Total	131		0.316	1.50	1	07/20/2019 16:51	WG1314770
(S) Toluene-d8	*84.4*			*80.0-120*		*07/20/2019 16:51*	WG1314770
(S) Toluene-d8	*103*			*80.0-120*		*07/24/2019 20:36*	WG1316884
(S) 4-Bromofluorobenzene	*87.4*			*77.0-126*		*07/20/2019 16:51*	WG1314770
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*07/24/2019 20:36*	WG1316884
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*07/20/2019 16:51*	WG1314770
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*07/24/2019 20:36*	WG1316884

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2190		31.6	100	1	07/23/2019 17:48	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*78.0-120*		*07/23/2019 17:48*	WG1316070

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	07/20/2019 17:12	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 17:12	WG1314770
Benzene	15.5		0.0896	0.500	1	07/20/2019 17:12	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 17:12	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 17:12	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 17:12	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 17:12	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 17:12	WG1314770
n-Butylbenzene	3.10		0.143	0.500	1	07/20/2019 17:12	WG1314770
sec-Butylbenzene	2.39		0.134	0.500	1	07/20/2019 17:12	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 17:12	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 17:12	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 17:12	WG1314770
Chlorobenzene	U		0.140	0.500	1	07/20/2019 17:12	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 17:12	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 17:12	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 17:12	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 17:12	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 17:12	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 17:12	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 17:12	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 17:12	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 17:12	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 17:12	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 17:12	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 17:12	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 17:12	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 17:12	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 17:12	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 17:12	WG1314770
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/20/2019 17:12	WG1314770
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 17:12	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 17:12	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 17:12	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 17:12	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 17:12	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 17:12	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 17:12	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 17:12	WG1314770
Di-isopropyl ether	0.893		0.0924	0.500	1	07/20/2019 17:12	WG1314770
Ethylbenzene	141		1.58	5.00	10	07/24/2019 23:22	WG1316884
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 17:12	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 17:12	WG1314770
n-Hexane	12.6		0.305	5.00	1	07/20/2019 17:12	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 17:12	WG1314770
Isopropylbenzene	18.7		0.126	0.500	1	07/20/2019 17:12	WG1314770
p-Isopropyltoluene	0.760		0.138	0.500	1	07/20/2019 17:12	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 17:12	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/20/2019 17:12	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 17:12	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 17:12	WG1314770
Naphthalene	115	J0	0.174	2.50	1	07/20/2019 17:12	WG1314770
n-Propylbenzene	46.2		0.162	0.500	1	07/20/2019 17:12	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 17:12	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 17:12	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 17:12	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 17:12	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 17:12	WG1314770
Toluene	3.71		0.412	0.500	1	07/20/2019 17:12	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 17:12	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 17:12	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 17:12	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 17:12	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 17:12	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 17:12	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 17:12	WG1314770
1,2,4-Trimethylbenzene	157		0.123	0.500	1	07/20/2019 17:12	WG1314770
1,2,3-Trimethylbenzene	88.3		0.0739	0.500	1	07/20/2019 17:12	WG1314770
1,3,5-Trimethylbenzene	12.8		0.124	0.500	1	07/20/2019 17:12	WG1314770
Vinyl acetate	U		0.645	5.00	1	07/20/2019 17:12	WG1314770
Vinyl chloride	U		0.118	0.500	1	07/20/2019 17:12	WG1314770
Xylenes, Total	149		0.316	1.50	1	07/20/2019 17:12	WG1314770
(S) Toluene-d8	*85.1*			*80.0-120*		*07/20/2019 17:12*	WG1314770
(S) Toluene-d8	*106*			*80.0-120*		*07/24/2019 23:22*	WG1316884
(S) 4-Bromofluorobenzene	*87.7*			*77.0-126*		*07/20/2019 17:12*	WG1314770
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*07/24/2019 23:22*	WG1316884
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*07/20/2019 17:12*	WG1314770
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*07/24/2019 23:22*	WG1316884

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	307000		2710	20000	1	07/24/2019 16:46	WG1315970

Sample Narrative:

L1120206-06 WG1315970: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19300		51.9	1000	1	07/19/2019 22:13	WG1314262
Nitrate	U		22.7	100	1	07/19/2019 22:13	WG1314262
Sulfate	30000		77.4	5000	1	07/19/2019 22:13	WG1314262

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	9560		102	1000	1	07/22/2019 16:13	WG1315213

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3800		15.0	100	1	07/21/2019 16:58	WG1314861
Manganese	750		0.250	5.00	1	07/21/2019 16:58	WG1314861

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	175		31.6	100	1	07/23/2019 18:09	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*07/23/2019 18:09*	WG1316070

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5450		0.287	0.678	1	07/24/2019 12:36	WG1316410
Ethane	U		0.296	1.29	1	07/24/2019 12:36	WG1316410
Ethene	191		0.422	1.27	1	07/24/2019 12:36	WG1316410

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.11	J J0	1.05	25.0	1	07/20/2019 17:32	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 17:32	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 17:32	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 17:32	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 17:32	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 17:32	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 17:32	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 17:32	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 17:32	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 17:32	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 17:32	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 17:32	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 17:32	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/20/2019 17:32	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 17:32	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 17:32	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 17:32	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 17:32	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 17:32	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 17:32	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 17:32	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 17:32	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 17:32	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 17:32	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 17:32	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 17:32	WG1314770
1,1-Dichloroethene	1.33		0.188	0.500	1	07/20/2019 17:32	WG1314770
cis-1,2-Dichloroethene	219		1.87	10.0	20	07/24/2019 23:44	WG1316884
trans-1,2-Dichloroethene	2.49		0.152	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 17:32	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 17:32	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 17:32	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 17:32	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 17:32	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 17:32	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 17:32	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 17:32	WG1314770
Ethylbenzene	U		3.16	10.0	20	07/24/2019 23:44	WG1316884
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 17:32	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 17:32	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 17:32	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 17:32	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 17:32	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 17:32	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 17:32	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 17:32	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 17:32	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 17:32	WG1314770
Naphthalene	5.94	J	3.48	50.0	20	07/24/2019 23:44	WG1316884
n-Propylbenzene	U		3.24	10.0	20	07/24/2019 23:44	WG1316884
Styrene	U		0.117	0.500	1	07/20/2019 17:32	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 17:32	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 17:32	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 17:32	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 17:32	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 17:32	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 17:32	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 17:32	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 17:32	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 17:32	WG1314770
Trichloroethene	4.79		0.153	0.500	1	07/20/2019 17:32	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 17:32	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 17:32	WG1314770
1,2,4-Trimethylbenzene	U		2.46	10.0	20	07/24/2019 23:44	WG1316884
1,2,3-Trimethylbenzene	U		1.48	10.0	20	07/24/2019 23:44	WG1316884
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 17:32	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	07/20/2019 17:32	WG1314770
Vinyl chloride	446		2.36	10.0	20	07/24/2019 23:44	WG1316884
Xylenes, Total	U		6.32	30.0	20	07/24/2019 23:44	WG1316884
(S) Toluene-d8	*99.8*			*80.0-120*		*07/20/2019 17:32*	WG1314770
(S) Toluene-d8	*109*			*80.0-120*		*07/24/2019 23:44*	WG1316884
(S) 4-Bromofluorobenzene	*92.1*			*77.0-126*		*07/20/2019 17:32*	WG1314770
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*07/24/2019 23:44*	WG1316884
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*07/20/2019 17:32*	WG1314770
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*07/24/2019 23:44*	WG1316884

Sample Narrative:

L1120206-06 WG1314770, WG1316884: Not all compounds reportable at lower dilution.

L1120206-06 WG1314770, WG1316884: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	167000		2710	20000	1	07/24/2019 16:56	WG1315970

Sample Narrative:

L1120206-07 WG1315970: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	5580		51.9	1000	1	07/19/2019 22:31	WG1314262
Nitrate	U		22.7	100	1	07/19/2019 22:31	WG1314262
Sulfate	1830	J	77.4	5000	1	07/19/2019 22:31	WG1314262

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4760		102	1000	1	07/22/2019 16:25	WG1315213

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7160		15.0	100	1	07/21/2019 17:01	WG1314861
Manganese	353		0.250	5.00	1	07/21/2019 17:01	WG1314861

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/23/2019 18:29	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*07/23/2019 18:29*	WG1316070

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	290		0.287	0.678	1	07/24/2019 12:40	WG1316410
Ethane	U		0.296	1.29	1	07/24/2019 12:40	WG1316410
Ethene	U		0.422	1.27	1	07/24/2019 12:40	WG1316410

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.74	J J0	1.05	25.0	1	07/20/2019 17:53	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 17:53	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 17:53	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 17:53	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 17:53	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 17:53	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 17:53	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 17:53	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 17:53	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 17:53	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 17:53	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 17:53	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 17:53	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/20/2019 17:53	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 17:53	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 17:53	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 17:53	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 17:53	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 17:53	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 17:53	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 17:53	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 17:53	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 17:53	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 17:53	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 17:53	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 17:53	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 17:53	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 17:53	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 17:53	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 17:53	WG1314770
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/24/2019 20:58	WG1316884
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 17:53	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 17:53	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 17:53	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 17:53	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 17:53	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 17:53	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 17:53	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 17:53	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 17:53	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 17:53	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 17:53	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 17:53	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 17:53	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 17:53	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 17:53	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 17:53	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 17:53	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 17:53	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 17:53	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 17:53	WG1314770
Naphthalene	2.11	J	0.174	2.50	1	07/24/2019 20:58	WG1316884
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 17:53	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 17:53	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 17:53	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 17:53	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 17:53	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 17:53	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 17:53	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 17:53	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 17:53	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 17:53	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 17:53	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 17:53	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 17:53	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 17:53	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 17:53	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 17:53	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 17:53	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	07/20/2019 17:53	WG1314770
Vinyl chloride	U		0.118	0.500	1	07/24/2019 20:58	WG1316884
Xylenes, Total	U		0.316	1.50	1	07/20/2019 17:53	WG1314770
(S) Toluene-d8	*97.8*			*80.0-120*		*07/20/2019 17:53*	WG1314770
(S) Toluene-d8	*110*			*80.0-120*		*07/24/2019 20:58*	WG1316884
(S) 4-Bromofluorobenzene	*97.3*			*77.0-126*		*07/20/2019 17:53*	WG1314770
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*07/24/2019 20:58*	WG1316884
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*07/20/2019 17:53*	WG1314770
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*07/24/2019 20:58*	WG1316884

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	284000		2710	20000	1	07/24/2019 17:04	WG1315970

Sample Narrative:

L1120206-08 WG1315970: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26500		51.9	1000	1	07/19/2019 23:24	WG1314262
Nitrate	U		22.7	100	1	07/19/2019 23:24	WG1314262
Sulfate	14100		77.4	5000	1	07/19/2019 23:24	WG1314262

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1610	B	102	1000	1	07/22/2019 16:38	WG1315213

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1300		15.0	100	1	07/21/2019 17:21	WG1314861
Manganese	694		0.250	5.00	1	07/21/2019 17:21	WG1314861

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/23/2019 18:50	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*07/23/2019 18:50*	WG1316070

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	139		0.287	0.678	1	07/24/2019 12:58	WG1316410
Ethane	U		0.296	1.29	1	07/24/2019 12:58	WG1316410
Ethene	U		0.422	1.27	1	07/24/2019 12:58	WG1316410

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.22	J J0	1.05	25.0	1	07/20/2019 18:13	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 18:13	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 18:13	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 18:13	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 18:13	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 18:13	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 18:13	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 18:13	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 18:13	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 18:13	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 18:13	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 18:13	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 18:13	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/20/2019 18:13	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 18:13	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 18:13	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 18:13	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 18:13	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 18:13	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 18:13	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 18:13	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 18:13	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 18:13	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 18:13	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 18:13	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 18:13	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 18:13	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 18:13	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 18:13	WG1314770
1,1-Dichloroethene	0.609		0.188	0.500	1	07/20/2019 18:13	WG1314770
cis-1,2-Dichloroethene	1.58		0.0933	0.500	1	07/20/2019 18:13	WG1314770
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 18:13	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 18:13	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 18:13	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 18:13	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 18:13	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 18:13	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 18:13	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 18:13	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 18:13	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 18:13	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 18:13	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 18:13	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 18:13	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 18:13	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 18:13	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 18:13	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 18:13	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 18:13	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 18:13	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 18:13	WG1314770
Naphthalene	0.353	J	0.174	2.50	1	07/24/2019 21:46	WG1316884
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 18:13	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 18:13	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 18:13	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 18:13	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 18:13	WG1314770
Tetrachloroethene	0.264	J	0.199	0.500	1	07/20/2019 18:13	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 18:13	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 18:13	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 18:13	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 18:13	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 18:13	WG1314770
Trichloroethene	1.53		0.153	0.500	1	07/20/2019 18:13	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 18:13	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 18:13	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 18:13	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 18:13	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 18:13	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	07/20/2019 18:13	WG1314770
Vinyl chloride	U		0.118	0.500	1	07/20/2019 18:13	WG1314770
Xylenes, Total	U		0.316	1.50	1	07/20/2019 18:13	WG1314770
(S) Toluene-d8	*99.6*			*80.0-120*		*07/20/2019 18:13*	WG1314770
(S) Toluene-d8	*105*			*80.0-120*		*07/24/2019 21:46*	WG1316884
(S) 4-Bromofluorobenzene	*91.4*			*77.0-126*		*07/20/2019 18:13*	WG1314770
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*07/24/2019 21:46*	WG1316884
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*07/20/2019 18:13*	WG1314770
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*07/24/2019 21:46*	WG1316884

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	601000		2710	20000	1	07/24/2019 20:29	WG1315970

Sample Narrative:

L1120206-09 WG1315970: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	22300		51.9	1000	1	07/19/2019 23:41	WG1314262
Nitrate	U		22.7	100	1	07/19/2019 23:41	WG1314262
Sulfate	4340	J	77.4	5000	1	07/19/2019 23:41	WG1314262

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	6940		102	1000	1	07/22/2019 17:30	WG1315213

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	12400		15.0	100	1	07/21/2019 17:24	WG1314861
Manganese	409		0.250	5.00	1	07/21/2019 17:24	WG1314861

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	15500		2.87	6.78	10	07/25/2019 11:17	WG1317135
Ethane	16.4		0.296	1.29	1	07/24/2019 13:08	WG1316410
Ethene	68.3		0.422	1.27	1	07/24/2019 13:08	WG1316410

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.24	J J0	1.05	25.0	1	07/20/2019 18:33	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 18:33	WG1314770
Benzene	12.2		0.0896	0.500	1	07/20/2019 18:33	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 18:33	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 18:33	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 18:33	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 18:33	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 18:33	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 18:33	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 18:33	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 18:33	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 18:33	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 18:33	WG1314770
Chlorobenzene	U		0.140	0.500	1	07/20/2019 18:33	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 18:33	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 18:33	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 18:33	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 18:33	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 18:33	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 18:33	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 18:33	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 18:33	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 18:33	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 18:33	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 18:33	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 18:33	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 18:33	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 18:33	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 18:33	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 18:33	WG1314770
cis-1,2-Dichloroethene	1.88		0.0933	0.500	1	07/20/2019 18:33	WG1314770
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 18:33	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 18:33	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 18:33	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 18:33	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 18:33	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 18:33	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 18:33	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 18:33	WG1314770
Di-isopropyl ether	0.161	J	0.0924	0.500	1	07/20/2019 18:33	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 18:33	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 18:33	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 18:33	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 18:33	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 18:33	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 18:33	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 18:33	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 18:33	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 18:33	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 18:33	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 18:33	WG1314770
Naphthalene	U	J0	0.174	2.50	1	07/20/2019 18:33	WG1314770
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 18:33	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 18:33	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 18:33	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 18:33	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 18:33	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 18:33	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 18:33	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 18:33	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 18:33	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 18:33	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 18:33	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 18:33	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 18:33	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 18:33	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 18:33	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 18:33	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 18:33	WG1314770
Vinyl acetate	U		0.645	5.00	1	07/20/2019 18:33	WG1314770
Vinyl chloride	108		0.118	0.500	1	07/20/2019 18:33	WG1314770
Xylenes, Total	U		0.316	1.50	1	07/20/2019 18:33	WG1314770
(S) Toluene-d8	*99.6*			*80.0-120*		*07/20/2019 18:33*	WG1314770
(S) 4-Bromofluorobenzene	*94.9*			*77.0-126*		*07/20/2019 18:33*	WG1314770
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*07/20/2019 18:33*	WG1314770

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 14:34	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 14:34*	WG1316734

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	07/20/2019 12:25	WG1314770
Acrylonitrile	U		0.873	5.00	1	07/20/2019 12:25	WG1314770
Benzene	U		0.0896	0.500	1	07/20/2019 12:25	WG1314770
Bromobenzene	U		0.133	0.500	1	07/20/2019 12:25	WG1314770
Bromodichloromethane	U		0.0800	0.500	1	07/20/2019 12:25	WG1314770
Bromochloromethane	U		0.145	0.500	1	07/20/2019 12:25	WG1314770
Bromoform	U		0.186	0.500	1	07/20/2019 12:25	WG1314770
Bromomethane	U		0.157	2.50	1	07/20/2019 12:25	WG1314770
n-Butylbenzene	U		0.143	0.500	1	07/20/2019 12:25	WG1314770
sec-Butylbenzene	U		0.134	0.500	1	07/20/2019 12:25	WG1314770
tert-Butylbenzene	U		0.183	0.500	1	07/20/2019 12:25	WG1314770
Carbon disulfide	U		0.101	0.500	1	07/20/2019 12:25	WG1314770
Carbon tetrachloride	U		0.159	0.500	1	07/20/2019 12:25	WG1314770
Chlorobenzene	U		0.140	0.500	1	07/20/2019 12:25	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 12:25	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 12:25	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 12:25	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 12:25	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 12:25	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 12:25	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 12:25	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 12:25	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 12:25	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 12:25	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 12:25	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 12:25	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 12:25	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 12:25	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 12:25	WG1314770
1,1-Dichloroethene	U		0.188	0.500	1	07/20/2019 12:25	WG1314770
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/20/2019 12:25	WG1314770
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/20/2019 12:25	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 12:25	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 12:25	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 12:25	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 12:25	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 12:25	WG1314770
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/20/2019 12:25	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 12:25	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 12:25	WG1314770
Ethylbenzene	U		0.158	0.500	1	07/20/2019 12:25	WG1314770
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 12:25	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 12:25	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 12:25	WG1314770
Iodomethane	U	J0	0.377	10.0	1	07/20/2019 12:25	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 12:25	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 12:25	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 12:25	WG1314770

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/20/2019 12:25	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 12:25	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 12:25	WG1314770
Naphthalene	U	J0	0.174	2.50	1	07/20/2019 12:25	WG1314770
n-Propylbenzene	U		0.162	0.500	1	07/20/2019 12:25	WG1314770
Styrene	U		0.117	0.500	1	07/20/2019 12:25	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 12:25	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 12:25	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 12:25	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 12:25	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 12:25	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 12:25	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 12:25	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 12:25	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 12:25	WG1314770
Trichloroethene	U		0.153	0.500	1	07/20/2019 12:25	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 12:25	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 12:25	WG1314770
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/20/2019 12:25	WG1314770
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/20/2019 12:25	WG1314770
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 12:25	WG1314770
Vinyl acetate	U		0.645	5.00	1	07/20/2019 12:25	WG1314770
Vinyl chloride	U		0.118	0.500	1	07/20/2019 12:25	WG1314770
Xylenes, Total	U		0.316	1.50	1	07/20/2019 12:25	WG1314770
(S) Toluene-d8	*101*			*80.0-120*		*07/20/2019 12:25*	WG1314770
(S) 4-Bromofluorobenzene	*92.9*			*77.0-126*		*07/20/2019 12:25*	WG1314770
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*07/20/2019 12:25*	WG1314770

Method Blank (MB)

(MB) R3433429-1 07/23/19 10:20

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5 HEADSPACE

L1120205-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1120205-05 07/23/19 12:44 • (DUP) R3433429-4 07/23/19 12:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	490000	488000	1	0.379		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5 HEADSPACE

Laboratory Control Sample (LCS)

(LCS) R3433429-3 07/23/19 11:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	103000	103	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5 HEADSPACE

Method Blank (MB)

(MB) R3434039-1 07/24/19 16:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	3140	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1120245-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1120245-01 07/24/19 17:46 • (DUP) R3434039-2 07/24/19 17:57

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	281000	281000	1	0.165		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1120245-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1120245-05 07/24/19 18:52 • (DUP) R3434039-4 07/24/19 19:03

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	423000	424000	1	0.260		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3434039-3 07/24/19 18:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	98200	98.2	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3432539-1 07/19/19 11:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1120147-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1120147-03 07/19/19 13:25 • (DUP) R3432539-3 07/19/19 13:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	59300	59200	1	0.185		15
Nitrate	6010	6050	1	0.730		15

L1120206-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1120206-09 07/19/19 23:41 • (DUP) R3432539-6 07/19/19 23:59

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	22300	22300	1	0.0291		15
Nitrate	U	0.000	1	0.000		15
Sulfate	4340	4300	1	0.914	J	15

L1120147-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1120147-03 07/19/19 14:35 • (DUP) R3432539-8 07/20/19 07:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	134000	134000	5	0.0978		15

Laboratory Control Sample (LCS)

(LCS) R3432539-2 07/19/19 11:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39900	99.8	80.0-120	
Nitrate	8000	8180	102	80.0-120	
Sulfate	40000	40400	101	80.0-120	

L1120147-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120147-03 07/19/19 13:25 • (MS) R3432539-4 07/19/19 14:00 • (MSD) R3432539-5 07/19/19 14:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	59300	107000	107000	96.1	96.0	1	80.0-120	E	E	0.0541	15
Nitrate	5000	6010	10900	10800	97.5	96.7	1	80.0-120	E	E	0.351	15

L1120206-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1120206-09 07/19/19 23:41 • (MS) R3432539-7 07/20/19 00:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	22300	72200	99.8	1	80.0-120	
Nitrate	5000	U	5010	100	1	80.0-120	
Sulfate	50000	4340	52300	95.9	1	80.0-120	

Method Blank (MB)

(MB) R3433105-1 07/22/19 11:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	231	J	102	1000

L1120475-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1120475-03 07/22/19 20:40 • (DUP) R3433105-8 07/22/19 20:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	9040	9000	1	0.510		20

Laboratory Control Sample (LCS)

(LCS) R3433105-2 07/22/19 12:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	74200	98.9	85.0-115	

L1120206-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120206-08 07/22/19 16:38 • (MS) R3433105-4 07/22/19 16:59 • (MSD) R3433105-5 07/22/19 17:15

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	1610	51300	51700	99.3	100	1	80.0-120			0.797	20

L1120208-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120208-04 07/22/19 19:11 • (MS) R3433105-6 07/22/19 19:29 • (MSD) R3433105-7 07/22/19 19:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	2010	52300	52900	101	102	1	80.0-120			1.27	20

Method Blank (MB)

(MB) R3432720-1 07/21/19 16:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Iron	25.6	J	15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3432720-2 07/21/19 16:35 • (LCSD) R3432720-3 07/21/19 16:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Iron	5000	5090	4920	102	98.5	80.0-120			3.41	20
Manganese	50.0	49.9	48.7	99.8	97.4	80.0-120			2.42	20

L1120205-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120205-06 07/21/19 16:42 • (MS) R3432720-5 07/21/19 16:48 • (MSD) R3432720-6 07/21/19 16:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Iron	5000	223	5050	5220	96.6	100	1	75.0-125			3.30	20
Manganese	50.0	38.3	83.9	85.4	91.2	94.0	1	75.0-125			1.67	20

Method Blank (MB)

(MB) R3433944-2 07/23/19 11:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3433944-1 07/23/19 10:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5580	101	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*95.6*	*78.0-120*	

L1120206-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120206-02 07/23/19 16:47 • (MS) R3433944-3 07/23/19 19:10 • (MSD) R3433944-4 07/23/19 19:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	U	3030	3340	55.1	60.7	1	10.0-155			9.54	21
(S) a,a,a-Trifluorotoluene(FID)					*103*	*103*		*78.0-120*				

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3433855-3 07/24/19 13:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3433855-2 07/24/19 12:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5440	99.0	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*94.7*	*78.0-120*	

Method Blank (MB)

(MB) R3433738-1 07/24/19 10:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1120208-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1120208-01 07/24/19 10:57 • (DUP) R3433738-2 07/24/19 11:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	14.5	16.8	1	14.9		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1120206-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1120206-07 07/24/19 12:40 • (DUP) R3433738-3 07/24/19 13:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	290	289	1	0.382		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3433738-4 07/24/19 13:14 • (LCSD) R3433738-5 07/24/19 13:22

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	77.8	73.3	115	108	85.0-115			5.86	20
Ethane	129	122	120	94.9	92.7	85.0-115			2.45	20
Ethene	127	121	118	95.4	92.6	85.0-115			3.02	20

Method Blank (MB)

(MB) R3433893-1 07/24/19 15:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1120245-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1120245-04 07/24/19 15:24 • (DUP) R3433893-2 07/24/19 15:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	661	628	1	5.11		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1119782-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1119782-03 07/24/19 16:13 • (DUP) R3433893-3 07/24/19 16:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	1990	2020	1	1.66		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3433893-6 07/24/19 16:43 • (LCSD) R3433893-7 07/24/19 16:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	74.4	75.3	110	111	85.0-115			1.23	20
Ethane	129	122	124	94.4	95.9	85.0-115			1.61	20
Ethene	127	121	123	95.0	96.5	85.0-115			1.56	20

L1120245-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120245-01 07/24/19 15:13 • (MS) R3433893-4 07/24/19 16:35 • (MSD) R3433893-5 07/24/19 16:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methane	67.8	66.5	145	125	115	86.5	1	85.0-115			14.4	20
Ethane	129	U	132	116	102	90.3	1	85.0-115			12.6	20
Ethene	127	U	131	115	103	90.4	1	85.0-115			12.8	20

Method Blank (MB)

(MB) R3434214-1 07/25/19 11:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678

L1120270-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1120270-03 07/25/19 11:25 • (DUP) R3434214-2 07/25/19 11:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20

L1120270-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1120270-13 07/25/19 12:57 • (DUP) R3434214-3 07/25/19 13:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	58.9	56.1	1	4.93		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3434214-8 07/25/19 13:38 • (LCSD) R3434214-9 07/25/19 13:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.7	70.9	109	105	85.0-115			3.89	20

L1120270-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120270-05 07/25/19 11:30 • (MS) R3434214-4 07/25/19 13:26 • (MSD) R3434214-5 07/25/19 13:28

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	9330	9490	9560	224	338	1	85.0-115	E V	E V	0.810	20

L1120270-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120270-14 07/25/19 12:59 • (MS) R3434214-6 07/25/19 13:30 • (MSD) R3434214-7 07/25/19 13:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	32200	31700	32500	0.000	564	1	85.0-115	E V	E V	2.58	20

Method Blank (MB)

(MB) R3433853-2 07/20/19 11:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3433853-2 07/20/19 11:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3433853-1 07/20/19 10:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	150	120	19.0-160	
Acrylonitrile	125	139	111	55.0-149	
Benzene	25.0	25.2	101	70.0-123	
Bromobenzene	25.0	21.3	85.0	73.0-121	
Bromodichloromethane	25.0	24.3	97.4	75.0-120	
Bromochloromethane	25.0	23.3	93.1	76.0-122	
Bromoform	25.0	26.4	106	68.0-132	
Bromomethane	25.0	23.5	93.9	10.0-160	
n-Butylbenzene	25.0	23.0	92.1	73.0-125	
sec-Butylbenzene	25.0	22.4	89.5	75.0-125	
tert-Butylbenzene	25.0	23.0	91.8	76.0-124	
Carbon disulfide	25.0	26.5	106	61.0-128	
Carbon tetrachloride	25.0	27.1	108	68.0-126	
Chlorobenzene	25.0	25.3	101	80.0-121	
Chlorodibromomethane	25.0	26.9	108	77.0-125	
Chloroethane	25.0	27.4	110	47.0-150	
Chloroform	25.0	25.2	101	73.0-120	
Chloromethane	25.0	20.5	81.8	41.0-142	
2-Chlorotoluene	25.0	21.8	87.1	76.0-123	
4-Chlorotoluene	25.0	21.5	85.9	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.6	82.3	58.0-134	
1,2-Dibromoethane	25.0	25.0	99.9	80.0-122	
Dibromomethane	25.0	25.7	103	80.0-120	
1,2-Dichlorobenzene	25.0	24.1	96.3	79.0-121	
1,3-Dichlorobenzene	25.0	23.7	94.9	79.0-120	
1,4-Dichlorobenzene	25.0	23.2	93.0	79.0-120	
Dichlorodifluoromethane	25.0	36.0	144	51.0-149	
1,1-Dichloroethane	25.0	25.5	102	70.0-126	
1,2-Dichloroethane	25.0	25.7	103	70.0-128	
1,1-Dichloroethene	25.0	25.4	102	71.0-124	
cis-1,2-Dichloroethene	25.0	25.4	102	73.0-120	
trans-1,2-Dichloroethene	25.0	27.4	110	73.0-120	
1,2-Dichloropropane	25.0	25.8	103	77.0-125	
1,1-Dichloropropene	25.0	27.7	111	74.0-126	
1,3-Dichloropropane	25.0	23.9	95.6	80.0-120	
cis-1,3-Dichloropropene	25.0	25.2	101	80.0-123	
trans-1,3-Dichloropropene	25.0	24.8	99.4	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	19.1	76.4	33.0-144	
2,2-Dichloropropane	25.0	21.1	84.5	58.0-130	
Di-isopropyl ether	25.0	25.6	103	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3433853-1 07/20/19 10:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	25.0	25.6	102	79.0-123	
Hexachloro-1,3-butadiene	25.0	21.1	84.4	54.0-138	
2-Hexanone	125	122	97.6	67.0-149	
n-Hexane	25.0	24.3	97.4	57.0-133	
Iodomethane	125	92.2	73.8	33.0-147	
Isopropylbenzene	25.0	25.6	102	76.0-127	
p-Isopropyltoluene	25.0	23.8	95.2	76.0-125	
2-Butanone (MEK)	125	126	101	44.0-160	
Methylene Chloride	25.0	25.2	101	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	125	99.8	68.0-142	
Methyl tert-butyl ether	25.0	25.0	99.8	68.0-125	
Naphthalene	25.0	19.0	76.0	54.0-135	
n-Propylbenzene	25.0	23.0	92.0	77.0-124	
Styrene	25.0	26.9	108	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	25.1	100	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	22.1	88.4	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	21.9	87.8	69.0-132	
Tetrachloroethene	25.0	25.7	103	72.0-132	
Toluene	25.0	24.0	95.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	22.7	90.7	50.0-138	
1,2,4-Trichlorobenzene	25.0	22.2	88.8	57.0-137	
1,1,1-Trichloroethane	25.0	26.9	107	73.0-124	
1,1,2-Trichloroethane	25.0	23.5	94.0	80.0-120	
Trichloroethene	25.0	24.0	95.9	78.0-124	
Trichlorofluoromethane	25.0	28.6	115	59.0-147	
1,2,3-Trichloropropane	25.0	23.2	92.7	73.0-130	
1,2,4-Trimethylbenzene	25.0	23.1	92.5	76.0-121	
1,2,3-Trimethylbenzene	25.0	27.5	110	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.1	92.3	76.0-122	
Vinyl acetate	125	148	118	11.0-160	
Vinyl chloride	25.0	25.4	101	67.0-131	
Xylenes, Total	75.0	76.7	102	79.0-123	
(S) Toluene-d8			*95.9*	*80.0-120*	
(S) 4-Bromofluorobenzene			*96.9*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*111*	*70.0-130*	

Method Blank (MB)

(MB) R3434111-2 07/24/19 18:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Ethylbenzene	U		0.158	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3434111-1 07/24/19 09:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	25.0	25.1	100	73.0-120	
Ethylbenzene	25.0	25.1	101	79.0-123	
Naphthalene	25.0	25.1	100	54.0-135	
n-Propylbenzene	25.0	25.8	103	77.0-124	
1,2,4-Trimethylbenzene	25.0	25.5	102	76.0-121	
1,2,3-Trimethylbenzene	25.0	25.3	101	77.0-120	
Vinyl chloride	25.0	26.9	108	67.0-131	
Xylenes, Total	75.0	75.9	101	79.0-123	
(S) Toluene-d8			*106*	*80.0-120*	
(S) 4-Bromofluorobenzene			*105*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*104*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

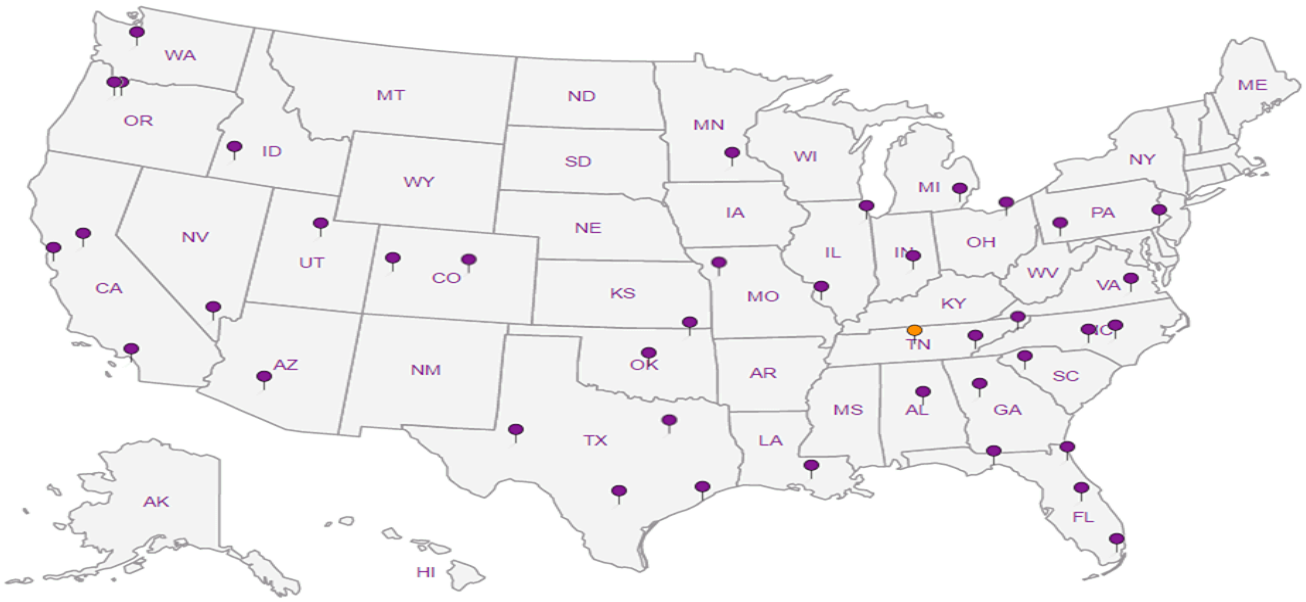
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

KVIK@PESENV.COM
KSPRINGSTEAD@PESENV.COM CZ

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected: Seattle, WA

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # American Linen

Lab Project # PESENVSWA-ALP

Collected by (print): Ben Hecht

Site/Facility ID # 1413.001.05.601

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: STAT

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Chain of Custody Page ___ of ___

L# L1120606
C222

Acctnum: PESENVSWA
Template: T152679
Prelogin: P718645
TSR: 110 - Brian Ford
PB: 7-5-19 ES
Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,Cl, SO4* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCl	Remarks	Sample # (lab only)
MW 126-071819	Grab	GW	90	7-18-19	0715	3							X		-01
MW-8-071819		GW	135		0935	6				X			X		-02
MW-912-071819		GW	75		0800	12	X	X	X	X	X	X	X		-03
MW-914-071819		GW	19		0820	6				X			X		-04
SCS-2-071819		GW	20		1035	6				X			X		-05
MW-147-071819			75		1045	12	X	X	X	X	X	X	X		-06
MW 102-071819			120		1215	12	X	X	X	X	X	X	X		-07
MW-161-071819			125		1415	12	X	X	X	X	X	X	X		-08
MW 128-071819			65		1415	9/12	X	X	X		X	X	X		-09
TRIP-071819	-		-		1630	1	AB			X			X		-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: *Nitrate has a 48 hour holding time. Required Tier 2 QA/QC ~~Okay~~ BH 7/18/19

B.11 PES for work e-mail only copy OK

pH _____ Temp _____ Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier __ _____

Tracking # FedEx 1082 5988 5594

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y __N
COC Signed/Accurate: Y __N
Bottles arrive intact: Y __N
Correct bottles used: Y __N
Sufficient volume sent: Y __N
If Applicable
VOA Zero Headspace: Y __N
Preservation Correct/Checked: __Y __N

RAD SCREEN: <0.5 mR/hr

	Date:	Time:		
Relinquished by : (Signature)	7/18/19	1630	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeOH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 5.1+1=5.2 °C Bottles Received: 8
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/19/19 Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 30, 2019

PES Environmental, Inc.- WA

Sample Delivery Group:	L1120698
Samples Received:	07/20/2019
Project Number:	1413.001.05.601
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman
	1215 Fourth Ave., Suite 1350
	Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford

Project Manager

MW-125-071819 L1120698-01 GW

Collected by: Ben Hecht | Collected date/time: 07/18/19 16:55 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 15:46	07/24/19 15:46	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 14:54	07/23/19 14:54	BMB	Mt. Juliet, TN

MW-158A-071919 L1120698-02 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 07:55 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 23:04	07/25/19 23:04	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 19:39	07/20/19 19:39	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 17:40	07/23/19 17:40	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:08	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 16:10	07/24/19 16:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 16:57	07/25/19 16:57	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 15:16	07/23/19 15:16	BMB	Mt. Juliet, TN

MW-121-071919 L1120698-03 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 08:35 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 16:34	07/24/19 16:34	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 15:37	07/23/19 15:37	BMB	Mt. Juliet, TN

MW-138-071919 L1120698-04 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 10:05 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 23:11	07/25/19 23:11	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 19:53	07/20/19 19:53	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 17:54	07/23/19 17:54	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:11	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 16:58	07/24/19 16:58	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 16:59	07/25/19 16:59	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 15:58	07/23/19 15:58	BMB	Mt. Juliet, TN

MW-146-071919 L1120698-05 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 10:25 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 23:18	07/25/19 23:18	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 20:08	07/20/19 20:08	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 18:21	07/23/19 18:21	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:14	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 17:22	07/24/19 17:22	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 17:01	07/25/19 17:01	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 16:20	07/23/19 16:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1319424	20	07/29/19 15:09	07/29/19 15:09	ADM	Mt. Juliet, TN

MW-119-071919 L1120698-06 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 10:25 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 16:41	07/23/19 16:41	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1318890	1	07/28/19 17:09	07/28/19 17:09	ADM	Mt. Juliet, TN

MW-143-071919 L1120698-07 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 13:20 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 23:25	07/25/19 23:25	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 20:22	07/20/19 20:22	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 18:35	07/23/19 18:35	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 17:46	07/24/19 17:46	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 17:09	07/25/19 17:09	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 17:02	07/23/19 17:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1318890	1	07/28/19 17:29	07/28/19 17:29	ADM	Mt. Juliet, TN

MW-106-071919 L1120698-08 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 13:35 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 23:32	07/25/19 23:32	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 20:51	07/20/19 20:51	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 20:18	07/23/19 20:18	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:21	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 18:10	07/24/19 18:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 17:15	07/25/19 17:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 17:23	07/23/19 17:23	BMB	Mt. Juliet, TN

MW-913-071919 L1120698-09 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 12:00 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 23:48	07/25/19 23:48	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 21:49	07/20/19 21:49	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 20:31	07/23/19 20:31	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 18:34	07/24/19 18:34	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 17:17	07/25/19 17:17	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 17:45	07/23/19 17:45	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1318890	20	07/28/19 17:49	07/28/19 17:49	ADM	Mt. Juliet, TN

EQ-071919 L1120698-10 GW

Collected by: Ben Hecht | Collected date/time: 07/19/19 15:00 | Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1317440	1	07/25/19 21:00	07/25/19 21:00	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1314733	1	07/20/19 22:03	07/20/19 22:03	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1315948	1	07/23/19 20:45	07/23/19 20:45	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1315585	1	07/22/19 22:32	07/23/19 10:45	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 18:58	07/24/19 18:58	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1317137	1	07/25/19 17:20	07/25/19 17:20	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 18:06	07/23/19 18:06	BMB	Mt. Juliet, TN

EQ-071919 L1120698-10 GW

Collected by: Ben Hecht
Collected date/time: 07/19/19 15:00
Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1318890	1	07/28/19 18:08	07/28/19 18:08	ADM	Mt. Juliet, TN

TRIPBLANK-071919 L1120698-11 GW

Collected by: Ben Hecht
Collected date/time: 07/19/19 00:00
Received date/time: 07/20/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1316734	1	07/24/19 14:58	07/24/19 14:58	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1315893	1	07/23/19 14:33	07/23/19 14:33	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 15:46	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 15:46*	WG1316734

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.89	J	1.05	25.0	1	07/23/2019 14:54	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 14:54	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 14:54	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 14:54	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 14:54	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 14:54	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 14:54	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 14:54	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 14:54	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 14:54	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 14:54	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 14:54	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 14:54	WG1315893
Chlorobenzene	U		0.140	0.500	1	07/23/2019 14:54	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 14:54	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 14:54	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 14:54	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 14:54	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 14:54	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 14:54	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 14:54	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 14:54	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 14:54	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 14:54	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 14:54	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 14:54	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 14:54	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 14:54	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 14:54	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 14:54	WG1315893
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/23/2019 14:54	WG1315893
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 14:54	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 14:54	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 14:54	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 14:54	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 14:54	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 14:54	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 14:54	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 14:54	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 14:54	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 14:54	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 14:54	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 14:54	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 14:54	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 14:54	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 14:54	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 14:54	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 14:54	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/23/2019 14:54	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 14:54	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 14:54	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 14:54	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 14:54	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 14:54	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 14:54	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 14:54	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 14:54	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 14:54	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 14:54	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 14:54	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 14:54	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 14:54	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 14:54	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 14:54	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 14:54	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 14:54	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 14:54	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 14:54	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 14:54	WG1315893
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 14:54	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/23/2019 14:54	WG1315893
Xylenes, Total	U		0.316	1.50	1	07/23/2019 14:54	WG1315893
(S) Toluene-d8	*102*			*80.0-120*		*07/23/2019 14:54*	WG1315893
(S) 4-Bromofluorobenzene	*97.5*			*77.0-126*		*07/23/2019 14:54*	WG1315893
(S) 1,2-Dichloroethane-d4	*93.8*			*70.0-130*		*07/23/2019 14:54*	WG1315893

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	330000		2710	20000	1	07/25/2019 23:04	WG1317440

Sample Narrative:

L1120698-02 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26900		51.9	1000	1	07/20/2019 19:39	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 19:39	WG1314733
Sulfate	19800		77.4	5000	1	07/20/2019 19:39	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	4640		102	1000	1	07/23/2019 17:40	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	69200		15.0	100	1	07/23/2019 10:08	WG1315585
Manganese	1370		0.250	5.00	1	07/23/2019 10:08	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 16:10	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 16:10*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	222		0.287	0.678	1	07/25/2019 16:57	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 16:57	WG1317137
Ethene	5.86		0.422	1.27	1	07/25/2019 16:57	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.79	J	1.05	25.0	1	07/23/2019 15:16	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 15:16	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 15:16	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 15:16	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 15:16	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 15:16	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 15:16	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 15:16	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 15:16	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 15:16	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 15:16	WG1315893
Carbon disulfide	0.437	J	0.101	0.500	1	07/23/2019 15:16	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 15:16	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/23/2019 15:16	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 15:16	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 15:16	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 15:16	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 15:16	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 15:16	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 15:16	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 15:16	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 15:16	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 15:16	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 15:16	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 15:16	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 15:16	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 15:16	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 15:16	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 15:16	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 15:16	WG1315893
cis-1,2-Dichloroethene	0.290	J	0.0933	0.500	1	07/23/2019 15:16	WG1315893
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 15:16	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 15:16	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 15:16	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 15:16	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 15:16	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 15:16	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 15:16	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 15:16	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 15:16	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 15:16	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 15:16	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 15:16	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 15:16	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 15:16	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 15:16	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 15:16	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 15:16	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 15:16	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 15:16	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 15:16	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 15:16	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 15:16	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 15:16	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 15:16	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 15:16	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 15:16	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 15:16	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 15:16	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 15:16	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 15:16	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 15:16	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 15:16	WG1315893
Trichloroethene	0.177	J	0.153	0.500	1	07/23/2019 15:16	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 15:16	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 15:16	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 15:16	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 15:16	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 15:16	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 15:16	WG1315893
Vinyl chloride	1.24		0.118	0.500	1	07/23/2019 15:16	WG1315893
Xylenes, Total	U		0.316	1.50	1	07/23/2019 15:16	WG1315893
(S) Toluene-d8	*95.3*			*80.0-120*		*07/23/2019 15:16*	WG1315893
(S) 4-Bromofluorobenzene	*88.9*			*77.0-126*		*07/23/2019 15:16*	WG1315893
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*		*07/23/2019 15:16*	WG1315893

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 16:34	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 16:34*	WG1316734

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.70	J	1.05	25.0	1	07/23/2019 15:37	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 15:37	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 15:37	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 15:37	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 15:37	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 15:37	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 15:37	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 15:37	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 15:37	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 15:37	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 15:37	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 15:37	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 15:37	WG1315893
Chlorobenzene	U		0.140	0.500	1	07/23/2019 15:37	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 15:37	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 15:37	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 15:37	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 15:37	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 15:37	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 15:37	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 15:37	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 15:37	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 15:37	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 15:37	WG1315893
1,3-Dichlorobenzene	0.133	J	0.130	0.500	1	07/23/2019 15:37	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 15:37	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 15:37	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 15:37	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 15:37	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 15:37	WG1315893
cis-1,2-Dichloroethene	1.01		0.0933	0.500	1	07/23/2019 15:37	WG1315893
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 15:37	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 15:37	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 15:37	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 15:37	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 15:37	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 15:37	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 15:37	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 15:37	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 15:37	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 15:37	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 15:37	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 15:37	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 15:37	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 15:37	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 15:37	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 15:37	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 15:37	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/23/2019 15:37	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 15:37	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 15:37	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 15:37	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 15:37	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 15:37	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 15:37	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 15:37	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 15:37	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 15:37	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 15:37	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 15:37	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 15:37	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 15:37	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 15:37	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 15:37	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 15:37	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 15:37	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 15:37	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 15:37	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 15:37	WG1315893
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 15:37	WG1315893
Vinyl chloride	5.04		0.118	0.500	1	07/23/2019 15:37	WG1315893
Xylenes, Total	U		0.316	1.50	1	07/23/2019 15:37	WG1315893
(S) Toluene-d8	*105*			*80.0-120*		*07/23/2019 15:37*	WG1315893
(S) 4-Bromofluorobenzene	*109*			*77.0-126*		*07/23/2019 15:37*	WG1315893
(S) 1,2-Dichloroethane-d4	*99.4*			*70.0-130*		*07/23/2019 15:37*	WG1315893

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	133000		2710	20000	1	07/25/2019 23:11	WG1317440

Sample Narrative:

L1120698-04 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	14900		51.9	1000	1	07/20/2019 19:53	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 19:53	WG1314733
Sulfate	53400		77.4	5000	1	07/20/2019 19:53	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1400	B	102	1000	1	07/23/2019 17:54	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	11700		15.0	100	1	07/23/2019 10:11	WG1315585
Manganese	560		0.250	5.00	1	07/23/2019 10:11	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 16:58	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*07/24/2019 16:58*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	74.2		0.287	0.678	1	07/25/2019 16:59	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 16:59	WG1317137
Ethene	U		0.422	1.27	1	07/25/2019 16:59	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.82	J	1.05	25.0	1	07/23/2019 15:58	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 15:58	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 15:58	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 15:58	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 15:58	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 15:58	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 15:58	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 15:58	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 15:58	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 15:58	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 15:58	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 15:58	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 15:58	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/23/2019 15:58	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 15:58	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 15:58	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 15:58	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 15:58	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 15:58	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 15:58	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 15:58	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 15:58	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 15:58	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 15:58	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 15:58	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 15:58	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 15:58	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 15:58	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 15:58	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 15:58	WG1315893
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/23/2019 15:58	WG1315893
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 15:58	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 15:58	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 15:58	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 15:58	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 15:58	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 15:58	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 15:58	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 15:58	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 15:58	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 15:58	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 15:58	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 15:58	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 15:58	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 15:58	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 15:58	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 15:58	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 15:58	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 15:58	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 15:58	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 15:58	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 15:58	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 15:58	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 15:58	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 15:58	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 15:58	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 15:58	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 15:58	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 15:58	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 15:58	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 15:58	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 15:58	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 15:58	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 15:58	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 15:58	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 15:58	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 15:58	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 15:58	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 15:58	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 15:58	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/23/2019 15:58	WG1315893
Xylenes, Total	U		0.316	1.50	1	07/23/2019 15:58	WG1315893
(S) Toluene-d8	*125*	J1		*80.0-120*		*07/23/2019 15:58*	WG1315893
(S) 4-Bromofluorobenzene	*122*			*77.0-126*		*07/23/2019 15:58*	WG1315893
(S) 1,2-Dichloroethane-d4	*96.9*			*70.0-130*		*07/23/2019 15:58*	WG1315893

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	310000		2710	20000	1	07/25/2019 23:18	WG1317440

Sample Narrative:

L1120698-05 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17200		51.9	1000	1	07/20/2019 20:08	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 20:08	WG1314733
Sulfate	23900		77.4	5000	1	07/20/2019 20:08	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780		102	1000	1	07/23/2019 18:21	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2870		15.0	100	1	07/23/2019 10:14	WG1315585
Manganese	800		0.250	5.00	1	07/23/2019 10:14	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	46.3	J	31.6	100	1	07/24/2019 17:22	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*07/24/2019 17:22*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	6490		0.287	0.678	1	07/25/2019 17:01	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 17:01	WG1317137
Ethene	463		0.422	1.27	1	07/25/2019 17:01	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	07/23/2019 16:20	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 16:20	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 16:20	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 16:20	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 16:20	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 16:20	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 16:20	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 16:20	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 16:20	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 16:20	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 16:20	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 16:20	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 16:20	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/23/2019 16:20	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 16:20	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 16:20	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 16:20	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 16:20	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 16:20	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 16:20	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 16:20	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 16:20	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 16:20	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 16:20	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 16:20	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 16:20	WG1315893
1,1-Dichloroethene	1.15		0.188	0.500	1	07/23/2019 16:20	WG1315893
cis-1,2-Dichloroethene	257		1.87	10.0	20	07/29/2019 15:09	WG1319424
trans-1,2-Dichloroethene	3.29		0.152	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 16:20	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 16:20	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 16:20	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 16:20	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 16:20	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 16:20	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 16:20	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 16:20	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 16:20	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 16:20	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 16:20	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 16:20	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 16:20	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 16:20	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 16:20	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 16:20	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 16:20	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 16:20	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 16:20	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 16:20	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 16:20	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 16:20	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 16:20	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 16:20	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 16:20	WG1315893
Tetrachloroethene	3.08		0.199	0.500	1	07/23/2019 16:20	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 16:20	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 16:20	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 16:20	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 16:20	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 16:20	WG1315893
Trichloroethene	14.4		0.153	0.500	1	07/23/2019 16:20	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 16:20	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 16:20	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 16:20	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 16:20	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 16:20	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 16:20	WG1315893
Vinyl chloride	580		2.36	10.0	20	07/29/2019 15:09	WG1319424
Xylenes, Total	U		0.316	1.50	1	07/23/2019 16:20	WG1315893
(S) Toluene-d8	*109*			*80.0-120*		*07/23/2019 16:20*	WG1315893
(S) Toluene-d8	*105*			*80.0-120*		*07/29/2019 15:09*	WG1319424
(S) 4-Bromofluorobenzene	*88.7*			*77.0-126*		*07/23/2019 16:20*	WG1315893
(S) 4-Bromofluorobenzene	*96.6*			*77.0-126*		*07/29/2019 15:09*	WG1319424
(S) 1,2-Dichloroethane-d4	*93.3*			*70.0-130*		*07/23/2019 16:20*	WG1315893
(S) 1,2-Dichloroethane-d4	*117*			*70.0-130*		*07/29/2019 15:09*	WG1319424

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	5.73	J	1.05	25.0	1	07/23/2019 16:41	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 16:41	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 16:41	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 16:41	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 16:41	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 16:41	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 16:41	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 16:41	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 16:41	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 16:41	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 16:41	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 16:41	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 16:41	WG1315893
Chlorobenzene	U		0.140	0.500	1	07/23/2019 16:41	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 16:41	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 16:41	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 16:41	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 16:41	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 16:41	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 16:41	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 16:41	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 16:41	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 16:41	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 16:41	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 16:41	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 16:41	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 16:41	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 16:41	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 16:41	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 16:41	WG1315893
cis-1,2-Dichloroethene	0.340	J	0.0933	0.500	1	07/28/2019 17:09	WG1318890
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 16:41	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 16:41	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 16:41	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 16:41	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 16:41	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 16:41	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 16:41	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 16:41	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 16:41	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 16:41	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 16:41	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 16:41	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 16:41	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 16:41	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 16:41	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 16:41	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 16:41	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 16:41	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 16:41	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 16:41	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 16:41	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 16:41	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 16:41	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 16:41	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 16:41	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 16:41	WG1315893
Tetrachloroethene	0.303	J	0.199	0.500	1	07/23/2019 16:41	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 16:41	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 16:41	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 16:41	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 16:41	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 16:41	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 16:41	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 16:41	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 16:41	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 16:41	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 16:41	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 16:41	WG1315893
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 16:41	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/28/2019 17:09	WG1318890
Xylenes, Total	U		0.316	1.50	1	07/23/2019 16:41	WG1315893
(S) Toluene-d8	*128*	J1		*80.0-120*		*07/23/2019 16:41*	WG1315893
(S) Toluene-d8	*110*			*80.0-120*		*07/28/2019 17:09*	WG1318890
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*07/23/2019 16:41*	WG1315893
(S) 4-Bromofluorobenzene	*98.4*			*77.0-126*		*07/28/2019 17:09*	WG1318890
(S) 1,2-Dichloroethane-d4	*96.2*			*70.0-130*		*07/23/2019 16:41*	WG1315893
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*07/28/2019 17:09*	WG1318890

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	403000		2710	20000	1	07/25/2019 23:25	WG1317440

Sample Narrative:

L1120698-07 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	58200		51.9	1000	1	07/20/2019 20:22	WG1314733
Nitrate	140		22.7	100	1	07/20/2019 20:22	WG1314733
Sulfate	6910		77.4	5000	1	07/20/2019 20:22	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	12700		102	1000	1	07/23/2019 18:35	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2070		15.0	100	1	07/23/2019 10:17	WG1315585
Manganese	398		0.250	5.00	1	07/23/2019 10:17	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 17:46	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 17:46*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	4790		0.287	0.678	1	07/25/2019 17:09	WG1317137
Ethane	96.5		0.296	1.29	1	07/25/2019 17:09	WG1317137
Ethene	14.4		0.422	1.27	1	07/25/2019 17:09	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.80	J	1.05	25.0	1	07/23/2019 17:02	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 17:02	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 17:02	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 17:02	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 17:02	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 17:02	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 17:02	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 17:02	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 17:02	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 17:02	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 17:02	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 17:02	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 17:02	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	07/23/2019 17:02	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 17:02	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 17:02	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 17:02	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 17:02	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 17:02	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 17:02	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 17:02	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 17:02	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 17:02	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 17:02	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 17:02	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 17:02	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 17:02	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 17:02	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 17:02	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 17:02	WG1315893
cis-1,2-Dichloroethene	0.309	J	0.0933	0.500	1	07/28/2019 17:29	WG1318890
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 17:02	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 17:02	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 17:02	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 17:02	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 17:02	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 17:02	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 17:02	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 17:02	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 17:02	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 17:02	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 17:02	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 17:02	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 17:02	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 17:02	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 17:02	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 17:02	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 17:02	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 17:02	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 17:02	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 17:02	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 17:02	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 17:02	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 17:02	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 17:02	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 17:02	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 17:02	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 17:02	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 17:02	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 17:02	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 17:02	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 17:02	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 17:02	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 17:02	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 17:02	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 17:02	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 17:02	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 17:02	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 17:02	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 17:02	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/28/2019 17:29	WG1318890
Xylenes, Total	U		0.316	1.50	1	07/23/2019 17:02	WG1315893
(S) Toluene-d8	*103*			*80.0-120*		*07/23/2019 17:02*	WG1315893
(S) Toluene-d8	*106*			*80.0-120*		*07/28/2019 17:29*	WG1318890
(S) 4-Bromofluorobenzene	*86.0*			*77.0-126*		*07/23/2019 17:02*	WG1315893
(S) 4-Bromofluorobenzene	*99.0*			*77.0-126*		*07/28/2019 17:29*	WG1318890
(S) 1,2-Dichloroethane-d4	*99.7*			*70.0-130*		*07/23/2019 17:02*	WG1315893
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*07/28/2019 17:29*	WG1318890

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	266000		2710	20000	1	07/25/2019 23:32	WG1317440

Sample Narrative:

L1120698-08 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24400		51.9	1000	1	07/20/2019 20:51	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 20:51	WG1314733
Sulfate	15000		77.4	5000	1	07/20/2019 20:51	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2230		102	1000	1	07/23/2019 20:18	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	13700		15.0	100	1	07/23/2019 10:21	WG1315585
Manganese	972		0.250	5.00	1	07/23/2019 10:21	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 18:10	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 18:10*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	39.5		0.287	0.678	1	07/25/2019 17:15	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 17:15	WG1317137
Ethene	U		0.422	1.27	1	07/25/2019 17:15	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.16	J	1.05	25.0	1	07/23/2019 17:23	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 17:23	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 17:23	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 17:23	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 17:23	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 17:23	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 17:23	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 17:23	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 17:23	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 17:23	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 17:23	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 17:23	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 17:23	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/23/2019 17:23	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 17:23	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 17:23	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 17:23	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 17:23	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 17:23	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 17:23	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 17:23	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 17:23	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 17:23	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 17:23	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 17:23	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 17:23	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 17:23	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 17:23	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 17:23	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 17:23	WG1315893
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/23/2019 17:23	WG1315893
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 17:23	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 17:23	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 17:23	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 17:23	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 17:23	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 17:23	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 17:23	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 17:23	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 17:23	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 17:23	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 17:23	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 17:23	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 17:23	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 17:23	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 17:23	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 17:23	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 17:23	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 17:23	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 17:23	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 17:23	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 17:23	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 17:23	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 17:23	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 17:23	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 17:23	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 17:23	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 17:23	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 17:23	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 17:23	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 17:23	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 17:23	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 17:23	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 17:23	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 17:23	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 17:23	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 17:23	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 17:23	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 17:23	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 17:23	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/23/2019 17:23	WG1315893
Xylenes, Total	U		0.316	1.50	1	07/23/2019 17:23	WG1315893
(S) Toluene-d8	*120*			*80.0-120*		*07/23/2019 17:23*	WG1315893
(S) 4-Bromofluorobenzene	*95.7*			*77.0-126*		*07/23/2019 17:23*	WG1315893
(S) 1,2-Dichloroethane-d4	*98.9*			*70.0-130*		*07/23/2019 17:23*	WG1315893

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	307000		2710	20000	1	07/25/2019 23:48	WG1317440

Sample Narrative:

L1120698-09 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17200		51.9	1000	1	07/20/2019 21:49	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 21:49	WG1314733
Sulfate	24200		77.4	5000	1	07/20/2019 21:49	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3670		102	1000	1	07/23/2019 20:31	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	2950		15.0	100	1	07/23/2019 10:24	WG1315585
Manganese	817		0.250	5.00	1	07/23/2019 10:24	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	262		31.6	100	1	07/24/2019 18:34	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*07/24/2019 18:34*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5480		0.287	0.678	1	07/25/2019 17:17	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 17:17	WG1317137
Ethene	387		0.422	1.27	1	07/25/2019 17:17	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		1.05	25.0	1	07/23/2019 17:45	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 17:45	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 17:45	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 17:45	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 17:45	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 17:45	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 17:45	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 17:45	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 17:45	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 17:45	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 17:45	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 17:45	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 17:45	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	07/23/2019 17:45	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 17:45	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 17:45	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 17:45	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 17:45	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 17:45	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 17:45	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 17:45	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 17:45	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 17:45	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 17:45	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 17:45	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 17:45	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 17:45	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 17:45	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 17:45	WG1315893
1,1-Dichloroethene	1.37		0.188	0.500	1	07/23/2019 17:45	WG1315893
cis-1,2-Dichloroethene	371		1.87	10.0	20	07/28/2019 17:49	WG1318890
trans-1,2-Dichloroethene	3.50		0.152	0.500	1	07/23/2019 17:45	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 17:45	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 17:45	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 17:45	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 17:45	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 17:45	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 17:45	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 17:45	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 17:45	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 17:45	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 17:45	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 17:45	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 17:45	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 17:45	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 17:45	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 17:45	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 17:45	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 17:45	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 17:45	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 17:45	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 17:45	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 17:45	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 17:45	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 17:45	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 17:45	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 17:45	WG1315893
Tetrachloroethene	2.80		0.199	0.500	1	07/23/2019 17:45	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 17:45	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 17:45	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 17:45	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 17:45	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 17:45	WG1315893
Trichloroethene	15.9		0.153	0.500	1	07/23/2019 17:45	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 17:45	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 17:45	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 17:45	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 17:45	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 17:45	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 17:45	WG1315893
Vinyl chloride	842		2.36	10.0	20	07/28/2019 17:49	WG1318890
Xylenes, Total	U		0.316	1.50	1	07/23/2019 17:45	WG1315893
(S) Toluene-d8	*105*			*80.0-120*		*07/23/2019 17:45*	WG1315893
(S) Toluene-d8	*104*			*80.0-120*		*07/28/2019 17:49*	WG1318890
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*07/23/2019 17:45*	WG1315893
(S) 4-Bromofluorobenzene	*95.8*			*77.0-126*		*07/28/2019 17:49*	WG1318890
(S) 1,2-Dichloroethane-d4	*94.0*			*70.0-130*		*07/23/2019 17:45*	WG1315893
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*07/28/2019 17:49*	WG1318890

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	4460	B J	2710	20000	1	07/25/2019 21:00	WG1317440

Sample Narrative:

L1120698-10 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	195	J	51.9	1000	1	07/20/2019 22:03	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 22:03	WG1314733
Sulfate	U		77.4	5000	1	07/20/2019 22:03	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	234	B J	102	1000	1	07/23/2019 20:45	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	31.4	J	15.0	100	1	07/23/2019 10:45	WG1315585
Manganese	1.38	J	0.250	5.00	1	07/23/2019 10:45	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 18:58	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*07/24/2019 18:58*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	218		0.287	0.678	1	07/25/2019 17:20	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 17:20	WG1317137
Ethene	14.1		0.422	1.27	1	07/25/2019 17:20	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.98	J	1.05	25.0	1	07/23/2019 18:06	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 18:06	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 18:06	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 18:06	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 18:06	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 18:06	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 18:06	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 18:06	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 18:06	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 18:06	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 18:06	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 18:06	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 18:06	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/23/2019 18:06	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 18:06	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 18:06	WG1315893
Chloroform	0.295	J	0.0860	0.500	1	07/23/2019 18:06	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 18:06	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 18:06	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 18:06	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 18:06	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 18:06	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 18:06	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 18:06	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 18:06	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 18:06	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 18:06	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 18:06	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 18:06	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 18:06	WG1315893
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/28/2019 18:08	WG1318890
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 18:06	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 18:06	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 18:06	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 18:06	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 18:06	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 18:06	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 18:06	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 18:06	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 18:06	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 18:06	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 18:06	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 18:06	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 18:06	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 18:06	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 18:06	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 18:06	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 18:06	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 18:06	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 18:06	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 18:06	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 18:06	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 18:06	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 18:06	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 18:06	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 18:06	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 18:06	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 18:06	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 18:06	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 18:06	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 18:06	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 18:06	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 18:06	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 18:06	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 18:06	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 18:06	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 18:06	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 18:06	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 18:06	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 18:06	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/28/2019 18:08	WG1318890
Xylenes, Total	U		0.316	1.50	1	07/23/2019 18:06	WG1315893
(S) Toluene-d8	*106*			*80.0-120*		*07/23/2019 18:06*	WG1315893
(S) Toluene-d8	*108*			*80.0-120*		*07/28/2019 18:08*	WG1318890
(S) 4-Bromofluorobenzene	*79.6*			*77.0-126*		*07/23/2019 18:06*	WG1315893
(S) 4-Bromofluorobenzene	*98.4*			*77.0-126*		*07/28/2019 18:08*	WG1318890
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*		*07/23/2019 18:06*	WG1315893
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*07/28/2019 18:08*	WG1318890

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/24/2019 14:58	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*		*07/24/2019 14:58*	WG1316734

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	07/23/2019 14:33	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 14:33	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 14:33	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 14:33	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 14:33	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 14:33	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 14:33	WG1315893
Bromomethane	U	J0	0.157	2.50	1	07/23/2019 14:33	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 14:33	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 14:33	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 14:33	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 14:33	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 14:33	WG1315893
Chlorobenzene	U		0.140	0.500	1	07/23/2019 14:33	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 14:33	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 14:33	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 14:33	WG1315893
Chloromethane	U	J0	0.153	1.25	1	07/23/2019 14:33	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 14:33	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 14:33	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 14:33	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 14:33	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 14:33	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 14:33	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 14:33	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 14:33	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 14:33	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 14:33	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 14:33	WG1315893
1,1-Dichloroethene	U		0.188	0.500	1	07/23/2019 14:33	WG1315893
cis-1,2-Dichloroethene	U		0.0933	0.500	1	07/23/2019 14:33	WG1315893
trans-1,2-Dichloroethene	U		0.152	0.500	1	07/23/2019 14:33	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 14:33	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 14:33	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 14:33	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 14:33	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 14:33	WG1315893
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	07/23/2019 14:33	WG1315893
2,2-Dichloropropane	U	J0	0.0929	0.500	1	07/23/2019 14:33	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 14:33	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 14:33	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 14:33	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 14:33	WG1315893
n-Hexane	U	J0	0.305	5.00	1	07/23/2019 14:33	WG1315893
Iodomethane	U	J0	0.377	10.0	1	07/23/2019 14:33	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 14:33	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 14:33	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 14:33	WG1315893

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	07/23/2019 14:33	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 14:33	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 14:33	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 14:33	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 14:33	WG1315893
Styrene	U	J0	0.117	0.500	1	07/23/2019 14:33	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 14:33	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 14:33	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 14:33	WG1315893
Tetrachloroethene	U		0.199	0.500	1	07/23/2019 14:33	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 14:33	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 14:33	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 14:33	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 14:33	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 14:33	WG1315893
Trichloroethene	U		0.153	0.500	1	07/23/2019 14:33	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 14:33	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 14:33	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 14:33	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 14:33	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 14:33	WG1315893
Vinyl acetate	U	J0	0.645	5.00	1	07/23/2019 14:33	WG1315893
Vinyl chloride	U		0.118	0.500	1	07/23/2019 14:33	WG1315893
Xylenes, Total	U		0.316	1.50	1	07/23/2019 14:33	WG1315893
(S) Toluene-d8	*104*			*80.0-120*		*07/23/2019 14:33*	WG1315893
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*07/23/2019 14:33*	WG1315893
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*		*07/23/2019 14:33*	WG1315893

Method Blank (MB)

(MB) R3434474-1 07/25/19 20:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	2810	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1120670-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1120670-07 07/25/19 21:15 • (DUP) R3434474-2 07/25/19 21:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	259000	260000	1	0.533		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1122061-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1122061-01 07/25/19 23:55 • (DUP) R3434474-5 07/26/19 00:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	64900	64100	1	1.18		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3434474-3 07/25/19 22:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	100000	100	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3432718-1 07/20/19 09:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	88.4	J	77.4	5000

L1120682-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1120682-04 07/20/19 16:17 • (DUP) R3432718-3 07/20/19 16:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	40800	40600	1	0.485		15
Nitrate	960	946	1	1.41		15
Sulfate	13400	13300	1	0.271		15

L1120698-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1120698-07 07/20/19 20:22 • (DUP) R3432718-6 07/20/19 20:36

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	58200	58100	1	0.211		15
Nitrate	140	131	1	6.35		15
Sulfate	6910	6870	1	0.587		15

Laboratory Control Sample (LCS)

(LCS) R3432718-2 07/20/19 09:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39900	99.8	80.0-120	
Nitrate	8000	8400	105	80.0-120	
Sulfate	40000	41100	103	80.0-120	

L1120686-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120686-01 07/20/19 16:46 • (MS) R3432718-4 07/20/19 17:00 • (MSD) R3432718-5 07/20/19 17:15

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	5360	56500	56200	102	102	1	80.0-120			0.483	15
Nitrate	5000	267	5490	5460	104	104	1	80.0-120			0.502	15
Sulfate	50000	ND	55000	55000	102	102	1	80.0-120			0.0749	15

L1120698-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1120698-08 07/20/19 20:51 • (MS) R3432718-7 07/20/19 21:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	24400	74900	101	1	80.0-120	
Nitrate	5000	U	5200	104	1	80.0-120	
Sulfate	50000	15000	65800	102	1	80.0-120	

Method Blank (MB)

(MB) R3433613-1 07/23/19 16:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	190	J	102	1000

L1120698-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1120698-04 07/23/19 17:54 • (DUP) R3433613-3 07/23/19 18:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	1400	1320	1	5.81		20

L1121124-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1121124-03 07/23/19 21:25 • (DUP) R3433613-6 07/23/19 21:38

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	7910	7670	1	3.08		20

Laboratory Control Sample (LCS)

(LCS) R3433613-2 07/23/19 17:27

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	74300	99.1	85.0-115	

L1120698-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120698-07 07/23/19 18:35 • (MS) R3433613-4 07/23/19 18:51 • (MSD) R3433613-5 07/23/19 19:07

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	12700	63800	63100	102	101	1	80.0-120			1.07	20

L1121210-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1121210-05 07/23/19 23:55 • (MS) R3433613-7 07/24/19 00:12 • (MSD) R3433613-8 07/24/19 00:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	14900	66600	64500	103	99.2	1	80.0-120			3.22	20

Method Blank (MB)

(MB) R3433190-1 07/23/19 09:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3433190-2 07/23/19 09:05 • (LCSD) R3433190-3 07/23/19 09:08

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Iron	5000	5320	5130	106	103	80.0-120			3.65	20
Manganese	50.0	50.1	50.9	100	102	80.0-120			1.53	20

L1120670-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120670-12 07/23/19 09:11 • (MS) R3433190-5 07/23/19 09:18 • (MSD) R3433190-6 07/23/19 09:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	5000	22.3	5130	5120	102	102	1	75.0-125			0.220	20
Manganese	50.0	1.03	50.2	51.2	98.4	100	1	75.0-125			1.88	20

Method Blank (MB)

(MB) R3433855-3 07/24/19 13:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3433855-2 07/24/19 12:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5440	99.0	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*94.7*	*78.0-120*	

Method Blank (MB)

(MB) R3434376-1 07/25/19 16:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1120670-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1120670-14 07/25/19 16:44 • (DUP) R3434376-2 07/25/19 17:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	U	0.000	1	0.000		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3434376-3 07/25/19 17:23 • (LCSD) R3434376-4 07/25/19 17:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	73.1	74.6	108	110	85.0-115			1.93	20
Ethane	129	117	115	90.5	89.2	85.0-115			1.48	20
Ethene	127	116	113	91.0	89.1	85.0-115			2.04	20

Method Blank (MB)

(MB) R3433905-2 07/23/19 10:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3433905-2 07/23/19 10:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*95.0*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3433905-1 07/23/19 09:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	133	107	19.0-160	
Acrylonitrile	125	118	94.1	55.0-149	
Benzene	25.0	22.4	89.8	70.0-123	
Bromobenzene	25.0	22.5	90.1	73.0-121	
Bromodichloromethane	25.0	23.8	95.3	75.0-120	
Bromochloromethane	25.0	27.9	112	76.0-122	
Bromoform	25.0	23.6	94.5	68.0-132	
Bromomethane	25.0	14.7	58.9	10.0-160	
n-Butylbenzene	25.0	21.2	84.7	73.0-125	
sec-Butylbenzene	25.0	21.1	84.5	75.0-125	
tert-Butylbenzene	25.0	20.1	80.4	76.0-124	
Carbon disulfide	25.0	22.1	88.4	61.0-128	
Carbon tetrachloride	25.0	23.2	92.7	68.0-126	
Chlorobenzene	25.0	22.0	88.0	80.0-121	
Chlorodibromomethane	25.0	22.9	91.6	77.0-125	
Chloroethane	25.0	24.4	97.4	47.0-150	
Chloroform	25.0	23.4	93.5	73.0-120	
Chloromethane	25.0	18.1	72.3	41.0-142	
2-Chlorotoluene	25.0	21.9	87.8	76.0-123	
4-Chlorotoluene	25.0	23.7	94.7	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	22.3	89.3	58.0-134	
1,2-Dibromoethane	25.0	22.9	91.5	80.0-122	
Dibromomethane	25.0	25.2	101	80.0-120	
1,2-Dichlorobenzene	25.0	24.4	97.7	79.0-121	
1,3-Dichlorobenzene	25.0	24.6	98.5	79.0-120	
1,4-Dichlorobenzene	25.0	21.3	85.1	79.0-120	
Dichlorodifluoromethane	25.0	29.4	118	51.0-149	
1,1-Dichloroethane	25.0	22.6	90.4	70.0-126	
1,2-Dichloroethane	25.0	23.4	93.5	70.0-128	
1,1-Dichloroethene	25.0	22.0	88.1	71.0-124	
cis-1,2-Dichloroethene	25.0	22.8	91.2	73.0-120	
trans-1,2-Dichloroethene	25.0	24.6	98.5	73.0-120	
1,2-Dichloropropane	25.0	24.7	98.8	77.0-125	
1,1-Dichloropropene	25.0	23.8	95.3	74.0-126	
1,3-Dichloropropane	25.0	22.7	91.0	80.0-120	
cis-1,3-Dichloropropene	25.0	25.2	101	80.0-123	
trans-1,3-Dichloropropene	25.0	23.2	92.9	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	17.5	69.9	33.0-144	
2,2-Dichloropropane	25.0	19.1	76.3	58.0-130	
Di-isopropyl ether	25.0	22.4	89.5	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3433905-1 07/23/19 09:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	25.0	21.5	86.0	79.0-123	
Hexachloro-1,3-butadiene	25.0	21.6	86.3	54.0-138	
2-Hexanone	125	111	88.8	67.0-149	
n-Hexane	25.0	19.2	76.8	57.0-133	
Iodomethane	125	83.3	66.6	33.0-147	
Isopropylbenzene	25.0	21.6	86.5	76.0-127	
p-Isopropyltoluene	25.0	21.5	86.2	76.0-125	
2-Butanone (MEK)	125	114	91.1	44.0-160	
Methylene Chloride	25.0	23.8	95.1	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	113	90.1	68.0-142	
Methyl tert-butyl ether	25.0	24.6	98.4	68.0-125	
Naphthalene	25.0	22.9	91.4	54.0-135	
n-Propylbenzene	25.0	23.3	93.3	77.0-124	
Styrene	25.0	19.8	79.3	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	21.8	87.0	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	21.9	87.7	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	23.4	93.6	69.0-132	
Tetrachloroethene	25.0	22.0	87.9	72.0-132	
Toluene	25.0	21.9	87.6	79.0-120	
1,2,3-Trichlorobenzene	25.0	24.6	98.4	50.0-138	
1,2,4-Trichlorobenzene	25.0	24.3	97.3	57.0-137	
1,1,1-Trichloroethane	25.0	23.5	94.2	73.0-124	
1,1,2-Trichloroethane	25.0	20.9	83.6	80.0-120	
Trichloroethene	25.0	24.8	99.1	78.0-124	
Trichlorofluoromethane	25.0	25.1	101	59.0-147	
1,2,3-Trichloropropane	25.0	23.5	94.1	73.0-130	
1,2,4-Trimethylbenzene	25.0	21.1	84.3	76.0-121	
1,2,3-Trimethylbenzene	25.0	21.5	86.0	77.0-120	
1,3,5-Trimethylbenzene	25.0	22.3	89.0	76.0-122	
Vinyl acetate	125	86.4	69.2	11.0-160	
Vinyl chloride	25.0	22.8	91.3	67.0-131	
Xylenes, Total	75.0	63.8	85.1	79.0-123	
(S) Toluene-d8			*91.7*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.6*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*99.4*	*70.0-130*	

Method Blank (MB)

(MB) R3435312-4 07/28/19 16:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3435312-1 07/28/19 14:52 • (LCSD) R3435312-2 07/28/19 15:12

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	23.5	23.6	94.0	94.5	73.0-120			0.487	20
Vinyl chloride	25.0	28.3	28.9	113	116	67.0-131			2.22	20
(S) Toluene-d8				*106*	*108*	*80.0-120*				
(S) 4-Bromofluorobenzene				*98.3*	*98.5*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*115*	*114*	*70.0-130*				

Method Blank (MB)

(MB) R3435403-4 07/29/19 13:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*96.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3435403-1 07/29/19 11:58 • (LCSD) R3435403-2 07/29/19 12:18

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
cis-1,2-Dichloroethene	25.0	22.8	22.3	91.2	89.1	73.0-120			2.37	20
Vinyl chloride	25.0	26.4	26.2	105	105	67.0-131			0.606	20
(S) Toluene-d8				*105*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*98.0*	*98.3*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*115*	*115*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

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* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

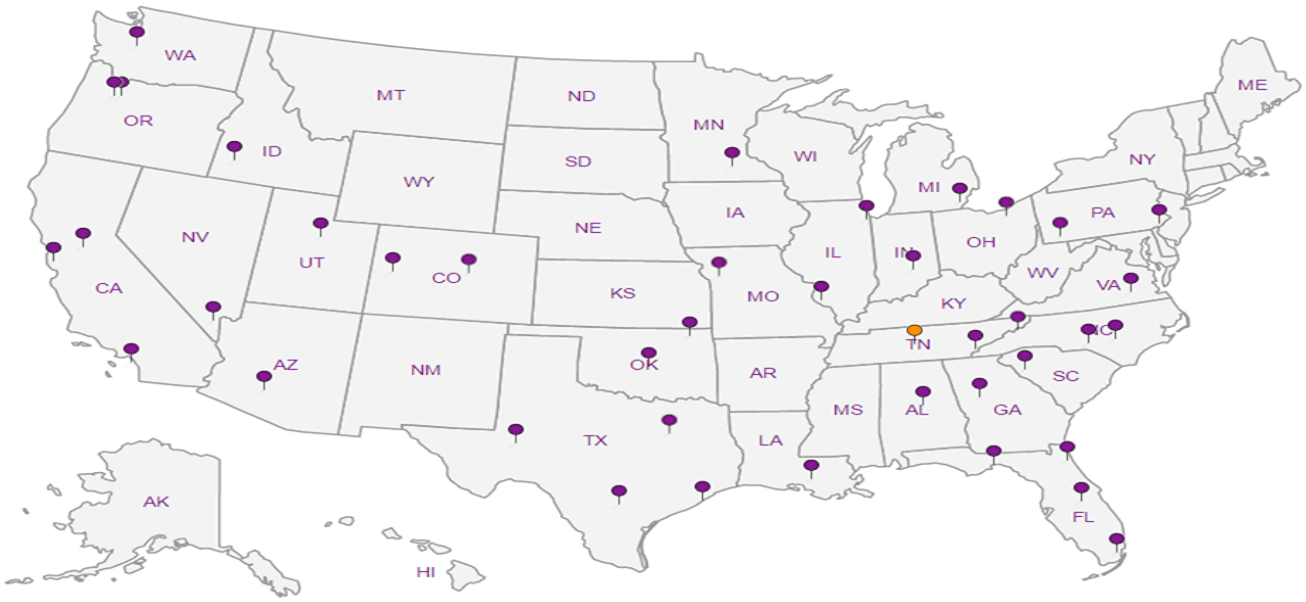
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Report to: Brian O'Neal/Bill Haldeman

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Email To: boneal@pesenv.com; bhaldeman@pesenv.com; KVIIC@PESENV.COM KSPRINGSTEAD@PESENV.COM

Project Description: American Linen
City/State Collected: Seattle, WA
Phone: 206-529-3980
Fax: 206-529-3985
Client Project # 1413.001.05.601
Lab Project # PESENVSWA-ALP
Collected by (print): Ben Hecht
Site/Facility ID # American Linen
P.O. #
Collected by (signature):
Immediately Packed on Ice N ___ Y ✓
Rush? (Lab MUST Be Notified) ___ Same Day ___ Next Day ___ Two Day ___ Three Day ___ Five Day ___ 5 Day (Rad Only) ___ 10 Day (Rad Only)
Quote #
Date Results Needed STAT

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,Cl, SO4* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlAmb-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs 8260LLC 40mlAmb-HCl	Remarks	Sample # (lab only)
MW125-071819	Grab	GW	24	7/18/19	1655	6				X			X		-01
MW-158A-071919		GW	95	7/19/19	0755	12	X	X	X	X	X	X	X		02
MW121-071919		GW	20		0835	6				X			X		03
MW-138-071919		GW	110		1005	12	X	X	X	X	X	X	X		04
MW-146-071919		GW	45		1025	12	X	X	X	X	X	X	X		05
MW119-071919		GW	30		1025	3							X		06
MW-143-071919		GW	75		1320	12	X	X	X	X	X	X	X		07
MW106-071919		GW	135		1335	12	X	X	X	X	X	X	X		08
MW-913-071919		GW	45		1200	12	X	X	X	X	X	X	X		09
EQ-071919	—	GW	—		1500	12	X	X	X	X	X	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: *Nitrate has a 48 hour holding time.
+ TRIP BLANK, analyze for NWTPHGx and VOC -Bill PES -Tier QA/QC -Email OK

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier __ _____
Tracking # 1082 5988 5675

Relinquished by : (Signature) Date: 7-19-19 Time: 1700
Received by: (Signature)
Trip Blank Received: (Yes) No HCL / MeoH TBR

Relinquished by : (Signature) Date: Time:
Received by: (Signature)
Temp: 5.1-1-5.5 °C Bottles Received: 99
If preservation required by Login: Date/Time

Relinquished by : (Signature) Date: Time:
Received for lab by: (Signature)
Date: 7/20/19 Time: 8:45
Hold:
Condition: NCF / (OK)

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1120698
1093
Acctnum: PESENVSWA
Template: T152679
Prelogin: P718645
TSR: 110 - Brian Ford
PB: 7-5-19 ES
Shipped Via: FedEX Ground

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mR/hr

MEMORANDUM

TO: Project File **DATE:** August 11, 2019

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.601

TASK: EIM Data Validation Level EPA2A for July and August 2019 – Groundwater and Soil Vapor Samples

LAB: Pace Sample Delivery Groups (SDGs): L1119161, L1119171, L1119726, L1120206, L1120698, L1121210, L1121576, L1121848, L1122507, and L1124853

Forty-nine (49) groundwater samples (including three field duplicates), three (3) soil vapor samples (including one field duplicate), two (2) equipment blanks, and nine (9) trip blanks were collected as Round 3 Quarterly Monitoring sampling event at the Former American Linen Supply Site, in Seattle, Washington, between July 15-25, and August 1, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- VOCs by USEPA Method TO-15;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (Chloride, Nitrate, and Sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

Samples were collected between July 15-25 and August 1, 2019 and results are reported in ten Pace SDGs (L1119161, L1119171, L1119726, L1120206, L1120698, L1121210, L1121576, L1121848, L1122507, and L1124853). The quality assurance review of the sample data is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with PACE control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for

Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1119161: Review of the chain of custody (COC) shows date of collection missing from samples MW112-071619, GEI-1-071619, and GEI-2-071619. PES confirmed that the date of collection was July 16, 2019.

- SDG L1119171: Review of the COC indicates MW103-071519. Pace identified the sample as MW-103-071519. Review of COC shows that the date that the laboratory received the cooler was recorded as 7/17 but date of receipt should read 7/17/2019.

- SDG L1119726: Review of COC shows that the date that the laboratory received the cooler was recorded as 7/18 but date of receipt should read 7/18/2019.

- SDG L1120206: Review of the COC indicates MW 126-071819. Pace identified the sample as MW-126-071819.

- SDG L1120698: Review of the COC shows MW125-071819 and MW106-071919. Pace identified the samples as MW-125-071819 and MW-106-071919. The associated trip blank sample is included in the COC remarks section.

- SDG L1121210: Review of the COC shows MW104-072219 and MW107-072219. Pace identified the samples as MW-104-072219 and MW-107-072219. Date of collection was not recorded for samples MW-148-072219, MW-153-072219, MW-157-072219, MW-156-072219, and MW-107-072219. PES confirmed that samples were collected on July 22, 2019.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:

All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

USEPA Method TO-15:
The analyses for VOCs by Method TO-15 were performed within the 30-day recommended holding time limit for the air samples collected in Summa canisters. All holding time criteria are met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:
All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however PACE's notes indicate the following:

- SDGs L1119161 and L1119171 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for trans-1,4-dichloro-2-butene and trichlorofluoromethane (CFC-11) associated with analytical batch WG1313581 (analyzed on July 18, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDGs L1119726 and L1120206 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for acetone, trans-1,4-dichloro-2-butene, iodomethane (methyl iodide), and naphthalene associated with analytical batch WG1314770 (analyzed on July 20, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1120698 - *USEPA Method 8260C:* CCV issues are noted by Pace for multiple compounds associated with analytical batch WG1315893 (analyzed on July 23, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1121210 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for trichlorofluoromethane associated with analytical batch WG1317389 (analyzed on July 25, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1121576 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for trichlorofluoromethane associated with analytical batch WG1317389 (analyzed on July 25, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

- SDG L1124853 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues are noted by Pace for trans-1,4-dichloro-2-butene and trichlorofluoromethane associated with analytical batch WG1323449 (analyzed on August 6, 2019). Associated sample results for these compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **All associated sample results for these compounds are estimated and qualified (UJ/J).**

Method Blank Results

USEPA Method 8260C:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1119161 - Analytical batch WG1313581: A low level of acetone is detected in the method blank. A low level of acetone is also detected in the trip blank. **Acetone detections in samples FMW-129-071619, MW112-071619, GEI-1-071619, and GEI-2-071619 are detected below the RDL are qualified (U) as non-detects due to trip, and/or method blank contamination.** A low level of hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since hexachloro-1,3-butadiene is not detected in the associated samples.

- SDG L1119171 - Analytical batch WG1313581: A low level of acetone is detected in the method blank. **Acetone detections in samples MW-110-071519, MW-111-071519, MW-103-071519, MW-109-071519, MW-154-071519, MW-108-071519, MW-9-071619, MW-120-071619, and R-MW5-071619 are detected below the RDL are qualified (U) as non-detects due to method blank contamination.** A low level of

hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since hexachloro-1,3-butadiene is not detected in the associated samples.

- SDG L1119171 - Analytical batch WG1313748: Low levels of gasoline are detected (below the RDL) in the trip and method blanks. **Associated low level gasoline detection, below the RDL, in samples MW-154-071519 and MW-9-071619, are qualified as not detected (U).**

- SDGs L1121210 - Analytical batch WG1317007: A low level of tetrachloroethene (PCE) is detected in the method blank. Tetrachloroethene was detected, below the RDL, in the associated trip blank. No action is taken other than to note this.

- SDG L1121576 - Analytical batch WG1317007: A low level of PCE is detected in the method blank. PCE was detected, below the RDL, in the trip blank sample. No action is taken on this basis.

- SDGs L1121210 and L1121576 - Analytical batch WG1317007: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action was necessary since hexachloro-1,3-butadiene is not detected in the associated samples or the trip blank associated with SDG L1121576.

- SDG L1121210 - Analytical batch WG1317370: A low level of PCE is detected in the method blank. **Tetrachloroethene was detected, below the RDL, in sample MW-148-072219 and is qualified (U) as non-detect due to method blank contamination.**

- SDG L1121576 – Analytical batch WG1317389: A low level of tetrachloroethene is detected in the trip and method blanks. Tetrachloroethene was detected in sample MW-155-072319 but the result is significantly greater than the method blank detection. No action was taken.

- SDG L1124853 - Analytical batch WG1323449: Low levels of hexachloro-1,3-butadiene and 1,2,4-trimethylbenzene are detected in the method blank. No action was necessary since these compounds are not detected in the associated sample.

USEPA Method TO-15:
A laboratory method blank is included with the analytical batch per method requirement. The target analytes were not detected in the method blank at or above the RDLs with the following exceptions:

- SDG L1121848 – Analytical batch WG1317302: Multiple compounds are detected at low levels (below the RDLs) in the soil vapor method blank. Discussion and exception are as follows:

    - Sample SV-02-071919 result for toluene was detected is slightly greater than the blank detection. Sample dilution (2X) was evaluated against the blank

contamination. No action was taken for the toluene result as bias from the contamination is considered negligible.

- Sample SV-01-071919 results for methylene chloride, propene, and toluene are laboratory qualified (B) to indicate method blank contamination. **Sample SV-01-071919 results for methylene chloride (a common laboratory contaminant), propene, and toluene are estimated and qualified (J+) due to low levels of blank contamination.** Sample dilution (2X) was evaluated against the blank contamination. A field duplicate sample SV-01-071919-D was also collected. Refer to the Field Duplicate section for further discussion regarding precision data.

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1119161 - Analytical batch WG1313748: Gasoline is detected at a low level (below the RDL) in the method blank. **Gasoline detection in sample MW112-071619 is detected below the RDL and qualified (U) as non-detect due to trip, and/or method blank contamination.**

- SDG L1119171 - Analytical batch WG1313748: Gasoline is detected at a low level (below the RDL) in the method blank. **Gasoline detection in samples MW-154-071519 and MW-9-071619 are detected below the RDL and qualified (U) as non-detect due to method blank contamination.** No action is taken with sample MW-120-071619 since the gasoline detection exceeds the RDL.

- SDG L1119726 - Analytical batch WG1313748: Gasoline is detected at a low level (below the RDL) in the method blank. **Gasoline detection in samples MW105-071719 are detected below the RDL and qualified (U) as non-detect due to method blank contamination.** No action is taken on this basis for samples MW113-071719 and BB-8-071719 since the gasoline detections exceed the RDL.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1119161	WG1315264	SM2320B	Alkalinity as CaCO3, Total	3000	J	20000	ug/L	NO
L1119161	WG1312677	9056A	Chloride	289	J	1000	ug/L	NO
L1119161	WG1313436	6020B	Iron	16.9	J	100	ug/L	NO
L1119161	WG1312677	9056A	Sulfate	312	J	5000	ug/L	NO
L1119161	WG1312820	9060A	TOC	284	J	1000	ug/L	NO
L1119171	WG1315264	SM2320B	Alkalinity as CaCO3, Total	3000	J	20000	ug/L	NO
L1119171	WG1312677	9056A	Chloride	289	J	1000	ug/L	NO
L1119171	WG1312677	9056A	Sulfate	312	J	5000	ug/L	NO
L1119171	WG1313391	9060A	TOC	117	J	1000	ug/L	NO
L1119726	WG1315387	SM2320B	Alkalinity as CaCO3, Total	2900	J	20000	ug/L	NO
L1119726	WG1313370	9056A	Chloride	294	J	1000	ug/L	NO
L1119726	WG1314078	9060A	TOC	212	J	1000	ug/L	NO
L1120206	WG1315970	SM2320B	Alkalinity as CaCO3, Total	3140	J	20000	ug/L	NO
L1120206	WG1314861	6020B	Iron	25.6	J	100	ug/L	NO
L1120206	WG1315213	9060A	TOC	231	J	1000	ug/L	NO
L1120698	WG1317440	SM2320B	Alkalinity as CaCO3, Total	2810	J	20000	ug/L	NO
L1120698	WG1314733	9056A	Sulfate	88.4	J	5000	ug/L	NO
L1120698	WG1315948	9060A	TOC	190	J	1000	ug/L	NO
L1121210	WG1317446	SM2320B	Alkalinity as CaCO3, Total	2860	J	20000	ug/L	NO
L1121210	WG1315944	9056A	Chloride	277	J	1000	ug/L	NO
L1121210	WG1315948	9060A	TOC	190	J	1000	ug/L	NO
L1121210	WG1316685	9060A	TOC	363	J	1000	ug/L	NO
L1121576	WG1317887	SM2320B	Alkalinity as CaCO3, Total	3080	J	20000	ug/L	NO
L1121576	WG1317639	9060A	TOC	195	J	1000	ug/L	NO
L1122507	WG1319145	SM2320B	Alkalinity as CaCO3, Total	3540	J	20000	ug/L	NO
L1122507	WG1318499	9060A	TOC	235	J	1000	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:
Nine trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1119161 - Analytical batch WG1313748: Low levels of gasoline are detected (below the RDL) in the trip and method blanks. **The associated low level gasoline detection, below the RDL, in sample MW112-071619 is qualified as not detected (U).** Low levels of acetone are detected (below the RDL) in the trip and method blanks. **Acetone detections in samples FMW-129-071619, MW112-071619, GEI-1-071619, and GEI-2-071619 are detected below the RDL are qualified (U) as non-detects due to trip, and/or method blank contamination.**

- SDG L1119171 - Analytical batch WG1313748: Low levels of gasoline are detected (below the RDL) in the trip and method blanks. **Associated low level gasoline**

detections, below the RDL, in samples MW-154-071519 and MW-9-071619, are qualified as not detected (U).

- SDG L1121210 - Analytical batches WG1317007 (Trip Blank), WG1320771 (MW-104-072219), and WG1317370 (MW-148-072219): A low level of tetrachloroethene is detected (above the RDL) in the trip blank. Pace's sample narrative indicates that the PCE detection in the trip blank is likely due to instrument carryover. Tetrachloroethene was also detected above the RDL in two of the associated method blanks (WG1317007 and WG1317370). **A low level tetrachloroethene detection (below the RDL) in sample MW-148-072219 is qualified as not detected (U) due to method blank contamination.** No action is taken for sample MW-104-072219 because PCE was reanalyzed on July 31, 2019 with analytical batch WG1320771. No action was taken with sample MW-156-072219 since the detection is significantly greater than the RDL.

- SDG L1121576 – Analytical batch WG1317007 (Trip): Low levels of acetone and tetrachloroethene are detected in the trip blank. Pace's sample narrative indicates that the PCE detection in the trip blank is likely due to instrument carryover. PCE was also detected in the method blank. PCE was detected in sample MW-155-072319 but no action is required since the result associated with a different analytical batch (WG1317389) and is significantly greater than the trip/method blank detections. No action was taken on this basis. **Associated acetone detections, below the RDL, in sample MW-160-072319 and MW-155-072319, are qualified as not detected (U).**

- SDG L1124853 - Analytical batch WG1323449: Low levels of acetone and hexachloro-1,3-butadiene are detected in the trip blank. No action was necessary for hexachloro-1,3-butadiene as it was not detected in the associated sample and is laboratory qualified (B) to indicate method blank contamination. **The associated acetone detection, below the RDL, in sample MW127-080119, is qualified as not detected (U).**

- SDG L1124853 - Analytical batch WG1325194: A low level of gasoline is detected (below the RDL) in the method blank. No action was necessary since gasoline was not detected in the associated sample or trip blank.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:
Two equipment blanks (EQ-071919 and EQ-072519) were collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), metals (iron and manganese), wet chemistry parameters (alkalinity, chloride, nitrate, sulfate, and TOC). Review of the equipment blank results are as follows:

- SDG L1120698: An equipment blank sample (EQ-071919) was collected on July 19, 2019 from the bladder pump associated with samples MW-158A-071919, MW-146-071919, field duplicate sample MW-913-071919, MW-143-071919, and MW-106-071919. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

- Low levels of acetone and chloroform (both below the RDL) are detected in the equipment blank. No action was needed for chloroform as it was not detected in the associated samples. **Sample MW-158A-071919, MW-143-071919, and MW-106-071919 acetone detections are less than the RDL and are qualified (U) as not detected due to equipment blank contamination.**

- Methane and ethane were detected in the equipment blank and associated samples as shown below:

Sample ID	Methane 0.678 ug/L RDL	Ethane 1.29 ug/L RDL	Ethene 1.27 ug/L RDL
EQ-071919	**218**	**1.29 U**	**14.1**
MW-158A-071919	222	1.29 U	5.86
MW-146-071919	6490	1.29 U	463
MW-143-071919	4790	96.5	14.4
MW-106-071919	39.5	1.29 U	1.27 U

- Methane and ethane qualifiers are assigned as follows:

  - **Sample MW-158A-071919 methane detection is slightly greater than the equipment blank concentration and is estimated with high bias (J+). Sample MW-158A-071919 ethene detection is less than the equipment blank concentration and qualified as not detected (U).**

  - **Sample MW-143-071919 ethene detection is slightly greater than the equipment blank concentration and is estimated with high bias (J+).**

  - **Sample MW-106-071919 methane detection is less than the equipment blank concentration and qualified as not detected (U).**

- Low levels of alkalinity, chloride, TOC, iron, and manganese are detected in the equipment blank. No action was taken on this basis since associated detections are either above the RDL or are not detected.

- SDG L1122507: An equipment blank sample (EQ-072519) was collected on July 27, 2019 from the bladder pump associated with samples MW-142-072519. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

  - Low levels of acetone, chlorobenzene, and chloroform are detected in the equipment blank. **Sample MW-142-072519 acetone, chlorobenzene, and chloroform detections are less than the RDL and are qualified (U) as not**

detected due to equipment blank contamination. Low levels of alkalinity, chloride, nitrate, sulfate, TOC, iron, and manganese are also detected in the equipment blank. No action was taken on this basis since associated detections are either above the RDL or are not detected.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1120206: Samples MW-147-071819 and MW-912-071819;
- SDG L1120206: Samples SCS-2-071819 and MW-914-071819;
- SDG L1120698: Samples MW-146-071919 and MW-913-071919;
- SDG L1121848: Samples SV-01-071919 and SV-01-071919-D

Target analyte results are comparable and within a relative percent difference (RPD) of 30% for the field duplicate pair with the following exceptions:

- SDG L1120206: Samples MW-147-071819 and MW-912-071819 - Iron results are not comparable with an RPD greater than 30% (for results < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for iron are estimated and qualified (J).**

- SDG L1120698: Samples MW-146-071919 and MW-913-071919 - Gasoline, cis-1,2-dichloroethene, and vinyl chloride results are not comparable with RPDs greater than 30% (for results < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for gasoline, cis-1,2-dichloroethene, and vinyl chloride are estimated and qualified (J).** Refer to Compound Identification and Quantitation Limits for further discussion regarding gasoline results.

- SDG L1121848: Samples SV-01-071919 and SV-01-071919-D - Acetone results are not comparable with an RPD greater than 30% (low level duplicate results were evaluated using < 5X RDL the absolute difference < 1X RDL). **Field duplicate results for acetone are estimated and qualified (J).** The associated method blank was contaminated with multiple compounds at low levels. Refer to the discussion under Method Blank Results for more information.

Laboratory Duplicate Analyses

USEPA Method 8260C:
Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

NWTPH-Gx Method:
A laboratory duplicate sample was not analyzed. Refer to LCS/LCSD or MS/MSDs results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:
A laboratory duplicate sample was not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicates (MS/MSDs) results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
A laboratory duplicate sample was performed on client samples and on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussions:

- SDG L1121576: Non client laboratory duplicate sample nitrate RPD result exceeds 15%. No action is taken since the duplicate was performed on a non-client sample refer to additional laboratory duplicate results for precision data.

- SDG L1121576: Client sample MW-160-072319 TOC RPD result slightly exceeds 20%. No action is taken since the result < 5X RDL and the absolute difference < 1X RDL.

Surrogate Recoveries

USEPA Method 8260C:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all the analyses with the following exceptions:

- SDG L1120698 – Analytical Batch WG1315893: Surrogate recovery toluene-d8 is recovered above laboratory control limit criteria for sample MW-138-071919. Acetone is detected in MW-138-071919 however detected results are already estimated and qualified (J) since the result is below the RDL.

- SDG L1120698 Analytical Batch WG1315893: Surrogate recovery toluene-d8 is recovered above laboratory control limit criteria for sample MW-119-071919. Acetone, cis-1,2-dichloroethene, and tetrachloroethene are detected at low levels in sample MW-119-071919 however detected results are already estimated and qualified (J) since the result is below the RDL.

USEPA Method TO-15:
The surrogate recovery results for the samples, laboratory control samples, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:

The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:
Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDGs L1119161 and L1119171 - Analytical batch WG1314393. An LCSD was not analyzed for cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene. These selected targets were reanalyzed on July 20, 2019 due to necessary dilution. Refer to initial analysis associated with analytical batch WG1313581 for precision data.

- SDG L1119726 - Analytical batches WG1314770 and WG1316884. An LCSD was not analyzed. Refer to field duplicate data associated with SDG L1120206 for precision data.

- SDG L1120698 - Analytical batch WG1315893. An LCSD was not analyzed. Refer to field duplicate data for precision data.

- SDG L1121210 – Analytical batches WG1317007, WG1317389, and WG1320771. An LCSD was not analyzed. Refer to field duplicate data for precision data.

USEPA Method TO-15:
LCS/LCSDs were analyzed for the VOCs by TO-15 along with each analytical batch. LCS/LCSD %Rs and relative percent differences (RPDs) are within QC criteria.

NWTPH-Gx Method:
The LCS or LCS/LCSD %Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD %Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:
The LCS/LCSD %Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS or LCS/LCSD %Rs and RPDs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:
Matrix spike/matrix spike duplicate (MS/MSD) analyses was performed on a non-client sample within the analytical batch. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters.

USEPA Method TO-15:
MS/MSD analyses were not performed. Refer to LCS/LCSD and field duplicate data for accuracy and precision data.

NWTPH-Gx Method:
MS/MSD analyses were performed on client or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
MS/MSD analyses were performed on client or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD for accuracy and precision data. The MS/MSD %Rs and RPDs for all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDG L1120206 - Analytical batch WG1317135: MS/MSDs were performed on a non-client sample. The sample amounts for methane are greater than four times the spike amount exceeding the upper calibration criteria and MS/MSD results are qualified (EV) by the laboratory. No action was taken. LCS/LCSD results are within criteria.

USEPA Method 6020B:
MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDG L1119161 - Analytical batch WG1313436: MS/MSD were performed on client sample FMW-129-071619. The sample amount for manganese is greater than four times the spike amount and MSD results are qualified (V) by the laboratory. Per Guidance, no action is necessary. LCS/LCSD results are within criteria.

- SDG L1121576 - Analytical batch WG1317876: MS/MSD were performed MW-160-072319. The sample amount for manganese is greater than four times the spike amount and MSD results are qualified (V) by the laboratory. Per Guidance, no action is necessary. LCS/LCSD results are within criteria.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or

laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following exception:

- SDGs L1119161 and L1119171 - Analytical batch WG1312677: The MS/MSDs were performed on a non-client sample. Results for nitrate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Results for sulfate are qualified (E and EV) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range and/or the sample amount was far greater than the spiked amount. No action was taken other than to note that the laboratory duplicate and LCS percent recovery results are within criteria.

- SDGs L1119161 and L1119171 - Analytical batch WG1312677: An additional MS was performed on client sample MW-120-071619 (SDG L1119171). Results for sulfate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action was taken other than to note that the LCS recovery results are within criteria.

- SDG L1119726 - Analytical batch WG1313370: MS/MSD analyses was performed on sample BB-8-071719. Results for sulfate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action is taken other than to note that the LCS and duplicate results are within criteria.

- SDG L1119726 - Analytical batch WG1313370: MS/MSD analyses was performed on non-client samples. Results for chloride and sulfate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action is taken other than to note that the LCS and duplicate results are within criteria.

- SDG L1120206 - Analytical batch WG1314262: MS/MSD analyses was performed on a non-client sample. Results for chloride and nitrate are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. No action is taken other than to note that the LCS and duplicate results are within criteria.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and tetrachloroethene) elute within the GRO retention time range. Elevated chlorinated VOC compounds likely contribute to the GRO result and associated GRO results are likely biased high (J+). No action was taken for gasoline detections below the RDL since the results are estimated (J). Qualified samples are as follows:

Sample ID	Laboratory Identification	Result Parameter Name	Result Value (µg/L)	Qualified Result	Comments
MW-120-071619	L1119171-08	Gasoline Range Organics	152	J+	Elevated chlorinated VOCs within the GRO elution range
MW113-071719	L1119726-02	Gasoline Range Organics	2560	J+	Elevated chlorinated VOCs within the GRO elution range
BB-8-071719	L1119726-05	Gasoline Range Organics	112	J+	Elevated chlorinated VOCs within the GRO elution range
MW-912-071819	L1120206-03	Gasoline Range Organics	170	J+	Elevated chlorinated VOCs within the GRO elution range
MW-147-071819	L1120206-06	Gasoline Range Organics	175	J+	Elevated chlorinated VOCs within the GRO elution range
MW-913-071919	L1120698-09	Gasoline Range Organics	262	J+	Elevated chlorinated VOCs within the GRO elution range
MW-157-072219	L1121210-05	Gasoline Range Organics	3880	J+	Elevated chlorinated VOCs within the GRO elution range
MW-156-072219	L1121210-06	Gasoline Range Organics	3100	J+	Elevated chlorinated VOCs within the GRO elution range
MW-107-072219	L1121210-07	Gasoline Range Organics	210	J+	Elevated chlorinated VOCs within the GRO elution range

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note that Pace sample narrative notes indicate that VOC target compounds were too high to run at lower dilution for samples as follows:

- SDG L1120206: Sample MW-147-071819; and
- SDG L1121210: Samples MW-157-072219 and MW-107-072219.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	307000		2710	20000	1	07/24/2019 16:46	WG1315970

Sample Narrative:
L1120206-06 WG1315970: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	19300		51.9	1000	1	07/19/2019 22:13	WG1314262
Nitrate	U		22.7	100	1	07/19/2019 22:13	WG1314262
Sulfate	30000		77.4	5000	1	07/19/2019 22:13	WG1314262

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	9560		102	1000	1	07/22/2019 16:13	WG1315213

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	3800	J	15.0	100	1	07/21/2019 16:58	WG1314861
Manganese	750		0.250	5.00	1	07/21/2019 16:58	WG1314861

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	175	J+	31.6	100	1	07/23/2019 18:09	WG1316070
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*07/23/2019 18:09*	WG1316070

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5450		0.287	0.678	1	07/24/2019 12:36	WG1316410
Ethane	U		0.296	1.29	1	07/24/2019 12:36	WG1316410
Ethene	191		0.422	1.27	1	07/24/2019 12:36	WG1316410

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.11	J	J J0	1.05	25.0	1	07/20/2019 17:32	WG1314770
Acrylonitrile	U			0.873	5.00	1	07/20/2019 17:32	WG1314770
Benzene	U			0.0896	0.500	1	07/20/2019 17:32	WG1314770
Bromobenzene	U			0.133	0.500	1	07/20/2019 17:32	WG1314770
Bromodichloromethane	U			0.0800	0.500	1	07/20/2019 17:32	WG1314770
Bromochloromethane	U			0.145	0.500	1	07/20/2019 17:32	WG1314770
Bromoform	U			0.186	0.500	1	07/20/2019 17:32	WG1314770
Bromomethane	U			0.157	2.50	1	07/20/2019 17:32	WG1314770
n-Butylbenzene	U			0.143	0.500	1	07/20/2019 17:32	WG1314770
sec-Butylbenzene	U			0.134	0.500	1	07/20/2019 17:32	WG1314770
tert-Butylbenzene	U			0.183	0.500	1	07/20/2019 17:32	WG1314770
Carbon disulfide	U			0.101	0.500	1	07/20/2019 17:32	WG1314770
Carbon tetrachloride	U			0.159	0.500	1	07/20/2019 17:32	WG1314770

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	07/20/2019 17:32	WG1314770
Chlorodibromomethane	U		0.128	0.500	1	07/20/2019 17:32	WG1314770
Chloroethane	U		0.141	2.50	1	07/20/2019 17:32	WG1314770
Chloroform	U		0.0860	0.500	1	07/20/2019 17:32	WG1314770
Chloromethane	U		0.153	1.25	1	07/20/2019 17:32	WG1314770
2-Chlorotoluene	U		0.111	0.500	1	07/20/2019 17:32	WG1314770
4-Chlorotoluene	U		0.0972	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/20/2019 17:32	WG1314770
1,2-Dibromoethane	U		0.193	0.500	1	07/20/2019 17:32	WG1314770
Dibromomethane	U		0.117	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dichlorobenzene	U		0.101	0.500	1	07/20/2019 17:32	WG1314770
1,3-Dichlorobenzene	U		0.130	0.500	1	07/20/2019 17:32	WG1314770
1,4-Dichlorobenzene	U		0.121	0.500	1	07/20/2019 17:32	WG1314770
Dichlorodifluoromethane	U		0.127	2.50	1	07/20/2019 17:32	WG1314770
1,1-Dichloroethane	U		0.114	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dichloroethane	U		0.108	0.500	1	07/20/2019 17:32	WG1314770
1,1-Dichloroethene	1.33		0.188	0.500	1	07/20/2019 17:32	WG1314770
cis-1,2-Dichloroethene	219		1.87	10.0	20	07/24/2019 23:44	WG1316884
trans-1,2-Dichloroethene	2.49		0.152	0.500	1	07/20/2019 17:32	WG1314770
1,2-Dichloropropane	U		0.190	0.500	1	07/20/2019 17:32	WG1314770
1,1-Dichloropropene	U		0.128	0.500	1	07/20/2019 17:32	WG1314770
1,3-Dichloropropane	U		0.147	1.00	1	07/20/2019 17:32	WG1314770
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/20/2019 17:32	WG1314770
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/20/2019 17:32	WG1314770
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	07/20/2019 17:32	WG1314770
2,2-Dichloropropane	U		0.0929	0.500	1	07/20/2019 17:32	WG1314770
Di-isopropyl ether	U		0.0924	0.500	1	07/20/2019 17:32	WG1314770
Ethylbenzene	U		3.16	10.0	20	07/24/2019 23:44	WG1316884
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/20/2019 17:32	WG1314770
2-Hexanone	U		0.757	5.00	1	07/20/2019 17:32	WG1314770
n-Hexane	U		0.305	5.00	1	07/20/2019 17:32	WG1314770
Iodomethane	U	UJ J0	0.377	10.0	1	07/20/2019 17:32	WG1314770
Isopropylbenzene	U		0.126	0.500	1	07/20/2019 17:32	WG1314770
p-Isopropyltoluene	U		0.138	0.500	1	07/20/2019 17:32	WG1314770
2-Butanone (MEK)	U		1.28	5.00	1	07/20/2019 17:32	WG1314770
Methylene Chloride	U		1.07	2.50	1	07/20/2019 17:32	WG1314770
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/20/2019 17:32	WG1314770
Methyl tert-butyl ether	U		0.102	0.500	1	07/20/2019 17:32	WG1314770
Naphthalene	5.94	J J	3.48	50.0	20	07/24/2019 23:44	WG1316884
n-Propylbenzene	U		3.24	10.0	20	07/24/2019 23:44	WG1316884
Styrene	U		0.117	0.500	1	07/20/2019 17:32	WG1314770
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/20/2019 17:32	WG1314770
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/20/2019 17:32	WG1314770
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/20/2019 17:32	WG1314770
Tetrachloroethene	U		0.199	0.500	1	07/20/2019 17:32	WG1314770
Toluene	U		0.412	0.500	1	07/20/2019 17:32	WG1314770
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/20/2019 17:32	WG1314770
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/20/2019 17:32	WG1314770
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/20/2019 17:32	WG1314770
1,1,2-Trichloroethane	U		0.186	0.500	1	07/20/2019 17:32	WG1314770
Trichloroethene	4.79		0.153	0.500	1	07/20/2019 17:32	WG1314770
Trichlorofluoromethane	U		0.130	2.50	1	07/20/2019 17:32	WG1314770
1,2,3-Trichloropropane	U		0.247	2.50	1	07/20/2019 17:32	WG1314770
1,2,4-Trimethylbenzene	U		2.46	10.0	20	07/24/2019 23:44	WG1316884
1,2,3-Trimethylbenzene	U		1.48	10.0	20	07/24/2019 23:44	WG1316884
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/20/2019 17:32	WG1314770

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.645	5.00	1	07/20/2019 17:32	WG1314770
Vinyl chloride	446		2.36	10.0	20	07/24/2019 23:44	WG1316884
Xylenes, Total	U		6.32	30.0	20	07/24/2019 23:44	WG1316884
(S) Toluene-d8	*99.8*			*80.0-120*		*07/20/2019 17:32*	WG1314770
(S) Toluene-d8	*109*			*80.0-120*		*07/24/2019 23:44*	WG1316884
(S) 4-Bromofluorobenzene	*92.1*			*77.0-126*		*07/20/2019 17:32*	WG1314770
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*07/24/2019 23:44*	WG1316884
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*07/20/2019 17:32*	WG1314770
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*07/24/2019 23:44*	WG1316884

Sample Narrative:

L1120206-06 WG1314770, WG1316884: Not all compounds reportable at lower dilution.

L1120206-06 WG1314770, WG1316884: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

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1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	310000		2710	20000	1	07/25/2019 23:18	WG1317440

Sample Narrative:

L1120698-05 WG1317440: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17200		51.9	1000	1	07/20/2019 20:08	WG1314733
Nitrate	U		22.7	100	1	07/20/2019 20:08	WG1314733
Sulfate	23900		77.4	5000	1	07/20/2019 20:08	WG1314733

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780		102	1000	1	07/23/2019 18:21	WG1315948

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2870		15.0	100	1	07/23/2019 10:14	WG1315585
Manganese	800		0.250	5.00	1	07/23/2019 10:14	WG1315585

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	46.3 J	J	31.6	100	1	07/24/2019 17:22	WG1316734
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*07/24/2019 17:22*	WG1316734

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	6490		0.287	0.678	1	07/25/2019 17:01	WG1317137
Ethane	U		0.296	1.29	1	07/25/2019 17:01	WG1317137
Ethene	463		0.422	1.27	1	07/25/2019 17:01	WG1317137

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1.05	25.0	1	07/23/2019 16:20	WG1315893
Acrylonitrile	U		0.873	5.00	1	07/23/2019 16:20	WG1315893
Benzene	U		0.0896	0.500	1	07/23/2019 16:20	WG1315893
Bromobenzene	U		0.133	0.500	1	07/23/2019 16:20	WG1315893
Bromodichloromethane	U		0.0800	0.500	1	07/23/2019 16:20	WG1315893
Bromochloromethane	U		0.145	0.500	1	07/23/2019 16:20	WG1315893
Bromoform	U		0.186	0.500	1	07/23/2019 16:20	WG1315893
Bromomethane	U	UJ JO	0.157	2.50	1	07/23/2019 16:20	WG1315893
n-Butylbenzene	U		0.143	0.500	1	07/23/2019 16:20	WG1315893
sec-Butylbenzene	U		0.134	0.500	1	07/23/2019 16:20	WG1315893
tert-Butylbenzene	U		0.183	0.500	1	07/23/2019 16:20	WG1315893
Carbon disulfide	U		0.101	0.500	1	07/23/2019 16:20	WG1315893
Carbon tetrachloride	U		0.159	0.500	1	07/23/2019 16:20	WG1315893

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	07/23/2019 16:20	WG1315893
Chlorodibromomethane	U		0.128	0.500	1	07/23/2019 16:20	WG1315893
Chloroethane	U		0.141	2.50	1	07/23/2019 16:20	WG1315893
Chloroform	U		0.0860	0.500	1	07/23/2019 16:20	WG1315893
Chloromethane	U	UJ J0	0.153	1.25	1	07/23/2019 16:20	WG1315893
2-Chlorotoluene	U		0.111	0.500	1	07/23/2019 16:20	WG1315893
4-Chlorotoluene	U		0.0972	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	07/23/2019 16:20	WG1315893
1,2-Dibromoethane	U		0.193	0.500	1	07/23/2019 16:20	WG1315893
Dibromomethane	U		0.117	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dichlorobenzene	U		0.101	0.500	1	07/23/2019 16:20	WG1315893
1,3-Dichlorobenzene	U		0.130	0.500	1	07/23/2019 16:20	WG1315893
1,4-Dichlorobenzene	U		0.121	0.500	1	07/23/2019 16:20	WG1315893
Dichlorodifluoromethane	U		0.127	2.50	1	07/23/2019 16:20	WG1315893
1,1-Dichloroethane	U		0.114	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dichloroethane	U		0.108	0.500	1	07/23/2019 16:20	WG1315893
1,1-Dichloroethene	1.15		0.188	0.500	1	07/23/2019 16:20	WG1315893
cis-1,2-Dichloroethene	257	J	1.87	10.0	20	07/29/2019 15:09	WG1319424
trans-1,2-Dichloroethene	3.29		0.152	0.500	1	07/23/2019 16:20	WG1315893
1,2-Dichloropropane	U		0.190	0.500	1	07/23/2019 16:20	WG1315893
1,1-Dichloropropene	U		0.128	0.500	1	07/23/2019 16:20	WG1315893
1,3-Dichloropropane	U		0.147	1.00	1	07/23/2019 16:20	WG1315893
cis-1,3-Dichloropropene	U		0.0976	0.500	1	07/23/2019 16:20	WG1315893
trans-1,3-Dichloropropene	U		0.222	0.500	1	07/23/2019 16:20	WG1315893
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	07/23/2019 16:20	WG1315893
2,2-Dichloropropane	U	UJ J0	0.0929	0.500	1	07/23/2019 16:20	WG1315893
Di-isopropyl ether	U		0.0924	0.500	1	07/23/2019 16:20	WG1315893
Ethylbenzene	U		0.158	0.500	1	07/23/2019 16:20	WG1315893
Hexachloro-1,3-butadiene	U		0.157	1.00	1	07/23/2019 16:20	WG1315893
2-Hexanone	U		0.757	5.00	1	07/23/2019 16:20	WG1315893
n-Hexane	U	UJ J0	0.305	5.00	1	07/23/2019 16:20	WG1315893
Iodomethane	U	UJ J0	0.377	10.0	1	07/23/2019 16:20	WG1315893
Isopropylbenzene	U		0.126	0.500	1	07/23/2019 16:20	WG1315893
p-Isopropyltoluene	U		0.138	0.500	1	07/23/2019 16:20	WG1315893
2-Butanone (MEK)	U		1.28	5.00	1	07/23/2019 16:20	WG1315893
Methylene Chloride	U		1.07	2.50	1	07/23/2019 16:20	WG1315893
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	07/23/2019 16:20	WG1315893
Methyl tert-butyl ether	U		0.102	0.500	1	07/23/2019 16:20	WG1315893
Naphthalene	U		0.174	2.50	1	07/23/2019 16:20	WG1315893
n-Propylbenzene	U		0.162	0.500	1	07/23/2019 16:20	WG1315893
Styrene	U	UJ J0	0.117	0.500	1	07/23/2019 16:20	WG1315893
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	07/23/2019 16:20	WG1315893
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	07/23/2019 16:20	WG1315893
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	07/23/2019 16:20	WG1315893
Tetrachloroethene	3.08		0.199	0.500	1	07/23/2019 16:20	WG1315893
Toluene	U		0.412	0.500	1	07/23/2019 16:20	WG1315893
1,2,3-Trichlorobenzene	U		0.164	0.500	1	07/23/2019 16:20	WG1315893
1,2,4-Trichlorobenzene	U		0.355	0.500	1	07/23/2019 16:20	WG1315893
1,1,1-Trichloroethane	U		0.0940	0.500	1	07/23/2019 16:20	WG1315893
1,1,2-Trichloroethane	U		0.186	0.500	1	07/23/2019 16:20	WG1315893
Trichloroethene	14.4		0.153	0.500	1	07/23/2019 16:20	WG1315893
Trichlorofluoromethane	U		0.130	2.50	1	07/23/2019 16:20	WG1315893
1,2,3-Trichloropropane	U		0.247	2.50	1	07/23/2019 16:20	WG1315893
1,2,4-Trimethylbenzene	U		0.123	0.500	1	07/23/2019 16:20	WG1315893
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	07/23/2019 16:20	WG1315893
1,3,5-Trimethylbenzene	U		0.124	0.500	1	07/23/2019 16:20	WG1315893

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	UJ J0	0.645	5.00	1	07/23/2019 16:20	WG1315893
Vinyl chloride	580	J	2.36	10.0	20	07/29/2019 15:09	WG1319424
Xylenes, Total	U		0.316	1.50	1	07/23/2019 16:20	WG1315893
(S) Toluene-d8	*109*			*80.0-120*		*07/23/2019 16:20*	WG1315893
(S) Toluene-d8	*105*			*80.0-120*		*07/29/2019 15:09*	WG1319424
(S) 4-Bromofluorobenzene	*88.7*			*77.0-126*		*07/23/2019 16:20*	WG1315893
(S) 4-Bromofluorobenzene	*96.6*			*77.0-126*		*07/29/2019 15:09*	WG1319424
(S) 1,2-Dichloroethane-d4	*93.3*			*70.0-130*		*07/23/2019 16:20*	WG1315893
(S) 1,2-Dichloroethane-d4	*117*			*70.0-130*		*07/29/2019 15:09*	WG1319424

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MEMORANDUM

TO: Project File **DATE:** January 20, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review - Addendum

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.304/601

TASK: EIM Data Validation Level EPA2A for February, April, May, and July of 2019 – Quarterly Groundwater Samples

LAB: Pace Analytical (Pace) Sample Delivery Groups (SDGs): L1066228, L1079439, L1079374, L1091958, L1091936, L1092440, L1092400, L1093242, L1094387, L1119171, L1119726, L1120206, L1120698, and L1121210

This memorandum has been drafted to further clarify the analytical laboratory (Pace) gasoline method of analysis via Volatile Organic Compounds (GC) by Washington State Method NWTPHGx (using a gas chromatograph/flame ionization detector (GC/FID)) and reported gasoline range organic-NWTPH results. Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, and vinyl chloride) elute within the gasoline range organics (GRO) retention time range as specified by Washington State (detections falling between the toluene and dodecane range).

Non-petroleum organics (e.g. chlorinated VOC compounds) eluting within the gasoline range contribute to the GRO result and GRO results are likely biased high (J+). PES requested that Pace evaluate chromatograms associated with positive sample detections to confirm the potential presence of gasoline. Per PES's request Pace reviewed selected sample chromatograms against the gasoline standard chromatograms and assigned "no discernible petroleum pattern" or "most closely resembles gasoline" to GRO results associated with this Task. PES assigned an additional project level qualifier (Z) to GRO results when the chromatogram for the sample does not match a discernible gasoline standard pattern. Associated chromatograms and qualified samples for this Task are as follows:

Sample ID	Laboratory Identification	Gasoline Range Organic Result (µg/L)	DV Qualifier	Data Validation Comments	Pace Chromatogram Review Notes
MW-104-020119	L1066228-10	191	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW162-031219	L1079439-09	690	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW152-031219	L1079439-10	55900	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW151-031219	L1079374-04	143	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW163-031219	L1079374-05	319	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW164-031219	L1079374-06	565	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW150-031319	L1079374-08	7540	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW135-031319	L1079374-09	32700	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW149-031319	L1079374-10	15300	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW104-031319	L1079374-11	124	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
W-MW-02-042319	L1091958-01	429	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW104-042319	L1091936-03	174	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW147-042319	L1091936-05	139	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-908-042419	L1092440-03	2600	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-146-042419	L1092400-02	88	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-156-042419	L1092440-05	2570	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-157-042419	L1092440-06	3210	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-9-042619	L1093242-08	121	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW107-050119	L1094387-07	481	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-120-071619	L1119171-08	152	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
BB-8-071719	L1119726-05	112	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW113-071719	L1119726-02	2560	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-147-071819	L1120206-06	175	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-912-071819	L1120206-03	170	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-914-071819	L1120206-04	2320		Low level chlorinated VOC is detected in the GRO elution range	Most closely resembles gasoline
SCS-2-071819	L1120206-05	2190		Chlorinated VOCs are not detected in the GRO elution range	Most closely resembles gasoline
MW-146-071919	L1120698-05	46.3	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-913-071919	L1120698-09	262	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-104-072219	L1121210-02	50.4	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-107-072219	L1121210-07	210	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern

MW-156-072219	L1121210-06	3100	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern
MW-157-072219	L1121210-05	3880	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernible petroleum pattern

For additional details refer to the attached Table 1 which includes the sample GRO result along with associated chlorinated VOC results, and Pace's review notes. Pace will, for future sampling events, include a sample narrative evaluating each positive GRO detection (greater than the RDL). Pace has indicated that this effort may result in cost increases and delay in requested analytical turnaround time. A project action level threshold for GRO may be determined to expedite turnaround and minimize any fee increases.

Project level qualifiers have been included to the PES's project database (Epiphany) as (ZJ+). Washington State EIM valid values were reviewed. In this case no Washington State EIM valid value descriptor is ideal and the default estimated value (J) has been selected as the best match to qualify GRO (ZJ+) data.

Table 1
American Linen Data Validation
Project 1413.001.05.601 - October/November 2019 Groundwater Samples
Chlorinated VOC Results and Gasoline Range Organic Chromatogram Review

Sample Location	Sample ID	Lab ID	Sample Date	SDG	GRO (µg/L)	Lab Qual	PCE (µg/L)	Lab Qual	TCE (µg/L)	Lab Qual	cDCE (µg/L)	Lab Qual	VC (µg/L)	Lab Qual	PACE Chromatographic Analysis
MW104	MW-104-020119	L1066228-10	2/1/19	L1066228	191		12.1		3.22		30.6		32.4		No discernable petroleum pattern
MW-162	MW162-031219	L1079439-09	3/12/19	L1079439	690		613		538		758		46.5		No discernable petroleum pattern
MW-152	MW152-031219	L1079439-10	3/12/19	L1079439	55900		1000	U	18700		1E+05		11000		No discernable petroleum pattern
MW-151	MW151-031219	L1079374-04	3/12/19	L1079374	143	B	0.981		1.36		196		24.9		No discernable petroleum pattern
MW-163	MW163-031219	L1079374-05	3/12/19	L1079374	319	B	282		334		56.9		1.1		No discernable petroleum pattern
MW-164	MW164-031219	L1079374-06	3/12/19	L1079374	565		444		327		529		7.8		No discernable petroleum pattern
MW-150	MW150-031319	L1079374-08	3/13/19	L1079374	7540		36		262		15000		479		No discernable petroleum pattern
MW-135	MW135-031319	L1079374-09	3/13/19	L1079374	32700		57300		8150		37200		706		No discernable petroleum pattern
MW-149	MW149-031319	L1079374-10	3/13/19	L1079374	15300		2630		2770		30800		285		No discernable petroleum pattern
MW104	MW104-031319	L1079374-11	3/13/19	L1079374	124	B	31.6		75.7		83		25.9		No discernable petroleum pattern
W-MW-02	W-MW-02-042319	L1091958-01	4/23/19	L1091958	429	J	0.199	U	40.1		672		81	J	No discernable petroleum pattern
MW104	MW104-042319	L1091936-03	4/23/19	L1091936	174		15.9		56.9		162		21.1	J	No discernable petroleum pattern
MW-147	MW147-042319	L1091936-05	4/23/19	L1091936	139		0.199	U	5.13		322		499	UJ	No discernable petroleum pattern
MW-908	MW-908-042419	L1092440-03	4/24/19	L1092440	2600	J	1440		717		1760		3.34	J	No discernable petroleum pattern
MW-146	MW-146-042419	L1092400-02	4/24/19	L1092400	88	J	1.5		12.4		257		383	J	No discernable petroleum pattern
MW-156	MW-156-042419	L1092440-05	4/24/19	L1092440	2570	J	1430		727		1770		3.21	J	No discernable petroleum pattern
MW-157	MW-157-042419	L1092440-06	4/24/19	L1092440	3210	J	9.95	U	8.52	J	3550		622		No discernable petroleum pattern
MW-9	MW-9-042619	L1093242-08	4/26/19	L1093242	121	J	157		45.2		75.1		0.861	J	No discernable petroleum pattern
MW107	MW107-050119	L1094387-07	5/1/19	L1094387	481		0.199	U	99.9		1250		374		No discernable petroleum pattern
MW120	MW-120-071619	L1119171-08	7/16/19	L1119171	152	J+	134		40.1		74.9		1.01		No discernable petroleum pattern
BB-8	BB-8-071719	L1119726-05	7/17/19	L1119726	112	J+	169		28.9		19.3		0.118	U	No discernable petroleum pattern
MW113	MW113-071719	L1119726-02	7/17/19	L1119726	2560	J+	3.14		20.4		4940		103		No discernable petroleum pattern
MW-147	MW-147-071819	L1120206-06	7/18/19	L1120206	175	J+	0.199	U	4.79		219		446		No discernable petroleum pattern
MW-9	MW-912-071819	L1120206-03	7/18/19	L1120206	170	J+	0.199	U	4.72		286		425		No discernable petroleum pattern
MW-914	MW-914-071819	L1120206-04	7/18/19	L1120206	2320		0.199	U	0.153	U	0.093	U	0.242	J	*Most closely resembles gasoline*
SCS-2	SCS-2-071819	L1120206-05	7/18/19	L1120206	2190		0.199	U	0.153	U	0.093	U	0.118	U	*Most closely resembles gasoline*
MW-146	MW-146-071919	L1120698-05	7/19/19	L1120698	46.3	J	3.08		14.4		257		580		No discernable petroleum pattern
MW-146	MW-913-071919	L1120698-09	7/19/19	L1120698	262	J+	2.8		15.9		371	J	842	J	No discernable petroleum pattern
MW104	MW-104-072219	L1121210-02	7/22/19	L1121210	50.4	J	0.282	J	28.3		160		57.1		No discernable petroleum pattern
MW107	MW-107-072219	L1121210-07	7/22/19	L1121210	210	J+	1.99	U	2.62	J	290		307		No discernable petroleum pattern
MW-156	MW-156-072219	L1121210-06	7/22/19	L1121210	3100	J+	232		1270		2310		82		No discernable petroleum pattern
MW-157	MW-157-072219	L1121210-05	7/22/19	L1121210	3880	J+	19.9	U	27.6		4530		666		No discernable petroleum pattern

Definitions
SDG - Sample Delivery Group

Table 1
American Linen Data Validation
Project 1413.001.05.601 - October/November 2019 Groundwater Samples
Chlorinated VOC Results and Gasoline Range Organic Chromatogram Review

Sample Location	Sample ID	Lab ID	Sample Date	SDG	GRO (µg/L)	Lab Qual	PCE (µg/L)	Lab Qual	TCE (µg/L)	Lab Qual	cDCE (µg/L)	Lab Qual	VC (µg/L)	Lab Qual	PACE Chromatographic Analysis

GRO - Gasoline Range Organics
PCE - Tetrachloroethene
TCE - Trichloroethene
cDCE - cis-1,2-Dichloroethene
VC - Vinyl Chloride
U - Not detected
J - Estimated value

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

October 25, 2019

PES Environmental, Inc.- WA

Sample Delivery Group:	L1149851
Samples Received:	10/15/2019
Project Number:	1413.001.02.501E
Description:	
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman 1215 Fourth Ave., Suite 1350 Seattle, WA 98161

Entire Report Reviewed By:

Brian Ford
Project Manager

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MW-190-101419 L1149851-01 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 09:10 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:14	10/18/19 11:14	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/15/19 22:42	10/15/19 22:42	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 03:19	10/17/19 03:19	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:10	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 04:37	10/18/19 04:37	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:10	10/16/19 13:10	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 11:44	10/21/19 11:44	BMB	Mt. Juliet, TN

MW-146-101419 L1149851-02 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 10:15 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:22	10/18/19 11:22	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/15/19 22:56	10/15/19 22:56	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 03:41	10/17/19 03:41	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:25	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 05:01	10/18/19 05:01	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:15	10/16/19 13:15	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 12:03	10/21/19 12:03	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	100	10/23/19 01:49	10/23/19 01:49	TJJ	Mt. Juliet, TN

MW-309-101419 L1149851-03 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 10:35 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:37	10/18/19 11:37	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/15/19 23:54	10/15/19 23:54	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 03:58	10/17/19 03:58	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:29	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:25	10/16/19 13:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 12:23	10/21/19 12:23	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 02:10	10/23/19 02:10	TJJ	Mt. Juliet, TN

MW-189-101419 L1149851-04 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 11:30 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:44	10/18/19 11:44	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/16/19 00:08	10/16/19 00:08	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 04:56	10/17/19 04:56	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:32	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 05:24	10/18/19 05:24	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1363432	1	10/16/19 13:27	10/16/19 13:27	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 12:43	10/21/19 12:43	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 02:30	10/23/19 02:30	TJJ	Mt. Juliet, TN

MW-154-101419 L1149851-05 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 12:05 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:52	10/18/19 11:52	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363086	1	10/16/19 00:23	10/16/19 00:23	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 05:16	10/17/19 05:16	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 11:58	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 05:48	10/18/19 05:48	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:11	10/17/19 11:11	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 13:02	10/21/19 13:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 02:50	10/23/19 02:50	TJJ	Mt. Juliet, TN

MW-122-101419 L1149851-06 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 12:05 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 11:59	10/18/19 11:59	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 16:07	10/15/19 16:07	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 05:34	10/17/19 05:34	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:02	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:14	10/17/19 11:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 13:22	10/21/19 13:22	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 03:11	10/23/19 03:11	TJJ	Mt. Juliet, TN

MW-111-101419 L1149851-07 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 13:25 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:06	10/18/19 12:06	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 16:33	10/15/19 16:33	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364227	1	10/17/19 05:51	10/17/19 05:51	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:05	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:17	10/17/19 11:17	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 13:41	10/21/19 13:41	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 03:31	10/23/19 03:31	TJJ	Mt. Juliet, TN

MW-147-101419 L1149851-08 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 13:55 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:13	10/18/19 12:13	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 17:38	10/15/19 17:38	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364260	5	10/17/19 16:35	10/17/19 16:35	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:09	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 06:12	10/18/19 06:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 11:26	10/17/19 11:26	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1365165	10	10/18/19 13:08	10/18/19 13:08	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 14:01	10/21/19 14:01	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	25	10/23/19 03:51	10/23/19 03:51	TJJ	Mt. Juliet, TN

MW-161-101419 L1149851-09 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 14:28 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:20	10/18/19 12:20	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 17:51	10/15/19 17:51	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364260	1	10/17/19 16:53	10/17/19 16:53	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:13	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1367521	1	10/23/19 02:14	10/23/19 02:14	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 13:20	10/17/19 13:20	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 14:21	10/21/19 14:21	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1367719	1	10/23/19 04:11	10/23/19 04:11	TJJ	Mt. Juliet, TN

MW-103-101419 L1149851-10 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 14:55 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1365104	1	10/18/19 12:27	10/18/19 12:27	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1363090	1	10/15/19 18:04	10/15/19 18:04	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1364260	1	10/17/19 17:20	10/17/19 17:20	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1364629	1	10/20/19 13:40	10/21/19 12:16	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1364418	1	10/17/19 13:23	10/17/19 13:23	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1366365	1	10/21/19 14:40	10/21/19 14:40	BMB	Mt. Juliet, TN

TB-101419 L1149851-11 GW

Collected by: KZ/HC/BH | Collected date/time: 10/14/19 15:30 | Received date/time: 10/15/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1364938	1	10/18/19 01:02	10/18/19 01:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1368672	1	10/24/19 16:33	10/24/19 16:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1369459	1	10/25/19 11:05	10/25/19 11:05	JAH	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	172000		2710	20000	1	10/18/2019 11:14	WG1365104

Sample Narrative:

L1149851-01 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	12800		51.9	1000	1	10/15/2019 22:42	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:42	WG1363086
Sulfate	20300		77.4	5000	1	10/15/2019 22:42	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	10300		102	1000	1	10/17/2019 03:19	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1850		15.0	100	1	10/21/2019 11:10	WG1364629
Manganese	406		0.250	5.00	1	10/21/2019 11:10	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 04:37	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 04:37*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	428		0.287	0.678	1	10/16/2019 13:10	WG1363432
Ethane	6.87		0.296	1.29	1	10/16/2019 13:10	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:10	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J0	1.05	25.0	1	10/21/2019 11:44	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 11:44	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 11:44	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 11:44	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 11:44	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 11:44	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 11:44	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 11:44	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 11:44	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 11:44	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 11:44	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 11:44	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 11:44	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:44	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:44	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 11:44	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 11:44	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 11:44	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:44	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:44	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:44	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:44	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:44	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:44	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:44	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 11:44	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:44	WG1366365
cis-1,2-Dichloroethene	7.78		0.0933	0.500	1	10/21/2019 11:44	WG1366365
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 11:44	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:44	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:44	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:44	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:44	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:44	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 11:44	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:44	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:44	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:44	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:44	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 11:44	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 11:44	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 11:44	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:44	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:44	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 11:44	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:44	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 11:44	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:44	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 11:44	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:44	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 11:44	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:44	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:44	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:44	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:44	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 11:44	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:44	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:44	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:44	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:44	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:44	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:44	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:44	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:44	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:44	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:44	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 11:44	WG1366365
Vinyl chloride	0.994		0.118	0.500	1	10/21/2019 11:44	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 11:44	WG1366365
(S) Toluene-d8	*96.6*			*80.0-120*		*10/21/2019 11:44*	WG1366365
(S) 4-Bromofluorobenzene	*94.2*			*77.0-126*		*10/21/2019 11:44*	WG1366365
(S) 1,2-Dichloroethane-d4	*85.9*			*70.0-130*		*10/21/2019 11:44*	WG1366365

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	338000		2710	20000	1	10/18/2019 11:22	WG1365104

Sample Narrative:
L1149851-02 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	23300		51.9	1000	1	10/15/2019 22:56	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:56	WG1363086
Sulfate	20600		77.4	5000	1	10/15/2019 22:56	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3630	B	102	1000	1	10/17/2019 03:41	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2910		15.0	100	1	10/21/2019 11:25	WG1364629
Manganese	898		0.250	5.00	1	10/21/2019 11:25	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1310		31.6	100	1	10/18/2019 05:01	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 05:01*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	6190		0.287	0.678	1	10/16/2019 13:15	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:15	WG1363432
Ethene	394		0.422	1.27	1	10/16/2019 13:15	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 12:03	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 12:03	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:03	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:03	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:03	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:03	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 12:03	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:03	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:03	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:03	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:03	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:03	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:03	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:03	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:03	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:03	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:03	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:03	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:03	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethene	2.83		0.188	0.500	1	10/21/2019 12:03	WG1366365
cis-1,2-Dichloroethene	1350		9.33	50.0	100	10/23/2019 01:49	WG1367719
trans-1,2-Dichloroethene	7.85		0.152	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:03	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:03	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:03	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 12:03	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:03	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:03	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:03	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:03	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 12:03	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:03	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 12:03	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:03	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:03	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 12:03	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:03	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 12:03	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:03	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 12:03	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:03	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:03	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
Tetrachloroethene	2.03		0.199	0.500	1	10/21/2019 12:03	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:03	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Trichloroethene	6.77		0.153	0.500	1	10/21/2019 12:03	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:03	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:03	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:03	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:03	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 12:03	WG1366365
Vinyl chloride	2830		11.8	50.0	100	10/23/2019 01:49	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:03	WG1366365
(S) Toluene-d8	*94.4*			*80.0-120*		*10/21/2019 12:03*	WG1366365
(S) Toluene-d8	*96.6*			*80.0-120*		*10/23/2019 01:49*	WG1367719
(S) 4-Bromofluorobenzene	*92.3*			*77.0-126*		*10/21/2019 12:03*	WG1366365
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*10/23/2019 01:49*	WG1367719
(S) 1,2-Dichloroethane-d4	*81.9*			*70.0-130*		*10/21/2019 12:03*	WG1366365
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*10/23/2019 01:49*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	228000		2710	20000	1	10/18/2019 11:37	WG1365104

Sample Narrative:
L1149851-03 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	15100		51.9	1000	1	10/15/2019 23:54	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 23:54	WG1363086
Sulfate	86500		77.4	5000	1	10/15/2019 23:54	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2950	B	102	1000	1	10/17/2019 03:58	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	511		15.0	100	1	10/21/2019 11:29	WG1364629
Manganese	435		0.250	5.00	1	10/21/2019 11:29	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	105		0.287	0.678	1	10/16/2019 13:25	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:25	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:25	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 12:23	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 12:23	WG1366365
Benzene	0.295	J	0.0896	0.500	1	10/21/2019 12:23	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:23	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:23	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:23	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 12:23	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:23	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:23	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:23	WG1366365
Carbon disulfide	5.84		0.101	0.500	1	10/21/2019 12:23	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:23	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:23	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:23	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:23	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:23	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:23	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:23	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:23	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:23	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:23	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:23	WG1366365
cis-1,2-Dichloroethene	1.47		0.0933	0.500	1	10/23/2019 02:10	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:23	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:23	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:23	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 12:23	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:23	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:23	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:23	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:23	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 12:23	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:23	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 12:23	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:23	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:23	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 12:23	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:23	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 12:23	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:23	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 12:23	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:23	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:23	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
Tetrachloroethene	1.11		0.199	0.500	1	10/21/2019 12:23	WG1366365
Toluene	2.01		0.412	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:23	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Trichloroethene	0.497	J	0.153	0.500	1	10/21/2019 12:23	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:23	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:23	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:23	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:23	WG1366365
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 12:23	WG1366365
Vinyl chloride	6.37		0.118	0.500	1	10/23/2019 02:10	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:23	WG1366365
(S) Toluene-d8	*99.9*			*80.0-120*		*10/21/2019 12:23*	WG1366365
(S) Toluene-d8	*96.5*			*80.0-120*		*10/23/2019 02:10*	WG1367719
(S) 4-Bromofluorobenzene	*95.2*			*77.0-126*		*10/21/2019 12:23*	WG1366365
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/23/2019 02:10*	WG1367719

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*84.3*			*70.0-130*		*10/21/2019 12:23*	WG1366365
(S) 1,2-Dichloroethane-d4	*98.3*			*70.0-130*		*10/23/2019 02:10*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	197000		2710	20000	1	10/18/2019 11:44	WG1365104

Sample Narrative:
L1149851-04 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17100		51.9	1000	1	10/16/2019 00:08	WG1363086
Nitrate	U		22.7	100	1	10/16/2019 00:08	WG1363086
Sulfate	37200		77.4	5000	1	10/16/2019 00:08	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3780	B	102	1000	1	10/17/2019 04:56	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1330		15.0	100	1	10/21/2019 11:32	WG1364629
Manganese	838		0.250	5.00	1	10/21/2019 11:32	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:24	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 05:24*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	203		0.287	0.678	1	10/16/2019 13:27	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:27	WG1363432
Ethene	69.9		0.422	1.27	1	10/16/2019 13:27	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J0	1.05	25.0	1	10/21/2019 12:43	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 12:43	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:43	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:43	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:43	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:43	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 12:43	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:43	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:43	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:43	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:43	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:43	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
Chloroethane	0.362	J	0.141	2.50	1	10/21/2019 12:43	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:43	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:43	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:43	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:43	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:43	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:43	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:43	WG1366365
cis-1,2-Dichloroethene	2.23		0.0933	0.500	1	10/23/2019 02:30	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:43	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:43	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:43	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 12:43	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:43	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:43	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:43	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:43	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 12:43	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:43	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 12:43	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:43	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:43	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 12:43	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:43	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 12:43	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:43	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 12:43	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:43	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:43	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 12:43	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:43	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 12:43	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:43	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:43	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:43	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:43	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 12:43	WG1366365
Vinyl chloride	18.2		0.118	0.500	1	10/23/2019 02:30	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:43	WG1366365
(S) Toluene-d8	*96.3*			*80.0-120*		*10/21/2019 12:43*	WG1366365
(S) Toluene-d8	*95.3*			*80.0-120*		*10/23/2019 02:30*	WG1367719
(S) 4-Bromofluorobenzene	*91.4*			*77.0-126*		*10/21/2019 12:43*	WG1366365
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/23/2019 02:30*	WG1367719
(S) 1,2-Dichloroethane-d4	*83.1*			*70.0-130*		*10/21/2019 12:43*	WG1366365
(S) 1,2-Dichloroethane-d4	*98.2*			*70.0-130*		*10/23/2019 02:30*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	186000		2710	20000	1	10/18/2019 11:52	WG1365104

Sample Narrative:
L1149851-05 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18400		51.9	1000	1	10/16/2019 00:23	WG1363086
Nitrate	1580		22.7	100	1	10/16/2019 00:23	WG1363086
Sulfate	87800		77.4	5000	1	10/16/2019 00:23	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1920	B	102	1000	1	10/17/2019 05:16	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	173		15.0	100	1	10/21/2019 11:58	WG1364629
Manganese	129		0.250	5.00	1	10/21/2019 11:58	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:48	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*		*10/18/2019 05:48*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 11:11	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:11	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:11	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 13:02	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 13:02	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:02	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:02	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:02	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:02	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 13:02	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:02	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:02	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:02	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:02	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:02	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:02	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:02	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:02	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:02	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:02	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:02	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:02	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:02	WG1366365
cis-1,2-Dichloroethene	1.40		0.0933	0.500	1	10/23/2019 02:50	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:02	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:02	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:02	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 13:02	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:02	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:02	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:02	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:02	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 13:02	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:02	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 13:02	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:02	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:02	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 13:02	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:02	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 13:02	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:02	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 13:02	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:02	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:02	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
Tetrachloroethene	4.99		0.199	0.500	1	10/21/2019 13:02	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:02	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Trichloroethene	0.445	J	0.153	0.500	1	10/21/2019 13:02	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:02	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:02	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:02	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:02	WG1366365

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 13:02	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 02:50	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:02	WG1366365
(S) Toluene-d8	*95.1*			*80.0-120*		*10/21/2019 13:02*	WG1366365
(S) Toluene-d8	*97.5*			*80.0-120*		*10/23/2019 02:50*	WG1367719
(S) 4-Bromofluorobenzene	*91.0*			*77.0-126*		*10/21/2019 13:02*	WG1366365
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*10/23/2019 02:50*	WG1367719
(S) 1,2-Dichloroethane-d4	*83.6*			*70.0-130*		*10/21/2019 13:02*	WG1366365
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*10/23/2019 02:50*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	182000		2710	20000	1	10/18/2019 11:59	WG1365104

Sample Narrative:

L1149851-06 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7800		51.9	1000	1	10/15/2019 16:07	WG1363090
Nitrate	58.4	J	22.7	100	1	10/15/2019 16:07	WG1363090
Sulfate	5820		77.4	5000	1	10/15/2019 16:07	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1190	B	102	1000	1	10/17/2019 05:34	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	348		15.0	100	1	10/21/2019 12:02	WG1364629
Manganese	212		0.250	5.00	1	10/21/2019 12:02	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 11:14	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:14	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:14	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 13:22	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 13:22	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:22	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:22	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:22	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:22	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 13:22	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:22	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:22	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:22	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:22	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:22	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:22	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:22	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:22	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:22	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:22	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:22	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:22	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:22	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:22	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/23/2019 03:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:22	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:22	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:22	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 13:22	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:22	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:22	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:22	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:22	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 13:22	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:22	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 13:22	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:22	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:22	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 13:22	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:22	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 13:22	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:22	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 13:22	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:22	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:22	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
Tetrachloroethene	0.223	J	0.199	0.500	1	10/21/2019 13:22	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:22	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:22	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:22	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:22	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:22	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:22	WG1366365
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 13:22	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 03:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:22	WG1366365
(S) Toluene-d8	*99.6*			*80.0-120*		*10/21/2019 13:22*	WG1366365
(S) Toluene-d8	*95.7*			*80.0-120*		*10/23/2019 03:11*	WG1367719
(S) 4-Bromofluorobenzene	*93.7*			*77.0-126*		*10/21/2019 13:22*	WG1366365
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*10/23/2019 03:11*	WG1367719

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*83.3*			*70.0-130*		*10/21/2019 13:22*	WG1366365
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*10/23/2019 03:11*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	222000		2710	20000	1	10/18/2019 12:06	WG1365104

Sample Narrative:
L1149851-07 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	29100		51.9	1000	1	10/15/2019 16:33	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 16:33	WG1363090
Sulfate	7700		77.4	5000	1	10/15/2019 16:33	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1970	B	102	1000	1	10/17/2019 05:51	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	159		15.0	100	1	10/21/2019 12:05	WG1364629
Manganese	229		0.250	5.00	1	10/21/2019 12:05	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	324		0.287	0.678	1	10/17/2019 11:17	WG1364418
Ethane	20.9		0.296	1.29	1	10/17/2019 11:17	WG1364418
Ethene	20.1		0.422	1.27	1	10/17/2019 11:17	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.25	J J0	1.05	25.0	1	10/21/2019 13:41	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 13:41	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:41	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:41	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:41	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:41	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:41	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 13:41	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:41	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:41	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:41	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:41	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:41	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:41	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:41	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:41	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:41	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:41	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:41	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:41	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:41	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:41	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:41	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:41	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:41	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:41	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:41	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:41	WG1366365
cis-1,2-Dichloroethene	0.413	J	0.0933	0.500	1	10/23/2019 03:31	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:41	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:41	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:41	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:41	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:41	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:41	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 13:41	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:41	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:41	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:41	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:41	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 13:41	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:41	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 13:41	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:41	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:41	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 13:41	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:41	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 13:41	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:41	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 13:41	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:41	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:41	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:41	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:41	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:41	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 13:41	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:41	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:41	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:41	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:41	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:41	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:41	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:41	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:41	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:41	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:41	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:41	WG1366365
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 13:41	WG1366365
Vinyl chloride	8.63		0.118	0.500	1	10/23/2019 03:31	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:41	WG1366365
(S) Toluene-d8	*97.1*			*80.0-120*		*10/21/2019 13:41*	WG1366365
(S) Toluene-d8	*94.2*			*80.0-120*		*10/23/2019 03:31*	WG1367719
(S) 4-Bromofluorobenzene	*90.6*			*77.0-126*		*10/21/2019 13:41*	WG1366365
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*10/23/2019 03:31*	WG1367719

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*81.7*			*70.0-130*		*10/21/2019 13:41*	WG1366365
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*10/23/2019 03:31*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	339000		2710	20000	1	10/18/2019 12:13	WG1365104

Sample Narrative:
L1149851-08 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	23200		51.9	1000	1	10/15/2019 17:38	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:38	WG1363090
Sulfate	28000		77.4	5000	1	10/15/2019 17:38	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	6700	B	510	5000	5	10/17/2019 16:35	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	9370		15.0	100	1	10/21/2019 12:09	WG1364629
Manganese	919		0.250	5.00	1	10/21/2019 12:09	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	513		31.6	100	1	10/18/2019 06:12	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 06:12*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	7830		2.87	6.78	10	10/18/2019 13:08	WG1365165
Ethane	2.94		0.296	1.29	1	10/17/2019 11:26	WG1364418
Ethene	457		0.422	1.27	1	10/17/2019 11:26	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 14:01	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 14:01	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:01	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:01	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:01	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:01	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 14:01	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:01	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:01	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:01	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:01	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:01	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:01	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:01	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:01	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:01	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:01	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:01	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:01	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethene	1.92		0.188	0.500	1	10/21/2019 14:01	WG1366365
cis-1,2-Dichloroethene	597		2.33	12.5	25	10/23/2019 03:51	WG1367719
trans-1,2-Dichloroethene	2.91		0.152	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:01	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:01	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:01	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 14:01	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:01	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:01	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:01	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:01	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 14:01	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:01	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 14:01	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:01	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:01	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 14:01	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:01	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 14:01	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:01	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 14:01	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:01	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:01	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:01	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:01	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Trichloroethene	3.38		0.153	0.500	1	10/21/2019 14:01	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:01	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:01	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:01	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:01	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 14:01	WG1366365
Vinyl chloride	1410		2.95	12.5	25	10/23/2019 03:51	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:01	WG1366365
(S) Toluene-d8	*98.9*			*80.0-120*		*10/21/2019 14:01*	WG1366365
(S) Toluene-d8	*96.4*			*80.0-120*		*10/23/2019 03:51*	WG1367719
(S) 4-Bromofluorobenzene	*95.6*			*77.0-126*		*10/21/2019 14:01*	WG1366365
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/23/2019 03:51*	WG1367719
(S) 1,2-Dichloroethane-d4	*81.8*			*70.0-130*		*10/21/2019 14:01*	WG1366365
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*10/23/2019 03:51*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	289000		2710	20000	1	10/18/2019 12:20	WG1365104

Sample Narrative:

L1149851-09 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26000		51.9	1000	1	10/15/2019 17:51	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:51	WG1363090
Sulfate	14400		77.4	5000	1	10/15/2019 17:51	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1280	B	102	1000	1	10/17/2019 16:53	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1390		15.0	100	1	10/21/2019 12:13	WG1364629
Manganese	737		0.250	5.00	1	10/21/2019 12:13	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	54.7	B J	31.6	100	1	10/23/2019 02:14	WG1367521
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*10/23/2019 02:14*	WG1367521

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	226		0.287	0.678	1	10/17/2019 13:20	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 13:20	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 13:20	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J0	1.05	25.0	1	10/21/2019 14:21	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 14:21	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:21	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:21	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:21	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:21	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 14:21	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:21	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:21	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:21	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:21	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:21	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:21	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:21	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:21	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:21	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:21	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:21	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:21	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:21	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:21	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:21	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:21	WG1366365
1,1-Dichloroethene	0.451	J	0.188	0.500	1	10/21/2019 14:21	WG1366365
cis-1,2-Dichloroethene	1.30		0.0933	0.500	1	10/23/2019 04:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 14:21	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:21	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:21	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:21	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:21	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:21	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 14:21	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:21	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:21	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:21	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:21	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 14:21	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:21	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 14:21	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:21	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:21	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 14:21	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:21	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 14:21	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:21	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 14:21	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:21	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:21	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:21	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:21	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:21	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:21	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:21	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:21	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:21	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:21	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Trichloroethene	0.978		0.153	0.500	1	10/21/2019 14:21	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:21	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:21	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:21	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:21	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:21	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 14:21	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 04:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:21	WG1366365
(S) Toluene-d8	*97.1*			*80.0-120*		*10/21/2019 14:21*	WG1366365
(S) Toluene-d8	*94.4*			*80.0-120*		*10/23/2019 04:11*	WG1367719
(S) 4-Bromofluorobenzene	*90.8*			*77.0-126*		*10/21/2019 14:21*	WG1366365
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*10/23/2019 04:11*	WG1367719
(S) 1,2-Dichloroethane-d4	*80.7*			*70.0-130*		*10/21/2019 14:21*	WG1366365
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*10/23/2019 04:11*	WG1367719

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	302000		2710	20000	1	10/18/2019 12:27	WG1365104

Sample Narrative:
L1149851-10 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	27400		51.9	1000	1	10/15/2019 18:04	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 18:04	WG1363090
Sulfate	25000		77.4	5000	1	10/15/2019 18:04	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1550	B	102	1000	1	10/17/2019 17:20	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	948		15.0	100	1	10/21/2019 12:16	WG1364629
Manganese	870		0.250	5.00	1	10/21/2019 12:16	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	166		0.287	0.678	1	10/17/2019 13:23	WG1364418
Ethane	17.7		0.296	1.29	1	10/17/2019 13:23	WG1364418
Ethene	13.8		0.422	1.27	1	10/17/2019 13:23	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 14:40	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 14:40	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:40	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:40	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:40	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:40	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 14:40	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:40	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:40	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:40	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:40	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:40	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:40	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:40	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:40	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:40	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:40	WG1366365

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:40	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:40	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:40	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:40	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:40	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:40	WG1366365
1,1-Dichloroethene	1.08		0.188	0.500	1	10/21/2019 14:40	WG1366365
cis-1,2-Dichloroethene	91.7		0.0933	0.500	1	10/21/2019 14:40	WG1366365
trans-1,2-Dichloroethene	0.158	J	0.152	0.500	1	10/21/2019 14:40	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:40	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:40	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:40	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:40	WG1366365
trans-1,4-Dichloro-2-butene	U	J0	0.257	5.00	1	10/21/2019 14:40	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:40	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:40	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:40	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:40	WG1366365
2-Hexanone	U	J0	0.757	5.00	1	10/21/2019 14:40	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:40	WG1366365
Iodomethane	U	J0	0.377	10.0	1	10/21/2019 14:40	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:40	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:40	WG1366365
2-Butanone (MEK)	U	J0	1.28	5.00	1	10/21/2019 14:40	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:40	WG1366365
4-Methyl-2-pentanone (MIBK)	U	J0	0.823	5.00	1	10/21/2019 14:40	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:40	WG1366365
Naphthalene	U	J0	0.174	2.50	1	10/21/2019 14:40	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:40	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:40	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:40	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:40	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:40	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:40	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:40	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:40	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:40	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:40	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 14:40	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:40	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:40	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:40	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:40	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:40	WG1366365
Vinyl acetate	U	J0	0.645	5.00	1	10/21/2019 14:40	WG1366365
Vinyl chloride	51.8		0.118	0.500	1	10/21/2019 14:40	WG1366365
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:40	WG1366365
(S) Toluene-d8	*95.4*			*80.0-120*		*10/21/2019 14:40*	WG1366365
(S) 4-Bromofluorobenzene	*89.6*			*77.0-126*		*10/21/2019 14:40*	WG1366365
(S) 1,2-Dichloroethane-d4	*82.6*			*70.0-130*		*10/21/2019 14:40*	WG1366365

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 01:02	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*10/18/2019 01:02*	WG1364938

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.29	J	1.05	25.0	1	10/25/2019 11:05	WG1369459
Acrylonitrile	U		0.873	5.00	1	10/24/2019 16:33	WG1368672
Benzene	U		0.0896	0.500	1	10/24/2019 16:33	WG1368672
Bromobenzene	U		0.133	0.500	1	10/24/2019 16:33	WG1368672
Bromodichloromethane	U		0.0800	0.500	1	10/24/2019 16:33	WG1368672
Bromochloromethane	U		0.145	0.500	1	10/24/2019 16:33	WG1368672
Bromoform	U		0.186	0.500	1	10/24/2019 16:33	WG1368672
Bromomethane	U		0.157	2.50	1	10/24/2019 16:33	WG1368672
n-Butylbenzene	U		0.143	0.500	1	10/24/2019 16:33	WG1368672
sec-Butylbenzene	U		0.134	0.500	1	10/24/2019 16:33	WG1368672
tert-Butylbenzene	U		0.183	0.500	1	10/24/2019 16:33	WG1368672
Carbon disulfide	U		0.101	0.500	1	10/24/2019 16:33	WG1368672
Carbon tetrachloride	U		0.159	0.500	1	10/24/2019 16:33	WG1368672
Chlorobenzene	U		0.140	0.500	1	10/24/2019 16:33	WG1368672
Chlorodibromomethane	U		0.128	0.500	1	10/24/2019 16:33	WG1368672
Chloroethane	U	J0	0.141	2.50	1	10/24/2019 16:33	WG1368672
Chloroform	U		0.0860	0.500	1	10/24/2019 16:33	WG1368672
Chloromethane	U		0.153	1.25	1	10/24/2019 16:33	WG1368672
2-Chlorotoluene	U		0.111	0.500	1	10/24/2019 16:33	WG1368672
4-Chlorotoluene	U		0.0972	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/24/2019 16:33	WG1368672
1,2-Dibromoethane	U		0.193	0.500	1	10/24/2019 16:33	WG1368672
Dibromomethane	U		0.117	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dichlorobenzene	U		0.101	0.500	1	10/24/2019 16:33	WG1368672
1,3-Dichlorobenzene	U		0.130	0.500	1	10/24/2019 16:33	WG1368672
1,4-Dichlorobenzene	U		0.121	0.500	1	10/24/2019 16:33	WG1368672
Dichlorodifluoromethane	U		0.127	2.50	1	10/24/2019 16:33	WG1368672
1,1-Dichloroethane	U		0.114	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dichloroethane	U		0.108	0.500	1	10/24/2019 16:33	WG1368672
1,1-Dichloroethene	U		0.188	0.500	1	10/24/2019 16:33	WG1368672
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/24/2019 16:33	WG1368672
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/24/2019 16:33	WG1368672
1,2-Dichloropropane	U		0.190	0.500	1	10/24/2019 16:33	WG1368672
1,1-Dichloropropene	U		0.128	0.500	1	10/24/2019 16:33	WG1368672
1,3-Dichloropropane	U		0.147	1.00	1	10/24/2019 16:33	WG1368672
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/24/2019 16:33	WG1368672
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/24/2019 16:33	WG1368672
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	10/24/2019 16:33	WG1368672
2,2-Dichloropropane	U		0.0929	0.500	1	10/24/2019 16:33	WG1368672
Di-isopropyl ether	U		0.0924	0.500	1	10/24/2019 16:33	WG1368672
Ethylbenzene	U		0.158	0.500	1	10/24/2019 16:33	WG1368672
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/24/2019 16:33	WG1368672
2-Hexanone	U		0.757	5.00	1	10/24/2019 16:33	WG1368672
n-Hexane	U		0.305	5.00	1	10/24/2019 16:33	WG1368672
Iodomethane	U		0.377	10.0	1	10/24/2019 16:33	WG1368672
Isopropylbenzene	U		0.126	0.500	1	10/24/2019 16:33	WG1368672
p-Isopropyltoluene	U		0.138	0.500	1	10/24/2019 16:33	WG1368672
2-Butanone (MEK)	U		1.28	5.00	1	10/24/2019 16:33	WG1368672

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	10/24/2019 16:33	WG1368672
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	10/24/2019 16:33	WG1368672
Methyl tert-butyl ether	U		0.102	0.500	1	10/24/2019 16:33	WG1368672
Naphthalene	U		0.174	2.50	1	10/24/2019 16:33	WG1368672
n-Propylbenzene	U		0.162	0.500	1	10/24/2019 16:33	WG1368672
Styrene	U		0.117	0.500	1	10/24/2019 16:33	WG1368672
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/24/2019 16:33	WG1368672
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/24/2019 16:33	WG1368672
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/24/2019 16:33	WG1368672
Tetrachloroethene	U		0.199	0.500	1	10/24/2019 16:33	WG1368672
Toluene	U		0.412	0.500	1	10/24/2019 16:33	WG1368672
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/24/2019 16:33	WG1368672
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/24/2019 16:33	WG1368672
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/24/2019 16:33	WG1368672
1,1,2-Trichloroethane	U		0.186	0.500	1	10/24/2019 16:33	WG1368672
Trichloroethene	U		0.153	0.500	1	10/24/2019 16:33	WG1368672
Trichlorofluoromethane	U		0.130	2.50	1	10/24/2019 16:33	WG1368672
1,2,3-Trichloropropane	U		0.247	2.50	1	10/24/2019 16:33	WG1368672
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/24/2019 16:33	WG1368672
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/24/2019 16:33	WG1368672
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/24/2019 16:33	WG1368672
Vinyl acetate	U	J4	0.645	5.00	1	10/24/2019 16:33	WG1368672
Vinyl chloride	U		0.118	0.500	1	10/24/2019 16:33	WG1368672
Xylenes, Total	U		0.316	1.50	1	10/24/2019 16:33	WG1368672
(S) Toluene-d8	*105*			*80.0-120*		*10/24/2019 16:33*	WG1368672
(S) Toluene-d8	*97.2*			*80.0-120*		*10/25/2019 11:05*	WG1369459
(S) 4-Bromofluorobenzene	*99.0*			*77.0-126*		*10/24/2019 16:33*	WG1368672
(S) 4-Bromofluorobenzene	*106*			*77.0-126*		*10/25/2019 11:05*	WG1369459
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*10/24/2019 16:33*	WG1368672
(S) 1,2-Dichloroethane-d4	*98.7*			*70.0-130*		*10/25/2019 11:05*	WG1369459

Method Blank (MB)

(MB) R3462708-1 10/18/19 10:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	3710	J	2710	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1147295-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147295-01 10/18/19 10:17 • (DUP) R3462708-2 10/18/19 10:27

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	168000	168000	1	0.177		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

L1149977-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149977-02 10/18/19 12:40 • (DUP) R3462708-4 10/18/19 12:54

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	41000	40700	1	0.520		20

Sample Narrative:

OS: Endpoint pH 4.5 HEADSPACE

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462708-3 10/18/19 11:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	99200	99.2	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3461441-1 10/15/19 14:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1149795-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149795-01 10/15/19 16:27 • (DUP) R3461441-3 10/15/19 16:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	22700	22600	1	0.451		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	56400	56500	1	0.179		15

L1149841-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149841-01 10/15/19 22:13 • (DUP) R3461441-6 10/15/19 22:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	14000	13900	1	0.362		15
Nitrate	137	133	1	2.88		15
Sulfate	184000	184000	1	0.128	E	15

Laboratory Control Sample (LCS)

(LCS) R3461441-2 10/15/19 14:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39400	98.5	80.0-120	
Nitrate	8000	8120	101	80.0-120	
Sulfate	40000	40700	102	80.0-120	

L1149811-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149811-01 10/15/19 16:56 • (MS) R3461441-4 10/15/19 17:11 • (MSD) R3461441-5 10/15/19 17:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	236000	274000	275000	76.0	76.6	1	80.0-120	E V	E V	0.106	15
Nitrate	5000	1280	6260	6360	99.6	102	1	80.0-120			1.62	15
Sulfate	50000	15400	65900	65700	101	101	1	80.0-120			0.364	15

L1149851-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149851-02 10/15/19 22:56 • (MS) R3461441-7 10/15/19 23:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	23300	72800	99.1	1	80.0-120	
Nitrate	5000	U	4920	98.3	1	80.0-120	
Sulfate	50000	20600	70400	99.6	1	80.0-120	

Method Blank (MB)

(MB) R3461431-1 10/15/19 09:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	61.6	J	51.9	1000
Nitrate	U		22.7	100
Sulfate	107	J	77.4	5000

L1149872-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149872-02 10/15/19 15:14 • (DUP) R3461431-3 10/15/19 15:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	45800	46100	1	0.661		15
Nitrate	7420	7470	1	0.687		15
Sulfate	23000	23100	1	0.167		15

L1149851-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149851-06 10/15/19 16:07 • (DUP) R3461431-5 10/15/19 16:20

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7800	7500	1	3.90		15
Nitrate	58.4	55.7	1	4.73	J	15
Sulfate	5820	5840	1	0.295		15

Laboratory Control Sample (LCS)

(LCS) R3461431-2 10/15/19 09:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38700	96.7	80.0-120	
Nitrate	8000	8030	100	80.0-120	
Sulfate	40000	38900	97.3	80.0-120	

L1149872-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149872-02 10/15/19 15:14 • (MS) R3461431-4 10/15/19 15:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	45800	92500	93.3	1	80.0-120	
Nitrate	5000	7420	12000	91.3	1	80.0-120	E
Sulfate	50000	23000	71100	96.2	1	80.0-120	

L1149851-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-07 10/15/19 16:33 • (MS) R3461431-6 10/15/19 17:12 • (MSD) R3461431-7 10/15/19 17:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	29100	76400	76200	94.7	94.1	1	80.0-120			0.345	15
Nitrate	5000	U	4960	4970	99.3	99.4	1	80.0-120			0.111	15
Sulfate	50000	7700	56500	56100	97.5	96.9	1	80.0-120			0.571	15

Method Blank (MB)

(MB) R3462022-1 10/16/19 18:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	416	J	102	1000

L1149387-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-08 10/16/19 21:34 • (DUP) R3462022-3 10/16/19 21:57

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	6970	7050	1	1.08		20

L1149591-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149591-06 10/17/19 08:46 • (DUP) R3462022-9 10/17/19 09:03

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	489	421	1	15.1	J	20

Laboratory Control Sample (LCS)

(LCS) R3462022-2 10/16/19 18:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC	75000	69000	92.0	85.0-115	

L1149591-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149591-04 10/17/19 00:20 • (MS) R3462022-4 10/17/19 00:42 • (MSD) R3462022-5 10/17/19 01:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC	50000	5870	53200	54900	94.7	98.1	1	80.0-120			3.11	20

L1149851-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-03 10/17/19 03:58 • (MS) R3462022-7 10/17/19 04:19 • (MSD) R3462022-8 10/17/19 04:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC	50000	2950	50000	49700	94.1	93.5	1	80.0-120			0.542	20

Method Blank (MB)

(MB) R3462318-1 10/17/19 14:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	422	J	102	1000

L1150179-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150179-01 10/17/19 17:59 • (DUP) R3462318-3 10/17/19 18:20

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	1500	1460	1	2.78		20

L1150179-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1150179-07 10/17/19 22:20 • (DUP) R3462318-6 10/17/19 22:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	130000	127000	5	2.26		20

Laboratory Control Sample (LCS)

(LCS) R3462318-2 10/17/19 15:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC	75000	69500	92.6	85.0-115	

L1150179-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150179-04 10/17/19 20:40 • (MS) R3462318-4 10/17/19 21:01 • (MSD) R3462318-5 10/17/19 21:22

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC	50000	ND	47200	48700	93.1	96.1	1	80.0-120			3.17	20

L1150234-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150234-01 10/18/19 01:16 • (MS) R3462318-7 10/18/19 01:39 • (MSD) R3462318-8 10/18/19 02:01

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC	50000	7380	55600	55000	96.4	95.2	1	80.0-120			1.01	20

Method Blank (MB)

(MB) R3463127-1 10/21/19 10:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Iron	U		15.0	100
Manganese	0.540	J	0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463127-2 10/21/19 11:03 • (LCSD) R3463127-3 10/21/19 11:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Iron	5000	5110	5090	102	102	80.0-120			0.334	20
Manganese	50.0	50.9	50.0	102	100	80.0-120			1.71	20

L1149851-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149851-01 10/21/19 11:10 • (MS) R3463127-5 10/21/19 11:18 • (MSD) R3463127-6 10/21/19 11:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Iron	5000	1850	7050	6940	104	102	1	75.0-125			1.61	20

Method Blank (MB)

(MB) R3463331-2 10/18/19 00:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3463331-1 10/17/19 23:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5340	97.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*83.7*	*78.0-120*	

Method Blank (MB)

(MB) R3464239-3 10/23/19 01:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	62.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*78.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3464239-1 10/23/19 00:19 • (LCSD) R3464239-2 10/23/19 00:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	6540	6030	119	110	70.0-124			8.11	20
(S) a,a,a-Trifluorotoluene(FID)				*107*	*106*	*78.0-120*				

Method Blank (MB)

(MB) R3461591-1 10/16/19 10:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1149371-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149371-06 10/16/19 11:29 • (DUP) R3461591-2 10/16/19 12:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1080	1130	1	4.95		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1149387-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149387-04 10/16/19 13:29 • (DUP) R3461591-3 10/16/19 13:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	12.3	12.9	1	4.67		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3461591-4 10/16/19 13:35 • (LCSD) R3461591-5 10/16/19 13:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	75.3	76.3	111	112	85.0-115			1.34	20
Ethane	129	133	129	103	100	85.0-115			2.40	20
Ethene	127	138	135	109	106	85.0-115			2.67	20

Method Blank (MB)

(MB) R3462073-1 10/17/19 10:48

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1149851-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1149851-07 10/17/19 11:17 • (DUP) R3462073-2 10/17/19 13:16

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	324	319	1	1.78		20
Ethane	20.9	19.8	1	5.28		20
Ethene	20.1	19.4	1	3.31		20

L1150060-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150060-01 10/17/19 13:25 • (DUP) R3462073-3 10/17/19 13:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	1720	1730	1	0.724		20
Ethane	97.1	98.5	1	1.46		20
Ethene	197	199	1	1.02		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462073-4 10/17/19 14:02 • (LCSD) R3462073-5 10/17/19 14:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	70.5	71.5	104	106	85.0-115			1.46	20
Ethane	129	127	128	98.6	98.9	85.0-115			0.256	20
Ethene	127	133	133	104	105	85.0-115			0.285	20

Method Blank (MB)

(MB) R3462507-1 10/18/19 13:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678

L1150336-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1150336-08 10/18/19 13:10 • (DUP) R3462507-2 10/18/19 13:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	20.2	22.0	1	8.39		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3462507-5 10/18/19 13:50 • (LCSD) R3462507-6 10/18/19 13:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	72.3	71.6	107	106	85.0-115			0.913	20

L1150339-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150339-10 10/18/19 13:42 • (MS) R3462507-3 10/18/19 13:45 • (MSD) R3462507-4 10/18/19 13:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Methane	67.8	10400	10600	11000	19.7	74.1	10	85.0-115	V	V	3.43	20

Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3463753-2 10/21/19 08:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*98.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*92.7*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*83.6*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	125	88.2	70.6	19.0-160	
Acrylonitrile	125	94.1	75.3	55.0-149	
Benzene	25.0	22.6	90.4	70.0-123	
Bromobenzene	25.0	24.4	97.6	73.0-121	
Bromodichloromethane	25.0	22.1	88.4	75.0-120	
Bromochloromethane	25.0	24.0	96.0	76.0-122	
Bromoform	25.0	22.6	90.4	68.0-132	
Bromomethane	25.0	19.1	76.4	10.0-160	
n-Butylbenzene	25.0	26.5	106	73.0-125	
sec-Butylbenzene	25.0	25.4	102	75.0-125	
tert-Butylbenzene	25.0	24.3	97.2	76.0-124	
Carbon disulfide	25.0	22.4	89.6	61.0-128	
Carbon tetrachloride	25.0	21.3	85.2	68.0-126	
Chlorobenzene	25.0	24.3	97.2	80.0-121	
Chlorodibromomethane	25.0	23.7	94.8	77.0-125	
Chloroethane	25.0	23.4	93.6	47.0-150	
Chloroform	25.0	22.0	88.0	73.0-120	
Chloromethane	25.0	20.1	80.4	41.0-142	
2-Chlorotoluene	25.0	24.2	96.8	76.0-123	
4-Chlorotoluene	25.0	23.4	93.6	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	20.3	81.2	58.0-134	
1,2-Dibromoethane	25.0	23.5	94.0	80.0-122	
Dibromomethane	25.0	22.3	89.2	80.0-120	
1,2-Dichlorobenzene	25.0	26.3	105	79.0-121	
1,3-Dichlorobenzene	25.0	26.7	107	79.0-120	
1,4-Dichlorobenzene	25.0	26.5	106	79.0-120	
Dichlorodifluoromethane	25.0	25.4	102	51.0-149	
1,1-Dichloroethane	25.0	21.3	85.2	70.0-126	
1,2-Dichloroethane	25.0	20.1	80.4	70.0-128	
1,1-Dichloroethene	25.0	25.6	102	71.0-124	
cis-1,2-Dichloroethene	25.0	24.1	96.4	73.0-120	
trans-1,2-Dichloroethene	25.0	23.2	92.8	73.0-120	
1,2-Dichloropropane	25.0	21.0	84.0	77.0-125	
1,1-Dichloropropene	25.0	23.7	94.8	74.0-126	
1,3-Dichloropropane	25.0	24.3	97.2	80.0-120	
cis-1,3-Dichloropropene	25.0	22.0	88.0	80.0-123	
trans-1,3-Dichloropropene	25.0	22.8	91.2	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	14.8	59.2	33.0-144	
2,2-Dichloropropane	25.0	20.1	80.4	58.0-130	
Di-isopropyl ether	25.0	20.6	82.4	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3463753-1 10/21/19 06:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	25.0	23.6	94.4	79.0-123	
Hexachloro-1,3-butadiene	25.0	33.8	135	54.0-138	
2-Hexanone	125	98.0	78.4	67.0-149	
n-Hexane	25.0	20.8	83.2	57.0-133	
Iodomethane	125	98.7	79.0	33.0-147	
Isopropylbenzene	25.0	22.2	88.8	76.0-127	
p-Isopropyltoluene	25.0	26.5	106	76.0-125	
2-Butanone (MEK)	125	81.5	65.2	44.0-160	
Methylene Chloride	25.0	22.7	90.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	87.8	70.2	68.0-142	
Methyl tert-butyl ether	25.0	20.5	82.0	68.0-125	
Naphthalene	25.0	19.2	76.8	54.0-135	
n-Propylbenzene	25.0	22.8	91.2	77.0-124	
Styrene	25.0	24.4	97.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.8	95.2	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	20.3	81.2	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	23.1	92.4	69.0-132	
Tetrachloroethene	25.0	25.2	101	72.0-132	
Toluene	25.0	23.7	94.8	79.0-120	
1,2,3-Trichlorobenzene	25.0	26.4	106	50.0-138	
1,2,4-Trichlorobenzene	25.0	28.9	116	57.0-137	
1,1,1-Trichloroethane	25.0	20.9	83.6	73.0-124	
1,1,2-Trichloroethane	25.0	23.4	93.6	80.0-120	
Trichloroethene	25.0	23.0	92.0	78.0-124	
Trichlorofluoromethane	25.0	25.7	103	59.0-147	
1,2,3-Trichloropropane	25.0	21.3	85.2	73.0-130	
1,2,4-Trimethylbenzene	25.0	24.0	96.0	76.0-121	
1,2,3-Trimethylbenzene	25.0	24.5	98.0	77.0-120	
1,3,5-Trimethylbenzene	25.0	23.3	93.2	76.0-122	
Vinyl acetate	125	92.6	74.1	11.0-160	
Vinyl chloride	25.0	25.2	101	67.0-131	
Xylenes, Total	75.0	71.6	95.5	79.0-123	
(S) Toluene-d8			*98.4*	*80.0-120*	
(S) 4-Bromofluorobenzene			*96.6*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*81.0*	*70.0-130*	

Method Blank (MB)

(MB) R3464659-2 10/23/19 00:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*95.1*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3464659-1 10/22/19 23:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	25.0	22.4	89.6	73.0-120	
Vinyl chloride	25.0	24.8	99.2	67.0-131	
(S) Toluene-d8			*95.6*	*80.0-120*	
(S) 4-Bromofluorobenzene			*109*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R3464761-2 10/24/19 10:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500
Ethylbenzene	U		0.158	0.500

Method Blank (MB)

(MB) R3464761-2 10/24/19 10:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	0.232	J	0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	0.162	J	0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*101*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*95.5*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3464761-1 10/24/19 09:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acrylonitrile	125	94.6	75.7	55.0-149	
Benzene	25.0	22.2	88.8	70.0-123	
Bromobenzene	25.0	24.4	97.6	73.0-121	
Bromodichloromethane	25.0	25.0	100	75.0-120	
Bromochloromethane	25.0	22.9	91.6	76.0-122	
Bromoform	25.0	25.9	104	68.0-132	
Bromomethane	25.0	22.3	89.2	10.0-160	
n-Butylbenzene	25.0	23.1	92.4	73.0-125	
sec-Butylbenzene	25.0	23.2	92.8	75.0-125	
tert-Butylbenzene	25.0	24.8	99.2	76.0-124	
Carbon disulfide	25.0	23.5	94.0	61.0-128	
Carbon tetrachloride	25.0	26.1	104	68.0-126	
Chlorobenzene	25.0	22.9	91.6	80.0-121	
Chlorodibromomethane	25.0	24.8	99.2	77.0-125	
Chloroethane	25.0	20.3	81.2	47.0-150	
Chloroform	25.0	24.2	96.8	73.0-120	
Chloromethane	25.0	24.0	96.0	41.0-142	
2-Chlorotoluene	25.0	26.0	104	76.0-123	
4-Chlorotoluene	25.0	25.9	104	75.0-122	
1,2-Dibromo-3-Chloropropane	25.0	24.2	96.8	58.0-134	
1,2-Dibromoethane	25.0	23.0	92.0	80.0-122	
Dibromomethane	25.0	22.1	88.4	80.0-120	
1,2-Dichlorobenzene	25.0	22.7	90.8	79.0-121	
1,3-Dichlorobenzene	25.0	22.4	89.6	79.0-120	
1,4-Dichlorobenzene	25.0	22.8	91.2	79.0-120	
Dichlorodifluoromethane	25.0	29.0	116	51.0-149	
1,1-Dichloroethane	25.0	23.6	94.4	70.0-126	
1,2-Dichloroethane	25.0	22.1	88.4	70.0-128	
1,1-Dichloroethene	25.0	24.2	96.8	71.0-124	
cis-1,2-Dichloroethene	25.0	23.9	95.6	73.0-120	
trans-1,2-Dichloroethene	25.0	23.4	93.6	73.0-120	
1,2-Dichloropropane	25.0	23.4	93.6	77.0-125	
1,1-Dichloropropene	25.0	24.8	99.2	74.0-126	
1,3-Dichloropropane	25.0	22.7	90.8	80.0-120	
cis-1,3-Dichloropropene	25.0	24.9	99.6	80.0-123	
trans-1,3-Dichloropropene	25.0	24.2	96.8	78.0-124	
trans-1,4-Dichloro-2-butene	25.0	22.4	89.6	33.0-144	
2,2-Dichloropropane	25.0	31.6	126	58.0-130	
Di-isopropyl ether	25.0	23.2	92.8	58.0-138	
Ethylbenzene	25.0	22.5	90.0	79.0-123	

Laboratory Control Sample (LCS)

(LCS) R3464761-1 10/24/19 09:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexachloro-1,3-butadiene	25.0	33.3	133	54.0-138	
2-Hexanone	125	114	91.2	67.0-149	
n-Hexane	25.0	32.0	128	57.0-133	
Iodomethane	125	125	100	33.0-147	
Isopropylbenzene	25.0	24.3	97.2	76.0-127	
p-Isopropyltoluene	25.0	23.4	93.6	76.0-125	
2-Butanone (MEK)	125	101	80.8	44.0-160	
Methylene Chloride	25.0	23.0	92.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	125	100	80.0	68.0-142	
Methyl tert-butyl ether	25.0	22.5	90.0	68.0-125	
Naphthalene	25.0	25.9	104	54.0-135	
n-Propylbenzene	25.0	25.7	103	77.0-124	
Styrene	25.0	23.4	93.6	73.0-130	
1,1,1,2-Tetrachloroethane	25.0	23.9	95.6	75.0-125	
1,1,2,2-Tetrachloroethane	25.0	25.4	102	65.0-130	
1,1,2-Trichlorotrifluoroethane	25.0	27.8	111	69.0-132	
Tetrachloroethene	25.0	26.8	107	72.0-132	
Toluene	25.0	22.5	90.0	79.0-120	
1,2,3-Trichlorobenzene	25.0	34.4	138	50.0-138	
1,2,4-Trichlorobenzene	25.0	31.2	125	57.0-137	
1,1,1-Trichloroethane	25.0	27.3	109	73.0-124	
1,1,2-Trichloroethane	25.0	22.8	91.2	80.0-120	
Trichloroethene	25.0	22.2	88.8	78.0-124	
Trichlorofluoromethane	25.0	28.2	113	59.0-147	
1,2,3-Trichloropropane	25.0	25.0	100	73.0-130	
1,2,4-Trimethylbenzene	25.0	23.4	93.6	76.0-121	
1,2,3-Trimethylbenzene	25.0	22.7	90.8	77.0-120	
1,3,5-Trimethylbenzene	25.0	26.7	107	76.0-122	
Vinyl acetate	125	228	182	11.0-160	J4
Vinyl chloride	25.0	20.7	82.8	67.0-131	
Xylenes, Total	75.0	69.5	92.7	79.0-123	
(S) Toluene-d8			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*112*	*70.0-130*	

Method Blank (MB)

(MB) R3465173-3 10/25/19 10:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
(S) Toluene-d8	*95.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*97.9*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3465173-1 10/25/19 04:08 • (LCSD) R3465173-2 10/25/19 04:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	125	118	114	94.4	91.2	19.0-160			3.45	27
(S) Toluene-d8				*98.9*	*90.3*	*80.0-120*				
(S) 4-Bromofluorobenzene				*108*	*86.9*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*94.8*	*92.1*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

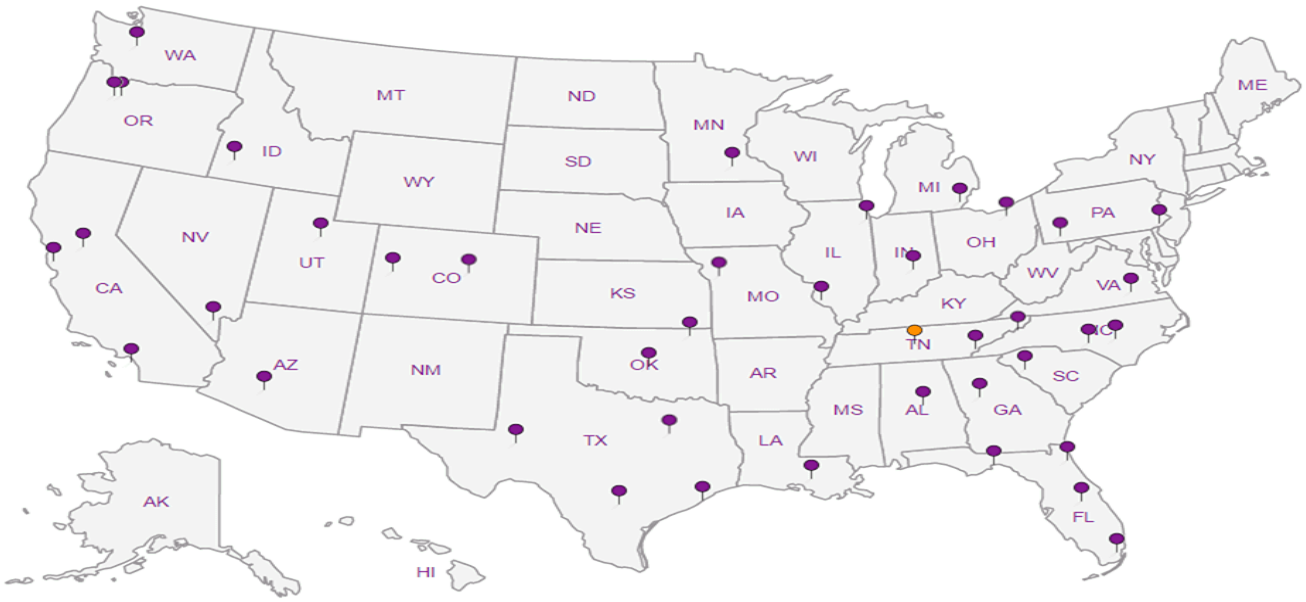
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Chain of Custody Page 1 of 2

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L# 1149851

E023

Acctnum: PESENVSWA

Template:

Prelogin:

TSR: Brian Ford

PB:

Shipped Via:

PES-Seattle	Billing Information: PES-Seattle	Pres Chk
Report to: Bill Haldeman/Brian O'neal	Email To: on file	
Project Description:	City/State Collected: Seattle, WA	
Phone: on file Fax:	Client Project # 1413.001.02.501E	Lab Project # PESENVSWA-ALP
Collected by (print): K. Ford/H. Coker/B. Haldeman	Site/Facility ID # AMERICAN LINEN	P.O. #
Collected by (signature):	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote #
Immediately Packed on Ice N ___ Y ___	Date Results Needed	No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)	Remarks	Sample # (lab only)
MW-190-101419	Grab	GW	83	10/14/19	0910	12	X	X	X	X	X	X	X		01
MW-146-101419		GW	43		1015	12	X	X	X	X	X	X	X		02
MW-309-101419		GW	67		1035	9	X	X	X	X	X	X	X		03
MW-189-101419		GW	53		1130	12	X	X	X	X	X	X	X		04
MW-154-101419		GW	32.5		1205	12	X	X	X	X	X	X	X		05
MW122-101419		GW	112		1205	9	X	X	X	X	X	X	X		06
MW111-101419		GW	75		1325	9	X	X	X	X	X	X	X		07
MW-147-101419		GW	75		1355	12	X	X	X	X	X	X	X		08
MW-161-101419		GW	125		1428	12	X	X	X	X	X	X	X		09
MW103-101419		GW	108		1455	9	X	X	X	X	X	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1203 5774 6562

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date: 10/14/19	Time: 1600	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 5.1+2=5.3 42 Bottles Received: 108	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Carol Kemp	Date: 10/15/19 Time: 8:45	Hold: Condition: NCF / OK

Chain of Custody Page 2 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

PES-Seattle	Billing Information: PES-Seattle
Report to: Bill Haldeman/Brian O'neal	Email To: on file
Project Description:	City/State Collected: Seattle, WA
Phone: on file	Client Project # 1413.001.02,501E
Fax:	Lab Project # PESENVSWA-ALP
Collected by (print): K. Zggo/H. Cohen/B. Hecht	Site/Facility ID # American Liver
Collected by (signature): [signature]	P.O. #
Immediately Packed on Ice N ___ Y ___	Quote #

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	**NO3,SO4,Chloride**48 hour hold	NWTPHGX	VOCs (V8260LLC)	Total Fe Mn 6020	TOC	Alkalinity	EEM (RSK175LL)			Remarks	Sample # (lab only)
TB-101419	—	GW	—	10-14-19	1530	1	X	X	X	X	X	X	X			Trip Blank	11
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															

L# 1149451
Table #
Acctnum: PESENVSWA
Template:
Prelogin:
TSR: Brian Ford
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_________

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier __ ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
[signature]	10/14/19	1600		1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C S.1+.2=S.3	Bottles Received: 108
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Carol Kemp	Date: 10/15/19	Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

MEMORANDUM

TO: Project File **DATE:** December 2, 2019

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.02.501E

TASK: EIM Data Validation Level EPA2A for October 2019 – Groundwater Samples

LAB: Pace Sample Delivery Groups (SDGs): L1148900, L1149387, L1149851, and L1150336

Thirty-six (36) groundwater samples (including two field duplicates), one (1) equipment blank, and four (4) trip blanks were collected as part of the Remedial Investigation (RI) sampling event at the Former American Linen Supply Site, in Seattle, Washington, October 10, 11, 14, and 15, 2019. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted during the month of October and results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups of approximately 2-4 per each data validation report. Group 2 analytical results are reported in SDGs L1148900, L1149387, L1149851, and L1150336. The quality assurance review of the laboratory data associated with Group 2 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory

Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following discussions:

- SDG L1148900: Review of the chain of custody (COC) shows that sample MW108-101019 was reported as MW-108-101019.

- SDGs L1148900 and L1150336: Dates of sample collection are listed on the first and last row of the laboratory provided COCs only. Sample collection dates may be confirmed using sample identification and field notes. Date of collection should be indicated on the COC for each sample via drop arrow or date per sample.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260C:
All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:
All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however PACE's notes indicate the following:

- SDGs L1148900, L1149387, L1149851, and L1150336 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by Pace for compounds associated with the trip blanks. The compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. No action is taken other than to note this.

- SDGs L1148900, L1149387, L1149851, and L1150336 - *USEPA Method 8260C:* Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ) however in some cases blank contamination qualifiers may supersede these qualifiers. Refer to Method Blank and/or Trip Blank sections of this report for additional details.

Method Blank Results

USEPA Method 8260C:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1148900 – Analytical batch WG1366289: A low level of naphthalene and is detected in the method blank. **Sample MW-108-101019 naphthalene detection is below the RDL and qualified as not detected (U).**

- SDG L1148900 – Analytical batch WG1366370: Low levels of hexachloro-1,3-butadiene, iodomethane, naphthalene, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene are detected in the method blank. No action is taken for these compounds as they are not detected in associated with one exception; naphthalene. **Naphthalene detection in sample MW-8-101019 is below the RDL and qualified as not detected (U).**

- SDG L1149851 – Analytical batch WG1368672: Low levels of tetrachloroethene and trichloroethene are detected in the method blank. No action is taken for as these compounds are not detected in the associated trip blank sample TB-101419.

- SDG L1150336 – Analytical batch WG1368527: A low level of hexachloro-1,3-butadiene, naphthalene, and 1,2,3-trichlorobenzene are detected in the method blank. No action is taken for these compounds as they are not detected in the associated samples.

- SDG L1150336 – Analytical batch WG1369955: A low level of hexachloro-1,3-butadiene is detected in the method blank. No action is taken since this compound is not detected in the associated samples.

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1149851– Analytical batch WG1367521: A low level of gasoline is detected in the method blank. **Associated gasoline detection in sample MW-161-101419 is below the RDL and qualified as not detected (U).**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1148900	WG1364209	SM2320B	Alkalinity as CaCO3, Total	5440	J	20000	ug/L	NO
L1148900	WG1364211	SM2320B	Alkalinity as CaCO3, Total	5510	J	20000	ug/L	NO
L1148900	WG1361291	9060A	TOC	662	J	1000	ug/L	NO
L1148900	WG1363727	6020B	Manganese	0.691	J	5.00	ug/L	NO
L1149387	WG1365100	SM2320B	Alkalinity as CaCO3, Total	4330	J	20000	ug/L	NO
L1149387	WG1361957	9056A	Chloride	79.3	J	1000	ug/L	NO
L1149387	WG1361957	9056A	Sulfate	1390	J	5000	ug/L	NO
L1149387	WG1364227	9060A	TOC	416	J	1000	ug/L	NO
L1149387	WG1364591	6020B	Manganese	1.01	J	5.00	ug/L	NO
L1149851	WG1365104	SM2320B	Alkalinity as CaCO3, Total	3710	J	20000	ug/L	NO
L1147791	WG1363090	9056A	Chloride	61.6	J	1000	ug/L	NO
L1147791	WG1363090	9056A	Sulfate	107	J	5000	ug/L	NO
L1147791	WG1364227	9060A	TOC	416	J	1000	ug/L	NO
L1147791	WG1364260	9060A	TOC	422	J	1000	ug/L	NO
L1147791	WG1364629	6020B	Manganese	0.540	J	5.00	ug/L	NO
L1147791	WG1362294	9060A	TOC	662	J	1000	ug/L	NO
L1150336	WG1366027	SM2320B	Alkalinity as CaCO3, Total	3910	J	20000	ug/L	NO
L1150336	WG1366029	SM2320B	Alkalinity as CaCO3, Total	4460	J	20000	ug/L	NO
L1150336	WG1363847	9056A	Sulfate	86.7	J	5000	ug/L	NO
L1150336	WG1365601	9060A	TOC	581	J	1000	ug/L	NO
L1150336	WG1364631	6020B	Manganese	0.261	J	5.00	ug/L	NO

Trip Blank Results

USEPA Method 8260C and NWTPH-Gx:
Four trip blanks were collected and submitted for analysis. The target analytes were not detected in the trip blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1149851 – Analytical batch WG1369459: A low level of acetone and is detected in the trip blank. **Acetone is detected below the RDL in sample MW-111-101419 and is qualified as not detected (U).**

- SDG L1150336 – Analytical batch WG1368527: Low levels of carbon disulfide, trans-1,2-dichloroethene, and naphthalene are detected in the trip blank. **Carbon disulfide is detected below the RDL in sample MW-107-101519 and is qualified as not detected (U).** No action is taken for compounds detected above the RDL.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:
One equipment blank (EQ-101119 from SDG L1149387) was collected and analyzed for VOCs, gasoline, dissolved gases (methane, ethane, and ethene), metals (iron and manganese), wet chemistry parameters (alkalinity, chloride, nitrate, sulfate, and TOC). Review of the equipment blank results are as follows:

- SDG L1149387: An equipment blank sample (EQ-101119) was collected on October 11, 2019 from the bladder pump associated with samples MW124-101119 and MW-307-101119. The target analytes were not detected in the equipment blank at or above the RDLs with the following exceptions:

    - Low levels of chloroform, alkalinity, chloride, TOC, iron, and manganese are detected in the equipment blank. No action was taken on this basis since associated detections are either above the RDL or are not detected.

    - Methane is detected in the equipment blank and associated samples as shown below:

Sample ID	**Methane (0.678 ug/L RDL)**
EQ-101119	24.2
MW124-101119	12.3
MW-307-101119	26.6

- SDG L1149387: Methane qualifiers are assigned as follows:
    - **Sample MW-307-101119 methane detection is slightly greater than the equipment blank concentration and is estimated with high bias (J+).**
    - **Sample MW124-101119 methane detection is less than the equipment blank concentration and qualified as not detected (U).**

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1149387: Samples MW-128-101119 and MW-916-101119; and
- SDG L1150336: Samples MW-126-101519 and MW-917-101519.

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (± 1x RDL for groundwater results <5X the RDL) for the field duplicate pair with the following exceptions:

- SDG L1149387: **Samples MW-128-101119 and MW-916-101119 sulfate, ethane, ethene, and VOC compound vinyl chloride RPD results are greater than 30% and qualified as estimated (J/UJ).**

Laboratory Duplicate Analyses

USEPA Method 8260C:
Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:
A laboratory duplicate sample was not analyzed. Refer to LCS/LCSD or MS/MSDs results for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:
Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control limits with the following discussion:

- SDG L1149387: Anion (chloride, sulfate and nitrate) laboratory duplicate was performed on the equipment blank with elevated RPDs on chloride and nitrate. No action is taken since the results are less than 5X the RDL and absolute differences are <1X the RDL.

- SDG L1149851: Sulfate laboratory duplicate was performed on a non-client sample within the analytical batch. RPD result is qualified by the laboratory to indicate that the sample result exceeds the upper limit of the calibration curve. No action is taken other

than to note that the laboratory performed more than one laboratory duplicate and precision results are acceptable.

Surrogate Recoveries

USEPA Method 8260C:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, trip blanks, equipment blank, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260C:
Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260C method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussions:

- SDG L1148900 - Analytical batch WG1366370. LCS hexachloro-1,3-butadiene recovery is above laboratory acceptance criteria and laboratory qualified (J4). No action is taken on this basis since hexachloro-1,3-butadiene was not detected in sample MW-8-101019.

- SDG L1148900 - LCSDs were not analyzed. Refer to the matrix spike data or field duplicate data for precision data.

- SDG L1149851 - Analytical batch WG1368672. LCS vinyl acetate recovery is above laboratory acceptance criteria and laboratory qualified (J4). No action is taken on this basis vinyl acetate was not detected in the associated trip blank.

- SDG L1150336 - Analytical batch WG1368527. LCS 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,3-dichloropropene and 1,1,2-trichloroethane recoveries are below laboratory acceptance criteria and laboratory qualified (J4). No action is taken on this basis for 1,4-dichlorobenzene since recovery is 78.8% and just below the control limit criteria of 79 – 120%. **All associated 1,3-dichlorobenzene, 1,3-dichloropropene, and 1,1,2-trichloroethane results are estimated and qualified (UJ/J).** Refer to initial and continuing calibration section for additional information.

NWTPH-Gx Method:
The LCS % Rs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:

The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:
The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260C:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on sample MW-8-101019 (SDG L1148900). The MS/MSD %Rs and RPDs for the all target compounds are within the laboratory control criteria for waters. In cases where matrix spike analyses were not performed refer to LCS results and field duplicate samples for accuracy and precision data.

NWTPH-Gx Method:
MS/MSD analyses were not performed. Refer to LCS results and field duplicate samples for accuracy and precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
MS/MSD analyses were not performed. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

- SDG L1149851: MS analysis was performed on a non-client sample. MS non-client sample results for methane is qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

- SDG L1150336: MS/MSD analyses was performed on a non-client sample. MS non-client sample results for methane is qualified (V) by the laboratory to indicate that the sample amount is greater than 4X the spike amount. In addition, ethene result is laboratory qualified (J5) due to matrix interference. Refer to LCS/LCSD and laboratory duplicate results for accuracy and precision data.

USEPA Method 6020B:
MS/MSD analyses were performed on client and non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are

acceptable and within laboratory control limit criteria for water samples with the following exceptions:

- SDGs L1148900 and L1149851: The MS and MS/MSD analyses were performed on two non-client samples. MS/MSD non-client sample results for chloride are qualified (EV) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range and sample amount was greater than 4X the spike amount. Refer to LCS and laboratory duplicate results for accuracy and precision data.

- SDG L1149851: MS analysis was performed on a non-client sample. MS non-client sample results for nitrate is qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS and laboratory duplicate results for accuracy and precision data.

- SDG L1150336: The MS/MSD analyses were performed on a non-client sample. MS/MSD non-client sample results for chloride are qualified (E) by the laboratory to indicate that the spiked analyte concentration exceeded the upper calibration range. Refer to LCS and laboratory duplicate results for accuracy and precision data.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	172000		2710	20000	1	10/18/2019 11:14	WG1365104

Sample Narrative:

L1149851-01 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	12800		51.9	1000	1	10/15/2019 22:42	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:42	WG1363086
Sulfate	20300		77.4	5000	1	10/15/2019 22:42	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	10300		102	1000	1	10/17/2019 03:19	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	1850		15.0	100	1	10/21/2019 11:10	WG1364629
Manganese	406		0.250	5.00	1	10/21/2019 11:10	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 04:37	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 04:37*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	428		0.287	0.678	1	10/16/2019 13:10	WG1363432
Ethane	6.87		0.296	1.29	1	10/16/2019 13:10	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:10	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l		Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch	
Acetone	U	UJ	J0	1.05	25.0	1	10/21/2019 11:44	WG1366365	
Acrylonitrile	U	UJ	J0	0.873	5.00	1	10/21/2019 11:44	WG1366365	
Benzene	U			0.0896	0.500	1	10/21/2019 11:44	WG1366365	
Bromobenzene	U			0.133	0.500	1	10/21/2019 11:44	WG1366365	
Bromodichloromethane	U			0.0800	0.500	1	10/21/2019 11:44	WG1366365	
Bromochloromethane	U			0.145	0.500	1	10/21/2019 11:44	WG1366365	
Bromoform	U			0.186	0.500	1	10/21/2019 11:44	WG1366365	
Bromomethane	U	UJ	J0	0.157	2.50	1	10/21/2019 11:44	WG1366365	
n-Butylbenzene	U			0.143	0.500	1	10/21/2019 11:44	WG1366365	
sec-Butylbenzene	U			0.134	0.500	1	10/21/2019 11:44	WG1366365	
tert-Butylbenzene	U			0.183	0.500	1	10/21/2019 11:44	WG1366365	JC 12/2/19
Carbon disulfide	U			0.101	0.500	1	10/21/2019 11:44	WG1366365	
Carbon tetrachloride	U			0.159	0.500	1	10/21/2019 11:44	WG1366365	

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Chlorobenzene	U		0.140	0.500	1	10/21/2019 11:44	WG1366365	
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 11:44	WG1366365	
Chloroethane	U		0.141	2.50	1	10/21/2019 11:44	WG1366365	
Chloroform	U		0.0860	0.500	1	10/21/2019 11:44	WG1366365	
Chloromethane	U		0.153	1.25	1	10/21/2019 11:44	WG1366365	
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 11:44	WG1366365	
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 11:44	WG1366365	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 11:44	WG1366365	
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 11:44	WG1366365	
Dibromomethane	U		0.117	0.500	1	10/21/2019 11:44	WG1366365	
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 11:44	WG1366365	
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 11:44	WG1366365	
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 11:44	WG1366365	
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 11:44	WG1366365	
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 11:44	WG1366365	
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 11:44	WG1366365	
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 11:44	WG1366365	
cis-1,2-Dichloroethene	7.78		0.0933	0.500	1	10/21/2019 11:44	WG1366365	
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 11:44	WG1366365	
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 11:44	WG1366365	
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 11:44	WG1366365	
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 11:44	WG1366365	
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 11:44	WG1366365	
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 11:44	WG1366365	
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 11:44	WG1366365	
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 11:44	WG1366365	
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 11:44	WG1366365	
Ethylbenzene	U		0.158	0.500	1	10/21/2019 11:44	WG1366365	
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 11:44	WG1366365	
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 11:44	WG1366365	
n-Hexane	U		0.305	5.00	1	10/21/2019 11:44	WG1366365	
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 11:44	WG1366365	
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 11:44	WG1366365	
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 11:44	WG1366365	
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 11:44	WG1366365	
Methylene Chloride	U		1.07	2.50	1	10/21/2019 11:44	WG1366365	
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 11:44	WG1366365	
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 11:44	WG1366365	
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 11:44	WG1366365	
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 11:44	WG1366365	
Styrene	U		0.117	0.500	1	10/21/2019 11:44	WG1366365	
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 11:44	WG1366365	
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 11:44	WG1366365	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 11:44	WG1366365	
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 11:44	WG1366365	
Toluene	U		0.412	0.500	1	10/21/2019 11:44	WG1366365	
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 11:44	WG1366365	
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 11:44	WG1366365	
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 11:44	WG1366365	
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 11:44	WG1366365	
Trichloroethene	U		0.153	0.500	1	10/21/2019 11:44	WG1366365	
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 11:44	WG1366365	
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 11:44	WG1366365	JC 12/2/19
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 11:44	WG1366365	
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 11:44	WG1366365	
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 11:44	WG1366365	

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	10/21/2019 11:44	WG1366365
Vinyl chloride	0.994			0.118	0.500	1	10/21/2019 11:44	WG1366365
Xylenes, Total	U			0.316	1.50	1	10/21/2019 11:44	WG1366365
(S) Toluene-d8	*96.6*				*80.0-120*		*10/21/2019 11:44*	WG1366365
(S) 4-Bromofluorobenzene	*94.2*				*77.0-126*		*10/21/2019 11:44*	WG1366365
(S) 1,2-Dichloroethane-d4	*85.9*				*70.0-130*		*10/21/2019 11:44*	WG1366365

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	338000		2710	20000	1	10/18/2019 11:22	WG1365104

Sample Narrative:
L1149851-02 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	23300		51.9	1000	1	10/15/2019 22:56	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 22:56	WG1363086
Sulfate	20600		77.4	5000	1	10/15/2019 22:56	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3630	~~B~~	102	1000	1	10/17/2019 03:41	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2910		15.0	100	1	10/21/2019 11:25	WG1364629
Manganese	898		0.250	5.00	1	10/21/2019 11:25	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1310		31.6	100	1	10/18/2019 05:01	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 05:01*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	6190		0.287	0.678	1	10/16/2019 13:15	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:15	WG1363432
Ethene	394		0.422	1.27	1	10/16/2019 13:15	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	UJ J0	1.05	25.0	1	10/21/2019 12:03	WG1366365
Acrylonitrile	U	UJ J0	0.873	5.00	1	10/21/2019 12:03	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:03	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:03	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:03	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:03	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Bromomethane	U	UJ J0	0.157	2.50	1	10/21/2019 12:03	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:03	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:03	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:03	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:03	WG1366365

JC 12/2/19

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:03	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 12:03	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:03	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:03	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:03	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:03	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:03	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:03	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloroethene	2.83		0.188	0.500	1	10/21/2019 12:03	WG1366365
cis-1,2-Dichloroethene	1350		9.33	50.0	100	10/23/2019 01:49	WG1367719
trans-1,2-Dichloroethene	7.85		0.152	0.500	1	10/21/2019 12:03	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:03	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:03	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:03	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:03	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:03	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 12:03	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:03	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:03	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:03	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:03	WG1366365
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 12:03	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:03	WG1366365
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 12:03	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:03	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:03	WG1366365
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 12:03	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:03	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 12:03	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:03	WG1366365
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 12:03	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:03	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:03	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:03	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
Tetrachloroethene	2.03		0.199	0.500	1	10/21/2019 12:03	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:03	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:03	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:03	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:03	WG1366365
Trichloroethene	6.77		0.153	0.500	1	10/21/2019 12:03	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:03	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:03	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:03	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:03	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:03	WG1366365

JC 12/2/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	10/21/2019 12:03	WG1366365
Vinyl chloride	2830			11.8	50.0	100	10/23/2019 01:49	WG1367719
Xylenes, Total	U			0.316	1.50	1	10/21/2019 12:03	WG1366365
(S) Toluene-d8	*94.4*				*80.0-120*		*10/21/2019 12:03*	WG1366365
(S) Toluene-d8	*96.6*				*80.0-120*		*10/23/2019 01:49*	WG1367719
(S) 4-Bromofluorobenzene	*92.3*				*77.0-126*		*10/21/2019 12:03*	WG1366365
(S) 4-Bromofluorobenzene	*107*				*77.0-126*		*10/23/2019 01:49*	WG1367719
(S) 1,2-Dichloroethane-d4	*81.9*				*70.0-130*		*10/21/2019 12:03*	WG1366365
(S) 1,2-Dichloroethane-d4	*103*				*70.0-130*		*10/23/2019 01:49*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	228000		2710	20000	1	10/18/2019 11:37	WG1365104

Sample Narrative:
L1149851-03 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	15100		51.9	1000	1	10/15/2019 23:54	WG1363086
Nitrate	U		22.7	100	1	10/15/2019 23:54	WG1363086
Sulfate	86500		77.4	5000	1	10/15/2019 23:54	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2950	B	102	1000	1	10/17/2019 03:58	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	511		15.0	100	1	10/21/2019 11:29	WG1364629
Manganese	435		0.250	5.00	1	10/21/2019 11:29	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	105		0.287	0.678	1	10/16/2019 13:25	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:25	WG1363432
Ethene	U		0.422	1.27	1	10/16/2019 13:25	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l		Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	UJ	J0	1.05	25.0	1	10/21/2019 12:23	WG1366365
Acrylonitrile	U	UJ	J0	0.873	5.00	1	10/21/2019 12:23	WG1366365
Benzene	0.295		J	0.0896	0.500	1	10/21/2019 12:23	WG1366365
Bromobenzene	U			0.133	0.500	1	10/21/2019 12:23	WG1366365
Bromodichloromethane	U			0.0800	0.500	1	10/21/2019 12:23	WG1366365
Bromochloromethane	U			0.145	0.500	1	10/21/2019 12:23	WG1366365
Bromoform	U			0.186	0.500	1	10/21/2019 12:23	WG1366365
Bromomethane	U	UJ	J0	0.157	2.50	1	10/21/2019 12:23	WG1366365
n-Butylbenzene	U			0.143	0.500	1	10/21/2019 12:23	WG1366365
sec-Butylbenzene	U			0.134	0.500	1	10/21/2019 12:23	WG1366365
tert-Butylbenzene	U			0.183	0.500	1	10/21/2019 12:23	WG1366365
Carbon disulfide	5.84			0.101	0.500	1	10/21/2019 12:23	WG1366365
Carbon tetrachloride	U			0.159	0.500	1	10/21/2019 12:23	WG1366365
Chlorobenzene	U			0.140	0.500	1	10/21/2019 12:23	WG1366365
Chlorodibromomethane	U			0.128	0.500	1	10/21/2019 12:23	WG1366365
Chloroethane	U			0.141	2.50	1	10/21/2019 12:23	WG1366365
Chloroform	U			0.0860	0.500	1	10/21/2019 12:23	WG1366365
Chloromethane	U			0.153	1.25	1	10/21/2019 12:23	WG1366365
2-Chlorotoluene	U			0.111	0.500	1	10/21/2019 12:23	WG1366365
4-Chlorotoluene	U			0.0972	0.500	1	10/21/2019 12:23	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:23	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:23	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:23	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:23	WG1366365
cis-1,2-Dichloroethene	1.47		0.0933	0.500	1	10/23/2019 02:10	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:23	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:23	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:23	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:23	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:23	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:23	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 12:23	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:23	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:23	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:23	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:23	WG1366365
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 12:23	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:23	WG1366365
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 12:23	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:23	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:23	WG1366365
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 12:23	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:23	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 12:23	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:23	WG1366365
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 12:23	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:23	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:23	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:23	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
Tetrachloroethene	1.11		0.199	0.500	1	10/21/2019 12:23	WG1366365
Toluene	2.01		0.412	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:23	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:23	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:23	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:23	WG1366365
Trichloroethene	0.497	J	0.153	0.500	1	10/21/2019 12:23	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:23	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:23	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:23	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:23	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:23	WG1366365
Vinyl acetate	U	UJ J0	0.645	5.00	1	10/21/2019 12:23	WG1366365
Vinyl chloride	6.37		0.118	0.500	1	10/23/2019 02:10	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 12:23	WG1366365
(S) Toluene-d8	*99.9*			*80.0-120*		*10/21/2019 12:23*	WG1366365
(S) Toluene-d8	*96.5*			*80.0-120*		*10/23/2019 02:10*	WG1367719
(S) 4-Bromofluorobenzene	*95.2*			*77.0-126*		*10/21/2019 12:23*	WG1366365
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*10/23/2019 02:10*	WG1367719

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*84.3*			*70.0-130*		*10/21/2019 12:23*	WG1366365
(S) 1,2-Dichloroethane-d4	*98.3*			*70.0-130*		*10/23/2019 02:10*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	197000		2710	20000	1	10/18/2019 11:44	WG1365104

Sample Narrative:
L1149851-04 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17100		51.9	1000	1	10/16/2019 00:08	WG1363086
Nitrate	U		22.7	100	1	10/16/2019 00:08	WG1363086
Sulfate	37200		77.4	5000	1	10/16/2019 00:08	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3780	B	102	1000	1	10/17/2019 04:56	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	1330		15.0	100	1	10/21/2019 11:32	WG1364629
Manganese	838		0.250	5.00	1	10/21/2019 11:32	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:24	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 05:24*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	203		0.287	0.678	1	10/16/2019 13:27	WG1363432
Ethane	U		0.296	1.29	1	10/16/2019 13:27	WG1363432
Ethene	69.9		0.422	1.27	1	10/16/2019 13:27	WG1363432

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U UJ	J0	1.05	25.0	1	10/21/2019 12:43	WG1366365
Acrylonitrile	U UJ	J0	0.873	5.00	1	10/21/2019 12:43	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 12:43	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 12:43	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 12:43	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 12:43	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Bromomethane	U UJ	J0	0.157	2.50	1	10/21/2019 12:43	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 12:43	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 12:43	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 12:43	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 12:43	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 12:43	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
Chloroethane	0.362	J	0.141	2.50	1	10/21/2019 12:43	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 12:43	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 12:43	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 12:43	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 12:43	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 12:43	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 12:43	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 12:43	WG1366365
cis-1,2-Dichloroethene	2.23		0.0933	0.500	1	10/23/2019 02:30	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 12:43	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 12:43	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 12:43	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 12:43	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 12:43	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 12:43	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 12:43	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 12:43	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 12:43	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 12:43	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 12:43	WG1366365
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 12:43	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 12:43	WG1366365
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 12:43	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 12:43	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 12:43	WG1366365
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 12:43	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 12:43	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 12:43	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 12:43	WG1366365
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 12:43	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 12:43	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 12:43	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 12:43	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 12:43	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 12:43	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 12:43	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 12:43	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 12:43	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 12:43	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 12:43	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 12:43	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 12:43	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 12:43	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 12:43	WG1366365

JC 12/2/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	10/21/2019 12:43	WG1366365
Vinyl chloride	18.2			0.118	0.500	1	10/23/2019 02:30	WG1367719
Xylenes, Total	U			0.316	1.50	1	10/21/2019 12:43	WG1366365
(S) Toluene-d8	*96.3*				*80.0-120*		*10/21/2019 12:43*	WG1366365
(S) Toluene-d8	*95.3*				*80.0-120*		*10/23/2019 02:30*	WG1367719
(S) 4-Bromofluorobenzene	*91.4*				*77.0-126*		*10/21/2019 12:43*	WG1366365
(S) 4-Bromofluorobenzene	*102*				*77.0-126*		*10/23/2019 02:30*	WG1367719
(S) 1,2-Dichloroethane-d4	*83.1*				*70.0-130*		*10/21/2019 12:43*	WG1366365
(S) 1,2-Dichloroethane-d4	*98.2*				*70.0-130*		*10/23/2019 02:30*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	186000		2710	20000	1	10/18/2019 11:52	WG1365104

Sample Narrative:
L1149851-05 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18400		51.9	1000	1	10/16/2019 00:23	WG1363086
Nitrate	1580		22.7	100	1	10/16/2019 00:23	WG1363086
Sulfate	87800		77.4	5000	1	10/16/2019 00:23	WG1363086

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1920	~~B~~	102	1000	1	10/17/2019 05:16	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	173		15.0	100	1	10/21/2019 11:58	WG1364629
Manganese	129		0.250	5.00	1	10/21/2019 11:58	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	10/18/2019 05:48	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*		*10/18/2019 05:48*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 11:11	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:11	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:11	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l		Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	UJ	J0	1.05	25.0	1	10/21/2019 13:02	WG1366365
Acrylonitrile	U	UJ	J0	0.873	5.00	1	10/21/2019 13:02	WG1366365
Benzene	U			0.0896	0.500	1	10/21/2019 13:02	WG1366365
Bromobenzene	U			0.133	0.500	1	10/21/2019 13:02	WG1366365
Bromodichloromethane	U			0.0800	0.500	1	10/21/2019 13:02	WG1366365
Bromochloromethane	U			0.145	0.500	1	10/21/2019 13:02	WG1366365
Bromoform	U			0.186	0.500	1	10/21/2019 13:02	WG1366365
Bromomethane	U	UJ	J0	0.157	2.50	1	10/21/2019 13:02	WG1366365
n-Butylbenzene	U			0.143	0.500	1	10/21/2019 13:02	WG1366365
sec-Butylbenzene	U			0.134	0.500	1	10/21/2019 13:02	WG1366365
tert-Butylbenzene	U			0.183	0.500	1	10/21/2019 13:02	WG1366365
Carbon disulfide	U			0.101	0.500	1	10/21/2019 13:02	WG1366365
Carbon tetrachloride	U			0.159	0.500	1	10/21/2019 13:02	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:02	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:02	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:02	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:02	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:02	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:02	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:02	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:02	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:02	WG1366365
cis-1,2-Dichloroethene	1.40		0.0933	0.500	1	10/23/2019 02:50	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:02	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:02	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:02	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:02	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:02	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:02	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 13:02	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:02	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:02	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:02	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:02	WG1366365
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 13:02	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:02	WG1366365
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 13:02	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:02	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:02	WG1366365
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 13:02	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:02	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 13:02	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:02	WG1366365
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 13:02	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:02	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:02	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:02	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
Tetrachloroethene	4.99		0.199	0.500	1	10/21/2019 13:02	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:02	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:02	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:02	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:02	WG1366365
Trichloroethene	0.445	J	0.153	0.500	1	10/21/2019 13:02	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:02	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:02	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:02	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:02	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:02	WG1366365

JC 12/2/19

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	10/21/2019 13:02	WG1366365
Vinyl chloride	U			0.118	0.500	1	10/23/2019 02:50	WG1367719
Xylenes, Total	U			0.316	1.50	1	10/21/2019 13:02	WG1366365
(S) Toluene-d8	*95.1*				*80.0-120*		*10/21/2019 13:02*	WG1366365
(S) Toluene-d8	*97.5*				*80.0-120*		*10/23/2019 02:50*	WG1367719
(S) 4-Bromofluorobenzene	*91.0*				*77.0-126*		*10/21/2019 13:02*	WG1366365
(S) 4-Bromofluorobenzene	*105*				*77.0-126*		*10/23/2019 02:50*	WG1367719
(S) 1,2-Dichloroethane-d4	*83.6*				*70.0-130*		*10/21/2019 13:02*	WG1366365
(S) 1,2-Dichloroethane-d4	*103*				*70.0-130*		*10/23/2019 02:50*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	182000		2710	20000	1	10/18/2019 11:59	WG1365104

Sample Narrative:
L1149851-06 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7800		51.9	1000	1	10/15/2019 16:07	WG1363090
Nitrate	58.4	J	22.7	100	1	10/15/2019 16:07	WG1363090
Sulfate	5820		77.4	5000	1	10/15/2019 16:07	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1190	B	102	1000	1	10/17/2019 05:34	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	348		15.0	100	1	10/21/2019 12:02	WG1364629
Manganese	212		0.250	5.00	1	10/21/2019 12:02	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	10/17/2019 11:14	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 11:14	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 11:14	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 13:22	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 13:22	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:22	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:22	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:22	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:22	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 13:22	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:22	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:22	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:22	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:22	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:22	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:22	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:22	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:22	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:22	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:22	WG1366365

UJ
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JC 12/2/19

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:22	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:22	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:22	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:22	WG1366365
cis-1,2-Dichloroethene	U		0.0933	0.500	1	10/23/2019 03:11	WG1367719
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:22	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:22	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:22	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:22	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:22	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:22	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 13:22	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:22	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:22	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:22	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:22	WG1366365
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 13:22	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 13:22	WG1366365
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 13:22	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:22	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:22	WG1366365
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 13:22	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:22	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 13:22	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:22	WG1366365
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 13:22	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:22	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 13:22	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:22	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
Tetrachloroethene	0.223	J	0.199	0.500	1	10/21/2019 13:22	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:22	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:22	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:22	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:22	WG1366365
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:22	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:22	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:22	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:22	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:22	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:22	WG1366365
Vinyl acetate	U	UJ J0	0.645	5.00	1	10/21/2019 13:22	WG1366365
Vinyl chloride	U		0.118	0.500	1	10/23/2019 03:11	WG1367719
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:22	WG1366365
(S) Toluene-d8	*99.6*			*80.0-120*		*10/21/2019 13:22*	WG1366365
(S) Toluene-d8	*95.7*			*80.0-120*		*10/23/2019 03:11*	WG1367719
(S) 4-Bromofluorobenzene	*93.7*			*77.0-126*		*10/21/2019 13:22*	WG1366365
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*10/23/2019 03:11*	WG1367719

JC 12/2/19

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*83.3*			*70.0-130*		*10/21/2019 13:22*	WG1366365
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*10/23/2019 03:11*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	222000		2710	20000	1	10/18/2019 12:06	WG1365104

Sample Narrative:
L1149851-07 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	29100		51.9	1000	1	10/15/2019 16:33	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 16:33	WG1363090
Sulfate	7700		77.4	5000	1	10/15/2019 16:33	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1970	B	102	1000	1	10/17/2019 05:51	WG1364227

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	159		15.0	100	1	10/21/2019 12:05	WG1364629
Manganese	229		0.250	5.00	1	10/21/2019 12:05	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	324		0.287	0.678	1	10/17/2019 11:17	WG1364418
Ethane	20.9		0.296	1.29	1	10/17/2019 11:17	WG1364418
Ethene	20.1		0.422	1.27	1	10/17/2019 11:17	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.25	U J J0	1.05	25.0	1	10/21/2019 13:41	WG1366365
Acrylonitrile	U	UJ J0	0.873	5.00	1	10/21/2019 13:41	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 13:41	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 13:41	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 13:41	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 13:41	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 13:41	WG1366365
Bromomethane	U	UJ J0	0.157	2.50	1	10/21/2019 13:41	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 13:41	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 13:41	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 13:41	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 13:41	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 13:41	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 13:41	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 13:41	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 13:41	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 13:41	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 13:41	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 13:41	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 13:41	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 13:41	WG1366365	
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 13:41	WG1366365	
Dibromomethane	U		0.117	0.500	1	10/21/2019 13:41	WG1366365	
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 13:41	WG1366365	
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 13:41	WG1366365	
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 13:41	WG1366365	
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 13:41	WG1366365	
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 13:41	WG1366365	
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 13:41	WG1366365	
1,1-Dichloroethene	U		0.188	0.500	1	10/21/2019 13:41	WG1366365	
cis-1,2-Dichloroethene	0.413	J J	0.0933	0.500	1	10/23/2019 03:31	WG1367719	
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 13:41	WG1366365	
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 13:41	WG1366365	
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 13:41	WG1366365	
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 13:41	WG1366365	
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 13:41	WG1366365	
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 13:41	WG1366365	
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 13:41	WG1366365	
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 13:41	WG1366365	
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 13:41	WG1366365	
Ethylbenzene	U		0.158	0.500	1	10/21/2019 13:41	WG1366365	
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 13:41	WG1366365	
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 13:41	WG1366365	
n-Hexane	U		0.305	5.00	1	10/21/2019 13:41	WG1366365	
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 13:41	WG1366365	
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 13:41	WG1366365	
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 13:41	WG1366365	
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 13:41	WG1366365	
Methylene Chloride	U		1.07	2.50	1	10/21/2019 13:41	WG1366365	
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 13:41	WG1366365	
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 13:41	WG1366365	
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 13:41	WG1366365	
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 13:41	WG1366365	
Styrene	U		0.117	0.500	1	10/21/2019 13:41	WG1366365	
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 13:41	WG1366365	
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 13:41	WG1366365	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 13:41	WG1366365	
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 13:41	WG1366365	
Toluene	U		0.412	0.500	1	10/21/2019 13:41	WG1366365	
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 13:41	WG1366365	
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 13:41	WG1366365	
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 13:41	WG1366365	
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 13:41	WG1366365	
Trichloroethene	U		0.153	0.500	1	10/21/2019 13:41	WG1366365	
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 13:41	WG1366365	
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 13:41	WG1366365	
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 13:41	WG1366365	
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 13:41	WG1366365	
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 13:41	WG1366365	
Vinyl acetate	U	UJ J0	0.645	5.00	1	10/21/2019 13:41	WG1366365	
Vinyl chloride	8.63		0.118	0.500	1	10/23/2019 03:31	WG1367719	
Xylenes, Total	U		0.316	1.50	1	10/21/2019 13:41	WG1366365	
(S) Toluene-d8	*97.1*			*80.0-120*		*10/21/2019 13:41*	WG1366365	
(S) Toluene-d8	*94.2*			*80.0-120*		*10/23/2019 03:31*	WG1367719	
(S) 4-Bromofluorobenzene	*90.6*			*77.0-126*		*10/21/2019 13:41*	WG1366365	JC 12/2/19
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*10/23/2019 03:31*	WG1367719	

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
(S) 1,2-Dichloroethane-d4	*81.7*			*70.0-130*		*10/21/2019 13:41*	WG1366365
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*10/23/2019 03:31*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	339000		2710	20000	1	10/18/2019 12:13	WG1365104

Sample Narrative:
L1149851-08 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	23200		51.9	1000	1	10/15/2019 17:38	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:38	WG1363090
Sulfate	28000		77.4	5000	1	10/15/2019 17:38	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	6700	B	510	5000	5	10/17/2019 16:35	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	9370		15.0	100	1	10/21/2019 12:09	WG1364629
Manganese	919		0.250	5.00	1	10/21/2019 12:09	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	513		31.6	100	1	10/18/2019 06:12	WG1364938
(S) a,a,a-Trifluorotoluene(FID)	*107*			*78.0-120*		*10/18/2019 06:12*	WG1364938

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	7830		2.87	6.78	10	10/18/2019 13:08	WG1365165
Ethane	2.94		0.296	1.29	1	10/17/2019 11:26	WG1364418
Ethene	457		0.422	1.27	1	10/17/2019 11:26	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	UJ J0	1.05	25.0	1	10/21/2019 14:01	WG1366365
Acrylonitrile	U	UJ J0	0.873	5.00	1	10/21/2019 14:01	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:01	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:01	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:01	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:01	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Bromomethane	U	UJ J0	0.157	2.50	1	10/21/2019 14:01	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:01	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:01	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:01	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:01	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:01	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:01	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:01	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:01	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:01	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:01	WG1366365
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:01	WG1366365
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:01	WG1366365
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloroethene	1.92		0.188	0.500	1	10/21/2019 14:01	WG1366365
cis-1,2-Dichloroethene	597		2.33	12.5	25	10/23/2019 03:51	WG1367719
trans-1,2-Dichloroethene	2.91		0.152	0.500	1	10/21/2019 14:01	WG1366365
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:01	WG1366365
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:01	WG1366365
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:01	WG1366365
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:01	WG1366365
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:01	WG1366365
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 14:01	WG1366365
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:01	WG1366365
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:01	WG1366365
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:01	WG1366365
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:01	WG1366365
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 14:01	WG1366365
n-Hexane	U		0.305	5.00	1	10/21/2019 14:01	WG1366365
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 14:01	WG1366365
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:01	WG1366365
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:01	WG1366365
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 14:01	WG1366365
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:01	WG1366365
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 14:01	WG1366365
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:01	WG1366365
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 14:01	WG1366365
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:01	WG1366365
Styrene	U		0.117	0.500	1	10/21/2019 14:01	WG1366365
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:01	WG1366365
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:01	WG1366365
Toluene	U		0.412	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:01	WG1366365
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:01	WG1366365
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:01	WG1366365
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:01	WG1366365
Trichloroethene	3.38		0.153	0.500	1	10/21/2019 14:01	WG1366365
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:01	WG1366365
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:01	WG1366365
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:01	WG1366365
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:01	WG1366365
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:01	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	10/21/2019 14:01	WG1366365
Vinyl chloride	1410			2.95	12.5	25	10/23/2019 03:51	WG1367719
Xylenes, Total	U			0.316	1.50	1	10/21/2019 14:01	WG1366365
(S) Toluene-d8	*98.9*				*80.0-120*		*10/21/2019 14:01*	WG1366365
(S) Toluene-d8	*96.4*				*80.0-120*		*10/23/2019 03:51*	WG1367719
(S) 4-Bromofluorobenzene	*95.6*				*77.0-126*		*10/21/2019 14:01*	WG1366365
(S) 4-Bromofluorobenzene	*102*				*77.0-126*		*10/23/2019 03:51*	WG1367719
(S) 1,2-Dichloroethane-d4	*81.8*				*70.0-130*		*10/21/2019 14:01*	WG1366365
(S) 1,2-Dichloroethane-d4	*102*				*70.0-130*		*10/23/2019 03:51*	WG1367719

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Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	289000		2710	20000	1	10/18/2019 12:20	WG1365104

Sample Narrative:
L1149851-09 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	26000		51.9	1000	1	10/15/2019 17:51	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 17:51	WG1363090
Sulfate	14400		77.4	5000	1	10/15/2019 17:51	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1280	~~B~~	102	1000	1	10/17/2019 16:53	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	1390		15.0	100	1	10/21/2019 12:13	WG1364629
Manganese	737		0.250	5.00	1	10/21/2019 12:13	WG1364629

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	54.7 U	~~B J~~	31.6	100	1	10/23/2019 02:14	WG1367521
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*10/23/2019 02:14*	WG1367521

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	226		0.287	0.678	1	10/17/2019 13:20	WG1364418
Ethane	U		0.296	1.29	1	10/17/2019 13:20	WG1364418
Ethene	U		0.422	1.27	1	10/17/2019 13:20	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U UJ	J0	1.05	25.0	1	10/21/2019 14:21	WG1366365
Acrylonitrile	U UJ	J0	0.873	5.00	1	10/21/2019 14:21	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:21	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:21	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:21	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:21	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:21	WG1366365
Bromomethane	U UJ	J0	0.157	2.50	1	10/21/2019 14:21	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:21	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:21	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:21	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:21	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:21	WG1366365

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Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
	ug/l		ug/l	ug/l		date / time		
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:21	WG1366365	
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:21	WG1366365	
Chloroethane	U		0.141	2.50	1	10/21/2019 14:21	WG1366365	
Chloroform	U		0.0860	0.500	1	10/21/2019 14:21	WG1366365	
Chloromethane	U		0.153	1.25	1	10/21/2019 14:21	WG1366365	
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:21	WG1366365	
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:21	WG1366365	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:21	WG1366365	
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:21	WG1366365	
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:21	WG1366365	
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:21	WG1366365	
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:21	WG1366365	
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:21	WG1366365	
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:21	WG1366365	
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:21	WG1366365	
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:21	WG1366365	
1,1-Dichloroethene	0.451	J	0.188	0.500	1	10/21/2019 14:21	WG1366365	
cis-1,2-Dichloroethene	1.30		0.0933	0.500	1	10/23/2019 04:11	WG1367719	
trans-1,2-Dichloroethene	U		0.152	0.500	1	10/21/2019 14:21	WG1366365	
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:21	WG1366365	
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:21	WG1366365	
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:21	WG1366365	
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:21	WG1366365	
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:21	WG1366365	
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 14:21	WG1366365	
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:21	WG1366365	
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:21	WG1366365	
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:21	WG1366365	
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:21	WG1366365	
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 14:21	WG1366365	
n-Hexane	U		0.305	5.00	1	10/21/2019 14:21	WG1366365	
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 14:21	WG1366365	
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:21	WG1366365	
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:21	WG1366365	
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 14:21	WG1366365	
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:21	WG1366365	
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 14:21	WG1366365	
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:21	WG1366365	
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 14:21	WG1366365	
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:21	WG1366365	
Styrene	U		0.117	0.500	1	10/21/2019 14:21	WG1366365	
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:21	WG1366365	
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:21	WG1366365	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:21	WG1366365	
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:21	WG1366365	
Toluene	U		0.412	0.500	1	10/21/2019 14:21	WG1366365	
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:21	WG1366365	
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:21	WG1366365	
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:21	WG1366365	
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:21	WG1366365	
Trichloroethene	0.978		0.153	0.500	1	10/21/2019 14:21	WG1366365	
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:21	WG1366365	
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:21	WG1366365	JC 12/2/19
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:21	WG1366365	
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:21	WG1366365	
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:21	WG1366365	

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	10/21/2019 14:21	WG1366365
Vinyl chloride	U			0.118	0.500	1	10/23/2019 04:11	WG1367719
Xylenes, Total	U			0.316	1.50	1	10/21/2019 14:21	WG1366365
(S) Toluene-d8	*97.1*				*80.0-120*		*10/21/2019 14:21*	WG1366365
(S) Toluene-d8	*94.4*				*80.0-120*		*10/23/2019 04:11*	WG1367719
(S) 4-Bromofluorobenzene	*90.8*				*77.0-126*		*10/21/2019 14:21*	WG1366365
(S) 4-Bromofluorobenzene	*104*				*77.0-126*		*10/23/2019 04:11*	WG1367719
(S) 1,2-Dichloroethane-d4	*80.7*				*70.0-130*		*10/21/2019 14:21*	WG1366365
(S) 1,2-Dichloroethane-d4	*103*				*70.0-130*		*10/23/2019 04:11*	WG1367719

JC 12/2/19

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	302000		2710	20000	1	10/18/2019 12:27	WG1365104

Sample Narrative:
L1149851-10 WG1365104: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	27400		51.9	1000	1	10/15/2019 18:04	WG1363090
Nitrate	U		22.7	100	1	10/15/2019 18:04	WG1363090
Sulfate	25000		77.4	5000	1	10/15/2019 18:04	WG1363090

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1550	B	102	1000	1	10/17/2019 17:20	WG1364260

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	948		15.0	100	1	10/21/2019 12:16	WG1364629
Manganese	870		0.250	5.00	1	10/21/2019 12:16	WG1364629

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	166		0.287	0.678	1	10/17/2019 13:23	WG1364418
Ethane	17.7		0.296	1.29	1	10/17/2019 13:23	WG1364418
Ethene	13.8		0.422	1.27	1	10/17/2019 13:23	WG1364418

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	1.05	25.0	1	10/21/2019 14:40	WG1366365
Acrylonitrile	U	J0	0.873	5.00	1	10/21/2019 14:40	WG1366365
Benzene	U		0.0896	0.500	1	10/21/2019 14:40	WG1366365
Bromobenzene	U		0.133	0.500	1	10/21/2019 14:40	WG1366365
Bromodichloromethane	U		0.0800	0.500	1	10/21/2019 14:40	WG1366365
Bromochloromethane	U		0.145	0.500	1	10/21/2019 14:40	WG1366365
Bromoform	U		0.186	0.500	1	10/21/2019 14:40	WG1366365
Bromomethane	U	J0	0.157	2.50	1	10/21/2019 14:40	WG1366365
n-Butylbenzene	U		0.143	0.500	1	10/21/2019 14:40	WG1366365
sec-Butylbenzene	U		0.134	0.500	1	10/21/2019 14:40	WG1366365
tert-Butylbenzene	U		0.183	0.500	1	10/21/2019 14:40	WG1366365
Carbon disulfide	U		0.101	0.500	1	10/21/2019 14:40	WG1366365
Carbon tetrachloride	U		0.159	0.500	1	10/21/2019 14:40	WG1366365
Chlorobenzene	U		0.140	0.500	1	10/21/2019 14:40	WG1366365
Chlorodibromomethane	U		0.128	0.500	1	10/21/2019 14:40	WG1366365
Chloroethane	U		0.141	2.50	1	10/21/2019 14:40	WG1366365
Chloroform	U		0.0860	0.500	1	10/21/2019 14:40	WG1366365
Chloromethane	U		0.153	1.25	1	10/21/2019 14:40	WG1366365
2-Chlorotoluene	U		0.111	0.500	1	10/21/2019 14:40	WG1366365
4-Chlorotoluene	U		0.0972	0.500	1	10/21/2019 14:40	WG1366365

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JC 12/2/19

Volatile Organic Compounds (GC/MS) by Method 8260C

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch	
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	10/21/2019 14:40	WG1366365	
1,2-Dibromoethane	U		0.193	0.500	1	10/21/2019 14:40	WG1366365	
Dibromomethane	U		0.117	0.500	1	10/21/2019 14:40	WG1366365	
1,2-Dichlorobenzene	U		0.101	0.500	1	10/21/2019 14:40	WG1366365	
1,3-Dichlorobenzene	U		0.130	0.500	1	10/21/2019 14:40	WG1366365	
1,4-Dichlorobenzene	U		0.121	0.500	1	10/21/2019 14:40	WG1366365	
Dichlorodifluoromethane	U		0.127	2.50	1	10/21/2019 14:40	WG1366365	
1,1-Dichloroethane	U		0.114	0.500	1	10/21/2019 14:40	WG1366365	
1,2-Dichloroethane	U		0.108	0.500	1	10/21/2019 14:40	WG1366365	
1,1-Dichloroethene	1.08		0.188	0.500	1	10/21/2019 14:40	WG1366365	
cis-1,2-Dichloroethene	91.7		0.0933	0.500	1	10/21/2019 14:40	WG1366365	
trans-1,2-Dichloroethene	0.158	J	0.152	0.500	1	10/21/2019 14:40	WG1366365	
1,2-Dichloropropane	U		0.190	0.500	1	10/21/2019 14:40	WG1366365	
1,1-Dichloropropene	U		0.128	0.500	1	10/21/2019 14:40	WG1366365	
1,3-Dichloropropane	U		0.147	1.00	1	10/21/2019 14:40	WG1366365	
cis-1,3-Dichloropropene	U		0.0976	0.500	1	10/21/2019 14:40	WG1366365	
trans-1,3-Dichloropropene	U		0.222	0.500	1	10/21/2019 14:40	WG1366365	
trans-1,4-Dichloro-2-butene	U	UJ J0	0.257	5.00	1	10/21/2019 14:40	WG1366365	
2,2-Dichloropropane	U		0.0929	0.500	1	10/21/2019 14:40	WG1366365	
Di-isopropyl ether	U		0.0924	0.500	1	10/21/2019 14:40	WG1366365	
Ethylbenzene	U		0.158	0.500	1	10/21/2019 14:40	WG1366365	
Hexachloro-1,3-butadiene	U		0.157	1.00	1	10/21/2019 14:40	WG1366365	
2-Hexanone	U	UJ J0	0.757	5.00	1	10/21/2019 14:40	WG1366365	
n-Hexane	U		0.305	5.00	1	10/21/2019 14:40	WG1366365	
Iodomethane	U	UJ J0	0.377	10.0	1	10/21/2019 14:40	WG1366365	
Isopropylbenzene	U		0.126	0.500	1	10/21/2019 14:40	WG1366365	
p-Isopropyltoluene	U		0.138	0.500	1	10/21/2019 14:40	WG1366365	
2-Butanone (MEK)	U	UJ J0	1.28	5.00	1	10/21/2019 14:40	WG1366365	
Methylene Chloride	U		1.07	2.50	1	10/21/2019 14:40	WG1366365	
4-Methyl-2-pentanone (MIBK)	U	UJ J0	0.823	5.00	1	10/21/2019 14:40	WG1366365	
Methyl tert-butyl ether	U		0.102	0.500	1	10/21/2019 14:40	WG1366365	
Naphthalene	U	UJ J0	0.174	2.50	1	10/21/2019 14:40	WG1366365	
n-Propylbenzene	U		0.162	0.500	1	10/21/2019 14:40	WG1366365	
Styrene	U		0.117	0.500	1	10/21/2019 14:40	WG1366365	
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	10/21/2019 14:40	WG1366365	
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	10/21/2019 14:40	WG1366365	
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	10/21/2019 14:40	WG1366365	
Tetrachloroethene	U		0.199	0.500	1	10/21/2019 14:40	WG1366365	
Toluene	U		0.412	0.500	1	10/21/2019 14:40	WG1366365	
1,2,3-Trichlorobenzene	U		0.164	0.500	1	10/21/2019 14:40	WG1366365	
1,2,4-Trichlorobenzene	U		0.355	0.500	1	10/21/2019 14:40	WG1366365	
1,1,1-Trichloroethane	U		0.0940	0.500	1	10/21/2019 14:40	WG1366365	
1,1,2-Trichloroethane	U		0.186	0.500	1	10/21/2019 14:40	WG1366365	
Trichloroethene	U		0.153	0.500	1	10/21/2019 14:40	WG1366365	
Trichlorofluoromethane	U		0.130	2.50	1	10/21/2019 14:40	WG1366365	
1,2,3-Trichloropropane	U		0.247	2.50	1	10/21/2019 14:40	WG1366365	
1,2,4-Trimethylbenzene	U		0.123	0.500	1	10/21/2019 14:40	WG1366365	
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	10/21/2019 14:40	WG1366365	
1,3,5-Trimethylbenzene	U		0.124	0.500	1	10/21/2019 14:40	WG1366365	
Vinyl acetate	U	UJ J0	0.645	5.00	1	10/21/2019 14:40	WG1366365	
Vinyl chloride	51.8		0.118	0.500	1	10/21/2019 14:40	WG1366365	
Xylenes, Total	U		0.316	1.50	1	10/21/2019 14:40	WG1366365	
(S) Toluene-d8	*95.4*			*80.0-120*		*10/21/2019 14:40*	WG1366365	JC 12/2/19
(S) 4-Bromofluorobenzene	*89.6*			*77.0-126*		*10/21/2019 14:40*	WG1366365	
(S) 1,2-Dichloroethane-d4	*82.6*			*70.0-130*		*10/21/2019 14:40*	WG1366365	

MEMORANDUM

TO: Project File **DATE:** January 20, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review - Addendum

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.05.501E

TASK: EIM Data Validation Level EPA2A for October 2019 – Groundwater Samples

LAB: Pace Analytical (Pace) Sample Delivery Groups (SDGs): L1149851, L1150336, L1151401, L1152340, and L1152823

This memorandum has been drafted to further clarify the analytical laboratory (Pace) gasoline method of analysis via Volatile Organic Compounds (GC) by Washington State Method NWTPHGx (using a gas chromatograph/flame ionization detector (GC/FID)) and reported gasoline range organic-NWTPH results. Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, and vinyl chloride) elute within the gasoline range organics (GRO) retention time range as specified by Washington State (detections falling between the toluene and dodecane range).

Non-petroleum organics (e.g. chlorinated VOC compounds) eluting within the gasoline range contribute to the GRO result and GRO results are likely biased high (J+). PES requested that Pace evaluate chromatograms associated with positive sample detections to confirm the potential presence of gasoline. Per PES's request Pace reviewed selected sample chromatograms against the gasoline standard chromatograms and assigned "no discernible petroleum pattern" to GRO results associated with this Task. PES assigned an additional project level qualifier (Z) to GRO results when the chromatogram for the sample does not match a discernible gasoline standard pattern. Associated chromatograms and qualified samples for this Task are as follows:

Sample ID	Laboratory Identification	Gasoline Range Organic Result (µg/L)	DV Qualifier	Data Validation Comments	Pace Chromatogram Review Notes
MW-146-101419	L1149851-02	1310	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-147-101419	L1149851-08	513	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-107-101519	L1150336-09	365	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-143-101619	L1150936-07	2000	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-918-101719	L1151401-01	113	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-156-101719	L1151401-02	1450	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-120-101719	L1151401-04	106	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
FMW-129-102119	L1152340-07	141	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-918-102219	L1152823-01	174	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
BB-8-102219	L1152823-05	176	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-146-101419	L1149851-02	1310	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-147-101419	L1149851-08	513	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-107-101519	L1150336-09	365	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-143-101619	L1150936-07	2000	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
MW-918-101719	L1151401-01	113	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern
BB-8-102219	L1151401-02	1450	Z, J+	Elevated chlorinated VOCs within the GRO elution range	No discernable petroleum pattern

For additional details refer to the attached Table 1 which includes the sample GRO result along with associated chlorinated VOC results, and Pace's review notes. Pace will, for future sampling events, include a sample narrative evaluating each positive GRO detection (greater than the RDL). Pace has indicated that this effort may result in cost increases and delay in requested analytical turnaround time. A project action level threshold for GRO may be determined to expedite turnaround and minimize any fee increases.

Project level qualifiers have been included to the PES's project database (Epiphany) as (ZJ+). Washington State EIM valid values were reviewed. In this case no Washington State EIM valid value descriptor is ideal and the default estimated value (J) has been selected as the best match to qualify GRO (ZJ+) data.

Table 1
American Linen Data Validation
Project 1413.001.02.501E - RI October 2019 Groundwater Samples
Chlorinated VOC Results and Gasoline Range Organic Chromatogram Review

Sample Location	Sample ID	Lab ID	Sample Date	SDG	GRO (µg/L)	Lab Qual	PCE (µg/L)	Lab Qual	TCE (µg/L)	Lab Qual	cDCE (µg/L)	Lab Qual	VC (µg/L)	Lab Qual	PACE Chromatographic Analysis
MW-146	MW-146-101419	L1149851-02	10/14/19	L1149851	1310		2.03		6.77		1350		2830		no discernable petroleum pattern
MW-147	MW-147-101419	L1149851-08	10/14/19	L1149851	513		0.199	U	3.38		597		1410		no discernable petroleum pattern
MW107	MW-107-101519	L1150336-09	10/15/19	L1150336	365		41.7		138		333		216		no discernable petroleum pattern
MW-143	MW-143-101619	L1150936-07	10/16/19	L1150936	2000		2.35		28		2510		1180		no discernable petroleum pattern
MW120	MW-918-101719	L1151401-01	10/17/19	L1151401	113		73.9		26.9		49.8		2.25		no discernable petroleum pattern
MW-156	MW-156-101719	L1151401-02	10/17/19	L1151401	1450		682		430		1420		51.1		no discernable petroleum pattern
MW120	MW-120-101719	L1151401-04	10/17/19	L1151401	106		61.5		22.3		48.8		2.31		no discernable petroleum pattern
FMW-129	FMW-129-102119	L1152340-07	10/21/19	L1152340	141		114		198		350		0.259	J	no discernable petroleum pattern
BB-8	MW-918-102219	L1152823-01	10/22/19	L1152823	174		169		48.3		30.4		0.152	J	no discernable petroleum pattern
BB-8	BB-8-102219	L1152823-05	10/22/19	L1152823	176		135		46.6		31.8		0.162	J	no discernable petroleum pattern

Definitions
SDG - Sample Delivery Group
GRO - Gasoline Range Organics
PCE - Tetrachloroethene
TCE - Trichloroethene
cDCE - cis-1,2-Dichloroethene
VC - Vinyl Chloride
U - Not detected
J - Estimated value

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 04, 2020

PES Environmental, Inc.- WA

Sample Delivery Group:	L1182886
Samples Received:	01/25/2020
Project Number:	1413.001.02.501E
Description:	American Linen Supply

Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By: Brian Ford

Brian Ford
Project Manager

R-MW5-012420 L1182886-01 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 10:05 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 18:45	01/26/20 18:45	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 21:24	01/25/20 21:24	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 04:40	01/30/20 04:40	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1416986	1	01/27/20 15:56	01/29/20 09:46	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417147	1	01/26/20 23:07	01/26/20 23:07	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 15:29	01/28/20 15:29	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	1	01/26/20 15:04	01/26/20 15:04	JAH	Mt. Juliet, TN

MW-303-012420 L1182886-02 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 10:20 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 18:52	01/26/20 18:52	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 22:42	01/25/20 22:42	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 06:17	01/30/20 06:17	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1416986	1	01/27/20 15:56	01/29/20 11:06	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417147	1	01/26/20 23:32	01/26/20 23:32	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 15:33	01/28/20 15:33	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	1	01/26/20 15:24	01/26/20 15:24	JAH	Mt. Juliet, TN

MW-302-012420 L1182886-03 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 10:29 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 19:01	01/26/20 19:01	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 22:55	01/25/20 22:55	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 06:30	01/30/20 06:30	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1416986	1	01/27/20 15:56	01/29/20 11:10	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417147	1	01/26/20 23:56	01/26/20 23:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 15:35	01/28/20 15:35	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	1	01/26/20 15:44	01/26/20 15:44	JAH	Mt. Juliet, TN

MW-925-012420 L1182886-04 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 11:15 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 19:10	01/26/20 19:10	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 23:08	01/25/20 23:08	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 07:28	01/30/20 07:28	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1416986	1	01/27/20 15:56	01/29/20 11:13	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417147	1	01/27/20 01:21	01/27/20 01:21	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 15:38	01/28/20 15:38	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	1	01/26/20 16:05	01/26/20 16:05	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1418320	200	01/28/20 23:31	01/28/20 23:31	BMB	Mt. Juliet, TN

MW112-012420 L1182886-05 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 12:10 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 19:17	01/26/20 19:17	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 23:21	01/25/20 23:21	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 07:45	01/30/20 07:45	VRP	Mt. Juliet, TN

MW112-012420 L1182886-05 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 12:10 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020B	WG1416986	1	01/27/20 15:56	01/29/20 11:16	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417147	1	01/27/20 01:45	01/27/20 01:45	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 15:40	01/28/20 15:40	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	1	01/26/20 16:25	01/26/20 16:25	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1418320	1	01/28/20 23:51	01/28/20 23:51	BMB	Mt. Juliet, TN

MW-146-012420 L1182886-06 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 14:30 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 19:24	01/26/20 19:24	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 23:34	01/25/20 23:34	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 08:01	01/30/20 08:01	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1417103	1	01/27/20 14:15	01/27/20 18:10	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417851	1	01/28/20 04:37	01/28/20 04:37	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 15:53	01/28/20 15:53	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1420207	10	01/31/20 11:13	01/31/20 11:13	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	100	01/26/20 16:45	01/26/20 16:45	JAH	Mt. Juliet, TN

MW-147-012420 L1182886-07 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 14:45 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1417009	1	01/26/20 19:32	01/26/20 19:32	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1417084	1	01/25/20 23:47	01/25/20 23:47	ST	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1418866	1	01/30/20 08:18	01/30/20 08:18	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1417103	1	01/27/20 14:15	01/27/20 18:23	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417851	1	01/28/20 05:01	01/28/20 05:01	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1418072	1	01/28/20 16:00	01/28/20 16:00	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	25	01/26/20 17:05	01/26/20 17:05	JAH	Mt. Juliet, TN

TB-012420 L1182886-08 GW

Collected by: HRC/KSZ/BLH | Collected date/time: 01/24/20 16:30 | Received date/time: 01/25/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1417851	1	01/28/20 01:02	01/28/20 01:02	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1417330	1	01/26/20 11:01	01/26/20 11:01	JAH	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Report Revision History

Version 1: 02/04/20 19:58

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	107000		2710	20000	1	01/26/2020 18:45	WG1417009

Sample Narrative:
L1182886-01 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	29400		51.9	1000	1	01/25/2020 21:24	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 21:24	WG1417084
Sulfate	18500		77.4	5000	1	01/25/2020 21:24	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2740	B	102	1000	1	01/30/2020 04:40	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	10200		15.0	100	1	01/29/2020 09:46	WG1416986
Manganese	999		0.250	5.00	1	01/29/2020 09:46	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/26/2020 23:07	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*01/26/2020 23:07*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	197		0.287	0.678	1	01/28/2020 15:29	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:29	WG1418072
Ethene	U		0.422	1.27	1	01/28/2020 15:29	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J0	1.05	25.0	1	01/26/2020 15:04	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 15:04	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 15:04	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 15:04	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 15:04	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 15:04	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 15:04	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 15:04	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 15:04	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 15:04	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 15:04	WG1417330
Carbon disulfide	U		0.101	0.500	1	01/26/2020 15:04	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 15:04	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/26/2020 15:04	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 15:04	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 15:04	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 15:04	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 15:04	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 15:04	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 15:04	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 15:04	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 15:04	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 15:04	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 15:04	WG1417330
Dichlorodifluoromethane	U	J0	0.127	2.50	1	01/26/2020 15:04	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 15:04	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 15:04	WG1417330
cis-1,2-Dichloroethene	0.265	J	0.0933	0.500	1	01/26/2020 15:04	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 15:04	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 15:04	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 15:04	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 15:04	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 15:04	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 15:04	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 15:04	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 15:04	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 15:04	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 15:04	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 15:04	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 15:04	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 15:04	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 15:04	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 15:04	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 15:04	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 15:04	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 15:04	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 15:04	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 15:04	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 15:04	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 15:04	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 15:04	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 15:04	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 15:04	WG1417330
Tetrachloroethene	0.931		0.199	0.500	1	01/26/2020 15:04	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 15:04	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 15:04	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 15:04	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 15:04	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 15:04	WG1417330
Trichloroethene	0.374	J	0.153	0.500	1	01/26/2020 15:04	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 15:04	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 15:04	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 15:04	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 15:04	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 15:04	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	01/26/2020 15:04	WG1417330
Vinyl chloride	U		0.118	0.500	1	01/26/2020 15:04	WG1417330
Xylenes, Total	U		0.316	1.50	1	01/26/2020 15:04	WG1417330
(S) Toluene-d8	*99.8*			*80.0-120*		*01/26/2020 15:04*	WG1417330
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/26/2020 15:04*	WG1417330
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*01/26/2020 15:04*	WG1417330

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	162000		2710	20000	1	01/26/2020 18:52	WG1417009

Sample Narrative:
L1182886-02 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14800		51.9	1000	1	01/25/2020 22:42	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 22:42	WG1417084
Sulfate	29800		77.4	5000	1	01/25/2020 22:42	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3540		102	1000	1	01/30/2020 06:17	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1320		15.0	100	1	01/29/2020 11:06	WG1416986
Manganese	285		0.250	5.00	1	01/29/2020 11:06	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/26/2020 23:32	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*78.0-120*		*01/26/2020 23:32*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	137		0.287	0.678	1	01/28/2020 15:33	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:33	WG1418072
Ethene	U		0.422	1.27	1	01/28/2020 15:33	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.64	J J0	1.05	25.0	1	01/26/2020 15:24	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 15:24	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 15:24	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 15:24	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 15:24	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 15:24	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 15:24	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 15:24	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 15:24	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 15:24	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 15:24	WG1417330
Carbon disulfide	0.941		0.101	0.500	1	01/26/2020 15:24	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 15:24	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/26/2020 15:24	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 15:24	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 15:24	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 15:24	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 15:24	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 15:24	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 15:24	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 15:24	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 15:24	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 15:24	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 15:24	WG1417330
Dichlorodifluoromethane	U	J0	0.127	2.50	1	01/26/2020 15:24	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 15:24	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 15:24	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/26/2020 15:24	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 15:24	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 15:24	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 15:24	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 15:24	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 15:24	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 15:24	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 15:24	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 15:24	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 15:24	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 15:24	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 15:24	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 15:24	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 15:24	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 15:24	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 15:24	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 15:24	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 15:24	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 15:24	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 15:24	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 15:24	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 15:24	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 15:24	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 15:24	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 15:24	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 15:24	WG1417330
Tetrachloroethene	0.313	J	0.199	0.500	1	01/26/2020 15:24	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 15:24	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 15:24	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 15:24	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 15:24	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 15:24	WG1417330
Trichloroethene	0.153	J	0.153	0.500	1	01/26/2020 15:24	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 15:24	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 15:24	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 15:24	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 15:24	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 15:24	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	01/26/2020 15:24	WG1417330
Vinyl chloride	U		0.118	0.500	1	01/26/2020 15:24	WG1417330
Xylenes, Total	U		0.316	1.50	1	01/26/2020 15:24	WG1417330
(S) Toluene-d8	*101*			*80.0-120*		*01/26/2020 15:24*	WG1417330
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*01/26/2020 15:24*	WG1417330
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*01/26/2020 15:24*	WG1417330

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	331000		2710	20000	1	01/26/2020 19:01	WG1417009

Sample Narrative:
L1182886-03 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	20600		51.9	1000	1	01/25/2020 22:55	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 22:55	WG1417084
Sulfate	22800		77.4	5000	1	01/25/2020 22:55	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	1570	B	102	1000	1	01/30/2020 06:30	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1130		15.0	100	1	01/29/2020 11:10	WG1416986
Manganese	332		0.250	5.00	1	01/29/2020 11:10	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/26/2020 23:56	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*78.0-120*		*01/26/2020 23:56*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	590		0.287	0.678	1	01/28/2020 15:35	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:35	WG1418072
Ethene	U		0.422	1.27	1	01/28/2020 15:35	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	1.21	J J0	1.05	25.0	1	01/26/2020 15:44	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 15:44	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 15:44	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 15:44	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 15:44	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 15:44	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 15:44	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 15:44	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 15:44	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 15:44	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 15:44	WG1417330
Carbon disulfide	0.718		0.101	0.500	1	01/26/2020 15:44	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 15:44	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/26/2020 15:44	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 15:44	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 15:44	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 15:44	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 15:44	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 15:44	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 15:44	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 15:44	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 15:44	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 15:44	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 15:44	WG1417330
Dichlorodifluoromethane	U	J0	0.127	2.50	1	01/26/2020 15:44	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 15:44	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 15:44	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/26/2020 15:44	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 15:44	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 15:44	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 15:44	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 15:44	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 15:44	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 15:44	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 15:44	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 15:44	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 15:44	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 15:44	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 15:44	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 15:44	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 15:44	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 15:44	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 15:44	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 15:44	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 15:44	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 15:44	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 15:44	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 15:44	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 15:44	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 15:44	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 15:44	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 15:44	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 15:44	WG1417330
Tetrachloroethene	0.353	J	0.199	0.500	1	01/26/2020 15:44	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 15:44	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 15:44	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 15:44	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 15:44	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 15:44	WG1417330
Trichloroethene	0.164	J	0.153	0.500	1	01/26/2020 15:44	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 15:44	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 15:44	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 15:44	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 15:44	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 15:44	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	01/26/2020 15:44	WG1417330
Vinyl chloride	U		0.118	0.500	1	01/26/2020 15:44	WG1417330
Xylenes, Total	U		0.316	1.50	1	01/26/2020 15:44	WG1417330
(S) Toluene-d8	*101*			*80.0-120*		*01/26/2020 15:44*	WG1417330
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*01/26/2020 15:44*	WG1417330
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*01/26/2020 15:44*	WG1417330

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	365000		2710	20000	1	01/26/2020 19:10	WG1417009

Sample Narrative:

L1182886-04 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30900		51.9	1000	1	01/25/2020 23:08	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:08	WG1417084
Sulfate	15300		77.4	5000	1	01/25/2020 23:08	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3300		102	1000	1	01/30/2020 07:28	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3220		15.0	100	1	01/29/2020 11:13	WG1416986
Manganese	1120		0.250	5.00	1	01/29/2020 11:13	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	423		31.6	100	1	01/27/2020 01:21	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*99.5*			*78.0-120*		*01/27/2020 01:21*	WG1417147

Sample Narrative:

L1182886-04 WG1417147: No discernable petroleum pattern.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	6280		0.287	0.678	1	01/28/2020 15:38	WG1418072
Ethane	3.27		0.296	1.29	1	01/28/2020 15:38	WG1418072
Ethene	672		0.422	1.27	1	01/28/2020 15:38	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J0	1.05	25.0	1	01/26/2020 16:05	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 16:05	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 16:05	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 16:05	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 16:05	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 16:05	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 16:05	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 16:05	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 16:05	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 16:05	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 16:05	WG1417330
Carbon disulfide	U		0.101	0.500	1	01/26/2020 16:05	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 16:05	WG1417330
Chlorobenzene	U		0.140	0.500	1	01/26/2020 16:05	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 16:05	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 16:05	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 16:05	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 16:05	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 16:05	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 16:05	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 16:05	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 16:05	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 16:05	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 16:05	WG1417330
Dichlorodifluoromethane	U	J0	0.127	2.50	1	01/26/2020 16:05	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 16:05	WG1417330
1,1-Dichloroethene	2.59		0.188	0.500	1	01/26/2020 16:05	WG1417330
cis-1,2-Dichloroethene	1510		18.7	100	200	01/28/2020 23:31	WG1418320
trans-1,2-Dichloroethene	8.45		0.152	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 16:05	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 16:05	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 16:05	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 16:05	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 16:05	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 16:05	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 16:05	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 16:05	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 16:05	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 16:05	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 16:05	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 16:05	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 16:05	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 16:05	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 16:05	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 16:05	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 16:05	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 16:05	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 16:05	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 16:05	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 16:05	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 16:05	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 16:05	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 16:05	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 16:05	WG1417330
Tetrachloroethene	1.39		0.199	0.500	1	01/26/2020 16:05	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 16:05	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 16:05	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 16:05	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 16:05	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 16:05	WG1417330
Trichloroethene	4.80		0.153	0.500	1	01/26/2020 16:05	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 16:05	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 16:05	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 16:05	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 16:05	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 16:05	WG1417330
Vinyl acetate	U	J0	0.645	5.00	1	01/26/2020 16:05	WG1417330
Vinyl chloride	5800		23.6	100	200	01/28/2020 23:31	WG1418320
Xylenes, Total	U		0.316	1.50	1	01/26/2020 16:05	WG1417330
(S) Toluene-d8	*104*			*80.0-120*		*01/26/2020 16:05*	WG1417330
(S) Toluene-d8	*98.1*			*80.0-120*		*01/28/2020 23:31*	WG1418320
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/26/2020 16:05*	WG1417330
(S) 4-Bromofluorobenzene	*99.1*			*77.0-126*		*01/28/2020 23:31*	WG1418320
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*01/26/2020 16:05*	WG1417330
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*01/28/2020 23:31*	WG1418320

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	50800		2710	20000	1	01/26/2020 19:17	WG1417009

Sample Narrative:
L1182886-05 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7700		51.9	1000	1	01/25/2020 23:21	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:21	WG1417084
Sulfate	322	J	77.4	5000	1	01/25/2020 23:21	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3410		102	1000	1	01/30/2020 07:45	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	3560		15.0	100	1	01/29/2020 11:16	WG1416986
Manganese	220		0.250	5.00	1	01/29/2020 11:16	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/27/2020 01:45	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*01/27/2020 01:45*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	1670		0.287	0.678	1	01/28/2020 15:40	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:40	WG1418072
Ethene	35.0		0.422	1.27	1	01/28/2020 15:40	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.33	J JO	1.05	25.0	1	01/26/2020 16:25	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 16:25	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 16:25	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 16:25	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 16:25	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 16:25	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 16:25	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 16:25	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 16:25	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 16:25	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 16:25	WG1417330
Carbon disulfide	U		0.101	0.500	1	01/26/2020 16:25	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 16:25	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/26/2020 16:25	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 16:25	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 16:25	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 16:25	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 16:25	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 16:25	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 16:25	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 16:25	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 16:25	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 16:25	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 16:25	WG1417330
Dichlorodifluoromethane	U	J0	0.127	2.50	1	01/26/2020 16:25	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 16:25	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 16:25	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/28/2020 23:51	WG1418320
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 16:25	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 16:25	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 16:25	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 16:25	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 16:25	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 16:25	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 16:25	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 16:25	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 16:25	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 16:25	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 16:25	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 16:25	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 16:25	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 16:25	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 16:25	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 16:25	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 16:25	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 16:25	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 16:25	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 16:25	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 16:25	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 16:25	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 16:25	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 16:25	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 16:25	WG1417330
Tetrachloroethene	0.248	J	0.199	0.500	1	01/26/2020 16:25	WG1417330
Toluene	1.24		0.412	0.500	1	01/26/2020 16:25	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 16:25	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 16:25	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 16:25	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 16:25	WG1417330
Trichloroethene	U		0.153	0.500	1	01/26/2020 16:25	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 16:25	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 16:25	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 16:25	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 16:25	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 16:25	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U	J0	0.645	5.00	1	01/26/2020 16:25	WG1417330
Vinyl chloride	U		0.118	0.500	1	01/28/2020 23:51	WG1418320
Xylenes, Total	U		0.316	1.50	1	01/26/2020 16:25	WG1417330
(S) Toluene-d8	*101*			*80.0-120*		*01/26/2020 16:25*	WG1417330
(S) Toluene-d8	*99.7*			*80.0-120*		*01/28/2020 23:51*	WG1418320
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/26/2020 16:25*	WG1417330
(S) 4-Bromofluorobenzene	*96.6*			*77.0-126*		*01/28/2020 23:51*	WG1418320
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*01/26/2020 16:25*	WG1417330
(S) 1,2-Dichloroethane-d4	*117*			*70.0-130*		*01/28/2020 23:51*	WG1418320

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	362000		2710	20000	1	01/26/2020 19:24	WG1417009

Sample Narrative:
L1182886-06 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	32100		51.9	1000	1	01/25/2020 23:34	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:34	WG1417084
Sulfate	15500		77.4	5000	1	01/25/2020 23:34	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3310		102	1000	1	01/30/2020 08:01	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	3720		15.0	100	1	01/27/2020 18:10	WG1417103
Manganese	1170	V	0.250	5.00	1	01/27/2020 18:10	WG1417103

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1140		31.6	100	1	01/28/2020 04:37	WG1417851
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*01/28/2020 04:37*	WG1417851

Sample Narrative:
L1182886-06 WG1417851: No discernable petroleum pattern.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	888		2.87	6.78	10	01/31/2020 11:13	WG1420207
Ethane	3.09		0.296	1.29	1	01/28/2020 15:53	WG1418072
Ethene	728		0.422	1.27	1	01/28/2020 15:53	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	105	2500	100	01/26/2020 16:45	WG1417330
Acrylonitrile	U		87.3	500	100	01/26/2020 16:45	WG1417330
Benzene	U		8.96	50.0	100	01/26/2020 16:45	WG1417330
Bromobenzene	U		13.3	50.0	100	01/26/2020 16:45	WG1417330
Bromodichloromethane	U		8.00	50.0	100	01/26/2020 16:45	WG1417330
Bromochloromethane	U		14.5	50.0	100	01/26/2020 16:45	WG1417330
Bromoform	U		18.6	50.0	100	01/26/2020 16:45	WG1417330
Bromomethane	U		15.7	250	100	01/26/2020 16:45	WG1417330
n-Butylbenzene	U		14.3	50.0	100	01/26/2020 16:45	WG1417330
sec-Butylbenzene	U		13.4	50.0	100	01/26/2020 16:45	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		18.3	50.0	100	01/26/2020 16:45	WG1417330
Carbon disulfide	U		10.1	50.0	100	01/26/2020 16:45	WG1417330
Carbon tetrachloride	U		15.9	50.0	100	01/26/2020 16:45	WG1417330
Chlorobenzene	U		14.0	50.0	100	01/26/2020 16:45	WG1417330
Chlorodibromomethane	U		12.8	50.0	100	01/26/2020 16:45	WG1417330
Chloroethane	U		14.1	250	100	01/26/2020 16:45	WG1417330
Chloroform	U		8.60	50.0	100	01/26/2020 16:45	WG1417330
Chloromethane	U		15.3	125	100	01/26/2020 16:45	WG1417330
2-Chlorotoluene	U		11.1	50.0	100	01/26/2020 16:45	WG1417330
4-Chlorotoluene	U		9.72	50.0	100	01/26/2020 16:45	WG1417330
1,2-Dibromo-3-Chloropropane	U		32.5	250	100	01/26/2020 16:45	WG1417330
1,2-Dibromoethane	U		19.3	50.0	100	01/26/2020 16:45	WG1417330
Dibromomethane	U		11.7	50.0	100	01/26/2020 16:45	WG1417330
1,2-Dichlorobenzene	U		10.1	50.0	100	01/26/2020 16:45	WG1417330
1,3-Dichlorobenzene	U		13.0	50.0	100	01/26/2020 16:45	WG1417330
1,4-Dichlorobenzene	U		12.1	50.0	100	01/26/2020 16:45	WG1417330
Dichlorodifluoromethane	U	J0	12.7	250	100	01/26/2020 16:45	WG1417330
1,1-Dichloroethane	U		11.4	50.0	100	01/26/2020 16:45	WG1417330
1,2-Dichloroethane	U		10.8	50.0	100	01/26/2020 16:45	WG1417330
1,1-Dichloroethene	U		18.8	50.0	100	01/26/2020 16:45	WG1417330
cis-1,2-Dichloroethene	1460		9.33	50.0	100	01/26/2020 16:45	WG1417330
trans-1,2-Dichloroethene	U		15.2	50.0	100	01/26/2020 16:45	WG1417330
1,2-Dichloropropane	U		19.0	50.0	100	01/26/2020 16:45	WG1417330
1,1-Dichloropropene	U		12.8	50.0	100	01/26/2020 16:45	WG1417330
1,3-Dichloropropane	U		14.7	100	100	01/26/2020 16:45	WG1417330
cis-1,3-Dichloropropene	U		9.76	50.0	100	01/26/2020 16:45	WG1417330
trans-1,3-Dichloropropene	U		22.2	50.0	100	01/26/2020 16:45	WG1417330
trans-1,4-Dichloro-2-butene	U		25.7	500	100	01/26/2020 16:45	WG1417330
2,2-Dichloropropane	U		9.29	50.0	100	01/26/2020 16:45	WG1417330
Di-isopropyl ether	U		9.24	50.0	100	01/26/2020 16:45	WG1417330
Ethylbenzene	U		15.8	50.0	100	01/26/2020 16:45	WG1417330
Hexachloro-1,3-butadiene	U		15.7	100	100	01/26/2020 16:45	WG1417330
2-Hexanone	U		75.7	500	100	01/26/2020 16:45	WG1417330
n-Hexane	U		30.5	500	100	01/26/2020 16:45	WG1417330
Iodomethane	U		37.7	1000	100	01/26/2020 16:45	WG1417330
Isopropylbenzene	U		12.6	50.0	100	01/26/2020 16:45	WG1417330
p-Isopropyltoluene	U		13.8	50.0	100	01/26/2020 16:45	WG1417330
2-Butanone (MEK)	U		128	500	100	01/26/2020 16:45	WG1417330
Methylene Chloride	U		107	250	100	01/26/2020 16:45	WG1417330
4-Methyl-2-pentanone (MIBK)	U		82.3	500	100	01/26/2020 16:45	WG1417330
Methyl tert-butyl ether	U		10.2	50.0	100	01/26/2020 16:45	WG1417330
Naphthalene	U		17.4	250	100	01/26/2020 16:45	WG1417330
n-Propylbenzene	U		16.2	50.0	100	01/26/2020 16:45	WG1417330
Styrene	U		11.7	50.0	100	01/26/2020 16:45	WG1417330
1,1,1,2-Tetrachloroethane	U		12.0	50.0	100	01/26/2020 16:45	WG1417330
1,1,2,2-Tetrachloroethane	U		13.0	50.0	100	01/26/2020 16:45	WG1417330
1,1,2-Trichlorotrifluoroethane	U		16.4	50.0	100	01/26/2020 16:45	WG1417330
Tetrachloroethene	21.1	J	19.9	50.0	100	01/26/2020 16:45	WG1417330
Toluene	U		41.2	50.0	100	01/26/2020 16:45	WG1417330
1,2,3-Trichlorobenzene	U		16.4	50.0	100	01/26/2020 16:45	WG1417330
1,2,4-Trichlorobenzene	U		35.5	50.0	100	01/26/2020 16:45	WG1417330
1,1,1-Trichloroethane	U		9.40	50.0	100	01/26/2020 16:45	WG1417330
1,1,2-Trichloroethane	U		18.6	50.0	100	01/26/2020 16:45	WG1417330
Trichloroethene	U		15.3	50.0	100	01/26/2020 16:45	WG1417330
Trichlorofluoromethane	U		13.0	250	100	01/26/2020 16:45	WG1417330
1,2,3-Trichloropropane	U		24.7	250	100	01/26/2020 16:45	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		12.3	50.0	100	01/26/2020 16:45	WG1417330
1,2,3-Trimethylbenzene	U		7.39	50.0	100	01/26/2020 16:45	WG1417330
1,3,5-Trimethylbenzene	U		12.4	50.0	100	01/26/2020 16:45	WG1417330
Vinyl acetate	U	J0	64.5	500	100	01/26/2020 16:45	WG1417330
Vinyl chloride	3900		11.8	50.0	100	01/26/2020 16:45	WG1417330
Xylenes, Total	U		31.6	150	100	01/26/2020 16:45	WG1417330
(S) Toluene-d8	*103*			*80.0-120*		*01/26/2020 16:45*	WG1417330
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*01/26/2020 16:45*	WG1417330
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*01/26/2020 16:45*	WG1417330

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	351000		2710	20000	1	01/26/2020 19:32	WG1417009

Sample Narrative:

L1182886-07 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	28300		51.9	1000	1	01/25/2020 23:47	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:47	WG1417084
Sulfate	25600		77.4	5000	1	01/25/2020 23:47	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3340		102	1000	1	01/30/2020 08:18	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	13500		15.0	100	1	01/27/2020 18:23	WG1417103
Manganese	995		0.250	5.00	1	01/27/2020 18:23	WG1417103

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1200		31.6	100	1	01/28/2020 05:01	WG1417851
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*01/28/2020 05:01*	WG1417851

Sample Narrative:

L1182886-07 WG1417851: No discernable petroleum pattern.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	1550		0.287	0.678	1	01/28/2020 16:00	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 16:00	WG1418072
Ethene	172		0.422	1.27	1	01/28/2020 16:00	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J0	26.3	625	25	01/26/2020 17:05	WG1417330
Acrylonitrile	U		21.8	125	25	01/26/2020 17:05	WG1417330
Benzene	U		2.24	12.5	25	01/26/2020 17:05	WG1417330
Bromobenzene	U		3.33	12.5	25	01/26/2020 17:05	WG1417330
Bromodichloromethane	U		2.00	12.5	25	01/26/2020 17:05	WG1417330
Bromochloromethane	U		3.63	12.5	25	01/26/2020 17:05	WG1417330
Bromoform	U		4.65	12.5	25	01/26/2020 17:05	WG1417330
Bromomethane	U		3.93	62.5	25	01/26/2020 17:05	WG1417330
n-Butylbenzene	U		3.58	12.5	25	01/26/2020 17:05	WG1417330
sec-Butylbenzene	U		3.35	12.5	25	01/26/2020 17:05	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		4.58	12.5	25	01/26/2020 17:05	WG1417330
Carbon disulfide	U		2.53	12.5	25	01/26/2020 17:05	WG1417330
Carbon tetrachloride	U		3.97	12.5	25	01/26/2020 17:05	WG1417330
Chlorobenzene	U		3.50	12.5	25	01/26/2020 17:05	WG1417330
Chlorodibromomethane	U		3.20	12.5	25	01/26/2020 17:05	WG1417330
Chloroethane	U		3.53	62.5	25	01/26/2020 17:05	WG1417330
Chloroform	U		2.15	12.5	25	01/26/2020 17:05	WG1417330
Chloromethane	U		3.83	31.3	25	01/26/2020 17:05	WG1417330
2-Chlorotoluene	U		2.78	12.5	25	01/26/2020 17:05	WG1417330
4-Chlorotoluene	U		2.43	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dibromo-3-Chloropropane	U		8.13	62.5	25	01/26/2020 17:05	WG1417330
1,2-Dibromoethane	U		4.83	12.5	25	01/26/2020 17:05	WG1417330
Dibromomethane	U		2.93	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dichlorobenzene	U		2.53	12.5	25	01/26/2020 17:05	WG1417330
1,3-Dichlorobenzene	U		3.25	12.5	25	01/26/2020 17:05	WG1417330
1,4-Dichlorobenzene	U		3.03	12.5	25	01/26/2020 17:05	WG1417330
Dichlorodifluoromethane	U	J0	3.18	62.5	25	01/26/2020 17:05	WG1417330
1,1-Dichloroethane	U		2.85	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dichloroethane	U		2.70	12.5	25	01/26/2020 17:05	WG1417330
1,1-Dichloroethene	U		4.70	12.5	25	01/26/2020 17:05	WG1417330
cis-1,2-Dichloroethene	1100		2.33	12.5	25	01/26/2020 17:05	WG1417330
trans-1,2-Dichloroethene	U		3.80	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dichloropropane	U		4.75	12.5	25	01/26/2020 17:05	WG1417330
1,1-Dichloropropene	U		3.20	12.5	25	01/26/2020 17:05	WG1417330
1,3-Dichloropropane	U		3.68	25.0	25	01/26/2020 17:05	WG1417330
cis-1,3-Dichloropropene	U		2.44	12.5	25	01/26/2020 17:05	WG1417330
trans-1,3-Dichloropropene	U		5.55	12.5	25	01/26/2020 17:05	WG1417330
trans-1,4-Dichloro-2-butene	U		6.43	125	25	01/26/2020 17:05	WG1417330
2,2-Dichloropropane	U		2.32	12.5	25	01/26/2020 17:05	WG1417330
Di-isopropyl ether	U		2.31	12.5	25	01/26/2020 17:05	WG1417330
Ethylbenzene	U		3.95	12.5	25	01/26/2020 17:05	WG1417330
Hexachloro-1,3-butadiene	U		3.93	25.0	25	01/26/2020 17:05	WG1417330
2-Hexanone	U		18.9	125	25	01/26/2020 17:05	WG1417330
n-Hexane	U		7.63	125	25	01/26/2020 17:05	WG1417330
Iodomethane	U		9.43	250	25	01/26/2020 17:05	WG1417330
Isopropylbenzene	U		3.15	12.5	25	01/26/2020 17:05	WG1417330
p-Isopropyltoluene	U		3.45	12.5	25	01/26/2020 17:05	WG1417330
2-Butanone (MEK)	U		32.0	125	25	01/26/2020 17:05	WG1417330
Methylene Chloride	U		26.8	62.5	25	01/26/2020 17:05	WG1417330
4-Methyl-2-pentanone (MIBK)	U		20.6	125	25	01/26/2020 17:05	WG1417330
Methyl tert-butyl ether	U		2.55	12.5	25	01/26/2020 17:05	WG1417330
Naphthalene	U		4.35	62.5	25	01/26/2020 17:05	WG1417330
n-Propylbenzene	U		4.05	12.5	25	01/26/2020 17:05	WG1417330
Styrene	U		2.93	12.5	25	01/26/2020 17:05	WG1417330
1,1,1,2-Tetrachloroethane	U		3.00	12.5	25	01/26/2020 17:05	WG1417330
1,1,2,2-Tetrachloroethane	U		3.25	12.5	25	01/26/2020 17:05	WG1417330
1,1,2-Trichlorotrifluoroethane	U		4.10	12.5	25	01/26/2020 17:05	WG1417330
Tetrachloroethene	U		4.98	12.5	25	01/26/2020 17:05	WG1417330
Toluene	U		10.3	12.5	25	01/26/2020 17:05	WG1417330
1,2,3-Trichlorobenzene	U		4.10	12.5	25	01/26/2020 17:05	WG1417330
1,2,4-Trichlorobenzene	U		8.88	12.5	25	01/26/2020 17:05	WG1417330
1,1,1-Trichloroethane	U		2.35	12.5	25	01/26/2020 17:05	WG1417330
1,1,2-Trichloroethane	U		4.65	12.5	25	01/26/2020 17:05	WG1417330
Trichloroethene	4.63	J	3.83	12.5	25	01/26/2020 17:05	WG1417330
Trichlorofluoromethane	U		3.25	62.5	25	01/26/2020 17:05	WG1417330
1,2,3-Trichloropropane	U		6.17	62.5	25	01/26/2020 17:05	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		3.08	12.5	25	01/26/2020 17:05	WG1417330
1,2,3-Trimethylbenzene	U		1.85	12.5	25	01/26/2020 17:05	WG1417330
1,3,5-Trimethylbenzene	U		3.10	12.5	25	01/26/2020 17:05	WG1417330
Vinyl acetate	U	J0	16.1	125	25	01/26/2020 17:05	WG1417330
Vinyl chloride	1340		2.95	12.5	25	01/26/2020 17:05	WG1417330
Xylenes, Total	U		7.90	37.5	25	01/26/2020 17:05	WG1417330
(S) Toluene-d8	*101*			*80.0-120*		*01/26/2020 17:05*	WG1417330
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/26/2020 17:05*	WG1417330
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*01/26/2020 17:05*	WG1417330

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/28/2020 01:02	WG1417851
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*01/28/2020 01:02*	WG1417851

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.83	J J0	1.05	25.0	1	01/26/2020 11:01	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 11:01	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 11:01	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 11:01	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 11:01	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 11:01	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 11:01	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 11:01	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 11:01	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 11:01	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 11:01	WG1417330
Carbon disulfide	U		0.101	0.500	1	01/26/2020 11:01	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 11:01	WG1417330
Chlorobenzene	U		0.140	0.500	1	01/26/2020 11:01	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 11:01	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 11:01	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 11:01	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 11:01	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 11:01	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 11:01	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 11:01	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 11:01	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 11:01	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 11:01	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 11:01	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 11:01	WG1417330
Dichlorodifluoromethane	U	J0	0.127	2.50	1	01/26/2020 11:01	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 11:01	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 11:01	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 11:01	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/26/2020 11:01	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 11:01	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 11:01	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 11:01	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 11:01	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 11:01	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 11:01	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 11:01	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 11:01	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 11:01	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 11:01	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 11:01	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 11:01	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 11:01	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 11:01	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 11:01	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 11:01	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 11:01	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methylene Chloride	U		1.07	2.50	1	01/26/2020 11:01	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 11:01	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 11:01	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 11:01	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 11:01	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 11:01	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 11:01	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 11:01	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 11:01	WG1417330
Tetrachloroethene	U		0.199	0.500	1	01/26/2020 11:01	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 11:01	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 11:01	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 11:01	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 11:01	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 11:01	WG1417330
Trichloroethene	U		0.153	0.500	1	01/26/2020 11:01	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 11:01	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 11:01	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 11:01	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 11:01	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 11:01	WG1417330
Vinyl acetate	U	J0	0.645	5.00	1	01/26/2020 11:01	WG1417330
Vinyl chloride	U		0.118	0.500	1	01/26/2020 11:01	WG1417330
Xylenes, Total	U		0.316	1.50	1	01/26/2020 11:01	WG1417330
(S) Toluene-d8	*104*			*80.0-120*		*01/26/2020 11:01*	WG1417330
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*01/26/2020 11:01*	WG1417330
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*01/26/2020 11:01*	WG1417330

Method Blank (MB)

(MB) R3494242-1 01/26/20 18:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	4410	J	2710	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

Method Blank (MB)

(MB) R3494242-5 01/26/20 22:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	4870	J	2710	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1182813-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1182813-02 01/26/20 18:30 • (DUP) R3494242-2 01/26/20 18:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	6960	7610	1	8.94	J	20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1182912-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1182912-02 01/26/20 21:18 • (DUP) R3494242-4 01/26/20 21:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	227000	229000	1	0.642		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3494242-3 01/26/20 19:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	98100	98.1	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3494242-7 01/26/20 23:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	99000	99.0	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3494080-1 01/25/20 11:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Nitrate	U		22.7	100
Sulfate	U		77.4	5000

L1182901-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1182901-06 01/25/20 18:34 • (DUP) R3494080-3 01/25/20 18:47

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	0.000	1	0.000		15
Nitrate	ND	0.000	1	0.000		15
Sulfate	ND	0.000	1	0.000		15

L1182886-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1182886-01 01/25/20 21:24 • (DUP) R3494080-5 01/25/20 21:37

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	29400	29000	1	1.14		15
Nitrate	U	0.000	1	0.000		15
Sulfate	18500	18300	1	1.37		15

Laboratory Control Sample (LCS)

(LCS) R3494080-2 01/25/20 11:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38800	97.0	80.0-120	
Nitrate	8000	8020	100	80.0-120	
Sulfate	40000	39500	98.6	80.0-120	

L1182901-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1182901-06 01/25/20 18:34 • (MS) R3494080-4 01/25/20 19:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	ND	50400	101	1	80.0-120	
Nitrate	5000	ND	5120	102	1	80.0-120	
Sulfate	50000	ND	50700	101	1	80.0-120	

L1182886-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1182886-01 01/25/20 21:24 • (MS) R3494080-6 01/25/20 21:50 • (MSD) R3494080-7 01/25/20 22:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	29400	76700	75600	94.7	92.4	1	80.0-120			1.50	15
Nitrate	5000	U	4970	4860	99.4	97.3	1	80.0-120			2.15	15
Sulfate	50000	18500	66500	65700	96.0	94.3	1	80.0-120			1.24	15

Method Blank (MB)

(MB) R3495429-1 01/29/20 22:51

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	301	J	102	1000

L1182518-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1182518-02 01/30/20 00:49 • (DUP) R3495429-3 01/30/20 01:03

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	2740	2800	1	2.17		20

L1182886-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1182886-01 01/30/20 04:40 • (DUP) R3495429-6 01/30/20 04:54

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	2740	2720	1	0.952		20

Laboratory Control Sample (LCS)

(LCS) R3495429-2 01/29/20 23:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC	75000	74800	99.7	85.0-115	

L1182568-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1182568-01 01/30/20 02:26 • (MS) R3495429-4 01/30/20 02:48 • (MSD) R3495429-5 01/30/20 03:09

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC	50000	4330	53300	54000	98.0	99.4	1	80.0-120			1.34	20

Method Blank (MB)

(MB) R3495018-1 01/29/20 09:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Iron	37.7	J	15.0	100
Manganese	1.18	J	0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3495018-2 01/29/20 09:40 • (LCSD) R3495018-3 01/29/20 09:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Iron	5000	5460	5420	109	108	80.0-120			0.647	20
Manganese	50.0	54.3	55.0	109	110	80.0-120			1.11	20

L1182886-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1182886-01 01/29/20 09:46 • (MS) R3495018-5 01/29/20 09:53 • (MSD) R3495018-6 01/29/20 09:56

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Iron	5000	10200	15400	15500	104	105	1	75.0-125			0.344	20
Manganese	50.0	999	1060	1050	115	92.1	1	75.0-125			1.11	20

Method Blank (MB)

(MB) R3494564-1 01/27/20 18:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		15.0	100
Manganese	U		0.250	5.00

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3494564-2 01/27/20 18:04 • (LCSD) R3494564-3 01/27/20 18:07

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Iron	5000	5540	5360	111	107	80.0-120			3.46	20
Manganese	50.0	50.5	52.3	101	105	80.0-120			3.54	20

L1182886-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1182886-06 01/27/20 18:10 • (MS) R3494564-5 01/27/20 18:17 • (MSD) R3494564-6 01/27/20 18:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	5000	3720	8670	8620	99.0	98.0	1	75.0-125			0.563	20
Manganese	50.0	1170	1180	1160	20.6	0.000	1	75.0-125	V	V	1.20	20

Method Blank (MB)

(MB) R3494554-1 01/26/20 16:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3494554-2 01/26/20 17:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5000	90.9	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*78.0-120*	

Method Blank (MB)

(MB) R3495551-2 01/28/20 00:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3495551-1 01/27/20 22:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5500	100	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*90.8*	*78.0-120*	

Method Blank (MB)

(MB) R3494839-1 01/28/20 15:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1182889-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1182889-01 01/28/20 15:27 • (DUP) R3494839-2 01/28/20 16:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3494839-3 01/28/20 17:03 • (LCSD) R3494839-4 01/28/20 17:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	67.8	66.7	100	98.4	85.0-115			1.64	20
Ethane	129	131	128	102	99.2	85.0-115			2.32	20
Ethene	127	125	123	98.4	96.9	85.0-115			1.61	20

Method Blank (MB)

(MB) R3495862-1 01/31/20 11:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678

L1183590-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1183590-09 01/31/20 13:35 • (DUP) R3495862-2 01/31/20 13:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	ND	0.000	1	0.000		20

L1183749-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1183749-05 01/31/20 14:27 • (DUP) R3495862-3 01/31/20 14:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	234	266	1	12.8		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3495862-4 01/31/20 14:41 • (LCSD) R3495862-5 01/31/20 14:45

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	76.1	69.4	112	102	85.0-115			9.21	20

Method Blank (MB)

(MB) R3494723-2 01/26/20 09:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		1.05	25.0
Acrylonitrile	U		0.873	5.00
Benzene	U		0.0896	0.500
Bromobenzene	U		0.133	0.500
Bromodichloromethane	U		0.0800	0.500
Bromochloromethane	U		0.145	0.500
Bromoform	U		0.186	0.500
Bromomethane	U		0.157	2.50
n-Butylbenzene	U		0.143	0.500
sec-Butylbenzene	U		0.134	0.500
tert-Butylbenzene	U		0.183	0.500
Carbon disulfide	U		0.101	0.500
Carbon tetrachloride	U		0.159	0.500
Chlorobenzene	U		0.140	0.500
Chlorodibromomethane	U		0.128	0.500
Chloroethane	U		0.141	2.50
Chloroform	U		0.0860	0.500
Chloromethane	U		0.153	1.25
2-Chlorotoluene	U		0.111	0.500
4-Chlorotoluene	U		0.0972	0.500
1,2-Dibromo-3-Chloropropane	U		0.325	2.50
1,2-Dibromoethane	U		0.193	0.500
Dibromomethane	U		0.117	0.500
1,2-Dichlorobenzene	U		0.101	0.500
1,3-Dichlorobenzene	U		0.130	0.500
1,4-Dichlorobenzene	U		0.121	0.500
Dichlorodifluoromethane	U		0.127	2.50
1,1-Dichloroethane	U		0.114	0.500
1,2-Dichloroethane	U		0.108	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
1,2-Dichloropropane	U		0.190	0.500
1,1-Dichloropropene	U		0.128	0.500
1,3-Dichloropropane	U		0.147	1.00
cis-1,3-Dichloropropene	U		0.0976	0.500
trans-1,3-Dichloropropene	U		0.222	0.500
trans-1,4-Dichloro-2-butene	U		0.257	5.00
2,2-Dichloropropane	U		0.0929	0.500
Di-isopropyl ether	U		0.0924	0.500

Method Blank (MB)

(MB) R3494723-2 01/26/20 09:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.158	0.500
Hexachloro-1,3-butadiene	U		0.157	1.00
2-Hexanone	U		0.757	5.00
n-Hexane	U		0.305	5.00
Iodomethane	U		0.377	10.0
Isopropylbenzene	U		0.126	0.500
p-Isopropyltoluene	U		0.138	0.500
2-Butanone (MEK)	U		1.28	5.00
Methylene Chloride	U		1.07	2.50
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00
Methyl tert-butyl ether	U		0.102	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.162	0.500
Styrene	U		0.117	0.500
1,1,1,2-Tetrachloroethane	U		0.120	0.500
1,1,2,2-Tetrachloroethane	U		0.130	0.500
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500
Tetrachloroethene	U		0.199	0.500
Toluene	U		0.412	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.355	0.500
1,1,1-Trichloroethane	U		0.0940	0.500
1,1,2-Trichloroethane	U		0.186	0.500
Trichloroethene	U		0.153	0.500
Trichlorofluoromethane	U		0.130	2.50
1,2,3-Trichloropropane	U		0.247	2.50
1,2,4-Trimethylbenzene	U		0.123	0.500
1,2,3-Trimethylbenzene	U		0.0739	0.500
1,3,5-Trimethylbenzene	U		0.124	0.500
Vinyl acetate	U		0.645	5.00
Vinyl chloride	U		0.118	0.500
Xylenes, Total	U		0.316	1.50
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*92.3*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3494723-1 01/26/20 06:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	32.0	128	19.0-160	
Acrylonitrile	25.0	25.6	102	55.0-149	
Benzene	5.00	5.21	104	70.0-123	
Bromobenzene	5.00	4.85	97.0	73.0-121	
Bromodichloromethane	5.00	5.24	105	75.0-120	
Bromochloromethane	5.00	5.39	108	76.0-122	
Bromoform	5.00	5.21	104	68.0-132	
Bromomethane	5.00	4.63	92.6	10.0-160	
n-Butylbenzene	5.00	5.32	106	73.0-125	
sec-Butylbenzene	5.00	5.25	105	75.0-125	
tert-Butylbenzene	5.00	5.21	104	76.0-124	
Carbon disulfide	5.00	4.48	89.6	61.0-128	
Carbon tetrachloride	5.00	5.07	101	68.0-126	
Chlorobenzene	5.00	5.26	105	80.0-121	
Chlorodibromomethane	5.00	5.21	104	77.0-125	
Chloroethane	5.00	4.31	86.2	47.0-150	
Chloroform	5.00	5.66	113	73.0-120	
Chloromethane	5.00	4.48	89.6	41.0-142	
2-Chlorotoluene	5.00	5.27	105	76.0-123	
4-Chlorotoluene	5.00	5.10	102	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.71	114	58.0-134	
1,2-Dibromoethane	5.00	5.30	106	80.0-122	
Dibromomethane	5.00	5.39	108	80.0-120	
1,2-Dichlorobenzene	5.00	5.50	110	79.0-121	
1,3-Dichlorobenzene	5.00	5.31	106	79.0-120	
1,4-Dichlorobenzene	5.00	5.30	106	79.0-120	
Dichlorodifluoromethane	5.00	3.58	71.6	51.0-149	
1,1-Dichloroethane	5.00	5.15	103	70.0-126	
1,2-Dichloroethane	5.00	5.22	104	70.0-128	
1,1-Dichloroethene	5.00	4.79	95.8	71.0-124	
cis-1,2-Dichloroethene	5.00	5.21	104	73.0-120	
trans-1,2-Dichloroethene	5.00	5.15	103	73.0-120	
1,2-Dichloropropane	5.00	5.36	107	77.0-125	
1,1-Dichloropropene	5.00	5.29	106	74.0-126	
1,3-Dichloropropane	5.00	5.42	108	80.0-120	
cis-1,3-Dichloropropene	5.00	5.16	103	80.0-123	
trans-1,3-Dichloropropene	5.00	5.06	101	78.0-124	
trans-1,4-Dichloro-2-butene	5.00	4.06	81.2	33.0-144	
2,2-Dichloropropane	5.00	4.10	82.0	58.0-130	
Di-isopropyl ether	5.00	5.00	100	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3494723-1 01/26/20 06:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	5.00	5.30	106	79.0-123	
Hexachloro-1,3-butadiene	5.00	5.75	115	54.0-138	
2-Hexanone	25.0	26.7	107	67.0-149	
n-Hexane	5.00	4.78	95.6	57.0-133	
Iodomethane	25.0	25.5	102	33.0-147	
Isopropylbenzene	5.00	5.42	108	76.0-127	
p-Isopropyltoluene	5.00	5.29	106	76.0-125	
2-Butanone (MEK)	25.0	28.5	114	44.0-160	
Methylene Chloride	5.00	5.14	103	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	25.6	102	68.0-142	
Methyl tert-butyl ether	5.00	5.21	104	68.0-125	
Naphthalene	5.00	6.35	127	54.0-135	
n-Propylbenzene	5.00	5.10	102	77.0-124	
Styrene	5.00	5.47	109	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.39	108	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.79	95.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	4.97	99.4	69.0-132	
Tetrachloroethene	5.00	5.52	110	72.0-132	
Toluene	5.00	5.21	104	79.0-120	
1,2,3-Trichlorobenzene	5.00	6.74	135	50.0-138	
1,2,4-Trichlorobenzene	5.00	6.57	131	57.0-137	
1,1,1-Trichloroethane	5.00	5.17	103	73.0-124	
1,1,2-Trichloroethane	5.00	5.27	105	80.0-120	
Trichloroethene	5.00	5.67	113	78.0-124	
Trichlorofluoromethane	5.00	4.26	85.2	59.0-147	
1,2,3-Trichloropropane	5.00	5.24	105	73.0-130	
1,2,4-Trimethylbenzene	5.00	5.12	102	76.0-121	
1,2,3-Trimethylbenzene	5.00	5.27	105	77.0-120	
1,3,5-Trimethylbenzene	5.00	5.24	105	76.0-122	
Vinyl acetate	25.0	16.8	67.2	11.0-160	
Vinyl chloride	5.00	4.48	89.6	67.0-131	
Xylenes, Total	15.0	15.9	106	79.0-123	
(S) Toluene-d8			*101*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

Method Blank (MB)

(MB) R3495218-2 01/28/20 15:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0933	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	*99.2*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3495218-1 01/28/20 14:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	5.00	5.20	104	73.0-120	
Vinyl chloride	5.00	4.98	99.6	67.0-131	
(S) Toluene-d8			*96.4*	*80.0-120*	
(S) 4-Bromofluorobenzene			*102*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*119*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

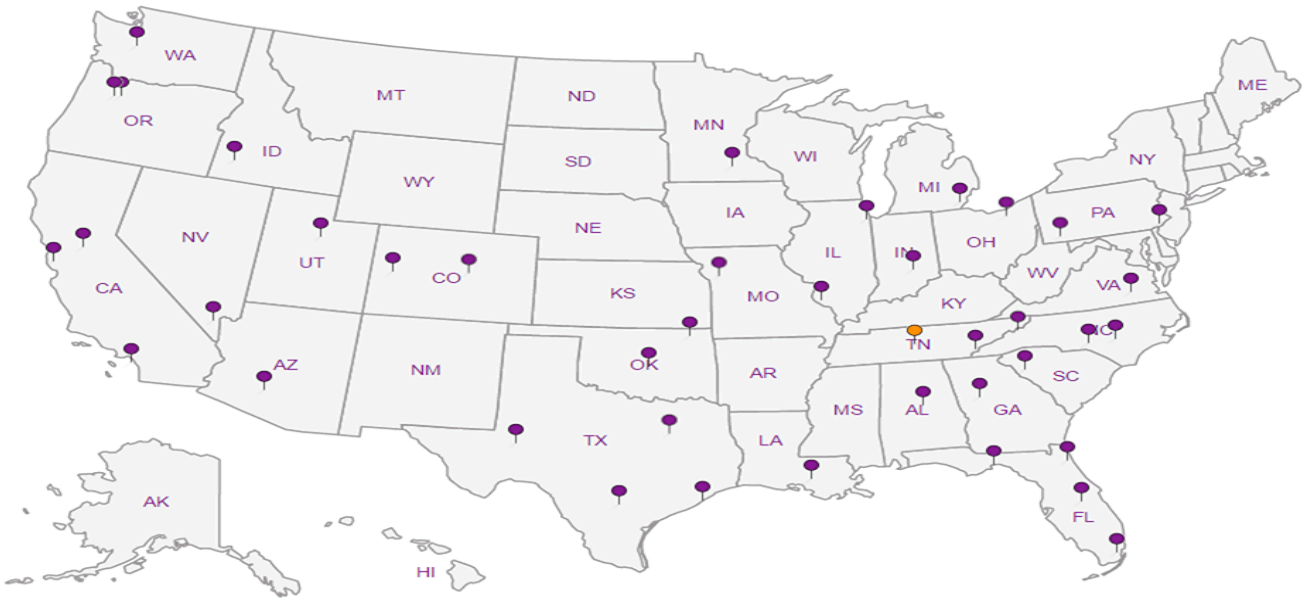
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com; bhaldeman@pesenv.com;

Project Description: American Linen Supply

City/State Collected:

Please Circle: PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.02.501E

Lab Project # PESENVSWA-ALP

Collected by (print): HRC/KSZ/BLH

Site/Facility ID #

P.O. #

Collected by (signature): Hannah Cohn

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl* 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlHDPE-HCl (2)	Total Fe Mn 6020 250mlHDPE-HNO3 (2)	VOCs (V8260LLC) 40mlAmb-HCl				Remarks	Sample # (lab only)
R-MW5-012420	Grab	GW	27	1/24/20	1005	12	X	X	X	X	X	X	X					-01
MW-303-012420	"	GW	77	"	1020	12	X	X	X	X	X	X	X					02
MW-302-012420	"	GW	61.4	"	1029	12	X	X	X	X	X	X	X					03
MW-925-012420	"	GW	45	"	1115	12	X	X	X	X	X	X	X					04
MW112-012420	"	GW	80	"	1210	12	X	X	X	X	X	X	X					05
~~MW-178-012420~~ HC	~~—~~	~~GW~~	~~30.6~~	~~—~~	1331	12												
MW-146-012420	Grab	GW	45	1/24/20	1430	12	X	X	X	X	X	X	X					06
MW-147-012420	Grab	GW	75	1/24/20	1445	12	X	X	X	X	X	X	X					07
~~MW-177-012420~~ HC	~~—~~	~~GW~~	~~15.6~~	~~—~~														
TB-012420	—	GW	—	1/24/20	1630	2				X			X					08

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking # 8098 2926 8833

Relinquished by : (Signature) Hannah Cohn — Date: 1/24/20 — Time: 1645

Received by: (Signature)

Trip Blank Received: Yes / No — 2 — HCl / MeoH — TBR

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Temp: 5.3 +0 2 5.3 °C — Bottles Received: 84

If preservation required by Login: Date/Time

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature) — Date: 1-25-20 — Time: 845

Hold:

Condition: NCF / OK

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Chain of Custody Page 1 of 2

Pace Analytical®
National Center for Testing & Innovation

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SDG # L1192886

C109

Acctnum: PESENVSWA

Template: T160957

Prelogin: P748502

PM: 110 - Brian Ford

PB: KB 1/6/20

Shipped Via: FedEX Ground

MEMORANDUM

TO: Project File **DATE:** February 17, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.02.501E

TASK: EIM Data Validation Level EPA2A for 1st Quarter 2020 – Groundwater Samples

LAB: Pace Sample Delivery Groups (SDGs): L1181608, L1182886, L1182898, and L1183293

Nineteen (19) groundwater samples (including one field duplicate sample), two equipment blanks, and three trip blanks were collected as part of the Remedial Investigation (RI) first quarter of 2020 groundwater sampling event at the Former American Linen Supply Site, in Seattle, Washington on January 21, 24, and 27, 2020. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260D;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The first quarter of RI sampling was conducted January of 2020. Results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups (less than 10 SDGs) for each data validation report. Group 3 analytical results are reported in SDGs L1181608, L1182886, L1182898, and L1183293. The quality assurance review of the laboratory data associated with Group 3 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria

outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following exception:

- SDG L1183293: On January 28, 2020 Pace contacted PES regarding a conflict on the chain of custody (COC). Sample MW-18**2**-012720 with a collection time of 0951 was not received however a sample MW-18**7**-012720 with a collection time of 0951was received. PES instructed Pace to log the sample as MW-18**2**-012720. No action is taken other than to note this.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260D:
All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:
All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace's notes indicate the following:

- Multiple SDGs - *USEPA Method 8260D:* Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ) unless qualified as not detected (U) due to blank contamination.**

Method Blank Results

USEPA Method 8260D:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exceptions:

- SDG L1181608 – Analytical batch WG1415610: Low levels of 2-butanone (MEK) and naphthalene are detected in the method blank. No action is taken for these compounds as these are not detected in the associated samples.

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with one exception:

- SDG L1183293 – Analytical batch WG1418226: A low level gasoline concentration is detected in the method blank. **The associated gasoline range organic (GRO) detection in sample MW-304-012720 is below the RDL and qualified as not detected (U) due to method or trip blank contamination.**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1181608	WG1415297	SM2320B	Alkalinity as CaCO3, Total	4440	J	20000	µg/L	NO
L1181608	WG1415072	9056A	Chloride	61.3	J	1000	µg/L	NO
L1181608	WG1415072	9056A	Nitrate	23.0	J	100	µg/L	**YES**
L1181608	WG1416628	9060A	TOC	420	J	1000	µg/L	NO
L1181608	WG1415176	6020B	Manganese	0.339	J	5.00	µg/L	NO
L1181649	WG1417179	9060A	TOC	381	J	1000	µg/L	NO
L1182886	WG1417009	SM2320B	Alkalinity as CaCO3, Total	4410	J	20000	µg/L	NO
L1182886	WG1418866	9060A	TOC	301	J	1000	µg/L	NO
L1182886	WG1416986	6020B	Iron	37.7	J	100	µg/L	NO
L1182886	WG1416986	6020B	Manganese	1.18	J	5.00	µg/L	NO
L1182898	WG1417009	SM2320B	Alkalinity as CaCO3, Total	4410	J	20000	µg/L	NO
L1182898	WG1419599	9060A	TOC	486	J	1000	µg/L	NO
L1183293	WG1418552	SM2320B	Alkalinity as CaCO3, Total	6840	J	20000	µg/L	NO
L1183293	WG1418181	9056A	Chloride	417	J	1000	µg/L	NO
L1183293	WG1418181	9056A	Sulfate	569	J	5000	µg/L	**YES**
L1183293	WG1419929	9060A	TOC	356	J	1000	µg/L	NO

Target analytes were detected in method blanks at low levels with no impact to the associated samples with the following exceptions:

- SDG L1181608 – Analytical batch WG1415072: A low level of nitrate is detected in the method blank. **Samples MW-158A-012120, MW-153-012120, MW-144R-012120, and MW-145R-012120 nitrate detections are below the RDL and are qualified as not detected (U).**

- SDG L1183293 – Analytical batch WG1418181: A low level of sulfate is detected in the method blank. **Sample MW-181-012720 sulfate detection is below the RDL and qualified as not detected (U).**

Trip Blank Results

USEPA Method 8260D and NWTPH-Gx:
Four trip blanks were collected and analyzed. The target analytes (gasoline and VOCs) were not detected in the trip blanks at or above the RDLs with the following exceptions:

- SDG L1182886: A low level of acetone is detected in the trip blank (TB-012420). **Low levels of acetone are detected in the associated samples MW-303-012420, MW-302-012420, and MW112-012420 and are qualified as not detected (U) due to method or trip blank contamination.**

- SDG L1183293: A low level of iodomethane is detected in the trip blank (TB-012720). No action is necessary since iodomethane is not detected in the associated samples.

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

Two equipment blanks were collected as follows:

- SDG L1181608: Equipment blank (EQ-012120) is associated with all samples in the SDG.
- SDG L1183293: Equipment blank (EQ-012720) is associated with samples MW-304-012720 and MW-138-012720.

Equipment blanks were analyzed for all analytical parameters and positive detections are shown in the table below:

SDG	Equipment Blank Identification	Method	Analyte	Equipment Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1181608	EQ-012120	SM2320B	Alkalinity as CaCO3, Total	8520	J	20000	µg/L	NO
L1181608	EQ-012120	9056A	Chloride	68.9	J	1000	µg/L	NO
L1181608	EQ-012120	9056A	Nitrate	23.1	J	100	µg/L	**YES**
L1181608	EQ-012120	9056A	Sulfate	176	J	5000	µg/L	NO
L1181608	EQ-012120	9060A	TOC	525	J	1000	µg/L	NO
L1181608	EQ-012120	6020B	Iron	19.7	J	100	µg/L	**YES**
L1181608	EQ-012120	6020B	Manganese	2.15	J	5.00	µg/L	NO
L1181608	EQ-012120	8260D	Acetone	1.59	J	25.0	µg/L	**YES**
L1181608	EQ-012120	8260D	Chloroform	0.300	J	0.500	µg/L	NO
L1183293	EQ-012720	SM2320B	Alkalinity as CaCO3, Total	4520	J	20000	µg/L	NO
L1183293	EQ-012720	9056A	Chloride	418	J	1000	µg/L	NO
L1183293	EQ-012720	9056A	Nitrate	64.2	J	100	µg/L	NO
L1183293	EQ-012720	9056A	Sulfate	518	J	5000	µg/L	NO
L1183293	EQ-012720	9060A	TOC	343	J	1000	µg/L	NO
L1183293	EQ-012720	RSK 175	Methane	25.0	J	0.678	µg/L	**YES**
L1183293	EQ-012720	8260D	Acetone	1.59	J	25.0	µg/L	NO
L1183293	EQ-012720	8260D	Chloroform	0.300	J	0.500	µg/L	NO

Target analytes were detected in equipment blanks at low levels with no impact to the associated samples with the following exceptions:

- SDG L1181608 – Analytical batch WG1415072: A low level of nitrate is detected in the method and equipment blanks. **Samples MW-158A-012120, MW-153-012120, MW-144R-012120, and MW-145R-012120 nitrate detections are below the RDL and are qualified as not detected (U) due to blank contamination.**

- SDG L1181608 – Analytical batch WG1415072: A low level of sulfate (176 µg/L) is detected in the equipment blank. Sample MW-145R-012120 sulfate detection is at 3170 µg/L and is also below the RDL. *In this case, using professional judgement, no action is taken other than to note this.*

- SDG L1181608 – Analytical batch WG1415072: A low level of iron is detected in the equipment blank. **Sample MW-154-012120 iron detection is at 62.4 µg/L is below the RDL and is qualified as not detected (U) due to blank contamination.**

- SDG L1181608 – Analytical batch WG1415072: A low level of acetone is detected in the equipment blank. **Sample MW-145R-012120 acetone detection is below the RDL and is qualified as not detected (U) due to blank contamination.**

- SDG L1183293 – Analytical batch WG1418181: A low level of sulfate is detected in the method blank. **Sample MW-181-012720 sulfate detection is below the RDL and qualified as not detected (U).**

- SDG L1183293 – Analytical batch WG1418181: A low level of methane is detected in the method blank. **Sample MW-304-012720 methane detection is below the RDL and qualified as estimated (J+).**

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1182886: Samples MW-146-012420 and MW-925-012420

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (± 1x RDL for groundwater results <5X the RDL) for the field duplicate pair with the following exceptions:

- Samples MW-146-012420 and MW-925-012420: Gasoline range organics (GRO) and methane field duplicate results are not comparable with RPDs greater than 30%. **Methane sample MW-146-012420 and MW-925-012420 results are estimated and qualified (J).** GRO results are already estimated and qualified. Refer to Compound Identification and Quantitation Limits

- Samples MW-146-012420 and MW-925-012420: Sample MW-146-012420 was diluted 100X and sample MW-925-012420 was analyzed undiluted except for a 200X dilution factor for two compounds (cis-1,2-dichloroethene and vinyl chloride). Certain VOC compounds (1,1-dichloroethene, trans-1,2-dichloroethene, and trichloroethene) are not detected in MW-146-012420 because they were diluted out. No action is taken in these cases. **Tetrachloroethene and vinyl chloride sample MW-146-012420 and MW-925-012420 results are estimated (J).**
- Sample MW-146-012420 was diluted 100X and sample MW-925-012420 was undiluted with the two exceptions compounds (cis-1,2-dichloroethene and vinyl chloride) were diluted 200X. Certain VOC compounds (1,1-dichloroethene, trans-1,2-dichloroethene, and trichloroethene) are not detected in MW-146-012420 because they were diluted out. No action is taken in these cases. **Tetrachloroethene and vinyl chloride sample MW-146-012420 and MW-925-012420 results are estimated (J).**

Laboratory Duplicate Analyses

USEPA Method 8260D:

Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:
Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data. In some cases, only LCS data are available (SDGs L1179348, L1179855, and L1181269). No action is taken other than note that precision data are not available for several analytical batches.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:
Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control RPD limits or $\pm$ 1x RDL for groundwater results <5X the RDL.

Surrogate Recoveries

USEPA Method 8260D:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260D:
Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260D method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDG L1181608 - Analytical batch WG1415610: LCS % recoveries for chloromethane and 2,2-dichloropropane are above laboratory acceptance criteria and laboratory qualified (J4). No action is needed because these compounds are not detected in the associated samples.

- SDG L1183293 - Analytical batch WG1418645: LCS % recovery for bromomethane are above laboratory acceptance criteria and laboratory qualified (J4). No action is needed because this compound is not detected in the associated samples.

NWTPH-Gx Method:
The LCS % Rs or LCS/LCSD % Rs and RPDs for the target compound (gasoline) are within the laboratory control criteria for waters.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:
The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260D:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS/LCSD results for accuracy and precision data.

NWTPH-Gx Method:
MS/MSD analyses were performed on non-client samples within several analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples. Refer to LCS/LCSD results for accuracy and precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
MS/MSD analyses were not performed. Refer to LCS results and field duplicate sample for accuracy and precision data.

USEPA Method 6020B:
MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following discussion:

- SDGs L1182886 and L1182898: Matrix spike analysis was performed on client sample MW-146-012420 (SDG L1182886) and manganese MS/MSD recoveries are laboratory qualified (V) to indicate that the sample amount is greater than four times the spike amount. Per Guidance, no action is necessary. Refer to LCS/LCSD results for accuracy and precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

MS or MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following discussions:

- SDG L1181608: Chloride, nitrate, and sulfate spike analysis were performed on non-client samples within the analytical batch. MS/MSD recoveries are laboratory qualified (E) because the spiked amount exceeded the upper limit of the calibration limit and sample matrix interference. No action is taken other than to note this. Refer to laboratory duplicate and laboratory control sample results for precision and accuracy data.

- SDG L1183293: Sulfate spike analysis was performed on a non-client sample within the analytical batch. MS/MSD recoveries for sulfate are laboratory qualified (E) because the spiked amount exceeded the upper limit calibration limit. No action is taken other than to note this.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this.

Gasoline and gasoline range organics are analyzed for via Volatile Organic Compounds (GC) by Washington State Method NWTPHGx (using a gas chromatograph/flame ionization detector (GC/FID)) and Pace reported gasoline range organic-NWTPH results. Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, and vinyl chloride) elute within the gasoline range organics (GRO) retention time range as specified by Washington State (detections falling between the toluene and dodecane range).

Non-petroleum organics (e.g. chlorinated VOC compounds) eluting within the gasoline range contribute to the GRO result and GRO results are likely biased high (J+). PES requested that Pace evaluate chromatograms associated with positive sample detections to confirm the potential

presence of gasoline. Per PES's request Pace reviewed selected sample chromatograms against the gasoline standard chromatograms and assigned "no discernible petroleum pattern to GRO results associated with this Task. PES assigned an additional project level qualifier (Z) to GRO results when the chromatogram for the sample does not match a discernible petroleum pattern. Associated chromatograms and qualified samples for this Task are as follows:

Sample ID	Laboratory Identification	Gasoline Range Organic Result (µg/L)	DV Qualifier	Data Validation Comments	Pace Chromatogram Review Notes
MW-925-012420	L1182886-04	423	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range.	No discernible petroleum pattern
MW-146-012420	L1182886-06	1,140	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern
MW-147-012420	L1182886-07	1,200	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern
MW-177-012420	L1182898-02	89,400	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern
MW-180-012420	L1182898-03	186	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern
MW-182-012720	L1183293-01	2,420	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern
MW-181-012720	L1183293-05	9,090	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern

Project level qualifiers have been included to the PES's project database (Epiphany) as (ZJ+). Washington State EIM valid values were reviewed. In this case no Washington State EIM valid value descriptor is ideal and the default estimated value (J) has been selected as the best match to qualify GRO (ZJ+) data.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	107000		2710	20000	1	01/26/2020 18:45	WG1417009

Sample Narrative:
L1182886-01 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	29400		51.9	1000	1	01/25/2020 21:24	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 21:24	WG1417084
Sulfate	18500		77.4	5000	1	01/25/2020 21:24	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2740	B	102	1000	1	01/30/2020 04:40	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	10200		15.0	100	1	01/29/2020 09:46	WG1416986
Manganese	999		0.250	5.00	1	01/29/2020 09:46	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/26/2020 23:07	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*01/26/2020 23:07*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	197		0.287	0.678	1	01/28/2020 15:29	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:29	WG1418072
Ethene	U		0.422	1.27	1	01/28/2020 15:29	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l		Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	UJ	J0	1.05	25.0	1	01/26/2020 15:04	WG1417330
Acrylonitrile	U			0.873	5.00	1	01/26/2020 15:04	WG1417330
Benzene	U			0.0896	0.500	1	01/26/2020 15:04	WG1417330
Bromobenzene	U			0.133	0.500	1	01/26/2020 15:04	WG1417330
Bromodichloromethane	U			0.0800	0.500	1	01/26/2020 15:04	WG1417330
Bromochloromethane	U			0.145	0.500	1	01/26/2020 15:04	WG1417330
Bromoform	U			0.186	0.500	1	01/26/2020 15:04	WG1417330
Bromomethane	U			0.157	2.50	1	01/26/2020 15:04	WG1417330
n-Butylbenzene	U			0.143	0.500	1	01/26/2020 15:04	WG1417330
sec-Butylbenzene	U			0.134	0.500	1	01/26/2020 15:04	WG1417330
tert-Butylbenzene	U			0.183	0.500	1	01/26/2020 15:04	WG1417330
Carbon disulfide	U			0.101	0.500	1	01/26/2020 15:04	WG1417330
Carbon tetrachloride	U			0.159	0.500	1	01/26/2020 15:04	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/26/2020 15:04	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 15:04	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 15:04	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 15:04	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 15:04	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 15:04	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 15:04	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 15:04	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 15:04	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 15:04	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 15:04	WG1417330
Dichlorodifluoromethane	U	UJ J0	0.127	2.50	1	01/26/2020 15:04	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 15:04	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 15:04	WG1417330
cis-1,2-Dichloroethene	0.265	J	0.0933	0.500	1	01/26/2020 15:04	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 15:04	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 15:04	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 15:04	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 15:04	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 15:04	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 15:04	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 15:04	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 15:04	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 15:04	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 15:04	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 15:04	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 15:04	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 15:04	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 15:04	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 15:04	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 15:04	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 15:04	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 15:04	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 15:04	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 15:04	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 15:04	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 15:04	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 15:04	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 15:04	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 15:04	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 15:04	WG1417330
Tetrachloroethene	0.931		0.199	0.500	1	01/26/2020 15:04	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 15:04	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 15:04	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 15:04	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 15:04	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 15:04	WG1417330
Trichloroethene	0.374	J	0.153	0.500	1	01/26/2020 15:04	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 15:04	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 15:04	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 15:04	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 15:04	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 15:04	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	01/26/2020 15:04	WG1417330
Vinyl chloride	U			0.118	0.500	1	01/26/2020 15:04	WG1417330
Xylenes, Total	U			0.316	1.50	1	01/26/2020 15:04	WG1417330
(S) Toluene-d8	*99.8*				*80.0-120*		*01/26/2020 15:04*	WG1417330
(S) 4-Bromofluorobenzene	*101*				*77.0-126*		*01/26/2020 15:04*	WG1417330
(S) 1,2-Dichloroethane-d4	*108*				*70.0-130*		*01/26/2020 15:04*	WG1417330

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	162000		2710	20000	1	01/26/2020 18:52	WG1417009

Sample Narrative:
L1182886-02 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14800		51.9	1000	1	01/25/2020 22:42	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 22:42	WG1417084
Sulfate	29800		77.4	5000	1	01/25/2020 22:42	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3540		102	1000	1	01/30/2020 06:17	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	1320		15.0	100	1	01/29/2020 11:06	WG1416986
Manganese	285		0.250	5.00	1	01/29/2020 11:06	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/26/2020 23:32	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*78.0-120*		*01/26/2020 23:32*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	137		0.287	0.678	1	01/28/2020 15:33	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:33	WG1418072
Ethene	U		0.422	1.27	1	01/28/2020 15:33	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	2.64	U ~~J J0~~	1.05	25.0	1	01/26/2020 15:24	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 15:24	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 15:24	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 15:24	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 15:24	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 15:24	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 15:24	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 15:24	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 15:24	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 15:24	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 15:24	WG1417330
Carbon disulfide	0.941		0.101	0.500	1	01/26/2020 15:24	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 15:24	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	01/26/2020 15:24	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 15:24	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 15:24	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 15:24	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 15:24	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 15:24	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 15:24	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 15:24	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 15:24	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 15:24	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 15:24	WG1417330
Dichlorodifluoromethane	U	UJ J0	0.127	2.50	1	01/26/2020 15:24	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 15:24	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 15:24	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/26/2020 15:24	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 15:24	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 15:24	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 15:24	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 15:24	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 15:24	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 15:24	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 15:24	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 15:24	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 15:24	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 15:24	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 15:24	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 15:24	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 15:24	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 15:24	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 15:24	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 15:24	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 15:24	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 15:24	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 15:24	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 15:24	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 15:24	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 15:24	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 15:24	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 15:24	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 15:24	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 15:24	WG1417330
Tetrachloroethene	0.313	J	0.199	0.500	1	01/26/2020 15:24	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 15:24	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 15:24	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 15:24	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 15:24	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 15:24	WG1417330
Trichloroethene	0.153	J	0.153	0.500	1	01/26/2020 15:24	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 15:24	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 15:24	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 15:24	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 15:24	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 15:24	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	01/26/2020 15:24	WG1417330
Vinyl chloride	U			0.118	0.500	1	01/26/2020 15:24	WG1417330
Xylenes, Total	U			0.316	1.50	1	01/26/2020 15:24	WG1417330
(S) Toluene-d8	*101*				*80.0-120*		*01/26/2020 15:24*	WG1417330
(S) 4-Bromofluorobenzene	*102*				*77.0-126*		*01/26/2020 15:24*	WG1417330
(S) 1,2-Dichloroethane-d4	*106*				*70.0-130*		*01/26/2020 15:24*	WG1417330

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Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	331000		2710	20000	1	01/26/2020 19:01	WG1417009

Sample Narrative:
L1182886-03 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	20600		51.9	1000	1	01/25/2020 22:55	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 22:55	WG1417084
Sulfate	22800		77.4	5000	1	01/25/2020 22:55	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1570	~~B~~	102	1000	1	01/30/2020 06:30	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	1130		15.0	100	1	01/29/2020 11:10	WG1416986
Manganese	332		0.250	5.00	1	01/29/2020 11:10	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/26/2020 23:56	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*78.0-120*		*01/26/2020 23:56*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	590		0.287	0.678	1	01/28/2020 15:35	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:35	WG1418072
Ethene	U		0.422	1.27	1	01/28/2020 15:35	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.21	U ~~J J0~~	1.05	25.0	1	01/26/2020 15:44	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 15:44	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 15:44	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 15:44	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 15:44	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 15:44	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 15:44	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 15:44	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 15:44	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 15:44	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 15:44	WG1417330
Carbon disulfide	0.718		0.101	0.500	1	01/26/2020 15:44	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 15:44	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.140	0.500	1	01/26/2020 15:44	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 15:44	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 15:44	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 15:44	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 15:44	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 15:44	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 15:44	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 15:44	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 15:44	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 15:44	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 15:44	WG1417330
Dichlorodifluoromethane	U	UJ J0	0.127	2.50	1	01/26/2020 15:44	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 15:44	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 15:44	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/26/2020 15:44	WG1417330
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 15:44	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 15:44	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 15:44	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 15:44	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 15:44	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 15:44	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 15:44	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 15:44	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 15:44	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 15:44	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 15:44	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 15:44	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 15:44	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 15:44	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 15:44	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 15:44	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 15:44	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 15:44	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 15:44	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 15:44	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 15:44	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 15:44	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 15:44	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 15:44	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 15:44	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 15:44	WG1417330
Tetrachloroethene	0.353	J	0.199	0.500	1	01/26/2020 15:44	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 15:44	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 15:44	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 15:44	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 15:44	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 15:44	WG1417330
Trichloroethene	0.164	J	0.153	0.500	1	01/26/2020 15:44	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 15:44	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 15:44	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 15:44	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 15:44	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 15:44	WG1417330

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1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	01/26/2020 15:44	WG1417330
Vinyl chloride	U			0.118	0.500	1	01/26/2020 15:44	WG1417330
Xylenes, Total	U			0.316	1.50	1	01/26/2020 15:44	WG1417330
(S) Toluene-d8	*101*				*80.0-120*		*01/26/2020 15:44*	WG1417330
(S) 4-Bromofluorobenzene	*102*				*77.0-126*		*01/26/2020 15:44*	WG1417330
(S) 1,2-Dichloroethane-d4	*106*				*70.0-130*		*01/26/2020 15:44*	WG1417330

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	365000		2710	20000	1	01/26/2020 19:10	WG1417009

Sample Narrative:
L1182886-04 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30900		51.9	1000	1	01/25/2020 23:08	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:08	WG1417084
Sulfate	15300		77.4	5000	1	01/25/2020 23:08	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3300		102	1000	1	01/30/2020 07:28	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3220		15.0	100	1	01/29/2020 11:13	WG1416986
Manganese	1120		0.250	5.00	1	01/29/2020 11:13	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	423	Z, J+	31.6	100	1	01/27/2020 01:21	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*99.5*			*78.0-120*		*01/27/2020 01:21*	WG1417147

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Sample Narrative:
L1182886-04 WG1417147: No discernable petroleum pattern.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	6280	J	0.287	0.678	1	01/28/2020 15:38	WG1418072
Ethane	3.27		0.296	1.29	1	01/28/2020 15:38	WG1418072
Ethene	672		0.422	1.27	1	01/28/2020 15:38	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	UJ J0	1.05	25.0	1	01/26/2020 16:05	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 16:05	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 16:05	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 16:05	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 16:05	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 16:05	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 16:05	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 16:05	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 16:05	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 16:05	WG1417330

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 16:05	WG1417330
Carbon disulfide	U		0.101	0.500	1	01/26/2020 16:05	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 16:05	WG1417330
Chlorobenzene	U		0.140	0.500	1	01/26/2020 16:05	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 16:05	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 16:05	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 16:05	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 16:05	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 16:05	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 16:05	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 16:05	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 16:05	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 16:05	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 16:05	WG1417330
Dichlorodifluoromethane	U	UJ J0	0.127	2.50	1	01/26/2020 16:05	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 16:05	WG1417330
1,1-Dichloroethene	2.59		0.188	0.500	1	01/26/2020 16:05	WG1417330
cis-1,2-Dichloroethene	1510		18.7	100	200	01/28/2020 23:31	WG1418320
trans-1,2-Dichloroethene	8.45		0.152	0.500	1	01/26/2020 16:05	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 16:05	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 16:05	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 16:05	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 16:05	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 16:05	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 16:05	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 16:05	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 16:05	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 16:05	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 16:05	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 16:05	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 16:05	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 16:05	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 16:05	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 16:05	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 16:05	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 16:05	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 16:05	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 16:05	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 16:05	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 16:05	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 16:05	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 16:05	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 16:05	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 16:05	WG1417330
Tetrachloroethene	1.39	J	0.199	0.500	1	01/26/2020 16:05	WG1417330
Toluene	U		0.412	0.500	1	01/26/2020 16:05	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 16:05	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 16:05	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 16:05	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 16:05	WG1417330
Trichloroethene	4.80		0.153	0.500	1	01/26/2020 16:05	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 16:05	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 16:05	WG1417330

JC 2/14/2020

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 16:05	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 16:05	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 16:05	WG1417330
Vinyl acetate	U UJ	J0	0.645	5.00	1	01/26/2020 16:05	WG1417330
Vinyl chloride	5800 J		23.6	100	200	01/28/2020 23:31	WG1418320
Xylenes, Total	U		0.316	1.50	1	01/26/2020 16:05	WG1417330
(S) Toluene-d8	*104*			*80.0-120*		*01/26/2020 16:05*	WG1417330
(S) Toluene-d8	*98.1*			*80.0-120*		*01/28/2020 23:31*	WG1418320
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/26/2020 16:05*	WG1417330
(S) 4-Bromofluorobenzene	*99.1*			*77.0-126*		*01/28/2020 23:31*	WG1418320
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*01/26/2020 16:05*	WG1417330
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*01/28/2020 23:31*	WG1418320

JC 2/14/2020

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	50800		2710	20000	1	01/26/2020 19:17	WG1417009

Sample Narrative:
L1182886-05 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	7700		51.9	1000	1	01/25/2020 23:21	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:21	WG1417084
Sulfate	322	J	77.4	5000	1	01/25/2020 23:21	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3410		102	1000	1	01/30/2020 07:45	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	3560		15.0	100	1	01/29/2020 11:16	WG1416986
Manganese	220		0.250	5.00	1	01/29/2020 11:16	WG1416986

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	U		31.6	100	1	01/27/2020 01:45	WG1417147
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*01/27/2020 01:45*	WG1417147

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	1670		0.287	0.678	1	01/28/2020 15:40	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 15:40	WG1418072
Ethene	35.0		0.422	1.27	1	01/28/2020 15:40	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	2.33	U ~~J J0~~	1.05	25.0	1	01/26/2020 16:25	WG1417330
Acrylonitrile	U		0.873	5.00	1	01/26/2020 16:25	WG1417330
Benzene	U		0.0896	0.500	1	01/26/2020 16:25	WG1417330
Bromobenzene	U		0.133	0.500	1	01/26/2020 16:25	WG1417330
Bromodichloromethane	U		0.0800	0.500	1	01/26/2020 16:25	WG1417330
Bromochloromethane	U		0.145	0.500	1	01/26/2020 16:25	WG1417330
Bromoform	U		0.186	0.500	1	01/26/2020 16:25	WG1417330
Bromomethane	U		0.157	2.50	1	01/26/2020 16:25	WG1417330
n-Butylbenzene	U		0.143	0.500	1	01/26/2020 16:25	WG1417330
sec-Butylbenzene	U		0.134	0.500	1	01/26/2020 16:25	WG1417330
tert-Butylbenzene	U		0.183	0.500	1	01/26/2020 16:25	WG1417330
Carbon disulfide	U		0.101	0.500	1	01/26/2020 16:25	WG1417330
Carbon tetrachloride	U		0.159	0.500	1	01/26/2020 16:25	WG1417330

JC 2/14/2020

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.140	0.500	1	01/26/2020 16:25	WG1417330
Chlorodibromomethane	U		0.128	0.500	1	01/26/2020 16:25	WG1417330
Chloroethane	U		0.141	2.50	1	01/26/2020 16:25	WG1417330
Chloroform	U		0.0860	0.500	1	01/26/2020 16:25	WG1417330
Chloromethane	U		0.153	1.25	1	01/26/2020 16:25	WG1417330
2-Chlorotoluene	U		0.111	0.500	1	01/26/2020 16:25	WG1417330
4-Chlorotoluene	U		0.0972	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dibromo-3-Chloropropane	U		0.325	2.50	1	01/26/2020 16:25	WG1417330
1,2-Dibromoethane	U		0.193	0.500	1	01/26/2020 16:25	WG1417330
Dibromomethane	U		0.117	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dichlorobenzene	U		0.101	0.500	1	01/26/2020 16:25	WG1417330
1,3-Dichlorobenzene	U		0.130	0.500	1	01/26/2020 16:25	WG1417330
1,4-Dichlorobenzene	U		0.121	0.500	1	01/26/2020 16:25	WG1417330
Dichlorodifluoromethane	U	UJ J0	0.127	2.50	1	01/26/2020 16:25	WG1417330
1,1-Dichloroethane	U		0.114	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dichloroethane	U		0.108	0.500	1	01/26/2020 16:25	WG1417330
1,1-Dichloroethene	U		0.188	0.500	1	01/26/2020 16:25	WG1417330
cis-1,2-Dichloroethene	U		0.0933	0.500	1	01/28/2020 23:51	WG1418320
trans-1,2-Dichloroethene	U		0.152	0.500	1	01/26/2020 16:25	WG1417330
1,2-Dichloropropane	U		0.190	0.500	1	01/26/2020 16:25	WG1417330
1,1-Dichloropropene	U		0.128	0.500	1	01/26/2020 16:25	WG1417330
1,3-Dichloropropane	U		0.147	1.00	1	01/26/2020 16:25	WG1417330
cis-1,3-Dichloropropene	U		0.0976	0.500	1	01/26/2020 16:25	WG1417330
trans-1,3-Dichloropropene	U		0.222	0.500	1	01/26/2020 16:25	WG1417330
trans-1,4-Dichloro-2-butene	U		0.257	5.00	1	01/26/2020 16:25	WG1417330
2,2-Dichloropropane	U		0.0929	0.500	1	01/26/2020 16:25	WG1417330
Di-isopropyl ether	U		0.0924	0.500	1	01/26/2020 16:25	WG1417330
Ethylbenzene	U		0.158	0.500	1	01/26/2020 16:25	WG1417330
Hexachloro-1,3-butadiene	U		0.157	1.00	1	01/26/2020 16:25	WG1417330
2-Hexanone	U		0.757	5.00	1	01/26/2020 16:25	WG1417330
n-Hexane	U		0.305	5.00	1	01/26/2020 16:25	WG1417330
Iodomethane	U		0.377	10.0	1	01/26/2020 16:25	WG1417330
Isopropylbenzene	U		0.126	0.500	1	01/26/2020 16:25	WG1417330
p-Isopropyltoluene	U		0.138	0.500	1	01/26/2020 16:25	WG1417330
2-Butanone (MEK)	U		1.28	5.00	1	01/26/2020 16:25	WG1417330
Methylene Chloride	U		1.07	2.50	1	01/26/2020 16:25	WG1417330
4-Methyl-2-pentanone (MIBK)	U		0.823	5.00	1	01/26/2020 16:25	WG1417330
Methyl tert-butyl ether	U		0.102	0.500	1	01/26/2020 16:25	WG1417330
Naphthalene	U		0.174	2.50	1	01/26/2020 16:25	WG1417330
n-Propylbenzene	U		0.162	0.500	1	01/26/2020 16:25	WG1417330
Styrene	U		0.117	0.500	1	01/26/2020 16:25	WG1417330
1,1,1,2-Tetrachloroethane	U		0.120	0.500	1	01/26/2020 16:25	WG1417330
1,1,2,2-Tetrachloroethane	U		0.130	0.500	1	01/26/2020 16:25	WG1417330
1,1,2-Trichlorotrifluoroethane	U		0.164	0.500	1	01/26/2020 16:25	WG1417330
Tetrachloroethene	0.248	J	0.199	0.500	1	01/26/2020 16:25	WG1417330
Toluene	1.24		0.412	0.500	1	01/26/2020 16:25	WG1417330
1,2,3-Trichlorobenzene	U		0.164	0.500	1	01/26/2020 16:25	WG1417330
1,2,4-Trichlorobenzene	U		0.355	0.500	1	01/26/2020 16:25	WG1417330
1,1,1-Trichloroethane	U		0.0940	0.500	1	01/26/2020 16:25	WG1417330
1,1,2-Trichloroethane	U		0.186	0.500	1	01/26/2020 16:25	WG1417330
Trichloroethene	U		0.153	0.500	1	01/26/2020 16:25	WG1417330
Trichlorofluoromethane	U		0.130	2.50	1	01/26/2020 16:25	WG1417330
1,2,3-Trichloropropane	U		0.247	2.50	1	01/26/2020 16:25	WG1417330
1,2,4-Trimethylbenzene	U		0.123	0.500	1	01/26/2020 16:25	WG1417330
1,2,3-Trimethylbenzene	U		0.0739	0.500	1	01/26/2020 16:25	WG1417330
1,3,5-Trimethylbenzene	U		0.124	0.500	1	01/26/2020 16:25	WG1417330

JC 2/14/2020

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
Vinyl acetate	U	UJ	J0	0.645	5.00	1	01/26/2020 16:25	WG1417330
Vinyl chloride	U			0.118	0.500	1	01/28/2020 23:51	WG1418320
Xylenes, Total	U			0.316	1.50	1	01/26/2020 16:25	WG1417330
(S) Toluene-d8	*101*				*80.0-120*		*01/26/2020 16:25*	WG1417330
(S) Toluene-d8	*99.7*				*80.0-120*		*01/28/2020 23:51*	WG1418320
(S) 4-Bromofluorobenzene	*101*				*77.0-126*		*01/26/2020 16:25*	WG1417330
(S) 4-Bromofluorobenzene	*96.6*				*77.0-126*		*01/28/2020 23:51*	WG1418320
(S) 1,2-Dichloroethane-d4	*106*				*70.0-130*		*01/26/2020 16:25*	WG1417330
(S) 1,2-Dichloroethane-d4	*117*				*70.0-130*		*01/28/2020 23:51*	WG1418320

JC 2/14/2020

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	362000		2710	20000	1	01/26/2020 19:24	WG1417009

Sample Narrative:
L1182886-06 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	32100		51.9	1000	1	01/25/2020 23:34	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:34	WG1417084
Sulfate	15500		77.4	5000	1	01/25/2020 23:34	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3310		102	1000	1	01/30/2020 08:01	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3720		15.0	100	1	01/27/2020 18:10	WG1417103
Manganese	1170	V	0.250	5.00	1	01/27/2020 18:10	WG1417103

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	1140 Z,J+		31.6	100	1	01/28/2020 04:37	WG1417851
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*01/28/2020 04:37*	WG1417851

Sample Narrative:
L1182886-06 WG1417851: No discernable petroleum pattern.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	888 J		2.87	6.78	10	01/31/2020 11:13	WG1420207
Ethane	3.09		0.296	1.29	1	01/28/2020 15:53	WG1418072
Ethene	728		0.422	1.27	1	01/28/2020 15:53	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U UJ	J0	105	2500	100	01/26/2020 16:45	WG1417330
Acrylonitrile	U		87.3	500	100	01/26/2020 16:45	WG1417330
Benzene	U		8.96	50.0	100	01/26/2020 16:45	WG1417330
Bromobenzene	U		13.3	50.0	100	01/26/2020 16:45	WG1417330
Bromodichloromethane	U		8.00	50.0	100	01/26/2020 16:45	WG1417330
Bromochloromethane	U		14.5	50.0	100	01/26/2020 16:45	WG1417330
Bromoform	U		18.6	50.0	100	01/26/2020 16:45	WG1417330
Bromomethane	U		15.7	250	100	01/26/2020 16:45	WG1417330
n-Butylbenzene	U		14.3	50.0	100	01/26/2020 16:45	WG1417330
sec-Butylbenzene	U		13.4	50.0	100	01/26/2020 16:45	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier		MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch	
tert-Butylbenzene	U			18.3	50.0	100	01/26/2020 16:45	WG1417330	
Carbon disulfide	U			10.1	50.0	100	01/26/2020 16:45	WG1417330	
Carbon tetrachloride	U			15.9	50.0	100	01/26/2020 16:45	WG1417330	
Chlorobenzene	U			14.0	50.0	100	01/26/2020 16:45	WG1417330	
Chlorodibromomethane	U			12.8	50.0	100	01/26/2020 16:45	WG1417330	
Chloroethane	U			14.1	250	100	01/26/2020 16:45	WG1417330	
Chloroform	U			8.60	50.0	100	01/26/2020 16:45	WG1417330	
Chloromethane	U			15.3	125	100	01/26/2020 16:45	WG1417330	
2-Chlorotoluene	U			11.1	50.0	100	01/26/2020 16:45	WG1417330	
4-Chlorotoluene	U			9.72	50.0	100	01/26/2020 16:45	WG1417330	
1,2-Dibromo-3-Chloropropane	U			32.5	250	100	01/26/2020 16:45	WG1417330	
1,2-Dibromoethane	U			19.3	50.0	100	01/26/2020 16:45	WG1417330	
Dibromomethane	U			11.7	50.0	100	01/26/2020 16:45	WG1417330	
1,2-Dichlorobenzene	U			10.1	50.0	100	01/26/2020 16:45	WG1417330	
1,3-Dichlorobenzene	U			13.0	50.0	100	01/26/2020 16:45	WG1417330	
1,4-Dichlorobenzene	U			12.1	50.0	100	01/26/2020 16:45	WG1417330	
Dichlorodifluoromethane	U	UJ	J0	12.7	250	100	01/26/2020 16:45	WG1417330	
1,1-Dichloroethane	U			11.4	50.0	100	01/26/2020 16:45	WG1417330	
1,2-Dichloroethane	U			10.8	50.0	100	01/26/2020 16:45	WG1417330	
1,1-Dichloroethene	U			18.8	50.0	100	01/26/2020 16:45	WG1417330	
cis-1,2-Dichloroethene	1460			9.33	50.0	100	01/26/2020 16:45	WG1417330	
trans-1,2-Dichloroethene	U			15.2	50.0	100	01/26/2020 16:45	WG1417330	
1,2-Dichloropropane	U			19.0	50.0	100	01/26/2020 16:45	WG1417330	
1,1-Dichloropropene	U			12.8	50.0	100	01/26/2020 16:45	WG1417330	
1,3-Dichloropropane	U			14.7	100	100	01/26/2020 16:45	WG1417330	
cis-1,3-Dichloropropene	U			9.76	50.0	100	01/26/2020 16:45	WG1417330	
trans-1,3-Dichloropropene	U			22.2	50.0	100	01/26/2020 16:45	WG1417330	
trans-1,4-Dichloro-2-butene	U			25.7	500	100	01/26/2020 16:45	WG1417330	
2,2-Dichloropropane	U			9.29	50.0	100	01/26/2020 16:45	WG1417330	
Di-isopropyl ether	U			9.24	50.0	100	01/26/2020 16:45	WG1417330	
Ethylbenzene	U			15.8	50.0	100	01/26/2020 16:45	WG1417330	
Hexachloro-1,3-butadiene	U			15.7	100	100	01/26/2020 16:45	WG1417330	
2-Hexanone	U			75.7	500	100	01/26/2020 16:45	WG1417330	
n-Hexane	U			30.5	500	100	01/26/2020 16:45	WG1417330	
Iodomethane	U			37.7	1000	100	01/26/2020 16:45	WG1417330	
Isopropylbenzene	U			12.6	50.0	100	01/26/2020 16:45	WG1417330	
p-Isopropyltoluene	U			13.8	50.0	100	01/26/2020 16:45	WG1417330	
2-Butanone (MEK)	U			128	500	100	01/26/2020 16:45	WG1417330	
Methylene Chloride	U			107	250	100	01/26/2020 16:45	WG1417330	
4-Methyl-2-pentanone (MIBK)	U			82.3	500	100	01/26/2020 16:45	WG1417330	
Methyl tert-butyl ether	U			10.2	50.0	100	01/26/2020 16:45	WG1417330	
Naphthalene	U			17.4	250	100	01/26/2020 16:45	WG1417330	
n-Propylbenzene	U			16.2	50.0	100	01/26/2020 16:45	WG1417330	
Styrene	U			11.7	50.0	100	01/26/2020 16:45	WG1417330	
1,1,1,2-Tetrachloroethane	U			12.0	50.0	100	01/26/2020 16:45	WG1417330	
1,1,2,2-Tetrachloroethane	U			13.0	50.0	100	01/26/2020 16:45	WG1417330	
1,1,2-Trichlorotrifluoroethane	U			16.4	50.0	100	01/26/2020 16:45	WG1417330	
Tetrachloroethene	21.1	J	J	19.9	50.0	100	01/26/2020 16:45	WG1417330	
Toluene	U			41.2	50.0	100	01/26/2020 16:45	WG1417330	
1,2,3-Trichlorobenzene	U			16.4	50.0	100	01/26/2020 16:45	WG1417330	
1,2,4-Trichlorobenzene	U			35.5	50.0	100	01/26/2020 16:45	WG1417330	
1,1,1-Trichloroethane	U			9.40	50.0	100	01/26/2020 16:45	WG1417330	
1,1,2-Trichloroethane	U			18.6	50.0	100	01/26/2020 16:45	WG1417330	
Trichloroethene	U			15.3	50.0	100	01/26/2020 16:45	WG1417330	
Trichlorofluoromethane	U			13.0	250	100	01/26/2020 16:45	WG1417330	JC 2/14/2020
1,2,3-Trichloropropane	U			24.7	250	100	01/26/2020 16:45	WG1417330	

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result		Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l			ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U			12.3	50.0	100	01/26/2020 16:45	WG1417330
1,2,3-Trimethylbenzene	U			7.39	50.0	100	01/26/2020 16:45	WG1417330
1,3,5-Trimethylbenzene	U			12.4	50.0	100	01/26/2020 16:45	WG1417330
Vinyl acetate	U	UJ	J0	64.5	500	100	01/26/2020 16:45	WG1417330
Vinyl chloride	3900	J		11.8	50.0	100	01/26/2020 16:45	WG1417330
Xylenes, Total	U			31.6	150	100	01/26/2020 16:45	WG1417330
(S) Toluene-d8	*103*				*80.0-120*		*01/26/2020 16:45*	WG1417330
(S) 4-Bromofluorobenzene	*102*				*77.0-126*		*01/26/2020 16:45*	WG1417330
(S) 1,2-Dichloroethane-d4	*104*				*70.0-130*		*01/26/2020 16:45*	WG1417330

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Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	351000		2710	20000	1	01/26/2020 19:32	WG1417009

Sample Narrative:
L1182886-07 WG1417009: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	28300		51.9	1000	1	01/25/2020 23:47	WG1417084
Nitrate	U		22.7	100	1	01/25/2020 23:47	WG1417084
Sulfate	25600		77.4	5000	1	01/25/2020 23:47	WG1417084

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3340		102	1000	1	01/30/2020 08:18	WG1418866

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	13500		15.0	100	1	01/27/2020 18:23	WG1417103
Manganese	995		0.250	5.00	1	01/27/2020 18:23	WG1417103

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	1200	Z, J+	31.6	100	1	01/28/2020 05:01	WG1417851
(S) a,a,a-Trifluorotoluene(FID)	*106*			*78.0-120*		*01/28/2020 05:01*	WG1417851

Sample Narrative:
L1182886-07 WG1417851: No discernable petroleum pattern.

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1550		0.287	0.678	1	01/28/2020 16:00	WG1418072
Ethane	U		0.296	1.29	1	01/28/2020 16:00	WG1418072
Ethene	172		0.422	1.27	1	01/28/2020 16:00	WG1418072

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U UJ	J0	26.3	625	25	01/26/2020 17:05	WG1417330
Acrylonitrile	U		21.8	125	25	01/26/2020 17:05	WG1417330
Benzene	U		2.24	12.5	25	01/26/2020 17:05	WG1417330
Bromobenzene	U		3.33	12.5	25	01/26/2020 17:05	WG1417330
Bromodichloromethane	U		2.00	12.5	25	01/26/2020 17:05	WG1417330
Bromochloromethane	U		3.63	12.5	25	01/26/2020 17:05	WG1417330
Bromoform	U		4.65	12.5	25	01/26/2020 17:05	WG1417330
Bromomethane	U		3.93	62.5	25	01/26/2020 17:05	WG1417330
n-Butylbenzene	U		3.58	12.5	25	01/26/2020 17:05	WG1417330
sec-Butylbenzene	U		3.35	12.5	25	01/26/2020 17:05	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
tert-Butylbenzene	U		4.58	12.5	25	01/26/2020 17:05	WG1417330
Carbon disulfide	U		2.53	12.5	25	01/26/2020 17:05	WG1417330
Carbon tetrachloride	U		3.97	12.5	25	01/26/2020 17:05	WG1417330
Chlorobenzene	U		3.50	12.5	25	01/26/2020 17:05	WG1417330
Chlorodibromomethane	U		3.20	12.5	25	01/26/2020 17:05	WG1417330
Chloroethane	U		3.53	62.5	25	01/26/2020 17:05	WG1417330
Chloroform	U		2.15	12.5	25	01/26/2020 17:05	WG1417330
Chloromethane	U		3.83	31.3	25	01/26/2020 17:05	WG1417330
2-Chlorotoluene	U		2.78	12.5	25	01/26/2020 17:05	WG1417330
4-Chlorotoluene	U		2.43	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dibromo-3-Chloropropane	U		8.13	62.5	25	01/26/2020 17:05	WG1417330
1,2-Dibromoethane	U		4.83	12.5	25	01/26/2020 17:05	WG1417330
Dibromomethane	U		2.93	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dichlorobenzene	U		2.53	12.5	25	01/26/2020 17:05	WG1417330
1,3-Dichlorobenzene	U		3.25	12.5	25	01/26/2020 17:05	WG1417330
1,4-Dichlorobenzene	U		3.03	12.5	25	01/26/2020 17:05	WG1417330
Dichlorodifluoromethane	U	UJ J0	3.18	62.5	25	01/26/2020 17:05	WG1417330
1,1-Dichloroethane	U		2.85	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dichloroethane	U		2.70	12.5	25	01/26/2020 17:05	WG1417330
1,1-Dichloroethene	U		4.70	12.5	25	01/26/2020 17:05	WG1417330
cis-1,2-Dichloroethene	1100		2.33	12.5	25	01/26/2020 17:05	WG1417330
trans-1,2-Dichloroethene	U		3.80	12.5	25	01/26/2020 17:05	WG1417330
1,2-Dichloropropane	U		4.75	12.5	25	01/26/2020 17:05	WG1417330
1,1-Dichloropropene	U		3.20	12.5	25	01/26/2020 17:05	WG1417330
1,3-Dichloropropane	U		3.68	25.0	25	01/26/2020 17:05	WG1417330
cis-1,3-Dichloropropene	U		2.44	12.5	25	01/26/2020 17:05	WG1417330
trans-1,3-Dichloropropene	U		5.55	12.5	25	01/26/2020 17:05	WG1417330
trans-1,4-Dichloro-2-butene	U		6.43	125	25	01/26/2020 17:05	WG1417330
2,2-Dichloropropane	U		2.32	12.5	25	01/26/2020 17:05	WG1417330
Di-isopropyl ether	U		2.31	12.5	25	01/26/2020 17:05	WG1417330
Ethylbenzene	U		3.95	12.5	25	01/26/2020 17:05	WG1417330
Hexachloro-1,3-butadiene	U		3.93	25.0	25	01/26/2020 17:05	WG1417330
2-Hexanone	U		18.9	125	25	01/26/2020 17:05	WG1417330
n-Hexane	U		7.63	125	25	01/26/2020 17:05	WG1417330
Iodomethane	U		9.43	250	25	01/26/2020 17:05	WG1417330
Isopropylbenzene	U		3.15	12.5	25	01/26/2020 17:05	WG1417330
p-Isopropyltoluene	U		3.45	12.5	25	01/26/2020 17:05	WG1417330
2-Butanone (MEK)	U		32.0	125	25	01/26/2020 17:05	WG1417330
Methylene Chloride	U		26.8	62.5	25	01/26/2020 17:05	WG1417330
4-Methyl-2-pentanone (MIBK)	U		20.6	125	25	01/26/2020 17:05	WG1417330
Methyl tert-butyl ether	U		2.55	12.5	25	01/26/2020 17:05	WG1417330
Naphthalene	U		4.35	62.5	25	01/26/2020 17:05	WG1417330
n-Propylbenzene	U		4.05	12.5	25	01/26/2020 17:05	WG1417330
Styrene	U		2.93	12.5	25	01/26/2020 17:05	WG1417330
1,1,1,2-Tetrachloroethane	U		3.00	12.5	25	01/26/2020 17:05	WG1417330
1,1,2,2-Tetrachloroethane	U		3.25	12.5	25	01/26/2020 17:05	WG1417330
1,1,2-Trichlorotrifluoroethane	U		4.10	12.5	25	01/26/2020 17:05	WG1417330
Tetrachloroethene	U		4.98	12.5	25	01/26/2020 17:05	WG1417330
Toluene	U		10.3	12.5	25	01/26/2020 17:05	WG1417330
1,2,3-Trichlorobenzene	U		4.10	12.5	25	01/26/2020 17:05	WG1417330
1,2,4-Trichlorobenzene	U		8.88	12.5	25	01/26/2020 17:05	WG1417330
1,1,1-Trichloroethane	U		2.35	12.5	25	01/26/2020 17:05	WG1417330
1,1,2-Trichloroethane	U		4.65	12.5	25	01/26/2020 17:05	WG1417330
Trichloroethene	4.63	J	3.83	12.5	25	01/26/2020 17:05	WG1417330
Trichlorofluoromethane	U		3.25	62.5	25	01/26/2020 17:05	WG1417330
1,2,3-Trichloropropane	U		6.17	62.5	25	01/26/2020 17:05	WG1417330

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		3.08	12.5	25	01/26/2020 17:05	WG1417330
1,2,3-Trimethylbenzene	U		1.85	12.5	25	01/26/2020 17:05	WG1417330
1,3,5-Trimethylbenzene	U		3.10	12.5	25	01/26/2020 17:05	WG1417330
Vinyl acetate	U	UJ J0	16.1	125	25	01/26/2020 17:05	WG1417330
Vinyl chloride	1340		2.95	12.5	25	01/26/2020 17:05	WG1417330
Xylenes, Total	U		7.90	37.5	25	01/26/2020 17:05	WG1417330
(S) Toluene-d8	*101*			*80.0-120*		*01/26/2020 17:05*	WG1417330
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/26/2020 17:05*	WG1417330
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*01/26/2020 17:05*	WG1417330

JC 2/14/2020

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 27, 2020

PES Environmental, Inc.- WA

Sample Delivery Group:	L1213621
Samples Received:	04/30/2020
Project Number:	1413.001.02.501E
Description:	American Linen

Report To: Brian O'Neal/Bill Haldeman
1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Entire Report Reviewed By:

Jared Starkey
Project Manager

MW-929-042920 L1213621-01 GW

Collected by: Sean K | Collected date/time: 04/29/20 08:45 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469122	1	05/05/20 07:12	05/05/20 07:12	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	04/30/20 22:46	04/30/20 22:46	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/01/20 23:24	05/01/20 23:24	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 07:53	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 10:48	05/06/20 10:48	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471907	10	05/07/20 09:36	05/07/20 09:36	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/02/20 22:55	05/02/20 22:55	DWR	Mt. Juliet, TN

MW-320-042920 L1213621-02 GW

Collected by: Sean K | Collected date/time: 04/29/20 09:45 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469122	1	05/05/20 07:29	05/05/20 07:29	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	04/30/20 23:04	04/30/20 23:04	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/01/20 23:46	05/01/20 23:46	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 08:53	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:06	05/06/20 11:06	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/02/20 23:15	05/02/20 23:15	DWR	Mt. Juliet, TN

GEI-1-042920 L1213621-03 GW

Collected by: Sean K | Collected date/time: 04/29/20 09:55 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469122	1	05/05/20 07:36	05/05/20 07:36	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 00:16	05/01/20 00:16	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/02/20 00:05	05/02/20 00:05	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 08:56	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:11	05/06/20 11:11	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471907	10	05/07/20 09:38	05/07/20 09:38	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/02/20 23:34	05/02/20 23:34	DWR	Mt. Juliet, TN

MW-333-042920 L1213621-04 GW

Collected by: Sean K | Collected date/time: 04/29/20 10:00 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 09:59	05/05/20 09:59	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 00:51	05/01/20 00:51	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/02/20 00:25	05/02/20 00:25	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 08:59	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:14	05/06/20 11:14	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471907	10	05/07/20 09:40	05/07/20 09:40	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/02/20 23:53	05/02/20 23:53	DWR	Mt. Juliet, TN

MW-322-042920 L1213621-05 GW

Collected by: Sean K | Collected date/time: 04/29/20 12:00 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 10:18	05/05/20 10:18	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 01:09	05/01/20 01:09	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/02/20 00:41	05/02/20 00:41	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:03	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:16	05/06/20 11:16	DAH	Mt. Juliet, TN

MW-322-042920 L1213621-05 GW

Collected by: Sean K | Collected date/time: 04/29/20 12:00 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	100	05/03/20 00:13	05/03/20 00:13	DWR	Mt. Juliet, TN

GEI-MW-1-042920 L1213621-06 GW

Collected by: Sean K | Collected date/time: 04/29/20 12:25 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 10:26	05/05/20 10:26	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 01:27	05/01/20 01:27	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/02/20 01:35	05/02/20 01:35	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:06	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:19	05/06/20 11:19	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/03/20 00:32	05/03/20 00:32	DWR	Mt. Juliet, TN

GEI-2-042920 L1213621-07 GW

Collected by: Sean K | Collected date/time: 04/29/20 12:30 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 10:34	05/05/20 10:34	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 01:45	05/01/20 01:45	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1469258	1	05/02/20 01:53	05/02/20 01:53	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:42	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:22	05/06/20 11:22	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/03/20 00:51	05/03/20 00:51	DWR	Mt. Juliet, TN

FMW-131-042920 L1213621-08 GW

Collected by: Sean K | Collected date/time: 04/29/20 14:05 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 10:41	05/05/20 10:41	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 02:21	05/01/20 02:21	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1470661	1	05/05/20 22:13	05/05/20 22:13	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:45	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:25	05/06/20 11:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471907	10	05/07/20 09:45	05/07/20 09:45	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/03/20 01:10	05/03/20 01:10	DWR	Mt. Juliet, TN

MW116-042920 L1213621-09 GW

Collected by: Sean K | Collected date/time: 04/29/20 14:10 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 10:48	05/05/20 10:48	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 02:39	05/01/20 02:39	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1470661	1	05/05/20 23:20	05/05/20 23:20	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:49	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:28	05/06/20 11:28	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/03/20 01:29	05/03/20 01:29	DWR	Mt. Juliet, TN

MW-147-042920 L1213621-10 GW

Collected by: Sean K | Collected date/time: 04/29/20 14:55 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 10:56	05/05/20 10:56	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 03:33	05/01/20 03:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1470661	1	05/05/20 23:37	05/05/20 23:37	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:52	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1470018	1	05/04/20 17:04	05/04/20 17:04	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:31	05/06/20 11:31	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	25	05/03/20 01:48	05/03/20 01:48	DWR	Mt. Juliet, TN

EQ-042920 L1213621-11 GW

Collected by: Sean K | Collected date/time: 04/29/20 15:00 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469123	1	05/05/20 14:37	05/05/20 14:37	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1468704	1	05/01/20 03:51	05/01/20 03:51	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1470661	1	05/05/20 23:52	05/05/20 23:52	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469555	1	05/05/20 22:54	05/06/20 09:55	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1469667	1	05/03/20 00:10	05/03/20 00:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1470548	1	05/06/20 11:36	05/06/20 11:36	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1469806	1	05/02/20 20:41	05/02/20 20:41	DWR	Mt. Juliet, TN

TB-042920 L1213621-12 GW

Collected by: Sean K | Collected date/time: 04/29/20 15:05 | Received date/time: 04/30/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1469667	1	05/03/20 00:32	05/03/20 00:32	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1470365	1	05/04/20 23:13	05/04/20 23:13	ACG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jared Starkey
Project Manager

Report Revision History

Level II Report - Version 1: 05/08/20 14:09

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	287000		8450	20000	1	05/05/2020 07:12	WG1469122

Sample Narrative:
L1213621-01 WG1469122: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	15800		379	1000	1	04/30/2020 22:46	WG1468704
Nitrate	181		48.0	100	1	04/30/2020 22:46	WG1468704
Sulfate	36200		594	5000	1	04/30/2020 22:46	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4970		102	1000	1	05/01/2020 23:24	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	6570		48.9	100	1	05/06/2020 07:53	WG1469555
Manganese	1310	V	1.32	5.00	1	05/06/2020 07:53	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	7980		2.87	6.78	10	05/07/2020 09:36	WG1471907
Ethane	U		0.296	1.29	1	05/06/2020 10:48	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 10:48	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	25.0	1	05/02/2020 22:55	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/02/2020 22:55	WG1469806
Benzene	U		0.0941	0.500	1	05/02/2020 22:55	WG1469806
Bromobenzene	U		0.118	0.500	1	05/02/2020 22:55	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/02/2020 22:55	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/02/2020 22:55	WG1469806
Bromoform	U		0.129	0.500	1	05/02/2020 22:55	WG1469806
Bromomethane	U		0.605	2.50	1	05/02/2020 22:55	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/02/2020 22:55	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/02/2020 22:55	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/02/2020 22:55	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/02/2020 22:55	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/02/2020 22:55	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/02/2020 22:55	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/02/2020 22:55	WG1469806
Chloroethane	U		0.192	2.50	1	05/02/2020 22:55	WG1469806
Chloroform	U		0.111	0.500	1	05/02/2020 22:55	WG1469806
Chloromethane	U		0.960	1.25	1	05/02/2020 22:55	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/02/2020 22:55	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/02/2020 22:55	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/02/2020 22:55	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/02/2020 22:55	WG1469806
Dibromomethane	U		0.122	0.500	1	05/02/2020 22:55	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/02/2020 22:55	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/02/2020 22:55	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/02/2020 22:55	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/02/2020 22:55	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/02/2020 22:55	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/02/2020 22:55	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/02/2020 22:55	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/02/2020 22:55	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/02/2020 22:55	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/02/2020 22:55	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/02/2020 22:55	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/02/2020 22:55	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/02/2020 22:55	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/02/2020 22:55	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/02/2020 22:55	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/02/2020 22:55	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/02/2020 22:55	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/02/2020 22:55	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/02/2020 22:55	WG1469806
2-Hexanone	U		0.787	5.00	1	05/02/2020 22:55	WG1469806
n-Hexane	U		0.749	5.00	1	05/02/2020 22:55	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/02/2020 22:55	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/02/2020 22:55	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/02/2020 22:55	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/02/2020 22:55	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/02/2020 22:55	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/02/2020 22:55	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/02/2020 22:55	WG1469806
Naphthalene	U		0.174	2.50	1	05/02/2020 22:55	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/02/2020 22:55	WG1469806
Styrene	U		0.118	0.500	1	05/02/2020 22:55	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/02/2020 22:55	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/02/2020 22:55	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/02/2020 22:55	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/02/2020 22:55	WG1469806
Toluene	0.286	J	0.278	0.500	1	05/02/2020 22:55	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2020 22:55	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/02/2020 22:55	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/02/2020 22:55	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/02/2020 22:55	WG1469806
Trichloroethene	U		0.190	0.500	1	05/02/2020 22:55	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/02/2020 22:55	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/02/2020 22:55	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/02/2020 22:55	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 22:55	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 22:55	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/02/2020 22:55	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/02/2020 22:55	WG1469806
Xylenes, Total	U		0.174	1.50	1	05/02/2020 22:55	WG1469806
(S) Toluene-d8	*106*			*80.0-120*		*05/02/2020 22:55*	WG1469806
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*05/02/2020 22:55*	WG1469806
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*05/02/2020 22:55*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	282000		8450	20000	1	05/05/2020 07:29	WG1469122

Sample Narrative:
L1213621-02 WG1469122: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	56500		379	1000	1	04/30/2020 23:04	WG1468704
Nitrate	U		48.0	100	1	04/30/2020 23:04	WG1468704
Sulfate	67000		594	5000	1	04/30/2020 23:04	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4700		102	1000	1	05/01/2020 23:46	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	5330		48.9	100	1	05/06/2020 08:53	WG1469555
Manganese	3660		1.32	5.00	1	05/06/2020 08:53	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	158		0.287	0.678	1	05/06/2020 11:06	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:06	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:06	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	25.0	1	05/02/2020 23:15	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/02/2020 23:15	WG1469806
Benzene	U		0.0941	0.500	1	05/02/2020 23:15	WG1469806
Bromobenzene	U		0.118	0.500	1	05/02/2020 23:15	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/02/2020 23:15	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/02/2020 23:15	WG1469806
Bromoform	U		0.129	0.500	1	05/02/2020 23:15	WG1469806
Bromomethane	U		0.605	2.50	1	05/02/2020 23:15	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/02/2020 23:15	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/02/2020 23:15	WG1469806
tert-Butylbenzene	0.865		0.127	0.500	1	05/02/2020 23:15	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/02/2020 23:15	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/02/2020 23:15	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/02/2020 23:15	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/02/2020 23:15	WG1469806
Chloroethane	U		0.192	2.50	1	05/02/2020 23:15	WG1469806
Chloroform	U		0.111	0.500	1	05/02/2020 23:15	WG1469806
Chloromethane	U		0.960	1.25	1	05/02/2020 23:15	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/02/2020 23:15	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/02/2020 23:15	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/02/2020 23:15	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/02/2020 23:15	WG1469806
Dibromomethane	U		0.122	0.500	1	05/02/2020 23:15	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/02/2020 23:15	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/02/2020 23:15	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/02/2020 23:15	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/02/2020 23:15	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/02/2020 23:15	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/02/2020 23:15	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/02/2020 23:15	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/02/2020 23:15	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/02/2020 23:15	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/02/2020 23:15	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/02/2020 23:15	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/02/2020 23:15	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/02/2020 23:15	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/02/2020 23:15	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/02/2020 23:15	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/02/2020 23:15	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/02/2020 23:15	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/02/2020 23:15	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/02/2020 23:15	WG1469806
2-Hexanone	U		0.787	5.00	1	05/02/2020 23:15	WG1469806
n-Hexane	U		0.749	5.00	1	05/02/2020 23:15	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/02/2020 23:15	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/02/2020 23:15	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/02/2020 23:15	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/02/2020 23:15	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/02/2020 23:15	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/02/2020 23:15	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/02/2020 23:15	WG1469806
Naphthalene	U		0.174	2.50	1	05/02/2020 23:15	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/02/2020 23:15	WG1469806
Styrene	U		0.118	0.500	1	05/02/2020 23:15	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/02/2020 23:15	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/02/2020 23:15	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/02/2020 23:15	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/02/2020 23:15	WG1469806
Toluene	U		0.278	0.500	1	05/02/2020 23:15	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2020 23:15	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/02/2020 23:15	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/02/2020 23:15	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/02/2020 23:15	WG1469806
Trichloroethene	U		0.190	0.500	1	05/02/2020 23:15	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/02/2020 23:15	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/02/2020 23:15	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/02/2020 23:15	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 23:15	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 23:15	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/02/2020 23:15	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/02/2020 23:15	WG1469806
Xylenes, Total	U		0.174	1.50	1	05/02/2020 23:15	WG1469806
(S) Toluene-d8	*96.3*			*80.0-120*		*05/02/2020 23:15*	WG1469806
(S) 4-Bromofluorobenzene	*95.1*			*77.0-126*		*05/02/2020 23:15*	WG1469806
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*05/02/2020 23:15*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	296000		8450	20000	1	05/05/2020 07:36	WG1469122

Sample Narrative:
L1213621-03 WG1469122: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	15900		379	1000	1	05/01/2020 00:16	WG1468704
Nitrate	118		48.0	100	1	05/01/2020 00:16	WG1468704
Sulfate	36000		594	5000	1	05/01/2020 00:16	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5300		102	1000	1	05/02/2020 00:05	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	7960		48.9	100	1	05/06/2020 08:56	WG1469555
Manganese	1590		1.32	5.00	1	05/06/2020 08:56	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	9170		2.87	6.78	10	05/07/2020 09:38	WG1471907
Ethane	U		0.296	1.29	1	05/06/2020 11:11	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:11	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	25.0	1	05/02/2020 23:34	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/02/2020 23:34	WG1469806
Benzene	U		0.0941	0.500	1	05/02/2020 23:34	WG1469806
Bromobenzene	U		0.118	0.500	1	05/02/2020 23:34	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/02/2020 23:34	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/02/2020 23:34	WG1469806
Bromoform	U		0.129	0.500	1	05/02/2020 23:34	WG1469806
Bromomethane	U		0.605	2.50	1	05/02/2020 23:34	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/02/2020 23:34	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/02/2020 23:34	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/02/2020 23:34	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/02/2020 23:34	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/02/2020 23:34	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/02/2020 23:34	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/02/2020 23:34	WG1469806
Chloroethane	U		0.192	2.50	1	05/02/2020 23:34	WG1469806
Chloroform	U		0.111	0.500	1	05/02/2020 23:34	WG1469806
Chloromethane	U		0.960	1.25	1	05/02/2020 23:34	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/02/2020 23:34	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/02/2020 23:34	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/02/2020 23:34	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/02/2020 23:34	WG1469806
Dibromomethane	U		0.122	0.500	1	05/02/2020 23:34	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/02/2020 23:34	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/02/2020 23:34	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/02/2020 23:34	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/02/2020 23:34	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/02/2020 23:34	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/02/2020 23:34	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/02/2020 23:34	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/02/2020 23:34	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/02/2020 23:34	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/02/2020 23:34	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/02/2020 23:34	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/02/2020 23:34	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/02/2020 23:34	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/02/2020 23:34	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/02/2020 23:34	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/02/2020 23:34	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/02/2020 23:34	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/02/2020 23:34	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/02/2020 23:34	WG1469806
2-Hexanone	U		0.787	5.00	1	05/02/2020 23:34	WG1469806
n-Hexane	U		0.749	5.00	1	05/02/2020 23:34	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/02/2020 23:34	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/02/2020 23:34	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/02/2020 23:34	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/02/2020 23:34	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/02/2020 23:34	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/02/2020 23:34	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/02/2020 23:34	WG1469806
Naphthalene	U		0.174	2.50	1	05/02/2020 23:34	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/02/2020 23:34	WG1469806
Styrene	U		0.118	0.500	1	05/02/2020 23:34	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/02/2020 23:34	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/02/2020 23:34	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/02/2020 23:34	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/02/2020 23:34	WG1469806
Toluene	U		0.278	0.500	1	05/02/2020 23:34	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2020 23:34	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/02/2020 23:34	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/02/2020 23:34	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/02/2020 23:34	WG1469806
Trichloroethene	U		0.190	0.500	1	05/02/2020 23:34	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/02/2020 23:34	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/02/2020 23:34	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/02/2020 23:34	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 23:34	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 23:34	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/02/2020 23:34	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/02/2020 23:34	WG1469806
Xylenes, Total	0.254	J	0.174	1.50	1	05/02/2020 23:34	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/02/2020 23:34*	WG1469806
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/02/2020 23:34*	WG1469806
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/02/2020 23:34*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	890000		8450	20000	1	05/05/2020 09:59	WG1469123

Sample Narrative:
L1213621-04 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	33900		379	1000	1	05/01/2020 00:51	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 00:51	WG1468704
Sulfate	1370	J	594	5000	1	05/01/2020 00:51	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	13500		102	1000	1	05/02/2020 00:25	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	26200		48.9	100	1	05/06/2020 08:59	WG1469555
Manganese	2160		1.32	5.00	1	05/06/2020 08:59	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	24300		2.87	6.78	10	05/07/2020 09:40	WG1471907
Ethane	U		0.296	1.29	1	05/06/2020 11:14	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:14	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	25.0	1	05/02/2020 23:53	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/02/2020 23:53	WG1469806
Benzene	U		0.0941	0.500	1	05/02/2020 23:53	WG1469806
Bromobenzene	U		0.118	0.500	1	05/02/2020 23:53	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/02/2020 23:53	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/02/2020 23:53	WG1469806
Bromoform	U		0.129	0.500	1	05/02/2020 23:53	WG1469806
Bromomethane	U		0.605	2.50	1	05/02/2020 23:53	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/02/2020 23:53	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/02/2020 23:53	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/02/2020 23:53	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/02/2020 23:53	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/02/2020 23:53	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/02/2020 23:53	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/02/2020 23:53	WG1469806
Chloroethane	U		0.192	2.50	1	05/02/2020 23:53	WG1469806
Chloroform	U		0.111	0.500	1	05/02/2020 23:53	WG1469806
Chloromethane	U		0.960	1.25	1	05/02/2020 23:53	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/02/2020 23:53	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/02/2020 23:53	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/02/2020 23:53	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/02/2020 23:53	WG1469806
Dibromomethane	U		0.122	0.500	1	05/02/2020 23:53	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/02/2020 23:53	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/02/2020 23:53	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/02/2020 23:53	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/02/2020 23:53	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/02/2020 23:53	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/02/2020 23:53	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/02/2020 23:53	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/02/2020 23:53	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/02/2020 23:53	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/02/2020 23:53	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/02/2020 23:53	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/02/2020 23:53	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/02/2020 23:53	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/02/2020 23:53	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/02/2020 23:53	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/02/2020 23:53	WG1469806
Di-isopropyl ether	0.158	J	0.105	0.500	1	05/02/2020 23:53	WG1469806
Ethylbenzene	0.189	J	0.137	0.500	1	05/02/2020 23:53	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/02/2020 23:53	WG1469806
2-Hexanone	U		0.787	5.00	1	05/02/2020 23:53	WG1469806
n-Hexane	U		0.749	5.00	1	05/02/2020 23:53	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/02/2020 23:53	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/02/2020 23:53	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/02/2020 23:53	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/02/2020 23:53	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/02/2020 23:53	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/02/2020 23:53	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/02/2020 23:53	WG1469806
Naphthalene	U		0.174	2.50	1	05/02/2020 23:53	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/02/2020 23:53	WG1469806
Styrene	U		0.118	0.500	1	05/02/2020 23:53	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/02/2020 23:53	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/02/2020 23:53	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/02/2020 23:53	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/02/2020 23:53	WG1469806
Toluene	1.08		0.278	0.500	1	05/02/2020 23:53	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2020 23:53	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/02/2020 23:53	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/02/2020 23:53	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/02/2020 23:53	WG1469806
Trichloroethene	U		0.190	0.500	1	05/02/2020 23:53	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/02/2020 23:53	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/02/2020 23:53	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/02/2020 23:53	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 23:53	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 23:53	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/02/2020 23:53	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/02/2020 23:53	WG1469806
Xylenes, Total	0.854	J	0.174	1.50	1	05/02/2020 23:53	WG1469806
(S) Toluene-d8	*108*			*80.0-120*		*05/02/2020 23:53*	WG1469806
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*05/02/2020 23:53*	WG1469806
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/02/2020 23:53*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	547000		8450	20000	1	05/05/2020 10:18	WG1469123

Sample Narrative:
L1213621-05 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	30400		379	1000	1	05/01/2020 01:09	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 01:09	WG1468704
Sulfate	69900		594	5000	1	05/01/2020 01:09	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5490		102	1000	1	05/02/2020 00:41	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	14600		48.9	100	1	05/06/2020 09:03	WG1469555
Manganese	2320		1.32	5.00	1	05/06/2020 09:03	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	2360		0.287	0.678	1	05/06/2020 11:16	WG1470548
Ethane	86.6		0.296	1.29	1	05/06/2020 11:16	WG1470548
Ethene	22.2		0.422	1.27	1	05/06/2020 11:16	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		1130	2500	100	05/03/2020 00:13	WG1469806
Acrylonitrile	U		67.1	500	100	05/03/2020 00:13	WG1469806
Benzene	15.5	J	9.41	50.0	100	05/03/2020 00:13	WG1469806
Bromobenzene	U		11.8	50.0	100	05/03/2020 00:13	WG1469806
Bromodichloromethane	U		13.6	50.0	100	05/03/2020 00:13	WG1469806
Bromochloromethane	U		12.8	50.0	100	05/03/2020 00:13	WG1469806
Bromoform	U		12.9	50.0	100	05/03/2020 00:13	WG1469806
Bromomethane	U		60.5	250	100	05/03/2020 00:13	WG1469806
n-Butylbenzene	U		15.7	50.0	100	05/03/2020 00:13	WG1469806
sec-Butylbenzene	U		12.5	50.0	100	05/03/2020 00:13	WG1469806
tert-Butylbenzene	U		12.7	50.0	100	05/03/2020 00:13	WG1469806
Carbon disulfide	U	J0	9.62	50.0	100	05/03/2020 00:13	WG1469806
Carbon tetrachloride	U		12.8	50.0	100	05/03/2020 00:13	WG1469806
Chlorobenzene	U		11.7	50.0	100	05/03/2020 00:13	WG1469806
Chlorodibromomethane	U		14.0	50.0	100	05/03/2020 00:13	WG1469806
Chloroethane	U		19.2	250	100	05/03/2020 00:13	WG1469806
Chloroform	U		11.1	50.0	100	05/03/2020 00:13	WG1469806
Chloromethane	U		96.0	125	100	05/03/2020 00:13	WG1469806
2-Chlorotoluene	U		10.6	50.0	100	05/03/2020 00:13	WG1469806
4-Chlorotoluene	U		11.4	50.0	100	05/03/2020 00:13	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		27.6	250	100	05/03/2020 00:13	WG1469806
1,2-Dibromoethane	U		12.6	50.0	100	05/03/2020 00:13	WG1469806
Dibromomethane	U		12.2	50.0	100	05/03/2020 00:13	WG1469806
1,2-Dichlorobenzene	U		10.7	50.0	100	05/03/2020 00:13	WG1469806
1,3-Dichlorobenzene	U		29.9	50.0	100	05/03/2020 00:13	WG1469806
1,4-Dichlorobenzene	U		12.0	50.0	100	05/03/2020 00:13	WG1469806
Dichlorodifluoromethane	U		37.4	250	100	05/03/2020 00:13	WG1469806
1,1-Dichloroethane	U		10.0	50.0	100	05/03/2020 00:13	WG1469806
1,2-Dichloroethane	U		8.19	50.0	100	05/03/2020 00:13	WG1469806
1,1-Dichloroethene	U		18.8	50.0	100	05/03/2020 00:13	WG1469806
cis-1,2-Dichloroethene	1510		12.6	50.0	100	05/03/2020 00:13	WG1469806
trans-1,2-Dichloroethene	U		14.9	50.0	100	05/03/2020 00:13	WG1469806
1,2-Dichloropropane	U		14.9	50.0	100	05/03/2020 00:13	WG1469806
1,1-Dichloropropene	U		14.2	50.0	100	05/03/2020 00:13	WG1469806
1,3-Dichloropropane	U		10.9	100	100	05/03/2020 00:13	WG1469806
cis-1,3-Dichloropropene	U		11.1	50.0	100	05/03/2020 00:13	WG1469806
trans-1,3-Dichloropropene	U		11.8	50.0	100	05/03/2020 00:13	WG1469806
trans-1,4-Dichloro-2-butene	U		46.7	500	100	05/03/2020 00:13	WG1469806
2,2-Dichloropropane	U		16.1	50.0	100	05/03/2020 00:13	WG1469806
Di-isopropyl ether	U		10.5	50.0	100	05/03/2020 00:13	WG1469806
Ethylbenzene	U		13.7	50.0	100	05/03/2020 00:13	WG1469806
Hexachloro-1,3-butadiene	U		33.7	100	100	05/03/2020 00:13	WG1469806
2-Hexanone	U		78.7	500	100	05/03/2020 00:13	WG1469806
n-Hexane	U		74.9	500	100	05/03/2020 00:13	WG1469806
Iodomethane	U	J0	55.4	500	100	05/03/2020 00:13	WG1469806
Isopropylbenzene	U		10.5	50.0	100	05/03/2020 00:13	WG1469806
p-Isopropyltoluene	U		12.0	50.0	100	05/03/2020 00:13	WG1469806
2-Butanone (MEK)	U		119	500	100	05/03/2020 00:13	WG1469806
Methylene Chloride	U	J0	43.0	250	100	05/03/2020 00:13	WG1469806
4-Methyl-2-pentanone (MIBK)	U		47.8	500	100	05/03/2020 00:13	WG1469806
Methyl tert-butyl ether	U		10.1	50.0	100	05/03/2020 00:13	WG1469806
Naphthalene	U		17.4	250	100	05/03/2020 00:13	WG1469806
n-Propylbenzene	U		9.93	50.0	100	05/03/2020 00:13	WG1469806
Styrene	U		11.8	50.0	100	05/03/2020 00:13	WG1469806
1,1,1,2-Tetrachloroethane	U		14.7	50.0	100	05/03/2020 00:13	WG1469806
1,1,2,2-Tetrachloroethane	U		13.3	50.0	100	05/03/2020 00:13	WG1469806
1,1,2-Trichlorotrifluoroethane	U		18.0	50.0	100	05/03/2020 00:13	WG1469806
Tetrachloroethene	U		30.0	50.0	100	05/03/2020 00:13	WG1469806
Toluene	U		27.8	50.0	100	05/03/2020 00:13	WG1469806
1,2,3-Trichlorobenzene	U		16.4	50.0	100	05/03/2020 00:13	WG1469806
1,2,4-Trichlorobenzene	U		48.1	100	100	05/03/2020 00:13	WG1469806
1,1,1-Trichloroethane	U		14.9	50.0	100	05/03/2020 00:13	WG1469806
1,1,2-Trichloroethane	U		15.8	50.0	100	05/03/2020 00:13	WG1469806
Trichloroethene	661		19.0	50.0	100	05/03/2020 00:13	WG1469806
Trichlorofluoromethane	U		16.0	250	100	05/03/2020 00:13	WG1469806
1,2,3-Trichloropropane	U		23.7	250	100	05/03/2020 00:13	WG1469806
1,2,4-Trimethylbenzene	U		32.2	50.0	100	05/03/2020 00:13	WG1469806
1,2,3-Trimethylbenzene	U		10.4	50.0	100	05/03/2020 00:13	WG1469806
1,3,5-Trimethylbenzene	U		10.4	50.0	100	05/03/2020 00:13	WG1469806
Vinyl acetate	U		69.2	500	100	05/03/2020 00:13	WG1469806
Vinyl chloride	280		23.4	50.0	100	05/03/2020 00:13	WG1469806
Xylenes, Total	U		17.4	150	100	05/03/2020 00:13	WG1469806
(S) Toluene-d8	*108*			*80.0-120*		*05/03/2020 00:13*	WG1469806
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*05/03/2020 00:13*	WG1469806
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/03/2020 00:13*	WG1469806

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	

Sample Narrative:

L1213621-05 WG1469806: Target compounds too high to run at a lower dilution.

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	404000		8450	20000	1	05/05/2020 10:26	WG1469123

Sample Narrative:
L1213621-06 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19700		379	1000	1	05/01/2020 01:27	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 01:27	WG1468704
Sulfate	29800		594	5000	1	05/01/2020 01:27	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	5000		102	1000	1	05/02/2020 01:35	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	5090		48.9	100	1	05/06/2020 09:06	WG1469555
Manganese	2750		1.32	5.00	1	05/06/2020 09:06	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	757		0.287	0.678	1	05/06/2020 11:19	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:19	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:19	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	25.0	1	05/03/2020 00:32	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/03/2020 00:32	WG1469806
Benzene	U		0.0941	0.500	1	05/03/2020 00:32	WG1469806
Bromobenzene	U		0.118	0.500	1	05/03/2020 00:32	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/03/2020 00:32	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/03/2020 00:32	WG1469806
Bromoform	U		0.129	0.500	1	05/03/2020 00:32	WG1469806
Bromomethane	U		0.605	2.50	1	05/03/2020 00:32	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/03/2020 00:32	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/03/2020 00:32	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/03/2020 00:32	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/03/2020 00:32	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/03/2020 00:32	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/03/2020 00:32	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/03/2020 00:32	WG1469806
Chloroethane	U		0.192	2.50	1	05/03/2020 00:32	WG1469806
Chloroform	U		0.111	0.500	1	05/03/2020 00:32	WG1469806
Chloromethane	U		0.960	1.25	1	05/03/2020 00:32	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/03/2020 00:32	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/03/2020 00:32	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/03/2020 00:32	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/03/2020 00:32	WG1469806
Dibromomethane	U		0.122	0.500	1	05/03/2020 00:32	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/03/2020 00:32	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/03/2020 00:32	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/03/2020 00:32	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/03/2020 00:32	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/03/2020 00:32	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/03/2020 00:32	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/03/2020 00:32	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/03/2020 00:32	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/03/2020 00:32	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/03/2020 00:32	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/03/2020 00:32	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/03/2020 00:32	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/03/2020 00:32	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/03/2020 00:32	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/03/2020 00:32	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/03/2020 00:32	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/03/2020 00:32	WG1469806
Ethylbenzene	0.161	J	0.137	0.500	1	05/03/2020 00:32	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/03/2020 00:32	WG1469806
2-Hexanone	U		0.787	5.00	1	05/03/2020 00:32	WG1469806
n-Hexane	U		0.749	5.00	1	05/03/2020 00:32	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/03/2020 00:32	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/03/2020 00:32	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/03/2020 00:32	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/03/2020 00:32	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/03/2020 00:32	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/03/2020 00:32	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/03/2020 00:32	WG1469806
Naphthalene	U		0.174	2.50	1	05/03/2020 00:32	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/03/2020 00:32	WG1469806
Styrene	U		0.118	0.500	1	05/03/2020 00:32	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/03/2020 00:32	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/03/2020 00:32	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/03/2020 00:32	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/03/2020 00:32	WG1469806
Toluene	1.06		0.278	0.500	1	05/03/2020 00:32	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/03/2020 00:32	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/03/2020 00:32	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/03/2020 00:32	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/03/2020 00:32	WG1469806
Trichloroethene	U		0.190	0.500	1	05/03/2020 00:32	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/03/2020 00:32	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/03/2020 00:32	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/03/2020 00:32	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 00:32	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 00:32	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/03/2020 00:32	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/03/2020 00:32	WG1469806
Xylenes, Total	0.938	J	0.174	1.50	1	05/03/2020 00:32	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/03/2020 00:32*	WG1469806
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*05/03/2020 00:32*	WG1469806
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*05/03/2020 00:32*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	622000		8450	20000	1	05/05/2020 10:34	WG1469123

Sample Narrative:
L1213621-07 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18500		379	1000	1	05/01/2020 01:45	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 01:45	WG1468704
Sulfate	1880	J	594	5000	1	05/01/2020 01:45	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	4630		102	1000	1	05/02/2020 01:53	WG1469258

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	19900		48.9	100	1	05/06/2020 09:42	WG1469555
Manganese	906		1.32	5.00	1	05/06/2020 09:42	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	56.8		0.287	0.678	1	05/06/2020 11:22	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:22	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:22	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	25.0	1	05/03/2020 00:51	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/03/2020 00:51	WG1469806
Benzene	2.22		0.0941	0.500	1	05/03/2020 00:51	WG1469806
Bromobenzene	U		0.118	0.500	1	05/03/2020 00:51	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/03/2020 00:51	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/03/2020 00:51	WG1469806
Bromoform	U		0.129	0.500	1	05/03/2020 00:51	WG1469806
Bromomethane	U		0.605	2.50	1	05/03/2020 00:51	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/03/2020 00:51	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/03/2020 00:51	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/03/2020 00:51	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/03/2020 00:51	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/03/2020 00:51	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/03/2020 00:51	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/03/2020 00:51	WG1469806
Chloroethane	U		0.192	2.50	1	05/03/2020 00:51	WG1469806
Chloroform	U		0.111	0.500	1	05/03/2020 00:51	WG1469806
Chloromethane	U		0.960	1.25	1	05/03/2020 00:51	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/03/2020 00:51	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/03/2020 00:51	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/03/2020 00:51	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/03/2020 00:51	WG1469806
Dibromomethane	U		0.122	0.500	1	05/03/2020 00:51	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/03/2020 00:51	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/03/2020 00:51	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/03/2020 00:51	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/03/2020 00:51	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/03/2020 00:51	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/03/2020 00:51	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/03/2020 00:51	WG1469806
cis-1,2-Dichloroethene	4.49		0.126	0.500	1	05/03/2020 00:51	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/03/2020 00:51	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/03/2020 00:51	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/03/2020 00:51	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/03/2020 00:51	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/03/2020 00:51	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/03/2020 00:51	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/03/2020 00:51	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/03/2020 00:51	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/03/2020 00:51	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/03/2020 00:51	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/03/2020 00:51	WG1469806
2-Hexanone	U		0.787	5.00	1	05/03/2020 00:51	WG1469806
n-Hexane	U		0.749	5.00	1	05/03/2020 00:51	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/03/2020 00:51	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/03/2020 00:51	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/03/2020 00:51	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/03/2020 00:51	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/03/2020 00:51	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/03/2020 00:51	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/03/2020 00:51	WG1469806
Naphthalene	U		0.174	2.50	1	05/03/2020 00:51	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/03/2020 00:51	WG1469806
Styrene	U		0.118	0.500	1	05/03/2020 00:51	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/03/2020 00:51	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/03/2020 00:51	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/03/2020 00:51	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/03/2020 00:51	WG1469806
Toluene	U		0.278	0.500	1	05/03/2020 00:51	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/03/2020 00:51	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/03/2020 00:51	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/03/2020 00:51	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/03/2020 00:51	WG1469806
Trichloroethene	U		0.190	0.500	1	05/03/2020 00:51	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/03/2020 00:51	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/03/2020 00:51	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/03/2020 00:51	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 00:51	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 00:51	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/03/2020 00:51	WG1469806
Vinyl chloride	67.8		0.234	0.500	1	05/03/2020 00:51	WG1469806
Xylenes, Total	U		0.174	1.50	1	05/03/2020 00:51	WG1469806
(S) Toluene-d8	*106*			*80.0-120*		*05/03/2020 00:51*	WG1469806
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*05/03/2020 00:51*	WG1469806
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/03/2020 00:51*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	375000		8450	20000	1	05/05/2020 10:41	WG1469123

Sample Narrative:
L1213621-08 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	13100		379	1000	1	05/01/2020 02:21	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 02:21	WG1468704
Sulfate	U		594	5000	1	05/01/2020 02:21	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	5070		102	1000	1	05/05/2020 22:13	WG1470661

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	416		48.9	100	1	05/06/2020 09:45	WG1469555
Manganese	4190		1.32	5.00	1	05/06/2020 09:45	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	11800		2.87	6.78	10	05/07/2020 09:45	WG1471907
Ethane	U		0.296	1.29	1	05/06/2020 11:25	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:25	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	25.0	1	05/03/2020 01:10	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/03/2020 01:10	WG1469806
Benzene	U		0.0941	0.500	1	05/03/2020 01:10	WG1469806
Bromobenzene	U		0.118	0.500	1	05/03/2020 01:10	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/03/2020 01:10	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/03/2020 01:10	WG1469806
Bromoform	U		0.129	0.500	1	05/03/2020 01:10	WG1469806
Bromomethane	U		0.605	2.50	1	05/03/2020 01:10	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/03/2020 01:10	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/03/2020 01:10	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/03/2020 01:10	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/03/2020 01:10	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/03/2020 01:10	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/03/2020 01:10	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/03/2020 01:10	WG1469806
Chloroethane	U		0.192	2.50	1	05/03/2020 01:10	WG1469806
Chloroform	U		0.111	0.500	1	05/03/2020 01:10	WG1469806
Chloromethane	U		0.960	1.25	1	05/03/2020 01:10	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/03/2020 01:10	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/03/2020 01:10	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/03/2020 01:10	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/03/2020 01:10	WG1469806
Dibromomethane	U		0.122	0.500	1	05/03/2020 01:10	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/03/2020 01:10	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/03/2020 01:10	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/03/2020 01:10	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/03/2020 01:10	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/03/2020 01:10	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/03/2020 01:10	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/03/2020 01:10	WG1469806
cis-1,2-Dichloroethene	13.9		0.126	0.500	1	05/03/2020 01:10	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/03/2020 01:10	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/03/2020 01:10	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/03/2020 01:10	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/03/2020 01:10	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/03/2020 01:10	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/03/2020 01:10	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/03/2020 01:10	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/03/2020 01:10	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/03/2020 01:10	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/03/2020 01:10	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/03/2020 01:10	WG1469806
2-Hexanone	U		0.787	5.00	1	05/03/2020 01:10	WG1469806
n-Hexane	U		0.749	5.00	1	05/03/2020 01:10	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/03/2020 01:10	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/03/2020 01:10	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/03/2020 01:10	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/03/2020 01:10	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/03/2020 01:10	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/03/2020 01:10	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/03/2020 01:10	WG1469806
Naphthalene	U		0.174	2.50	1	05/03/2020 01:10	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/03/2020 01:10	WG1469806
Styrene	U		0.118	0.500	1	05/03/2020 01:10	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/03/2020 01:10	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/03/2020 01:10	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/03/2020 01:10	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/03/2020 01:10	WG1469806
Toluene	0.954		0.278	0.500	1	05/03/2020 01:10	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/03/2020 01:10	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/03/2020 01:10	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/03/2020 01:10	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/03/2020 01:10	WG1469806
Trichloroethene	U		0.190	0.500	1	05/03/2020 01:10	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/03/2020 01:10	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/03/2020 01:10	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/03/2020 01:10	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 01:10	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 01:10	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/03/2020 01:10	WG1469806
Vinyl chloride	0.309	J	0.234	0.500	1	05/03/2020 01:10	WG1469806
Xylenes, Total	0.726	J	0.174	1.50	1	05/03/2020 01:10	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/03/2020 01:10*	WG1469806
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/03/2020 01:10*	WG1469806
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*05/03/2020 01:10*	WG1469806

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	358000		8450	20000	1	05/05/2020 10:48	WG1469123

Sample Narrative:
L1213621-09 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	23400		379	1000	1	05/01/2020 02:39	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 02:39	WG1468704
Sulfate	U		594	5000	1	05/01/2020 02:39	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6530		102	1000	1	05/05/2020 23:20	WG1470661

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	6830		48.9	100	1	05/06/2020 09:49	WG1469555
Manganese	811		1.32	5.00	1	05/06/2020 09:49	WG1469555

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	6140		0.287	0.678	1	05/06/2020 11:28	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:28	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:28	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	25.0	1	05/03/2020 01:29	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/03/2020 01:29	WG1469806
Benzene	U		0.0941	0.500	1	05/03/2020 01:29	WG1469806
Bromobenzene	U		0.118	0.500	1	05/03/2020 01:29	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/03/2020 01:29	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/03/2020 01:29	WG1469806
Bromoform	U		0.129	0.500	1	05/03/2020 01:29	WG1469806
Bromomethane	U		0.605	2.50	1	05/03/2020 01:29	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/03/2020 01:29	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/03/2020 01:29	WG1469806
tert-Butylbenzene	U		0.127	0.500	1	05/03/2020 01:29	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/03/2020 01:29	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/03/2020 01:29	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/03/2020 01:29	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/03/2020 01:29	WG1469806
Chloroethane	U		0.192	2.50	1	05/03/2020 01:29	WG1469806
Chloroform	U		0.111	0.500	1	05/03/2020 01:29	WG1469806
Chloromethane	U		0.960	1.25	1	05/03/2020 01:29	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/03/2020 01:29	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/03/2020 01:29	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/03/2020 01:29	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/03/2020 01:29	WG1469806
Dibromomethane	U		0.122	0.500	1	05/03/2020 01:29	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/03/2020 01:29	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/03/2020 01:29	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/03/2020 01:29	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/03/2020 01:29	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/03/2020 01:29	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/03/2020 01:29	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/03/2020 01:29	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/03/2020 01:29	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/03/2020 01:29	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/03/2020 01:29	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/03/2020 01:29	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/03/2020 01:29	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/03/2020 01:29	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/03/2020 01:29	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/03/2020 01:29	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/03/2020 01:29	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/03/2020 01:29	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/03/2020 01:29	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/03/2020 01:29	WG1469806
2-Hexanone	U		0.787	5.00	1	05/03/2020 01:29	WG1469806
n-Hexane	U		0.749	5.00	1	05/03/2020 01:29	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/03/2020 01:29	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/03/2020 01:29	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/03/2020 01:29	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/03/2020 01:29	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/03/2020 01:29	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/03/2020 01:29	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/03/2020 01:29	WG1469806
Naphthalene	U		0.174	2.50	1	05/03/2020 01:29	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/03/2020 01:29	WG1469806
Styrene	U		0.118	0.500	1	05/03/2020 01:29	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/03/2020 01:29	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/03/2020 01:29	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/03/2020 01:29	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/03/2020 01:29	WG1469806
Toluene	U		0.278	0.500	1	05/03/2020 01:29	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/03/2020 01:29	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/03/2020 01:29	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/03/2020 01:29	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/03/2020 01:29	WG1469806
Trichloroethene	U		0.190	0.500	1	05/03/2020 01:29	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/03/2020 01:29	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/03/2020 01:29	WG1469806
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/03/2020 01:29	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 01:29	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/03/2020 01:29	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/03/2020 01:29	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/03/2020 01:29	WG1469806
Xylenes, Total	U		0.174	1.50	1	05/03/2020 01:29	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/03/2020 01:29*	WG1469806
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*05/03/2020 01:29*	WG1469806
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*05/03/2020 01:29*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	370000		8450	20000	1	05/05/2020 10:56	WG1469123

Sample Narrative:
L1213621-10 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	33900		379	1000	1	05/01/2020 03:33	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 03:33	WG1468704
Sulfate	22400		594	5000	1	05/01/2020 03:33	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3470	B	102	1000	1	05/05/2020 23:37	WG1470661

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	8660		48.9	100	1	05/06/2020 09:52	WG1469555
Manganese	1010		1.32	5.00	1	05/06/2020 09:52	WG1469555

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1150		31.6	100	1	05/04/2020 17:04	WG1470018
(S) a,a,a-Trifluorotoluene(FID)	*98.1*			*78.0-120*		*05/04/2020 17:04*	WG1470018

Sample Narrative:
L1213621-10 WG1470018: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	3780		0.287	0.678	1	05/06/2020 11:31	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:31	WG1470548
Ethene	468		0.422	1.27	1	05/06/2020 11:31	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		282	625	25	05/03/2020 01:48	WG1469806
Acrylonitrile	U		16.8	125	25	05/03/2020 01:48	WG1469806
Benzene	U		2.35	12.5	25	05/03/2020 01:48	WG1469806
Bromobenzene	U		2.95	12.5	25	05/03/2020 01:48	WG1469806
Bromodichloromethane	U		3.40	12.5	25	05/03/2020 01:48	WG1469806
Bromochloromethane	U		3.20	12.5	25	05/03/2020 01:48	WG1469806
Bromoform	U		3.22	12.5	25	05/03/2020 01:48	WG1469806
Bromomethane	U		15.1	62.5	25	05/03/2020 01:48	WG1469806
n-Butylbenzene	U		3.93	12.5	25	05/03/2020 01:48	WG1469806
sec-Butylbenzene	U		3.13	12.5	25	05/03/2020 01:48	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		3.18	12.5	25	05/03/2020 01:48	WG1469806
Carbon disulfide	U	J0	2.41	12.5	25	05/03/2020 01:48	WG1469806
Carbon tetrachloride	U		3.20	12.5	25	05/03/2020 01:48	WG1469806
Chlorobenzene	U		2.93	12.5	25	05/03/2020 01:48	WG1469806
Chlorodibromomethane	U		3.50	12.5	25	05/03/2020 01:48	WG1469806
Chloroethane	U		4.80	62.5	25	05/03/2020 01:48	WG1469806
Chloroform	U		2.78	12.5	25	05/03/2020 01:48	WG1469806
Chloromethane	U		24.0	31.3	25	05/03/2020 01:48	WG1469806
2-Chlorotoluene	U		2.65	12.5	25	05/03/2020 01:48	WG1469806
4-Chlorotoluene	U		2.85	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dibromo-3-Chloropropane	U		6.90	62.5	25	05/03/2020 01:48	WG1469806
1,2-Dibromoethane	U		3.15	12.5	25	05/03/2020 01:48	WG1469806
Dibromomethane	U		3.05	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dichlorobenzene	U		2.68	12.5	25	05/03/2020 01:48	WG1469806
1,3-Dichlorobenzene	U		7.48	12.5	25	05/03/2020 01:48	WG1469806
1,4-Dichlorobenzene	U		3.00	12.5	25	05/03/2020 01:48	WG1469806
Dichlorodifluoromethane	U		9.35	62.5	25	05/03/2020 01:48	WG1469806
1,1-Dichloroethane	U		2.50	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dichloroethane	U		2.05	12.5	25	05/03/2020 01:48	WG1469806
1,1-Dichloroethene	U		4.70	12.5	25	05/03/2020 01:48	WG1469806
cis-1,2-Dichloroethene	2410		3.15	12.5	25	05/03/2020 01:48	WG1469806
trans-1,2-Dichloroethene	3.90	J	3.73	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dichloropropane	U		3.73	12.5	25	05/03/2020 01:48	WG1469806
1,1-Dichloropropene	U		3.55	12.5	25	05/03/2020 01:48	WG1469806
1,3-Dichloropropane	U		2.73	25.0	25	05/03/2020 01:48	WG1469806
cis-1,3-Dichloropropene	U		2.78	12.5	25	05/03/2020 01:48	WG1469806
trans-1,3-Dichloropropene	U		2.95	12.5	25	05/03/2020 01:48	WG1469806
trans-1,4-Dichloro-2-butene	U		11.7	125	25	05/03/2020 01:48	WG1469806
2,2-Dichloropropane	U		4.03	12.5	25	05/03/2020 01:48	WG1469806
Di-isopropyl ether	U		2.63	12.5	25	05/03/2020 01:48	WG1469806
Ethylbenzene	U		3.43	12.5	25	05/03/2020 01:48	WG1469806
Hexachloro-1,3-butadiene	U		8.43	25.0	25	05/03/2020 01:48	WG1469806
2-Hexanone	U		19.7	125	25	05/03/2020 01:48	WG1469806
n-Hexane	U		18.7	125	25	05/03/2020 01:48	WG1469806
Iodomethane	U	J0	13.9	125	25	05/03/2020 01:48	WG1469806
Isopropylbenzene	U		2.63	12.5	25	05/03/2020 01:48	WG1469806
p-Isopropyltoluene	U		3.00	12.5	25	05/03/2020 01:48	WG1469806
2-Butanone (MEK)	U		29.8	125	25	05/03/2020 01:48	WG1469806
Methylene Chloride	U	J0	10.7	62.5	25	05/03/2020 01:48	WG1469806
4-Methyl-2-pentanone (MIBK)	U		12.0	125	25	05/03/2020 01:48	WG1469806
Methyl tert-butyl ether	U		2.53	12.5	25	05/03/2020 01:48	WG1469806
Naphthalene	U		4.35	62.5	25	05/03/2020 01:48	WG1469806
n-Propylbenzene	U		2.48	12.5	25	05/03/2020 01:48	WG1469806
Styrene	U		2.95	12.5	25	05/03/2020 01:48	WG1469806
1,1,1,2-Tetrachloroethane	U		3.68	12.5	25	05/03/2020 01:48	WG1469806
1,1,2,2-Tetrachloroethane	U		3.33	12.5	25	05/03/2020 01:48	WG1469806
1,1,2-Trichlorotrifluoroethane	U		4.50	12.5	25	05/03/2020 01:48	WG1469806
Tetrachloroethene	U		7.50	12.5	25	05/03/2020 01:48	WG1469806
Toluene	U		6.95	12.5	25	05/03/2020 01:48	WG1469806
1,2,3-Trichlorobenzene	U		4.10	12.5	25	05/03/2020 01:48	WG1469806
1,2,4-Trichlorobenzene	U		12.0	25.0	25	05/03/2020 01:48	WG1469806
1,1,1-Trichloroethane	U		3.73	12.5	25	05/03/2020 01:48	WG1469806
1,1,2-Trichloroethane	U		3.95	12.5	25	05/03/2020 01:48	WG1469806
Trichloroethene	5.10	J	4.75	12.5	25	05/03/2020 01:48	WG1469806
Trichlorofluoromethane	U		4.00	62.5	25	05/03/2020 01:48	WG1469806
1,2,3-Trichloropropane	U		5.93	62.5	25	05/03/2020 01:48	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		8.05	12.5	25	05/03/2020 01:48	WG1469806
1,2,3-Trimethylbenzene	U		2.60	12.5	25	05/03/2020 01:48	WG1469806
1,3,5-Trimethylbenzene	U		2.60	12.5	25	05/03/2020 01:48	WG1469806
Vinyl acetate	U		17.3	125	25	05/03/2020 01:48	WG1469806
Vinyl chloride	3470		5.85	12.5	25	05/03/2020 01:48	WG1469806
Xylenes, Total	U		4.35	37.5	25	05/03/2020 01:48	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/03/2020 01:48*	WG1469806
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/03/2020 01:48*	WG1469806
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*05/03/2020 01:48*	WG1469806

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	U		8450	20000	1	05/05/2020 14:37	WG1469123

Sample Narrative:

L1213621-11 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	U		379	1000	1	05/01/2020 03:51	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 03:51	WG1468704
Sulfate	U		594	5000	1	05/01/2020 03:51	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	381	B J	102	1000	1	05/05/2020 23:52	WG1470661

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	U		48.9	100	1	05/06/2020 09:55	WG1469555
Manganese	1.53	J	1.32	5.00	1	05/06/2020 09:55	WG1469555

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	34.2	B J	31.6	100	1	05/03/2020 00:10	WG1469667
(S) a,a,a-Trifluorotoluene(FID)	*97.5*			*78.0-120*		*05/03/2020 00:10*	WG1469667

Sample Narrative:

L1213621-11 WG1469667: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	05/06/2020 11:36	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:36	WG1470548
Ethene	U		0.422	1.27	1	05/06/2020 11:36	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	25.0	1	05/02/2020 20:41	WG1469806
Acrylonitrile	U		0.671	5.00	1	05/02/2020 20:41	WG1469806
Benzene	U		0.0941	0.500	1	05/02/2020 20:41	WG1469806
Bromobenzene	U		0.118	0.500	1	05/02/2020 20:41	WG1469806
Bromodichloromethane	U		0.136	0.500	1	05/02/2020 20:41	WG1469806
Bromochloromethane	U		0.128	0.500	1	05/02/2020 20:41	WG1469806
Bromoform	U		0.129	0.500	1	05/02/2020 20:41	WG1469806
Bromomethane	U		0.605	2.50	1	05/02/2020 20:41	WG1469806
n-Butylbenzene	U		0.157	0.500	1	05/02/2020 20:41	WG1469806
sec-Butylbenzene	U		0.125	0.500	1	05/02/2020 20:41	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		0.127	0.500	1	05/02/2020 20:41	WG1469806
Carbon disulfide	U	J0	0.0962	0.500	1	05/02/2020 20:41	WG1469806
Carbon tetrachloride	U		0.128	0.500	1	05/02/2020 20:41	WG1469806
Chlorobenzene	U		0.117	0.500	1	05/02/2020 20:41	WG1469806
Chlorodibromomethane	U		0.140	0.500	1	05/02/2020 20:41	WG1469806
Chloroethane	U		0.192	2.50	1	05/02/2020 20:41	WG1469806
Chloroform	U		0.111	0.500	1	05/02/2020 20:41	WG1469806
Chloromethane	U		0.960	1.25	1	05/02/2020 20:41	WG1469806
2-Chlorotoluene	U		0.106	0.500	1	05/02/2020 20:41	WG1469806
4-Chlorotoluene	U		0.114	0.500	1	05/02/2020 20:41	WG1469806
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/02/2020 20:41	WG1469806
1,2-Dibromoethane	U		0.126	0.500	1	05/02/2020 20:41	WG1469806
Dibromomethane	U		0.122	0.500	1	05/02/2020 20:41	WG1469806
1,2-Dichlorobenzene	U		0.107	0.500	1	05/02/2020 20:41	WG1469806
1,3-Dichlorobenzene	U		0.299	0.500	1	05/02/2020 20:41	WG1469806
1,4-Dichlorobenzene	U		0.120	0.500	1	05/02/2020 20:41	WG1469806
Dichlorodifluoromethane	U		0.374	2.50	1	05/02/2020 20:41	WG1469806
1,1-Dichloroethane	U		0.100	0.500	1	05/02/2020 20:41	WG1469806
1,2-Dichloroethane	U		0.0819	0.500	1	05/02/2020 20:41	WG1469806
1,1-Dichloroethene	U		0.188	0.500	1	05/02/2020 20:41	WG1469806
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/02/2020 20:41	WG1469806
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/02/2020 20:41	WG1469806
1,2-Dichloropropane	U		0.149	0.500	1	05/02/2020 20:41	WG1469806
1,1-Dichloropropene	U		0.142	0.500	1	05/02/2020 20:41	WG1469806
1,3-Dichloropropane	U		0.109	1.00	1	05/02/2020 20:41	WG1469806
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/02/2020 20:41	WG1469806
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/02/2020 20:41	WG1469806
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/02/2020 20:41	WG1469806
2,2-Dichloropropane	U		0.161	0.500	1	05/02/2020 20:41	WG1469806
Di-isopropyl ether	U		0.105	0.500	1	05/02/2020 20:41	WG1469806
Ethylbenzene	U		0.137	0.500	1	05/02/2020 20:41	WG1469806
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/02/2020 20:41	WG1469806
2-Hexanone	U		0.787	5.00	1	05/02/2020 20:41	WG1469806
n-Hexane	U		0.749	5.00	1	05/02/2020 20:41	WG1469806
Iodomethane	U	J0	0.554	5.00	1	05/02/2020 20:41	WG1469806
Isopropylbenzene	U		0.105	0.500	1	05/02/2020 20:41	WG1469806
p-Isopropyltoluene	U		0.120	0.500	1	05/02/2020 20:41	WG1469806
2-Butanone (MEK)	U		1.19	5.00	1	05/02/2020 20:41	WG1469806
Methylene Chloride	U	J0	0.430	2.50	1	05/02/2020 20:41	WG1469806
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/02/2020 20:41	WG1469806
Methyl tert-butyl ether	U		0.101	0.500	1	05/02/2020 20:41	WG1469806
Naphthalene	U		0.174	2.50	1	05/02/2020 20:41	WG1469806
n-Propylbenzene	U		0.0993	0.500	1	05/02/2020 20:41	WG1469806
Styrene	U		0.118	0.500	1	05/02/2020 20:41	WG1469806
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/02/2020 20:41	WG1469806
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/02/2020 20:41	WG1469806
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/02/2020 20:41	WG1469806
Tetrachloroethene	U		0.300	0.500	1	05/02/2020 20:41	WG1469806
Toluene	U		0.278	0.500	1	05/02/2020 20:41	WG1469806
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/02/2020 20:41	WG1469806
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/02/2020 20:41	WG1469806
1,1,1-Trichloroethane	U		0.149	0.500	1	05/02/2020 20:41	WG1469806
1,1,2-Trichloroethane	U		0.158	0.500	1	05/02/2020 20:41	WG1469806
Trichloroethene	U		0.190	0.500	1	05/02/2020 20:41	WG1469806
Trichlorofluoromethane	U		0.160	2.50	1	05/02/2020 20:41	WG1469806
1,2,3-Trichloropropane	U		0.237	2.50	1	05/02/2020 20:41	WG1469806

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/02/2020 20:41	WG1469806
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 20:41	WG1469806
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/02/2020 20:41	WG1469806
Vinyl acetate	U		0.692	5.00	1	05/02/2020 20:41	WG1469806
Vinyl chloride	U		0.234	0.500	1	05/02/2020 20:41	WG1469806
Xylenes, Total	U		0.174	1.50	1	05/02/2020 20:41	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/02/2020 20:41*	WG1469806
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*05/02/2020 20:41*	WG1469806
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*05/02/2020 20:41*	WG1469806

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	34.5	B J	31.6	100	1	05/03/2020 00:32	WG1469667
(S) a,a,a-Trifluorotoluene(FID)	*97.3*			*78.0-120*		*05/03/2020 00:32*	WG1469667

Sample Narrative:

L1213621-12 WG1469667: No discernable petroleum pattern

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	25.0	1	05/04/2020 23:13	WG1470365
Acrylonitrile	U		0.671	5.00	1	05/04/2020 23:13	WG1470365
Benzene	U		0.0941	0.500	1	05/04/2020 23:13	WG1470365
Bromobenzene	U		0.118	0.500	1	05/04/2020 23:13	WG1470365
Bromodichloromethane	U		0.136	0.500	1	05/04/2020 23:13	WG1470365
Bromochloromethane	U		0.128	0.500	1	05/04/2020 23:13	WG1470365
Bromoform	U		0.129	0.500	1	05/04/2020 23:13	WG1470365
Bromomethane	U		0.605	2.50	1	05/04/2020 23:13	WG1470365
n-Butylbenzene	U		0.157	0.500	1	05/04/2020 23:13	WG1470365
sec-Butylbenzene	U		0.125	0.500	1	05/04/2020 23:13	WG1470365
tert-Butylbenzene	U		0.127	0.500	1	05/04/2020 23:13	WG1470365
Carbon disulfide	U	J0	0.0962	0.500	1	05/04/2020 23:13	WG1470365
Carbon tetrachloride	U		0.128	0.500	1	05/04/2020 23:13	WG1470365
Chlorobenzene	U		0.117	0.500	1	05/04/2020 23:13	WG1470365
Chlorodibromomethane	U		0.140	0.500	1	05/04/2020 23:13	WG1470365
Chloroethane	U		0.192	2.50	1	05/04/2020 23:13	WG1470365
Chloroform	U		0.111	0.500	1	05/04/2020 23:13	WG1470365
Chloromethane	U		0.960	1.25	1	05/04/2020 23:13	WG1470365
2-Chlorotoluene	U		0.106	0.500	1	05/04/2020 23:13	WG1470365
4-Chlorotoluene	U		0.114	0.500	1	05/04/2020 23:13	WG1470365
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/04/2020 23:13	WG1470365
1,2-Dibromoethane	U		0.126	0.500	1	05/04/2020 23:13	WG1470365
Dibromomethane	U		0.122	0.500	1	05/04/2020 23:13	WG1470365
1,2-Dichlorobenzene	U		0.107	0.500	1	05/04/2020 23:13	WG1470365
1,3-Dichlorobenzene	U		0.299	0.500	1	05/04/2020 23:13	WG1470365
1,4-Dichlorobenzene	U		0.120	0.500	1	05/04/2020 23:13	WG1470365
Dichlorodifluoromethane	U		0.374	2.50	1	05/04/2020 23:13	WG1470365
1,1-Dichloroethane	U		0.100	0.500	1	05/04/2020 23:13	WG1470365
1,2-Dichloroethane	U		0.0819	0.500	1	05/04/2020 23:13	WG1470365
1,1-Dichloroethene	U	J0	0.188	0.500	1	05/04/2020 23:13	WG1470365
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/04/2020 23:13	WG1470365
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/04/2020 23:13	WG1470365
1,2-Dichloropropane	U		0.149	0.500	1	05/04/2020 23:13	WG1470365
1,1-Dichloropropene	U		0.142	0.500	1	05/04/2020 23:13	WG1470365
1,3-Dichloropropane	U		0.109	1.00	1	05/04/2020 23:13	WG1470365
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/04/2020 23:13	WG1470365
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/04/2020 23:13	WG1470365
trans-1,4-Dichloro-2-butene	U	J0	0.467	5.00	1	05/04/2020 23:13	WG1470365
2,2-Dichloropropane	U		0.161	0.500	1	05/04/2020 23:13	WG1470365
Di-isopropyl ether	U		0.105	0.500	1	05/04/2020 23:13	WG1470365
Ethylbenzene	U		0.137	0.500	1	05/04/2020 23:13	WG1470365
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/04/2020 23:13	WG1470365
2-Hexanone	U		0.787	5.00	1	05/04/2020 23:13	WG1470365
n-Hexane	U		0.749	5.00	1	05/04/2020 23:13	WG1470365
Iodomethane	U		0.554	5.00	1	05/04/2020 23:13	WG1470365

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Isopropylbenzene	U		0.105	0.500	1	05/04/2020 23:13	WG1470365
p-Isopropyltoluene	U		0.120	0.500	1	05/04/2020 23:13	WG1470365
2-Butanone (MEK)	U		1.19	5.00	1	05/04/2020 23:13	WG1470365
Methylene Chloride	U		0.430	2.50	1	05/04/2020 23:13	WG1470365
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/04/2020 23:13	WG1470365
Methyl tert-butyl ether	U		0.101	0.500	1	05/04/2020 23:13	WG1470365
Naphthalene	U	J0	0.174	2.50	1	05/04/2020 23:13	WG1470365
n-Propylbenzene	U		0.0993	0.500	1	05/04/2020 23:13	WG1470365
Styrene	U		0.118	0.500	1	05/04/2020 23:13	WG1470365
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/04/2020 23:13	WG1470365
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/04/2020 23:13	WG1470365
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/04/2020 23:13	WG1470365
Tetrachloroethene	U		0.300	0.500	1	05/04/2020 23:13	WG1470365
Toluene	U		0.278	0.500	1	05/04/2020 23:13	WG1470365
1,2,3-Trichlorobenzene	U	J0	0.164	0.500	1	05/04/2020 23:13	WG1470365
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/04/2020 23:13	WG1470365
1,1,1-Trichloroethane	U		0.149	0.500	1	05/04/2020 23:13	WG1470365
1,1,2-Trichloroethane	U		0.158	0.500	1	05/04/2020 23:13	WG1470365
Trichloroethene	U		0.190	0.500	1	05/04/2020 23:13	WG1470365
Trichlorofluoromethane	U		0.160	2.50	1	05/04/2020 23:13	WG1470365
1,2,3-Trichloropropane	U		0.237	2.50	1	05/04/2020 23:13	WG1470365
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/04/2020 23:13	WG1470365
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/04/2020 23:13	WG1470365
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/04/2020 23:13	WG1470365
Vinyl acetate	U		0.692	5.00	1	05/04/2020 23:13	WG1470365
Vinyl chloride	U		0.234	0.500	1	05/04/2020 23:13	WG1470365
Xylenes, Total	U		0.174	1.50	1	05/04/2020 23:13	WG1470365
(S) Toluene-d8	*111*			*80.0-120*		*05/04/2020 23:13*	WG1470365
(S) 4-Bromofluorobenzene	*92.1*			*77.0-126*		*05/04/2020 23:13*	WG1470365
(S) 1,2-Dichloroethane-d4	*97.2*			*70.0-130*		*05/04/2020 23:13*	WG1470365

Method Blank (MB)

(MB) R3524686-1 05/05/20 04:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1213621-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1213621-03 05/05/20 07:36 • (DUP) R3524686-4 05/05/20 07:43

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	296000	296000	1	0.00372		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3524686-3 05/05/20 05:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3525006-1 05/05/20 09:51

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1213621-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1213621-04 05/05/20 09:59 • (DUP) R3525006-2 05/05/20 10:10

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	890000	880000	1	1.11		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3525006-3 05/05/20 11:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:

LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3523785-1 04/30/20 16:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Nitrate	U		48.0	100
Sulfate	U		594	5000

L1213621-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1213621-02 04/30/20 23:04 • (DUP) R3523785-6 04/30/20 23:58

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	56500	56400	1	0.116		15
Nitrate	U	U	1	0.000		15
Sulfate	67000	67100	1	0.248		15

Laboratory Control Sample (LCS)

(LCS) R3523785-2 04/30/20 16:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38500	96.4	80.0-120	
Nitrate	8000	7920	99.0	80.0-120	
Sulfate	40000	39000	97.6	80.0-120	

L1213621-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1213621-03 05/01/20 00:16 • (MS) R3523785-7 05/01/20 00:34

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	15900	64300	96.8	1	80.0-120	
Nitrate	5000	118	5090	99.5	1	80.0-120	
Sulfate	50000	36000	83200	94.3	1	80.0-120	

Method Blank (MB)

(MB) R3524626-1 05/01/20 15:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	389	J	102	1000

Laboratory Control Sample (LCS)

(LCS) R3524626-2 05/01/20 15:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC	75000	70600	94.1	85.0-115	

Method Blank (MB)

(MB) R3525069-1 05/05/20 12:31

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	445	J	102	1000

Laboratory Control Sample (LCS)

(LCS) R3525069-2 05/05/20 13:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC	75000	79200	106	85.0-115	

Method Blank (MB)

(MB) R3525032-1 05/06/20 07:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Iron	U		48.9	100
Manganese	U		1.32	5.00

Laboratory Control Sample (LCS)

(LCS) R3525032-2 05/06/20 07:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Iron	5000	4970	99.4	80.0-120	
Manganese	50.0	51.1	102	80.0-120	

Method Blank (MB)

(MB) R3524178-3 05/02/20 22:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	39.4	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*97.3*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3524178-1 05/02/20 21:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5380	97.8	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*78.0-120*	

Method Blank (MB)

(MB) R3524689-3 05/04/20 11:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	55.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*97.4*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3524689-1 05/04/20 10:21

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5240	95.3	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*78.0-120*	

Method Blank (MB)

(MB) R3525178-2 05/06/20 09:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1213621-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1213621-06 05/06/20 11:19 • (DUP) R3525178-4 05/06/20 11:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	757	755	1	0.265		20
Ethane	U	U	1	0.000		20
Ethene	U	U	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3525178-1 05/06/20 09:49 • (LCSD) R3525178-5 05/06/20 11:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	67.8	60.4	63.9	89.1	94.2	85.0-115			5.63	20
Ethane	129	119	119	92.2	92.2	85.0-115			0.000	20
Ethene	127	114	114	89.8	89.8	85.0-115			0.000	20

Method Blank (MB)

(MB) R3525463-2 05/07/20 09:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3525463-1 05/07/20 09:22 • (LCSD) R3525463-4 05/07/20 11:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	60.5	58.9	89.2	86.9	85.0-115			2.68	20

Method Blank (MB)

(MB) R3525226-2 05/02/20 19:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
2,2-Dichloropropane	U		0.161	0.500
Di-isopropyl ether	U		0.105	0.500

Method Blank (MB)

(MB) R3525226-2 05/02/20 19:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
n-Hexane	U		0.749	5.00
Iodomethane	U		0.554	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	0.500
1,2,4-Trimethylbenzene	U		0.322	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl acetate	U		0.692	5.00
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3525226-1 05/02/20 19:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	33.9	136	19.0-160	
Acrylonitrile	25.0	20.3	81.2	55.0-149	
Benzene	5.00	4.28	85.6	70.0-123	
Bromobenzene	5.00	4.51	90.2	73.0-121	
Bromodichloromethane	5.00	4.91	98.2	75.0-120	
Bromochloromethane	5.00	4.73	94.6	76.0-122	
Bromoform	5.00	4.86	97.2	68.0-132	
Bromomethane	5.00	4.99	99.8	10.0-160	
n-Butylbenzene	5.00	4.81	96.2	73.0-125	
sec-Butylbenzene	5.00	4.87	97.4	75.0-125	
tert-Butylbenzene	5.00	4.79	95.8	76.0-124	
Carbon disulfide	5.00	3.41	68.2	61.0-128	
Carbon tetrachloride	5.00	4.42	88.4	68.0-126	
Chlorobenzene	5.00	4.60	92.0	80.0-121	
Chlorodibromomethane	5.00	4.70	94.0	77.0-125	
Chloroethane	5.00	5.11	102	47.0-150	
Chloroform	5.00	4.44	88.8	73.0-120	
Chloromethane	5.00	4.63	92.6	41.0-142	
2-Chlorotoluene	5.00	4.47	89.4	76.0-123	
4-Chlorotoluene	5.00	4.73	94.6	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.66	93.2	58.0-134	
1,2-Dibromoethane	5.00	5.10	102	80.0-122	
Dibromomethane	5.00	4.97	99.4	80.0-120	
1,2-Dichlorobenzene	5.00	4.67	93.4	79.0-121	
1,3-Dichlorobenzene	5.00	4.61	92.2	79.0-120	
1,4-Dichlorobenzene	5.00	4.64	92.8	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	4.68	93.6	33.0-144	
Dichlorodifluoromethane	5.00	4.62	92.4	51.0-149	
1,1-Dichloroethane	5.00	4.29	85.8	70.0-126	
1,2-Dichloroethane	5.00	4.56	91.2	70.0-128	
1,1-Dichloroethene	5.00	4.10	82.0	71.0-124	
cis-1,2-Dichloroethene	5.00	4.72	94.4	73.0-120	
trans-1,2-Dichloroethene	5.00	4.38	87.6	73.0-120	
1,2-Dichloropropane	5.00	4.48	89.6	77.0-125	
1,1-Dichloropropene	5.00	4.59	91.8	74.0-126	
1,3-Dichloropropane	5.00	4.97	99.4	80.0-120	
cis-1,3-Dichloropropene	5.00	4.99	99.8	80.0-123	
trans-1,3-Dichloropropene	5.00	4.81	96.2	78.0-124	
2,2-Dichloropropane	5.00	4.88	97.6	58.0-130	
Di-isopropyl ether	5.00	4.35	87.0	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3525226-1 05/02/20 19:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	5.00	4.68	93.6	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.31	86.2	54.0-138	
2-Hexanone	25.0	28.8	115	67.0-149	
n-Hexane	5.00	4.15	83.0	57.0-133	
Iodomethane	25.0	18.5	74.0	33.0-147	
Isopropylbenzene	5.00	4.75	95.0	76.0-127	
p-Isopropyltoluene	5.00	5.02	100	76.0-125	
2-Butanone (MEK)	25.0	33.9	136	44.0-160	
Methylene Chloride	5.00	3.96	79.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	25.0	100	68.0-142	
Methyl tert-butyl ether	5.00	4.43	88.6	68.0-125	
Naphthalene	5.00	4.15	83.0	54.0-135	
n-Propylbenzene	5.00	4.41	88.2	77.0-124	
Styrene	5.00	4.87	97.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.63	92.6	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.64	92.8	65.0-130	
Tetrachloroethene	5.00	4.74	94.8	72.0-132	
Toluene	5.00	4.30	86.0	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	4.06	81.2	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.15	83.0	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.13	82.6	57.0-137	
1,1,1-Trichloroethane	5.00	4.62	92.4	73.0-124	
1,1,2-Trichloroethane	5.00	4.98	99.6	80.0-120	
Trichloroethene	5.00	4.62	92.4	78.0-124	
Trichlorofluoromethane	5.00	5.10	102	59.0-147	
1,2,3-Trichloropropane	5.00	4.88	97.6	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.49	89.8	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.59	91.8	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.52	90.4	76.0-122	
Vinyl acetate	25.0	32.1	128	11.0-160	
Vinyl chloride	5.00	4.66	93.2	67.0-131	
Xylenes, Total	15.0	13.7	91.3	79.0-123	
(S) Toluene-d8			*106*	*80.0-120*	
(S) 4-Bromofluorobenzene			*105*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*111*	*70.0-130*	

Method Blank (MB)

(MB) R3525642-2 05/04/20 20:34

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
2,2-Dichloropropane	U		0.161	0.500
Di-isopropyl ether	U		0.105	0.500

Method Blank (MB)

(MB) R3525642-2 05/04/20 20:34

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
n-Hexane	U		0.749	5.00
Iodomethane	U		0.554	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	0.500
1,2,4-Trimethylbenzene	U		0.322	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl acetate	U		0.692	5.00
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*98.3*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3525642-1 05/04/20 19:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	27.7	111	19.0-160	
Acrylonitrile	25.0	24.8	99.2	55.0-149	
Benzene	5.00	4.70	94.0	70.0-123	
Bromobenzene	5.00	4.83	96.6	73.0-121	
Bromodichloromethane	5.00	4.66	93.2	75.0-120	
Bromochloromethane	5.00	5.35	107	76.0-122	
Bromoform	5.00	4.97	99.4	68.0-132	
Bromomethane	5.00	5.25	105	10.0-160	
n-Butylbenzene	5.00	4.98	99.6	73.0-125	
sec-Butylbenzene	5.00	4.56	91.2	75.0-125	
tert-Butylbenzene	5.00	4.59	91.8	76.0-124	
Carbon disulfide	5.00	3.37	67.4	61.0-128	
Carbon tetrachloride	5.00	4.59	91.8	68.0-126	
Chlorobenzene	5.00	4.99	99.8	80.0-121	
Chlorodibromomethane	5.00	5.02	100	77.0-125	
Chloroethane	5.00	5.70	114	47.0-150	
Chloroform	5.00	4.73	94.6	73.0-120	
Chloromethane	5.00	5.45	109	41.0-142	
2-Chlorotoluene	5.00	5.14	103	76.0-123	
4-Chlorotoluene	5.00	4.86	97.2	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.18	104	58.0-134	
1,2-Dibromoethane	5.00	4.77	95.4	80.0-122	
Dibromomethane	5.00	4.91	98.2	80.0-120	
1,2-Dichlorobenzene	5.00	4.87	97.4	79.0-121	
1,3-Dichlorobenzene	5.00	5.22	104	79.0-120	
1,4-Dichlorobenzene	5.00	5.13	103	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	3.96	79.2	33.0-144	
Dichlorodifluoromethane	5.00	5.83	117	51.0-149	
1,1-Dichloroethane	5.00	4.54	90.8	70.0-126	
1,2-Dichloroethane	5.00	4.91	98.2	70.0-128	
1,1-Dichloroethene	5.00	3.93	78.6	71.0-124	
cis-1,2-Dichloroethene	5.00	5.03	101	73.0-120	
trans-1,2-Dichloroethene	5.00	4.36	87.2	73.0-120	
1,2-Dichloropropane	5.00	4.40	88.0	77.0-125	
1,1-Dichloropropene	5.00	4.71	94.2	74.0-126	
1,3-Dichloropropane	5.00	4.46	89.2	80.0-120	
cis-1,3-Dichloropropene	5.00	4.15	83.0	80.0-123	
trans-1,3-Dichloropropene	5.00	4.66	93.2	78.0-124	
2,2-Dichloropropane	5.00	5.11	102	58.0-130	
Di-isopropyl ether	5.00	5.04	101	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3525642-1 05/04/20 19:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	5.00	5.04	101	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.97	99.4	54.0-138	
2-Hexanone	25.0	21.1	84.4	67.0-149	
n-Hexane	5.00	4.48	89.6	57.0-133	
Iodomethane	25.0	21.5	86.0	33.0-147	
Isopropylbenzene	5.00	4.84	96.8	76.0-127	
p-Isopropyltoluene	5.00	4.75	95.0	76.0-125	
2-Butanone (MEK)	25.0	20.2	80.8	44.0-160	
Methylene Chloride	5.00	5.10	102	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	24.0	96.0	68.0-142	
Methyl tert-butyl ether	5.00	4.96	99.2	68.0-125	
Naphthalene	5.00	4.48	89.6	54.0-135	
n-Propylbenzene	5.00	5.13	103	77.0-124	
Styrene	5.00	4.73	94.6	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.00	100	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.09	102	65.0-130	
Tetrachloroethene	5.00	5.11	102	72.0-132	
Toluene	5.00	4.51	90.2	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	4.09	81.8	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.66	93.2	50.0-138	
1,2,4-Trichlorobenzene	5.00	5.22	104	57.0-137	
1,1,1-Trichloroethane	5.00	4.81	96.2	73.0-124	
1,1,2-Trichloroethane	5.00	4.60	92.0	80.0-120	
Trichloroethene	5.00	4.55	91.0	78.0-124	
Trichlorofluoromethane	5.00	5.35	107	59.0-147	
1,2,3-Trichloropropane	5.00	5.32	106	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.67	93.4	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.71	94.2	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.94	98.8	76.0-122	
Vinyl acetate	25.0	26.1	104	11.0-160	
Vinyl chloride	5.00	5.30	106	67.0-131	
Xylenes, Total	15.0	14.3	95.3	79.0-123	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*88.8*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*99.1*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

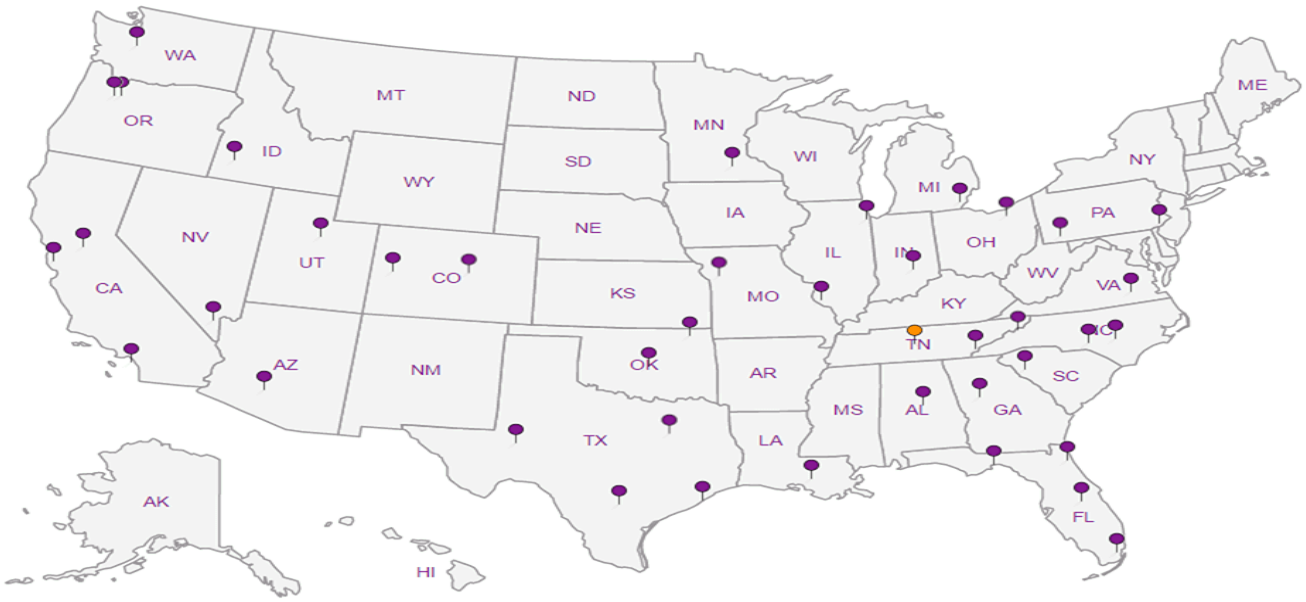
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA	Billing Information:	Pres Chk	Analysis / Container / Preservative	Chain of Custody Page 1 of 2
1215 Fourth Ave., Suite 1350 Seattle, WA 98161	Attn: Accounts Payable 1215 Fourth Ave., Ste. 1350 Seattle, WA 98161			Pace Analytical® National Center for Testing & Innovation
Report to: Brian O'Neal/Bill Haldeman	Email To: boneal@pesenv.com;bhaldeman@pesenv.com;sm			12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859
Project Description: American Linen	City/State Collected: Seattle, WA	Please Circle: PT MT CT ET		SDG # 1213621 J237
Phone: 206-529-3980 Fax: 206-529-3985	Client Project # 1413.001.02.501E	Lab Project # PESENVSWA-ALP		Acctnum: PESENVSWA Template: T165314 Prelogin: P763877 PM: 110 - Brian Ford PB: Shipped Via:
Collected by (print): Sean Kounovsky	Site/Facility ID # American Linen	P.O. #		
Collected by (signature): [signature] Immediately Packed on Ice N ___ Y ✓	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Quote # Date Results Needed		

Analysis columns: *NO3,SO4,Cl 125mlHDPE-NoPres; Alkalinity 125mlHDPE-NoPres; EEM RSK175LL 40mlAmb-HCl; NWTPHGX 40mlAmb HCl; TOC 250mlHDPE-HCl (<2); Total Fe Mn 6020 250mlHDPE-HNO3 (<2); VOCs LL 8260D 40mlAmb-HCl

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlHDPE-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs LL 8260D 40mlAmb-HCl	Remarks	Sample # (lab only)
MW-929-042920	Grab	GW	32	4/29/20	0845	9	X	X	X		X	X	X		-01
MW-320-042920	↓	GW	23	↓	0945	9	X	X	X		X	X	X		02
GEI-1-042920		GW	31.8		0955	9	X	X	X		X	X	X		03
MW-333-042920		GW	38		1000	9	X	X	X		X	X	X		04
MW-322-042920		GW	60		1200	9	X	X	X		X	X	X		05
GEI-MW-1-042920		GW	49		1225	9	X	X	X		X	X	X		06
GEI-2-042920		GW	54.6		1230	9	X	X	X		X	X	X		07
FMW-131-042920		GW	68		1405	9	X	X	X		X	X	X		08
MW-116-042920		GW	40		1410	9	X	X	X		X	X	X		09
MW-147-042920	↓	GW	75	↓	1455	12	X	X	X	X	X	X	X		10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks: *Nitrate has a 48 hour holding time.

pH ______ Temp ______
Flow ______ Other ______

Samples returned via: __ UPS X FedEx __ Courier ________

Tracking # 1749 9996 8175

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: ✓Y _N
Preservation Correct/Checked: ✓Y _N
RAD Screen <0.5 mR/hr: ✓Y _N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) / No HCL / MeoH TBR	
[signature]	4/29/20				
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 2.8-1=2.7 AT CK Bottles Received: 105	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) M Pappas	Date: 4-30-20 Time: 830	Hold: Condition: NCF / OK

PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;bhaldeman@pesenv.com;sm

Project Description: American Linen

City/State Collected: Seattle, WA

Please Circle: PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.02.501E

Lab Project # PESENVSWA-ALP

Collected by (print): Sean Kouncvsky

Site/Facility ID # American Linen

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlHDPE-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	VOCs LL 8260D 40mlAmb-HCl	Remarks	Sample # (lab only)
~~EQ-042920~~	~~Grab~~	~~GW~~	~~—~~	~~4/29/20~~	~~1600~~	~~12~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
~~TB-042920~~	~~Grab~~	~~GW~~	~~—~~	~~4/29/20~~	~~1605~~	~~2~~				~~X~~			~~X~~		
EQ-042920	Grab	GW	—	4/29/20	1500	12	X	X	X	X	X	X	X		11
TB-042920	Grab	GW	—	4/29/20	1505	2	HP			X			X		12
		GW													
		GW													
		GW													
		GW													
		GW													
		GW													

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 121362

Table #

Acctnum: PESENVSWA

Template: T165314

Prelogin: P763877

PM: 110 - Brian Ford

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other _____

Remarks: *Nitrate has a 48 hour holding time.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	4/29/20	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			M Pappas

Trip Blank Received: Yes / No HCl / MeoH TBR

Temp: 2.7-12.7 °C AI CK

Bottles Received: 105

Date: 4-30-20 Time: 830

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Brian Ford

From: Shannon E. McKernan <SMcKernan@pesenv.com>
Sent: Friday, May 1, 2020 11:58 AM
To: Brian Ford
Subject: RE: Pace Analytical National Login for 1413.001.02.501E American Linen L1213621

Brian-

Can we revise sample L1213621-09 to "MW116-042920"?

Thanks!
Shannon

-----Original Message-----
From: Brian Ford <bford@pacenational.com>
Sent: April 30, 2020 5:13 PM
To: Kim Vik <KVik@pesenv.com>; Bill Haldeman <bhaldeman@pesenv.com>; Brian O'Neal <boneal@pesenv.com>; Shannon E. McKernan <SMcKernan@pesenv.com>; Karsten Springstead <KSpringstead@pesenv.com>
Subject: Pace Analytical National Login for 1413.001.02.501E American Linen L1213621

"Privileged and Confidential"

Thank you for choosing Pace National! Please find enclosed PDF files containing your laboratory login confirmation and chain of custody.

Pace National is leading the laboratory industry with our On-line Data Management tools. Please contact your Project Manager to learn how to create historical Excel tables or access data in real time using powerful and intuitive software that is only available at https://www.pacenational.com.

Visit Pace National's secure data management web site - myData - for all your reporting and data management needs at https://linkprotect.cudasvc.com/url?a=https%3a%2f%2fwww.pacenational.com%2flogin&c=E,1,JOllGjjpstiQ07DLZPB7OOuPLdBwnHBSs9fsJBgmAiCl4G9J5N4cWisFEXHQy_TDuNZyyLP7pEo-KDgyYMHCzw76HZV5oTOaev-sq65Pmw,,&typo=1

Pace National ... "Your Lab of Choice"

Brian Ford
Technical Service Representative
615-773-9772

Pace Analytical National
12065 Lebanon Rd.
Mt. Juliet, TN 37122

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 11, 2020

PES Environmental, Inc.- WA

Sample Delivery Group:	L1214057
Samples Received:	05/01/2020
Project Number:	1413.001.02.501E
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman
	1215 Fourth Ave., Suite 1350
	Seattle, WA 98161

Entire Report Reviewed By:

Jared Starkey
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

MW-146-043020 L1214057-01 GW

Collected by: Hannah Cohen | Collected date/time: 04/30/20 09:55 | Received date/time: 05/01/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469125	1	05/03/20 10:46	05/03/20 10:46	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1469118	1	05/02/20 01:16	05/02/20 01:16	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1471458	1	05/08/20 00:56	05/08/20 00:56	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469558	1	05/06/20 16:41	05/06/20 20:23	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1470453	1	05/06/20 05:53	05/06/20 05:53	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471909	1	05/07/20 13:00	05/07/20 13:00	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1470473	100	05/05/20 00:13	05/05/20 00:13	ACG	Mt. Juliet, TN

MW-154-043020 L1214057-02 GW

Collected by: Hannah Cohen | Collected date/time: 04/30/20 11:35 | Received date/time: 05/01/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469125	1	05/03/20 10:56	05/03/20 10:56	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1469118	1	05/02/20 01:34	05/02/20 01:34	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1471458	1	05/08/20 01:18	05/08/20 01:18	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469558	1	05/06/20 16:41	05/06/20 20:40	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1470453	1	05/06/20 06:15	05/06/20 06:15	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471909	1	05/07/20 13:03	05/07/20 13:03	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1470473	1	05/05/20 00:32	05/05/20 00:32	ACG	Mt. Juliet, TN

MW-153-043020 L1214057-03 GW

Collected by: Hannah Cohen | Collected date/time: 04/30/20 13:45 | Received date/time: 05/01/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469125	1	05/03/20 11:19	05/03/20 11:19	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1469118	1	05/02/20 01:52	05/02/20 01:52	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1471459	1	05/06/20 20:37	05/06/20 20:37	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469558	1	05/06/20 16:41	05/06/20 20:43	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1470453	1	05/06/20 06:36	05/06/20 06:36	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471909	1	05/07/20 13:06	05/07/20 13:06	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1470473	1	05/05/20 00:51	05/05/20 00:51	ACG	Mt. Juliet, TN

MW-148-043020 L1214057-04 GW

Collected by: Hannah Cohen | Collected date/time: 04/30/20 15:10 | Received date/time: 05/01/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1469125	1	05/03/20 11:30	05/03/20 11:30	DGR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1469118	1	05/02/20 02:10	05/02/20 02:10	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1469118	10	05/02/20 02:28	05/02/20 02:28	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1471459	1	05/06/20 20:58	05/06/20 20:58	VRP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1469558	1	05/06/20 16:41	05/06/20 20:55	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1470453	1	05/06/20 06:57	05/06/20 06:57	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1471909	1	05/07/20 13:08	05/07/20 13:08	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1470473	1	05/05/20 01:11	05/05/20 01:11	ACG	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jared Starkey
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	383000		8450	20000	1	05/03/2020 10:46	WG1469125

Sample Narrative:
L1214057-01 WG1469125: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	40900		379	1000	1	05/02/2020 01:16	WG1469118
Nitrate	U		48.0	100	1	05/02/2020 01:16	WG1469118
Sulfate	13700		594	5000	1	05/02/2020 01:16	WG1469118

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3550		102	1000	1	05/08/2020 00:56	WG1471458

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2910		48.9	100	1	05/06/2020 20:23	WG1469558
Manganese	1100	V	1.32	5.00	1	05/06/2020 20:23	WG1469558

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1080		31.6	100	1	05/06/2020 05:53	WG1470453
(S) a,a,a-Trifluorotoluene(FID)	*98.2*			*78.0-120*		*05/06/2020 05:53*	WG1470453

Sample Narrative:
L1214057-01 WG1470453: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5020		0.287	0.678	1	05/07/2020 13:00	WG1471909
Ethane	U		0.296	1.29	1	05/07/2020 13:00	WG1471909
Ethene	511		0.422	1.27	1	05/07/2020 13:00	WG1471909

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	1130	2500	100	05/05/2020 00:13	WG1470473
Acrylonitrile	U		67.1	500	100	05/05/2020 00:13	WG1470473
Benzene	U		9.41	50.0	100	05/05/2020 00:13	WG1470473
Bromobenzene	U		11.8	50.0	100	05/05/2020 00:13	WG1470473
Bromodichloromethane	U		13.6	50.0	100	05/05/2020 00:13	WG1470473
Bromochloromethane	U		12.8	50.0	100	05/05/2020 00:13	WG1470473
Bromoform	U		12.9	50.0	100	05/05/2020 00:13	WG1470473
Bromomethane	U		60.5	250	100	05/05/2020 00:13	WG1470473
n-Butylbenzene	U		15.7	50.0	100	05/05/2020 00:13	WG1470473
sec-Butylbenzene	U		12.5	50.0	100	05/05/2020 00:13	WG1470473

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		12.7	50.0	100	05/05/2020 00:13	WG1470473
Carbon disulfide	U	J0	9.62	50.0	100	05/05/2020 00:13	WG1470473
Carbon tetrachloride	U		12.8	50.0	100	05/05/2020 00:13	WG1470473
Chlorobenzene	U		11.7	50.0	100	05/05/2020 00:13	WG1470473
Chlorodibromomethane	U		14.0	50.0	100	05/05/2020 00:13	WG1470473
Chloroethane	U		19.2	250	100	05/05/2020 00:13	WG1470473
Chloroform	U		11.1	50.0	100	05/05/2020 00:13	WG1470473
Chloromethane	U		96.0	125	100	05/05/2020 00:13	WG1470473
2-Chlorotoluene	U		10.6	50.0	100	05/05/2020 00:13	WG1470473
4-Chlorotoluene	U		11.4	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dibromo-3-Chloropropane	U		27.6	250	100	05/05/2020 00:13	WG1470473
1,2-Dibromoethane	U		12.6	50.0	100	05/05/2020 00:13	WG1470473
Dibromomethane	U		12.2	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dichlorobenzene	U		10.7	50.0	100	05/05/2020 00:13	WG1470473
1,3-Dichlorobenzene	U		29.9	50.0	100	05/05/2020 00:13	WG1470473
1,4-Dichlorobenzene	U		12.0	50.0	100	05/05/2020 00:13	WG1470473
Dichlorodifluoromethane	U		37.4	250	100	05/05/2020 00:13	WG1470473
1,1-Dichloroethane	U		10.0	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dichloroethane	U		8.19	50.0	100	05/05/2020 00:13	WG1470473
1,1-Dichloroethene	U		18.8	50.0	100	05/05/2020 00:13	WG1470473
cis-1,2-Dichloroethene	2100		12.6	50.0	100	05/05/2020 00:13	WG1470473
trans-1,2-Dichloroethene	U		14.9	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dichloropropane	U		14.9	50.0	100	05/05/2020 00:13	WG1470473
1,1-Dichloropropene	U		14.2	50.0	100	05/05/2020 00:13	WG1470473
1,3-Dichloropropane	U		10.9	100	100	05/05/2020 00:13	WG1470473
cis-1,3-Dichloropropene	U		11.1	50.0	100	05/05/2020 00:13	WG1470473
trans-1,3-Dichloropropene	U		11.8	50.0	100	05/05/2020 00:13	WG1470473
trans-1,4-Dichloro-2-butene	U		46.7	500	100	05/05/2020 00:13	WG1470473
2,2-Dichloropropane	U		16.1	50.0	100	05/05/2020 00:13	WG1470473
Di-isopropyl ether	U		10.5	50.0	100	05/05/2020 00:13	WG1470473
Ethylbenzene	U		13.7	50.0	100	05/05/2020 00:13	WG1470473
Hexachloro-1,3-butadiene	U		33.7	100	100	05/05/2020 00:13	WG1470473
2-Hexanone	U		78.7	500	100	05/05/2020 00:13	WG1470473
n-Hexane	U		74.9	500	100	05/05/2020 00:13	WG1470473
Iodomethane	U		55.4	500	100	05/05/2020 00:13	WG1470473
Isopropylbenzene	U		10.5	50.0	100	05/05/2020 00:13	WG1470473
p-Isopropyltoluene	U		12.0	50.0	100	05/05/2020 00:13	WG1470473
2-Butanone (MEK)	U		119	500	100	05/05/2020 00:13	WG1470473
Methylene Chloride	U		43.0	250	100	05/05/2020 00:13	WG1470473
4-Methyl-2-pentanone (MIBK)	U		47.8	500	100	05/05/2020 00:13	WG1470473
Methyl tert-butyl ether	U		10.1	50.0	100	05/05/2020 00:13	WG1470473
Naphthalene	U		17.4	250	100	05/05/2020 00:13	WG1470473
n-Propylbenzene	U		9.93	50.0	100	05/05/2020 00:13	WG1470473
Styrene	U		11.8	50.0	100	05/05/2020 00:13	WG1470473
1,1,1,2-Tetrachloroethane	U		14.7	50.0	100	05/05/2020 00:13	WG1470473
1,1,2,2-Tetrachloroethane	U		13.3	50.0	100	05/05/2020 00:13	WG1470473
1,1,2-Trichlorotrifluoroethane	U		18.0	50.0	100	05/05/2020 00:13	WG1470473
Tetrachloroethene	U		30.0	50.0	100	05/05/2020 00:13	WG1470473
Toluene	U		27.8	50.0	100	05/05/2020 00:13	WG1470473
1,2,3-Trichlorobenzene	U		16.4	50.0	100	05/05/2020 00:13	WG1470473
1,2,4-Trichlorobenzene	U		48.1	100	100	05/05/2020 00:13	WG1470473
1,1,1-Trichloroethane	U		14.9	50.0	100	05/05/2020 00:13	WG1470473
1,1,2-Trichloroethane	U		15.8	50.0	100	05/05/2020 00:13	WG1470473
Trichloroethene	U		19.0	50.0	100	05/05/2020 00:13	WG1470473
Trichlorofluoromethane	U		16.0	250	100	05/05/2020 00:13	WG1470473
1,2,3-Trichloropropane	U		23.7	250	100	05/05/2020 00:13	WG1470473

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		32.2	50.0	100	05/05/2020 00:13	WG1470473
1,2,3-Trimethylbenzene	U		10.4	50.0	100	05/05/2020 00:13	WG1470473
1,3,5-Trimethylbenzene	U		10.4	50.0	100	05/05/2020 00:13	WG1470473
Vinyl acetate	U		69.2	500	100	05/05/2020 00:13	WG1470473
Vinyl chloride	6040		23.4	50.0	100	05/05/2020 00:13	WG1470473
Xylenes, Total	U		17.4	150	100	05/05/2020 00:13	WG1470473
(S) Toluene-d8	*109*			*80.0-120*		*05/05/2020 00:13*	WG1470473
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/05/2020 00:13*	WG1470473
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*05/05/2020 00:13*	WG1470473

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	234000		8450	20000	1	05/03/2020 10:56	WG1469125

Sample Narrative:
L1214057-02 WG1469125: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	22300		379	1000	1	05/02/2020 01:34	WG1469118
Nitrate	3090		48.0	100	1	05/02/2020 01:34	WG1469118
Sulfate	74600		594	5000	1	05/02/2020 01:34	WG1469118

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	1380	B	102	1000	1	05/08/2020 01:18	WG1471458

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	1530		48.9	100	1	05/06/2020 20:40	WG1469558
Manganese	360		1.32	5.00	1	05/06/2020 20:40	WG1469558

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	47.5	B J	31.6	100	1	05/06/2020 06:15	WG1470453
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*05/06/2020 06:15*	WG1470453

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	U		0.287	0.678	1	05/07/2020 13:03	WG1471909
Ethane	U		0.296	1.29	1	05/07/2020 13:03	WG1471909
Ethene	U		0.422	1.27	1	05/07/2020 13:03	WG1471909

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	J4	11.3	25.0	1	05/05/2020 00:32	WG1470473
Acrylonitrile	U		0.671	5.00	1	05/05/2020 00:32	WG1470473
Benzene	U		0.0941	0.500	1	05/05/2020 00:32	WG1470473
Bromobenzene	U		0.118	0.500	1	05/05/2020 00:32	WG1470473
Bromodichloromethane	U		0.136	0.500	1	05/05/2020 00:32	WG1470473
Bromochloromethane	U		0.128	0.500	1	05/05/2020 00:32	WG1470473
Bromoform	U		0.129	0.500	1	05/05/2020 00:32	WG1470473
Bromomethane	U		0.605	2.50	1	05/05/2020 00:32	WG1470473
n-Butylbenzene	U		0.157	0.500	1	05/05/2020 00:32	WG1470473
sec-Butylbenzene	U		0.125	0.500	1	05/05/2020 00:32	WG1470473
tert-Butylbenzene	U		0.127	0.500	1	05/05/2020 00:32	WG1470473
Carbon disulfide	U	J0	0.0962	0.500	1	05/05/2020 00:32	WG1470473
Carbon tetrachloride	U		0.128	0.500	1	05/05/2020 00:32	WG1470473

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.117	0.500	1	05/05/2020 00:32	WG1470473
Chlorodibromomethane	U		0.140	0.500	1	05/05/2020 00:32	WG1470473
Chloroethane	U		0.192	2.50	1	05/05/2020 00:32	WG1470473
Chloroform	U		0.111	0.500	1	05/05/2020 00:32	WG1470473
Chloromethane	U		0.960	1.25	1	05/05/2020 00:32	WG1470473
2-Chlorotoluene	U		0.106	0.500	1	05/05/2020 00:32	WG1470473
4-Chlorotoluene	U		0.114	0.500	1	05/05/2020 00:32	WG1470473
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/05/2020 00:32	WG1470473
1,2-Dibromoethane	U		0.126	0.500	1	05/05/2020 00:32	WG1470473
Dibromomethane	U		0.122	0.500	1	05/05/2020 00:32	WG1470473
1,2-Dichlorobenzene	U		0.107	0.500	1	05/05/2020 00:32	WG1470473
1,3-Dichlorobenzene	U		0.299	0.500	1	05/05/2020 00:32	WG1470473
1,4-Dichlorobenzene	U		0.120	0.500	1	05/05/2020 00:32	WG1470473
Dichlorodifluoromethane	U		0.374	2.50	1	05/05/2020 00:32	WG1470473
1,1-Dichloroethane	U		0.100	0.500	1	05/05/2020 00:32	WG1470473
1,2-Dichloroethane	U		0.0819	0.500	1	05/05/2020 00:32	WG1470473
1,1-Dichloroethene	U		0.188	0.500	1	05/05/2020 00:32	WG1470473
cis-1,2-Dichloroethene	2.58		0.126	0.500	1	05/05/2020 00:32	WG1470473
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/05/2020 00:32	WG1470473
1,2-Dichloropropane	U		0.149	0.500	1	05/05/2020 00:32	WG1470473
1,1-Dichloropropene	U		0.142	0.500	1	05/05/2020 00:32	WG1470473
1,3-Dichloropropane	U		0.109	1.00	1	05/05/2020 00:32	WG1470473
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/05/2020 00:32	WG1470473
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/05/2020 00:32	WG1470473
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/05/2020 00:32	WG1470473
2,2-Dichloropropane	U		0.161	0.500	1	05/05/2020 00:32	WG1470473
Di-isopropyl ether	U		0.105	0.500	1	05/05/2020 00:32	WG1470473
Ethylbenzene	U		0.137	0.500	1	05/05/2020 00:32	WG1470473
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/05/2020 00:32	WG1470473
2-Hexanone	U		0.787	5.00	1	05/05/2020 00:32	WG1470473
n-Hexane	U		0.749	5.00	1	05/05/2020 00:32	WG1470473
Iodomethane	U		0.554	5.00	1	05/05/2020 00:32	WG1470473
Isopropylbenzene	U		0.105	0.500	1	05/05/2020 00:32	WG1470473
p-Isopropyltoluene	U		0.120	0.500	1	05/05/2020 00:32	WG1470473
2-Butanone (MEK)	U		1.19	5.00	1	05/05/2020 00:32	WG1470473
Methylene Chloride	U		0.430	2.50	1	05/05/2020 00:32	WG1470473
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/05/2020 00:32	WG1470473
Methyl tert-butyl ether	U		0.101	0.500	1	05/05/2020 00:32	WG1470473
Naphthalene	U		0.174	2.50	1	05/05/2020 00:32	WG1470473
n-Propylbenzene	U		0.0993	0.500	1	05/05/2020 00:32	WG1470473
Styrene	U		0.118	0.500	1	05/05/2020 00:32	WG1470473
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/05/2020 00:32	WG1470473
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/05/2020 00:32	WG1470473
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/05/2020 00:32	WG1470473
Tetrachloroethene	12.1		0.300	0.500	1	05/05/2020 00:32	WG1470473
Toluene	U		0.278	0.500	1	05/05/2020 00:32	WG1470473
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/05/2020 00:32	WG1470473
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/05/2020 00:32	WG1470473
1,1,1-Trichloroethane	U		0.149	0.500	1	05/05/2020 00:32	WG1470473
1,1,2-Trichloroethane	U		0.158	0.500	1	05/05/2020 00:32	WG1470473
Trichloroethene	1.06		0.190	0.500	1	05/05/2020 00:32	WG1470473
Trichlorofluoromethane	U		0.160	2.50	1	05/05/2020 00:32	WG1470473
1,2,3-Trichloropropane	U		0.237	2.50	1	05/05/2020 00:32	WG1470473
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/05/2020 00:32	WG1470473
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/05/2020 00:32	WG1470473
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/05/2020 00:32	WG1470473

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.692	5.00	1	05/05/2020 00:32	WG1470473
Vinyl chloride	U		0.234	0.500	1	05/05/2020 00:32	WG1470473
Xylenes, Total	U		0.174	1.50	1	05/05/2020 00:32	WG1470473
(S) Toluene-d8	*107*			*80.0-120*		*05/05/2020 00:32*	WG1470473
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*05/05/2020 00:32*	WG1470473
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*05/05/2020 00:32*	WG1470473

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	140000		8450	20000	1	05/03/2020 11:19	WG1469125

Sample Narrative:

L1214057-03 WG1469125: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	7300		379	1000	1	05/02/2020 01:52	WG1469118
Nitrate	U		48.0	100	1	05/02/2020 01:52	WG1469118
Sulfate	6230		594	5000	1	05/02/2020 01:52	WG1469118

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	843	B J	102	1000	1	05/06/2020 20:37	WG1471459

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	7790		48.9	100	1	05/06/2020 20:43	WG1469558
Manganese	420		1.32	5.00	1	05/06/2020 20:43	WG1469558

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	38.2	B J	31.6	100	1	05/06/2020 06:36	WG1470453
(S) a,a,a-Trifluorotoluene(FID)	*98.5*			*78.0-120*		*05/06/2020 06:36*	WG1470453

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	U		0.287	0.678	1	05/07/2020 13:06	WG1471909
Ethane	U		0.296	1.29	1	05/07/2020 13:06	WG1471909
Ethene	U		0.422	1.27	1	05/07/2020 13:06	WG1471909

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J4	11.3	25.0	1	05/05/2020 00:51	WG1470473
Acrylonitrile	U		0.671	5.00	1	05/05/2020 00:51	WG1470473
Benzene	U		0.0941	0.500	1	05/05/2020 00:51	WG1470473
Bromobenzene	U		0.118	0.500	1	05/05/2020 00:51	WG1470473
Bromodichloromethane	U		0.136	0.500	1	05/05/2020 00:51	WG1470473
Bromochloromethane	U		0.128	0.500	1	05/05/2020 00:51	WG1470473
Bromoform	U		0.129	0.500	1	05/05/2020 00:51	WG1470473
Bromomethane	U		0.605	2.50	1	05/05/2020 00:51	WG1470473
n-Butylbenzene	U		0.157	0.500	1	05/05/2020 00:51	WG1470473
sec-Butylbenzene	U		0.125	0.500	1	05/05/2020 00:51	WG1470473
tert-Butylbenzene	U		0.127	0.500	1	05/05/2020 00:51	WG1470473
Carbon disulfide	U	J0	0.0962	0.500	1	05/05/2020 00:51	WG1470473
Carbon tetrachloride	U		0.128	0.500	1	05/05/2020 00:51	WG1470473

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.117	0.500	1	05/05/2020 00:51	WG1470473
Chlorodibromomethane	U		0.140	0.500	1	05/05/2020 00:51	WG1470473
Chloroethane	U		0.192	2.50	1	05/05/2020 00:51	WG1470473
Chloroform	U		0.111	0.500	1	05/05/2020 00:51	WG1470473
Chloromethane	U		0.960	1.25	1	05/05/2020 00:51	WG1470473
2-Chlorotoluene	U		0.106	0.500	1	05/05/2020 00:51	WG1470473
4-Chlorotoluene	U		0.114	0.500	1	05/05/2020 00:51	WG1470473
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/05/2020 00:51	WG1470473
1,2-Dibromoethane	U		0.126	0.500	1	05/05/2020 00:51	WG1470473
Dibromomethane	U		0.122	0.500	1	05/05/2020 00:51	WG1470473
1,2-Dichlorobenzene	U		0.107	0.500	1	05/05/2020 00:51	WG1470473
1,3-Dichlorobenzene	U		0.299	0.500	1	05/05/2020 00:51	WG1470473
1,4-Dichlorobenzene	U		0.120	0.500	1	05/05/2020 00:51	WG1470473
Dichlorodifluoromethane	U		0.374	2.50	1	05/05/2020 00:51	WG1470473
1,1-Dichloroethane	U		0.100	0.500	1	05/05/2020 00:51	WG1470473
1,2-Dichloroethane	U		0.0819	0.500	1	05/05/2020 00:51	WG1470473
1,1-Dichloroethene	U		0.188	0.500	1	05/05/2020 00:51	WG1470473
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/05/2020 00:51	WG1470473
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/05/2020 00:51	WG1470473
1,2-Dichloropropane	U		0.149	0.500	1	05/05/2020 00:51	WG1470473
1,1-Dichloropropene	U		0.142	0.500	1	05/05/2020 00:51	WG1470473
1,3-Dichloropropane	U		0.109	1.00	1	05/05/2020 00:51	WG1470473
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/05/2020 00:51	WG1470473
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/05/2020 00:51	WG1470473
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/05/2020 00:51	WG1470473
2,2-Dichloropropane	U		0.161	0.500	1	05/05/2020 00:51	WG1470473
Di-isopropyl ether	U		0.105	0.500	1	05/05/2020 00:51	WG1470473
Ethylbenzene	U		0.137	0.500	1	05/05/2020 00:51	WG1470473
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/05/2020 00:51	WG1470473
2-Hexanone	U		0.787	5.00	1	05/05/2020 00:51	WG1470473
n-Hexane	U		0.749	5.00	1	05/05/2020 00:51	WG1470473
Iodomethane	U		0.554	5.00	1	05/05/2020 00:51	WG1470473
Isopropylbenzene	U		0.105	0.500	1	05/05/2020 00:51	WG1470473
p-Isopropyltoluene	U		0.120	0.500	1	05/05/2020 00:51	WG1470473
2-Butanone (MEK)	U		1.19	5.00	1	05/05/2020 00:51	WG1470473
Methylene Chloride	U		0.430	2.50	1	05/05/2020 00:51	WG1470473
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/05/2020 00:51	WG1470473
Methyl tert-butyl ether	U		0.101	0.500	1	05/05/2020 00:51	WG1470473
Naphthalene	U		0.174	2.50	1	05/05/2020 00:51	WG1470473
n-Propylbenzene	U		0.0993	0.500	1	05/05/2020 00:51	WG1470473
Styrene	U		0.118	0.500	1	05/05/2020 00:51	WG1470473
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/05/2020 00:51	WG1470473
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/05/2020 00:51	WG1470473
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/05/2020 00:51	WG1470473
Tetrachloroethene	U		0.300	0.500	1	05/05/2020 00:51	WG1470473
Toluene	U		0.278	0.500	1	05/05/2020 00:51	WG1470473
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/05/2020 00:51	WG1470473
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/05/2020 00:51	WG1470473
1,1,1-Trichloroethane	U		0.149	0.500	1	05/05/2020 00:51	WG1470473
1,1,2-Trichloroethane	U		0.158	0.500	1	05/05/2020 00:51	WG1470473
Trichloroethene	U		0.190	0.500	1	05/05/2020 00:51	WG1470473
Trichlorofluoromethane	U		0.160	2.50	1	05/05/2020 00:51	WG1470473
1,2,3-Trichloropropane	U		0.237	2.50	1	05/05/2020 00:51	WG1470473
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/05/2020 00:51	WG1470473
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/05/2020 00:51	WG1470473
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/05/2020 00:51	WG1470473

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.692	5.00	1	05/05/2020 00:51	WG1470473
Vinyl chloride	U		0.234	0.500	1	05/05/2020 00:51	WG1470473
Xylenes, Total	U		0.174	1.50	1	05/05/2020 00:51	WG1470473
(S) Toluene-d8	*107*			*80.0-120*		*05/05/2020 00:51*	WG1470473
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*05/05/2020 00:51*	WG1470473
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*05/05/2020 00:51*	WG1470473

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	160000		8450	20000	1	05/03/2020 11:30	WG1469125

Sample Narrative:
L1214057-04 WG1469125: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	16500		379	1000	1	05/02/2020 02:10	WG1469118
Nitrate	U		48.0	100	1	05/02/2020 02:10	WG1469118
Sulfate	149000		5940	50000	10	05/02/2020 02:28	WG1469118

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2840		102	1000	1	05/06/2020 20:58	WG1471459

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	30300		48.9	100	1	05/06/2020 20:55	WG1469558
Manganese	774		1.32	5.00	1	05/06/2020 20:55	WG1469558

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	36.8	B J	31.6	100	1	05/06/2020 06:57	WG1470453
(S) a,a,a-Trifluorotoluene(FID)	*98.5*			*78.0-120*		*05/06/2020 06:57*	WG1470453

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	1270		0.287	0.678	1	05/07/2020 13:08	WG1471909
Ethane	U		0.296	1.29	1	05/07/2020 13:08	WG1471909
Ethene	U		0.422	1.27	1	05/07/2020 13:08	WG1471909

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U	J4	11.3	25.0	1	05/05/2020 01:11	WG1470473
Acrylonitrile	U		0.671	5.00	1	05/05/2020 01:11	WG1470473
Benzene	U		0.0941	0.500	1	05/05/2020 01:11	WG1470473
Bromobenzene	U		0.118	0.500	1	05/05/2020 01:11	WG1470473
Bromodichloromethane	U		0.136	0.500	1	05/05/2020 01:11	WG1470473
Bromochloromethane	U		0.128	0.500	1	05/05/2020 01:11	WG1470473
Bromoform	U		0.129	0.500	1	05/05/2020 01:11	WG1470473
Bromomethane	U		0.605	2.50	1	05/05/2020 01:11	WG1470473
n-Butylbenzene	U		0.157	0.500	1	05/05/2020 01:11	WG1470473
sec-Butylbenzene	U		0.125	0.500	1	05/05/2020 01:11	WG1470473
tert-Butylbenzene	U		0.127	0.500	1	05/05/2020 01:11	WG1470473
Carbon disulfide	U	J0	0.0962	0.500	1	05/05/2020 01:11	WG1470473
Carbon tetrachloride	U		0.128	0.500	1	05/05/2020 01:11	WG1470473

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chlorobenzene	U		0.117	0.500	1	05/05/2020 01:11	WG1470473
Chlorodibromomethane	U		0.140	0.500	1	05/05/2020 01:11	WG1470473
Chloroethane	U		0.192	2.50	1	05/05/2020 01:11	WG1470473
Chloroform	U		0.111	0.500	1	05/05/2020 01:11	WG1470473
Chloromethane	U		0.960	1.25	1	05/05/2020 01:11	WG1470473
2-Chlorotoluene	U		0.106	0.500	1	05/05/2020 01:11	WG1470473
4-Chlorotoluene	U		0.114	0.500	1	05/05/2020 01:11	WG1470473
1,2-Dibromo-3-Chloropropane	U		0.276	2.50	1	05/05/2020 01:11	WG1470473
1,2-Dibromoethane	U		0.126	0.500	1	05/05/2020 01:11	WG1470473
Dibromomethane	U		0.122	0.500	1	05/05/2020 01:11	WG1470473
1,2-Dichlorobenzene	U		0.107	0.500	1	05/05/2020 01:11	WG1470473
1,3-Dichlorobenzene	U		0.299	0.500	1	05/05/2020 01:11	WG1470473
1,4-Dichlorobenzene	U		0.120	0.500	1	05/05/2020 01:11	WG1470473
Dichlorodifluoromethane	U		0.374	2.50	1	05/05/2020 01:11	WG1470473
1,1-Dichloroethane	U		0.100	0.500	1	05/05/2020 01:11	WG1470473
1,2-Dichloroethane	U		0.0819	0.500	1	05/05/2020 01:11	WG1470473
1,1-Dichloroethene	U		0.188	0.500	1	05/05/2020 01:11	WG1470473
cis-1,2-Dichloroethene	U		0.126	0.500	1	05/05/2020 01:11	WG1470473
trans-1,2-Dichloroethene	U		0.149	0.500	1	05/05/2020 01:11	WG1470473
1,2-Dichloropropane	U		0.149	0.500	1	05/05/2020 01:11	WG1470473
1,1-Dichloropropene	U		0.142	0.500	1	05/05/2020 01:11	WG1470473
1,3-Dichloropropane	U		0.109	1.00	1	05/05/2020 01:11	WG1470473
cis-1,3-Dichloropropene	U		0.111	0.500	1	05/05/2020 01:11	WG1470473
trans-1,3-Dichloropropene	U		0.118	0.500	1	05/05/2020 01:11	WG1470473
trans-1,4-Dichloro-2-butene	U		0.467	5.00	1	05/05/2020 01:11	WG1470473
2,2-Dichloropropane	U		0.161	0.500	1	05/05/2020 01:11	WG1470473
Di-isopropyl ether	U		0.105	0.500	1	05/05/2020 01:11	WG1470473
Ethylbenzene	U		0.137	0.500	1	05/05/2020 01:11	WG1470473
Hexachloro-1,3-butadiene	U		0.337	1.00	1	05/05/2020 01:11	WG1470473
2-Hexanone	U		0.787	5.00	1	05/05/2020 01:11	WG1470473
n-Hexane	U		0.749	5.00	1	05/05/2020 01:11	WG1470473
Iodomethane	U		0.554	5.00	1	05/05/2020 01:11	WG1470473
Isopropylbenzene	U		0.105	0.500	1	05/05/2020 01:11	WG1470473
p-Isopropyltoluene	U		0.120	0.500	1	05/05/2020 01:11	WG1470473
2-Butanone (MEK)	U		1.19	5.00	1	05/05/2020 01:11	WG1470473
Methylene Chloride	U		0.430	2.50	1	05/05/2020 01:11	WG1470473
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00	1	05/05/2020 01:11	WG1470473
Methyl tert-butyl ether	U		0.101	0.500	1	05/05/2020 01:11	WG1470473
Naphthalene	U		0.174	2.50	1	05/05/2020 01:11	WG1470473
n-Propylbenzene	U		0.0993	0.500	1	05/05/2020 01:11	WG1470473
Styrene	U		0.118	0.500	1	05/05/2020 01:11	WG1470473
1,1,1,2-Tetrachloroethane	U		0.147	0.500	1	05/05/2020 01:11	WG1470473
1,1,2,2-Tetrachloroethane	U		0.133	0.500	1	05/05/2020 01:11	WG1470473
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500	1	05/05/2020 01:11	WG1470473
Tetrachloroethene	U		0.300	0.500	1	05/05/2020 01:11	WG1470473
Toluene	U		0.278	0.500	1	05/05/2020 01:11	WG1470473
1,2,3-Trichlorobenzene	U		0.164	0.500	1	05/05/2020 01:11	WG1470473
1,2,4-Trichlorobenzene	U		0.481	1.00	1	05/05/2020 01:11	WG1470473
1,1,1-Trichloroethane	U		0.149	0.500	1	05/05/2020 01:11	WG1470473
1,1,2-Trichloroethane	U		0.158	0.500	1	05/05/2020 01:11	WG1470473
Trichloroethene	U		0.190	0.500	1	05/05/2020 01:11	WG1470473
Trichlorofluoromethane	U		0.160	2.50	1	05/05/2020 01:11	WG1470473
1,2,3-Trichloropropane	U		0.237	2.50	1	05/05/2020 01:11	WG1470473
1,2,4-Trimethylbenzene	U		0.322	0.500	1	05/05/2020 01:11	WG1470473
1,2,3-Trimethylbenzene	U		0.104	0.500	1	05/05/2020 01:11	WG1470473
1,3,5-Trimethylbenzene	U		0.104	0.500	1	05/05/2020 01:11	WG1470473

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Vinyl acetate	U		0.692	5.00	1	05/05/2020 01:11	WG1470473
Vinyl chloride	U		0.234	0.500	1	05/05/2020 01:11	WG1470473
Xylenes, Total	U		0.174	1.50	1	05/05/2020 01:11	WG1470473
(S) Toluene-d8	*107*			*80.0-120*		*05/05/2020 01:11*	WG1470473
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*05/05/2020 01:11*	WG1470473
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*		*05/05/2020 01:11*	WG1470473

Method Blank (MB)

(MB) R3524213-1 05/03/20 09:21

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1213843-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1213843-01 05/03/20 09:48 • (DUP) R3524213-2 05/03/20 09:58

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	255000	257000	1	0.841		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1214284-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1214284-08 05/03/20 12:48 • (DUP) R3524213-4 05/03/20 13:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	226000	225000	1	0.477		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3524213-3 05/03/20 11:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	101000	101	85.0-115	

Sample Narrative:
LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3524223-1 05/01/20 16:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Nitrate	U		48.0	100
Sulfate	U		594	5000

L1213960-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1213960-01 05/01/20 18:25 • (DUP) R3524223-3 05/01/20 18:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	5180	5250	1	1.37		15
Nitrate	469	565	1	18.6	J3	15
Sulfate	30500	31400	1	2.95		15

L1214061-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1214061-04 05/02/20 04:33 • (DUP) R3524223-7 05/02/20 04:51

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11400	11500	1	0.338		15
Nitrate	2000	2350	1	15.8	J3	15
Sulfate	ND	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3524223-2 05/01/20 17:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39800	99.4	80.0-120	
Nitrate	8000	8050	101	80.0-120	
Sulfate	40000	40100	100	80.0-120	

L1214028-25 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1214028-25 05/01/20 19:54 • (MS) R3524223-4 05/01/20 20:48 • (MSD) R3524223-5 05/01/20 21:06

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	5140	55700	55700	101	101	1	80.0-120			0.00969	15
Nitrate	5000	1070	6190	6190	102	102	1	80.0-120			0.0695	15
Sulfate	50000	ND	51100	51100	102	102	1	80.0-120			0.0133	15

L1214061-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1214061-03 05/02/20 03:58 • (MS) R3524223-6 05/02/20 04:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	32800	81600	97.6	1	80.0-120	
Nitrate	5000	117	5120	100	1	80.0-120	
Sulfate	50000	12600	62200	99.3	1	80.0-120	

Method Blank (MB)

(MB) R3525900-1 05/07/20 15:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	347	J	102	1000

L1214043-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1214043-17 05/07/20 18:39 • (DUP) R3525900-3 05/07/20 19:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	6650	6640	1	0.196		20

L1214043-25 Original Sample (OS) • Duplicate (DUP)

(OS) L1214043-25 05/07/20 23:02 • (DUP) R3525900-6 05/07/20 23:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC	4280000	4390000	50	2.72		20

Laboratory Control Sample (LCS)

(LCS) R3525900-2 05/07/20 16:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC	75000	82500	110	85.0-115	

L1214057-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1214057-02 05/08/20 01:18 • (MS) R3525900-7 05/08/20 01:41 • (MSD) R3525900-8 05/08/20 02:05

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC	50000	1380	57300	57900	112	113	1	80.0-120			1.16	20

Method Blank (MB)

(MB) R3525475-1 05/06/20 19:48

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	227	J	102	1000

L1214061-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1214061-04 05/06/20 21:55 • (DUP) R3525475-3 05/06/20 22:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	ND	305	1	0.000		20

L1214190-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1214190-05 05/07/20 01:27 • (DUP) R3525475-6 05/07/20 01:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	948	898	1	5.46	J	20

Laboratory Control Sample (LCS)

(LCS) R3525475-2 05/06/20 20:21

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	74800	99.7	85.0-115	

L1214190-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1214190-01 05/06/20 23:51 • (MS) R3525475-4 05/07/20 00:09 • (MSD) R3525475-5 05/07/20 00:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	997	53800	53900	106	106	1	80.0-120			0.223	20

L1214190-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1214190-07 05/07/20 03:20 • (MS) R3525475-7 05/07/20 03:38 • (MSD) R3525475-8 05/07/20 03:57

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TOC (Total Organic Carbon)	50000	596	53500	53800	106	106	1	80.0-120			0.485	20

Method Blank (MB)

(MB) R3525315-1 05/06/20 20:16

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		48.9	100
Manganese	U		1.32	5.00

Laboratory Control Sample (LCS)

(LCS) R3525315-2 05/06/20 20:19

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Iron	5000	4320	86.4	80.0-120	
Manganese	50.0	42.3	84.5	80.0-120	

L1214057-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1214057-01 05/06/20 20:23 • (MS) R3525315-4 05/06/20 20:30 • (MSD) R3525315-5 05/06/20 20:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	5000	2910	7070	6770	83.2	77.1	1	75.0-125			4.41	20
Manganese	50.0	1100	1040	1010	0.000	0.000	1	75.0-125	V	V	2.41	20

Method Blank (MB)

(MB) R3525621-2 05/06/20 01:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	67.1	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3525621-1 05/06/20 01:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5610	102	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*78.0-120*	

Method Blank (MB)

(MB) R3525464-2 05/07/20 11:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1214043-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1214043-14 05/07/20 11:24 • (DUP) R3525464-3 05/07/20 12:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	212	259	1	20.0		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

L1214110-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1214110-02 05/07/20 13:29 • (DUP) R3525464-4 05/07/20 13:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Methane	625	634	1	1.43		20
Ethane	975	1000	1	2.53		20
Ethene	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3525464-1 05/07/20 11:00 • (LCSD) R3525464-5 05/07/20 13:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	58.9	62.5	86.9	92.2	85.0-115			5.93	20
Ethane	129	115	125	89.1	96.9	85.0-115			8.33	20
Ethene	127	109	120	85.8	94.5	85.0-115			9.61	20

Method Blank (MB)

(MB) R3526316-3 05/04/20 20:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
2,2-Dichloropropane	U		0.161	0.500
Di-isopropyl ether	U		0.105	0.500

Method Blank (MB)

(MB) R3526316-3 05/04/20 20:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
n-Hexane	U		0.749	5.00
Iodomethane	U		0.554	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	0.500
1,2,4-Trimethylbenzene	U		0.322	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl acetate	U		0.692	5.00
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3526316-1 05/04/20 19:42 • (LCSD) R3526316-2 05/04/20 20:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	42.0	44.7	168	179	19.0-160	J4	J4	6.23	27
Acrylonitrile	25.0	25.4	26.6	102	106	55.0-149			4.62	20
Benzene	5.00	4.75	5.04	95.0	101	70.0-123			5.92	20
Bromobenzene	5.00	4.80	5.10	96.0	102	73.0-121			6.06	20
Bromodichloromethane	5.00	5.26	5.50	105	110	75.0-120			4.46	20
Bromochloromethane	5.00	5.40	5.55	108	111	76.0-122			2.74	20
Bromoform	5.00	5.25	5.32	105	106	68.0-132			1.32	20
Bromomethane	5.00	5.56	6.14	111	123	10.0-160			9.91	25
n-Butylbenzene	5.00	5.23	5.68	105	114	73.0-125			8.25	20
sec-Butylbenzene	5.00	5.33	5.62	107	112	75.0-125			5.30	20
tert-Butylbenzene	5.00	5.09	5.40	102	108	76.0-124			5.91	20
Carbon disulfide	5.00	3.76	3.95	75.2	79.0	61.0-128			4.93	20
Carbon tetrachloride	5.00	4.96	5.62	99.2	112	68.0-126			12.5	20
Chlorobenzene	5.00	4.95	5.32	99.0	106	80.0-121			7.21	20
Chlorodibromomethane	5.00	5.10	5.31	102	106	77.0-125			4.03	20
Chloroethane	5.00	5.64	6.22	113	124	47.0-150			9.78	20
Chloroform	5.00	5.01	5.44	100	109	73.0-120			8.23	20
Chloromethane	5.00	5.03	5.28	101	106	41.0-142			4.85	20
2-Chlorotoluene	5.00	4.92	5.15	98.4	103	76.0-123			4.57	20
4-Chlorotoluene	5.00	5.12	5.36	102	107	75.0-122			4.58	20
1,2-Dibromo-3-Chloropropane	5.00	5.18	5.11	104	102	58.0-134			1.36	20
1,2-Dibromoethane	5.00	5.32	5.42	106	108	80.0-122			1.86	20
Dibromomethane	5.00	5.35	5.60	107	112	80.0-120			4.57	20
1,2-Dichlorobenzene	5.00	5.02	5.11	100	102	79.0-121			1.78	20
1,3-Dichlorobenzene	5.00	4.98	5.35	99.6	107	79.0-120			7.16	20
1,4-Dichlorobenzene	5.00	5.04	5.23	101	105	79.0-120			3.70	20
trans-1,4-Dichloro-2-butene	5.00	5.05	5.28	101	106	33.0-144			4.45	20
Dichlorodifluoromethane	5.00	5.60	5.56	112	111	51.0-149			0.717	20
1,1-Dichloroethane	5.00	4.81	5.24	96.2	105	70.0-126			8.56	20
1,2-Dichloroethane	5.00	4.98	5.24	99.6	105	70.0-128			5.09	20
1,1-Dichloroethene	5.00	4.45	4.71	89.0	94.2	71.0-124			5.68	20
cis-1,2-Dichloroethene	5.00	5.29	5.70	106	114	73.0-120			7.46	20
trans-1,2-Dichloroethene	5.00	5.14	5.38	103	108	73.0-120			4.56	20
1,2-Dichloropropane	5.00	4.83	5.20	96.6	104	77.0-125			7.38	20
1,1-Dichloropropene	5.00	5.17	5.61	103	112	74.0-126			8.16	20
1,3-Dichloropropane	5.00	5.18	5.40	104	108	80.0-120			4.16	20
cis-1,3-Dichloropropene	5.00	5.25	5.62	105	112	80.0-123			6.81	20
trans-1,3-Dichloropropene	5.00	5.16	5.51	103	110	78.0-124			6.56	20
2,2-Dichloropropane	5.00	5.45	5.97	109	119	58.0-130			9.11	20
Di-isopropyl ether	5.00	4.73	4.96	94.6	99.2	58.0-138			4.75	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3526316-1 05/04/20 19:42 • (LCSD) R3526316-2 05/04/20 20:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	5.00	5.07	5.64	101	113	79.0-123			10.6	20
Hexachloro-1,3-butadiene	5.00	4.81	5.28	96.2	106	54.0-138			9.32	20
2-Hexanone	25.0	29.0	30.5	116	122	67.0-149			5.04	20
n-Hexane	5.00	4.71	5.04	94.2	101	57.0-133			6.77	20
Iodomethane	25.0	20.2	21.4	80.8	85.6	33.0-147			5.77	26
Isopropylbenzene	5.00	5.16	5.58	103	112	76.0-127			7.82	20
p-Isopropyltoluene	5.00	5.43	5.75	109	115	76.0-125			5.72	20
2-Butanone (MEK)	25.0	36.2	36.5	145	146	44.0-160			0.825	20
Methylene Chloride	5.00	4.09	4.30	81.8	86.0	67.0-120			5.01	20
4-Methyl-2-pentanone (MIBK)	25.0	26.1	27.3	104	109	68.0-142			4.49	20
Methyl tert-butyl ether	5.00	4.54	4.81	90.8	96.2	68.0-125			5.78	20
Naphthalene	5.00	4.25	4.51	85.0	90.2	54.0-135			5.94	20
n-Propylbenzene	5.00	4.81	5.20	96.2	104	77.0-124			7.79	20
Styrene	5.00	5.34	5.54	107	111	73.0-130			3.68	20
1,1,1,2-Tetrachloroethane	5.00	4.85	5.13	97.0	103	75.0-125			5.61	20
1,1,2,2-Tetrachloroethane	5.00	4.81	4.93	96.2	98.6	65.0-130			2.46	20
Tetrachloroethene	5.00	5.32	5.62	106	112	72.0-132			5.48	20
Toluene	5.00	4.70	5.04	94.0	101	79.0-120			6.98	20
1,1,2-Trichlorotrifluoroethane	5.00	4.79	4.80	95.8	96.0	69.0-132			0.209	20
1,2,3-Trichlorobenzene	5.00	4.40	4.57	88.0	91.4	50.0-138			3.79	20
1,2,4-Trichlorobenzene	5.00	4.51	4.78	90.2	95.6	57.0-137			5.81	20
1,1,1-Trichloroethane	5.00	5.20	5.47	104	109	73.0-124			5.06	20
1,1,2-Trichloroethane	5.00	5.39	5.46	108	109	80.0-120			1.29	20
Trichloroethene	5.00	4.99	5.46	99.8	109	78.0-124			9.00	20
Trichlorofluoromethane	5.00	5.75	6.03	115	121	59.0-147			4.75	20
1,2,3-Trichloropropane	5.00	5.21	5.31	104	106	73.0-130			1.90	20
1,2,3-Trimethylbenzene	5.00	4.82	5.14	96.4	103	77.0-120			6.43	20
1,2,4-Trimethylbenzene	5.00	4.92	5.33	98.4	107	76.0-121			8.00	20
1,3,5-Trimethylbenzene	5.00	4.90	5.23	98.0	105	76.0-122			6.52	20
Vinyl acetate	25.0	35.6	37.8	142	151	11.0-160			5.99	20
Vinyl chloride	5.00	5.13	5.61	103	112	67.0-131			8.94	20
Xylenes, Total	15.0	14.9	16.1	99.3	107	79.0-123			7.74	20
(S) Toluene-d8				*106*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*105*	*107*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*114*	*114*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

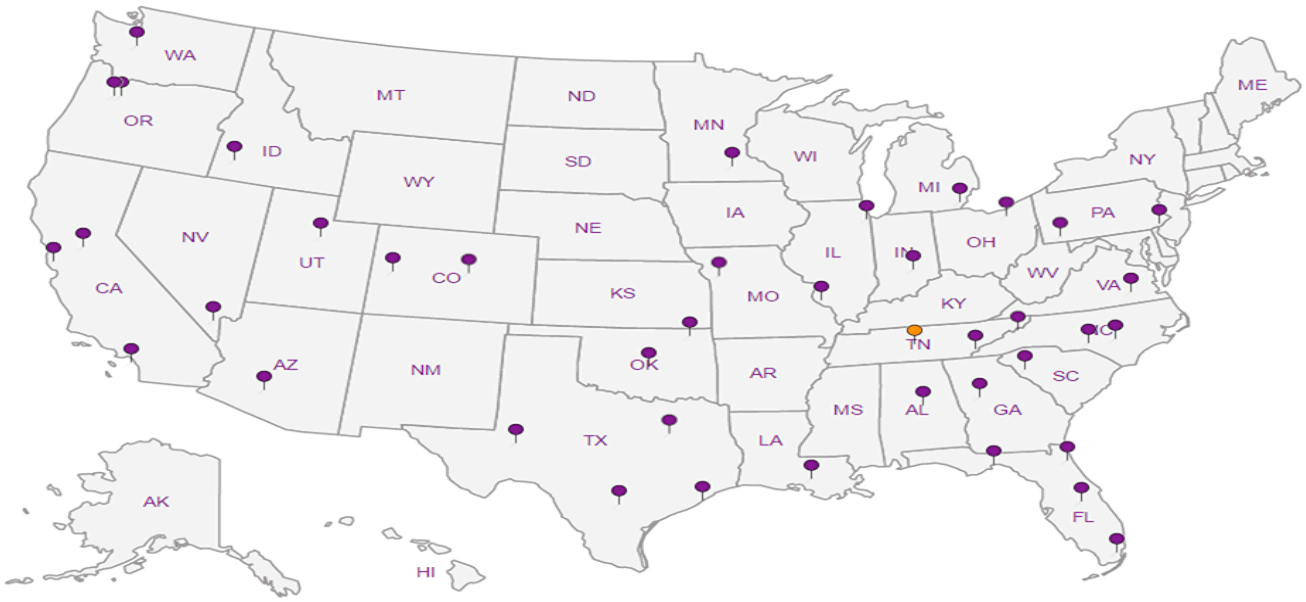
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;bhaldeman@pesenv.com;sm

Project Description: American Linen

City/State Collected:

Please Circle: PT MT CT ET

Phone: 206-529-3980
Fax: 206-529-3985

Client Project # 1413.001.02.501E

Lab Project # PESENVSWA-ALP

Collected by (print): Hannah Cohen

Site/Facility ID # American Linen

P.O. #

Collected by (signature): Hannah Cohn

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,SO4,Cl 125mlHDPE-NoPres	Alkalinity 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	TOC 250mlHDPE-HCl ✓2	Total Fe Mn 6020 250mlHDPE-HNO3 ✓2	VOCs LL 8260D 40mlAmb-HCl				
MW-146-043020	Grab	GW	45	4/30/20	955	12	X	X	X	X	X	X	X				-01
MW-154-043020	"	GW	34	"	1135	12	X	X	X	X	X	X	X				-02
MW-153-043020	"	GW	125	"	1345	12	X	X	X	X	X	X	X				-03
MW-148-043020	"	GW	75	"	1510	12	X	X	X	X	X	X	X				-04
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
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Fax: 615-758-5859

SDG # L1214057

F225

Ta

Acctnum: PESENVSWA
Template: T165314
Prelogin: P763877
PM: 110 - Brian Ford
PB:
Shipped Via:

Remarks | Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*Nitrate has a 48 hour holding time.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 1749 9997 2260

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y	N
COC Signed/Accurate:		Y	N
Bottles arrive intact:		Y	N
Correct bottles used:		Y	N
Sufficient volume sent:		Y	N
If Applicable			
VOA Zero Headspace:		Y	N
Preservation Correct/Checked:		Y	N
RAD Screen <0.5 mR/hr:		Y	N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Hannah Cohn	4/30/20	1630			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: IR#3 °C Bottles Received: 3.5+.1=3.6 47	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) L. Webster	Date: 5/1/20 Time: 08:45	Hold: / Condition: NCF / OK

MEMORANDUM

TO: Project File **DATE:** May 20, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.02.501E

TASK: EIM Data Validation Level EPA2A for 2nd Quarter Monitoring – Groundwater Samples - Group 3

LAB: Pace Sample Delivery Groups (SDGs): L1213148, L1213621, L1214057, L1214418, and L1214811

Thirty-two (32) groundwater samples (including one field duplicate), one equipment blank, and two trip blanks were collected as part of the 2nd Quarterly Monitoring Round for 2020 for the ongoing Remedial Investigation (RI) sampling at the Former American Linen Supply Site, in Seattle, Washington in April and May of 2020. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260D;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

The RI sampling was conducted in the spring of 2020. Results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in groups (up to 10 SDGs) for each data validation report. Group 3 analytical results are reported in SDGs L1213148, L1213621, L1214057, L1214418, and L1214811. The quality assurance review of the laboratory data associated with Group 3 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria

outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition except for issues mentioned in the Completeness section. No data were qualified based upon the sample collection and preservation information with the following discussions:

- SDG L1213621: PES review of field notes indicated that there was a work trailer parked over the top of monitoring well FMW-131 and it was sampled with the peristaltic pump instead of the bladder pump. The depth to water was measured at 22.4 feet below top of casing (TOC) however the SAP stipulates that well locations with water levels lower than 20.0 feet below TOC should be sampled with a bladder pump. Past and current data sets of analytical data for monitoring well FMW-131 were reviewed for comparability. The historical data appear to be generally consistent with current analytical data from monitoring well FMW-131. No further action is taken other than to note this.

- SDG L1213621: Pace's original sample narrative (May 8, 2020) for VOC results on sample MW-322-042920 read "non-target compounds too high to run at a dilution". PES followed up to confirm the types of non-target compounds that may have been present. Pace confirmed, May 27, 2020, that the statement was erroneously added by the bench analyst and should have read "target compounds too high to run at a lower dilution". SDG L1213621 was reissued on May 27, 2020 with the modified sample narrative for sample MW-322-042920 VOC results.

- SDG L1214418: Pace Log In comments indicate that samples were shipped without ice and received at 8.7 °C however emails between Pace and PES indicate that ice was included in the coolers prior to shipment. Validator recommends that PES pack coolers with additional bags of ice particularly for the upcoming warmer seasons. No action is taken on this basis since the cooler temperatures only marginally exceeded the recommended temperature and were received less than 10 °C.

- SDG L1213621: PES requested on May 1, 2020 that sample MW-116-042920 identification on the chain of custody be changed to sample MW116-042920.

Holding Times

USEPA Method 8260D:
All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:
All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met.

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace's notes indicate the following:

- Multiple SDGs - *USEPA Method 8260D:* Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

Method Blank Results

USEPA Method 8260D:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs).

NWTPH-Gx Method:

Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with one exception:

- SDG L1213148 – Analytical batch WG1469578: A low level of gasoline was detected in the method blank. The associated gasoline detection in sample MW-307-042820 is above the RDL and no action is taken. **Gasoline was detected below the RDL in samples MW-305-042820 and MW-306-042820. Gasoline results for samples are qualified as non-detected (U) due to blank contamination.**

- SDG L1213621 – Analytical batch WG1469667: Low levels of gasoline concentrations were detected in the method, trip, and equipment blanks. No action is taken on this basis.

- SDG L1213621 – Analytical batch WG1470018: Low level of gasoline concentrations were detected in the method, trip, and equipment blanks. Associated sample MW-147-042920 result is greater than the RDL and no action is taken on this basis.

- SDG L1214057 - Analytical batch WG1470453: A low levels of gasoline was detected in the method blank. The associated gasoline detection in sample MW-146-043020 is above the RDL and no action is taken. **Gasoline was detected below the RDL in samples MW-154-043020, MW-153-043020, and MW-148-043020. Gasoline results for these samples are qualified as non-detected (U) due to blank contamination.**

- SDG L1214418 - Analytical batch WG1472292: Low levels of gasoline concentrations were detected in the method and trip blank. The associated gasoline detection in sample MW-146-043020 is above the RDL and no action is taken. **Gasoline was detected below the RDL in samples MW-168-050120, MW-176-050120, MW-167-050120, MW-175-050120, MW-165-050120, MW-174-050120, and MW-166-050120. Gasoline results for these samples are qualified as non-detected (U) due to blank contamination.**

- SDG L1214418 - Analytical batch WG1472903: Low levels of gasoline concentrations were detected in the method and trip blank. No action is needed since gasoline was not detected in the associated sample (MW-173-050120).

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1213148	WG1468666	9060A	TOC	193	J	1000	µg/L	NO
L1213148	WG1470661	9060A	TOC	445	J	1000	µg/L	NO
L1213621	WG1469258	9060A	TOC	389	J	1000	µg/L	NO
L1213621	WG1470661	9060A	TOC	445	J	1000	µg/L	NO
L1214057	WG1471458	9060A	TOC	347	J	1000	µg/L	NO
L1214057	WG1471459	9060A	TOC	227	J	1000	µg/L	NO
L1214418	WG1471459	9060A	TOC	227	J	1000	µg/L	NO
L1214418	WG1472044	9060A	TOC	247	J	1000	µg/L	NO
L1214811	WG1472044	9060A	TOC	247	J	1000	µg/L	NO
L1214811	WG1472048	9060A	TOC	530	J	1000	µg/L	NO

Target analytes were detected in method blanks at low levels with no impact to the associated samples with the following discussions:

- SDGs L1213148: TOC was detected in sample MW-305-042820 at 921 µg/L slightly below the RDL of 1000 µg/L. TOC was also detected in the method blank at 193 µg/L. In this case professional judgment was used and no action is taken other than to remove the "B" qualifier from the EDD and Form 1 results.

- SDG L1214057: TOC was detected in sample MW-153-043020 at 843 µg/L slightly below the RDL. TOC was also detected in the method blank at 227 ug/L. In this case professional judgment was used and no action is taken other than to remove the "B" qualifier from the EDD and Form 1 results.

Trip Blank Results

USEPA Method 8260D, NWTPH-Gx:
Two trip blanks were collected. The target analytes are not detected in the method blanks at or above the RDLs with the following exceptions:

- SDG L1213621: A low level of gasoline is detected in the trip blank (TB-042920). Low levels of gasoline were also detected in the equipment and method blanks. Associated sample MW-147-042920 gasoline result is not impacted since the detection is significantly greater than the RDL.

- SDG L1214418: A low level of gasoline is detected in the trip blank (TB-050120). A low level of gasoline was also detected in the method blank. Associated sample MW-147-042920 is not impacted since the gasoline detection is significantly greater than the RDL. **Gasoline was detected below the RDL in samples MW-168-050120, MW-176-050120, MW-167-050120, MW-175-050120, MW-165-050120, MW-174-050120, and MW-166-050120. Gasoline results for these samples are qualified as non-detected (U) due to blank (method and trip) contamination.**

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:

One equipment blank (EQ-042920 with SDG L1213621) is associated with all samples collected via bladder pump on April 29, 2020. Associated samples are MW-320-042920, MW-333-042920, MW-322-042920**,** MW116-042920, and MW-147-042920. Low levels of gasoline, TOC, and manganese were detected in the equipment blank. No action is taken for low level of gasoline, TOC, and manganese since the amounts in the associated samples are far greater than the detections in the equipment blank.

Field Duplicate Analyses

Field duplicate pairs were submitted and analyzed. Field duplicate sample pair is as follows:

- SDG L1213621: Sample GEI-1-042920 is a field duplicate of MW-929-042920

Target analyte results are comparable and within a relative percent difference (RPD) of 30% (± 1x RDL for groundwater results <5X the RDL) for the field duplicate pair.

Laboratory Duplicate Analyses

USEPA Method 8260D:
Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:
Laboratory duplicate samples were not analyzed. Refer to field duplicate, LCS, or MS results for additional information.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:
Laboratory duplicate samples were not analyzed. Refer to LCS/LCSD or MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control RPD limits or ± 1x RDL for groundwater results <5X the RDL with the following discussions:

- SDG L1214057: A laboratory duplicate was performed on a non-client sample with a nitrate RPD result exceeding laboratory QC criteria and laboratory qualified (J3). No action is taken on this basis since the laboratory duplicate was performed on a non-client sample. Refer to matrix spike results for precision data.

- SDG L1214811: A laboratory duplicate was performed on a non-client sample with a chloride RPD result exceeding laboratory QC criteria and laboratory qualified (P1). No action is taken on this basis since the results are less than 5X the RL and $\pm$ <1X the RDL.

- SDG L1214811: A laboratory duplicate was performed on a non-client sample with a TOC RPD result exceeding laboratory QC criteria and laboratory qualified (P1). No action is taken on this basis since the results are less than 5X the RL and $\pm$ <1X the RDL.

Surrogate Recoveries

USEPA Method 8260D:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260D:
Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260D method. The LCS % Rs or LCS/LCSD % Rs and RPDs for all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDG L1210457 - Analytical batch WG1470473: LCS/LCSD % recoveries for acetone are above laboratory acceptance criteria and laboratory qualified (J4). No action is needed since acetone is not detected in the associated samples.

- SDG L1214811 - Analytical batch WG1470473: LCS/LCSD RPD exceeds criteria for two compounds (trans-1,4-dichloro-2-butene and 2-butanone) and laboratory qualified (J3). Recoveries are within criteria but are recovered wide. No action is taken on this basis.

NWTPH-Gx Method:
The LCS % Rs for the target compound (gasoline) are within the laboratory control criteria for waters. No measures of precision are provided with the analytical batch. No action is taken other than to note this.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:
The LCS % Rs or LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260D:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were not performed. Refer to LCS results. In some cases, no measure of precision was provided. Refer to the field duplicate results for precision data. No action was taken other than to note this.

NWTPH-Gx Method:
MS/MSD analyses were not performed. Refer to LCS results. No measure of precision was provided. In some cases, no measure of precision was provided. No action was taken other than to note this.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
MS/MSD analyses were not performed. Refer to LCS results and field duplicate sample for accuracy and precision data.

USEPA Method 6020B:
MS/MSD analyses were performed on client and on non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following discussion:

- SDG L1213621: MS/MSD was performed on sample MW-929-042920 with MSD recovery below criteria for manganese and laboratory qualified (V). Per Guidelines, no action is taken for manganese since the sample amount is greater than four times the spike amount.

- SDG L1214057: Matrix spike analysis was performed on client sample MW-146-043020 and manganese spike results are laboratory qualified (V) to indicate that the sample concentration is greater than 4X the spike amount. Per guidance no action is necessary. Refer to LCS results for accuracy data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS or MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples with the following discussion:

- SDG L1213148: Matrix spike analysis was performed on client sample MW-307-042820 and sulfate spike results are laboratory qualified (E) to indicate that the sample concentration exceeds the linear calibration range. No action is taken in this case since the RPD criteria is met.

- SDG L1214418: Matrix spike analysis was performed on a non-client sample. Chloride and sulfate spike results are laboratory qualified (EV) to indicate that the sample concentration exceeds the linear calibration range and is greater than 4X the spike amount. No action is taken in this case since the spike was performed on a non-client sample. Refer to MS results on client sample MW-175-050120 for accuracy data.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- Multiple SDGs: Sample narratives for alkalinity results indicate that the endpoint pH is 4.5. No action was taken other than to note that this reflects total alkalinity.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. In some cases, non-target compounds are too high to run at a lower dilution. No action is taken other than to note this.

Gasoline and gasoline range organics are analyzed for via Volatile Organic Compounds (GC) by Washington State Method NWTPHGx (using a gas chromatograph/flame ionization detector (GC/FID)) and Pace reported gasoline range organic-NWTPH results. Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and tetrachloroethene) elute within the gasoline range organics (GRO) retention time range as specified by Washington State (detections falling between the toluene and dodecane range).

Non-petroleum organics (e.g. chlorinated VOC compounds) eluting within the gasoline range contribute to the GRO result and GRO results are likely biased high (J+). PES requested that Pace evaluate chromatograms associated with positive sample detections to confirm the potential presence of gasoline. Per PES's request Pace reviewed selected sample chromatograms against the gasoline standard chromatograms and assigned "no discernible petroleum pattern" to GRO results associated with this Task. PES assigned an additional project level qualifier (Z) to GRO results when the chromatogram for the sample does not match a discernible gasoline standard pattern. No action is taken in these cases other than to note that this is likely due to report formatting error. Associated chromatograms and qualified samples for this Task are as follows:

Sample ID	Laboratory Identification	Gasoline Range Organic Result (µg/L)	DV Qualifier	Data Validation Comments	Pace Chromatogram Review Notes

MW-307-042820	L1213148-02	146	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.
MW-147-042920	L1213621-10	1,150	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.
MW-146-043020	L1214057-01	1,080	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.

Project level qualifiers have been included to the PES's project database (Epiphany) as (ZJ+). Washington State EIM valid values were reviewed. In this case no Washington State EIM valid value descriptor is ideal, and the default estimated value (J) has been selected as the best match to qualify GRO (Z,J+) data.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	370000		8450	20000	1	05/05/2020 10:56	WG1469123

Sample Narrative:
L1213621-10 WG1469123: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	33900		379	1000	1	05/01/2020 03:33	WG1468704
Nitrate	U		48.0	100	1	05/01/2020 03:33	WG1468704
Sulfate	22400		594	5000	1	05/01/2020 03:33	WG1468704

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3470	~~B~~	102	1000	1	05/05/2020 23:37	WG1470661

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	8660		48.9	100	1	05/06/2020 09:52	WG1469555
Manganese	1010		1.32	5.00	1	05/06/2020 09:52	WG1469555

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1150	Z, J+	31.6	100	1	05/04/2020 17:04	WG1470018
(S) a,a,a-Trifluorotoluene(FID)	*98.1*			*78.0-120*		*05/04/2020 17:04*	WG1470018

Sample Narrative:
L1213621-10 WG1470018: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	3780		0.287	0.678	1	05/06/2020 11:31	WG1470548
Ethane	U		0.296	1.29	1	05/06/2020 11:31	WG1470548
Ethene	468		0.422	1.27	1	05/06/2020 11:31	WG1470548

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		282	625	25	05/03/2020 01:48	WG1469806
Acrylonitrile	U		16.8	125	25	05/03/2020 01:48	WG1469806
Benzene	U		2.35	12.5	25	05/03/2020 01:48	WG1469806
Bromobenzene	U		2.95	12.5	25	05/03/2020 01:48	WG1469806
Bromodichloromethane	U		3.40	12.5	25	05/03/2020 01:48	WG1469806
Bromochloromethane	U		3.20	12.5	25	05/03/2020 01:48	WG1469806
Bromoform	U		3.22	12.5	25	05/03/2020 01:48	WG1469806
Bromomethane	U		15.1	62.5	25	05/03/2020 01:48	WG1469806
n-Butylbenzene	U		3.93	12.5	25	05/03/2020 01:48	WG1469806
sec-Butylbenzene	U		3.13	12.5	25	05/03/2020 01:48	WG1469806

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier		MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
tert-Butylbenzene	U			3.18	12.5	25	05/03/2020 01:48	WG1469806
Carbon disulfide	U	UJ	J0	2.41	12.5	25	05/03/2020 01:48	WG1469806
Carbon tetrachloride	U			3.20	12.5	25	05/03/2020 01:48	WG1469806
Chlorobenzene	U			2.93	12.5	25	05/03/2020 01:48	WG1469806
Chlorodibromomethane	U			3.50	12.5	25	05/03/2020 01:48	WG1469806
Chloroethane	U			4.80	62.5	25	05/03/2020 01:48	WG1469806
Chloroform	U			2.78	12.5	25	05/03/2020 01:48	WG1469806
Chloromethane	U			24.0	31.3	25	05/03/2020 01:48	WG1469806
2-Chlorotoluene	U			2.65	12.5	25	05/03/2020 01:48	WG1469806
4-Chlorotoluene	U			2.85	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dibromo-3-Chloropropane	U			6.90	62.5	25	05/03/2020 01:48	WG1469806
1,2-Dibromoethane	U			3.15	12.5	25	05/03/2020 01:48	WG1469806
Dibromomethane	U			3.05	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dichlorobenzene	U			2.68	12.5	25	05/03/2020 01:48	WG1469806
1,3-Dichlorobenzene	U			7.48	12.5	25	05/03/2020 01:48	WG1469806
1,4-Dichlorobenzene	U			3.00	12.5	25	05/03/2020 01:48	WG1469806
Dichlorodifluoromethane	U			9.35	62.5	25	05/03/2020 01:48	WG1469806
1,1-Dichloroethane	U			2.50	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dichloroethane	U			2.05	12.5	25	05/03/2020 01:48	WG1469806
1,1-Dichloroethene	U			4.70	12.5	25	05/03/2020 01:48	WG1469806
cis-1,2-Dichloroethene	2410			3.15	12.5	25	05/03/2020 01:48	WG1469806
trans-1,2-Dichloroethene	3.90		J	3.73	12.5	25	05/03/2020 01:48	WG1469806
1,2-Dichloropropane	U			3.73	12.5	25	05/03/2020 01:48	WG1469806
1,1-Dichloropropene	U			3.55	12.5	25	05/03/2020 01:48	WG1469806
1,3-Dichloropropane	U			2.73	25.0	25	05/03/2020 01:48	WG1469806
cis-1,3-Dichloropropene	U			2.78	12.5	25	05/03/2020 01:48	WG1469806
trans-1,3-Dichloropropene	U			2.95	12.5	25	05/03/2020 01:48	WG1469806
trans-1,4-Dichloro-2-butene	U			11.7	125	25	05/03/2020 01:48	WG1469806
2,2-Dichloropropane	U			4.03	12.5	25	05/03/2020 01:48	WG1469806
Di-isopropyl ether	U			2.63	12.5	25	05/03/2020 01:48	WG1469806
Ethylbenzene	U			3.43	12.5	25	05/03/2020 01:48	WG1469806
Hexachloro-1,3-butadiene	U			8.43	25.0	25	05/03/2020 01:48	WG1469806
2-Hexanone	U			19.7	125	25	05/03/2020 01:48	WG1469806
n-Hexane	U			18.7	125	25	05/03/2020 01:48	WG1469806
Iodomethane	U	UJ	J0	13.9	125	25	05/03/2020 01:48	WG1469806
Isopropylbenzene	U			2.63	12.5	25	05/03/2020 01:48	WG1469806
p-Isopropyltoluene	U			3.00	12.5	25	05/03/2020 01:48	WG1469806
2-Butanone (MEK)	U			29.8	125	25	05/03/2020 01:48	WG1469806
Methylene Chloride	U	UJ	J0	10.7	62.5	25	05/03/2020 01:48	WG1469806
4-Methyl-2-pentanone (MIBK)	U			12.0	125	25	05/03/2020 01:48	WG1469806
Methyl tert-butyl ether	U			2.53	12.5	25	05/03/2020 01:48	WG1469806
Naphthalene	U			4.35	62.5	25	05/03/2020 01:48	WG1469806
n-Propylbenzene	U			2.48	12.5	25	05/03/2020 01:48	WG1469806
Styrene	U			2.95	12.5	25	05/03/2020 01:48	WG1469806
1,1,1,2-Tetrachloroethane	U			3.68	12.5	25	05/03/2020 01:48	WG1469806
1,1,2,2-Tetrachloroethane	U			3.33	12.5	25	05/03/2020 01:48	WG1469806
1,1,2-Trichlorotrifluoroethane	U			4.50	12.5	25	05/03/2020 01:48	WG1469806
Tetrachloroethene	U			7.50	12.5	25	05/03/2020 01:48	WG1469806
Toluene	U			6.95	12.5	25	05/03/2020 01:48	WG1469806
1,2,3-Trichlorobenzene	U			4.10	12.5	25	05/03/2020 01:48	WG1469806
1,2,4-Trichlorobenzene	U			12.0	25.0	25	05/03/2020 01:48	WG1469806
1,1,1-Trichloroethane	U			3.73	12.5	25	05/03/2020 01:48	WG1469806
1,1,2-Trichloroethane	U			3.95	12.5	25	05/03/2020 01:48	WG1469806
Trichloroethene	5.10		J	4.75	12.5	25	05/03/2020 01:48	WG1469806
Trichlorofluoromethane	U			4.00	62.5	25	05/03/2020 01:48	WG1469806
1,2,3-Trichloropropane	U			5.93	62.5	25	05/03/2020 01:48	WG1469806

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		8.05	12.5	25	05/03/2020 01:48	WG1469806
1,2,3-Trimethylbenzene	U		2.60	12.5	25	05/03/2020 01:48	WG1469806
1,3,5-Trimethylbenzene	U		2.60	12.5	25	05/03/2020 01:48	WG1469806
Vinyl acetate	U		17.3	125	25	05/03/2020 01:48	WG1469806
Vinyl chloride	3470		5.85	12.5	25	05/03/2020 01:48	WG1469806
Xylenes, Total	U		4.35	37.5	25	05/03/2020 01:48	WG1469806
(S) Toluene-d8	*107*			*80.0-120*		*05/03/2020 01:48*	WG1469806
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/03/2020 01:48*	WG1469806
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*05/03/2020 01:48*	WG1469806

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Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	383000		8450	20000	1	05/03/2020 10:46	WG1469125

Sample Narrative:
L1214057-01 WG1469125: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	40900		379	1000	1	05/02/2020 01:16	WG1469118
Nitrate	U		48.0	100	1	05/02/2020 01:16	WG1469118
Sulfate	13700		594	5000	1	05/02/2020 01:16	WG1469118

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3550		102	1000	1	05/08/2020 00:56	WG1471458

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	2910		48.9	100	1	05/06/2020 20:23	WG1469558
Manganese	1100	~~V~~	1.32	5.00	1	05/06/2020 20:23	WG1469558

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1080	Z, J+	31.6	100	1	05/06/2020 05:53	WG1470453
(S) a,a,a-Trifluorotoluene(FID)	*98.2*			*78.0-120*		*05/06/2020 05:53*	WG1470453

Sample Narrative:
L1214057-01 WG1470453: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5020		0.287	0.678	1	05/07/2020 13:00	WG1471909
Ethane	U		0.296	1.29	1	05/07/2020 13:00	WG1471909
Ethene	511		0.422	1.27	1	05/07/2020 13:00	WG1471909

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U	~~J4~~	1130	2500	100	05/05/2020 00:13	WG1470473
Acrylonitrile	U		67.1	500	100	05/05/2020 00:13	WG1470473
Benzene	U		9.41	50.0	100	05/05/2020 00:13	WG1470473
Bromobenzene	U		11.8	50.0	100	05/05/2020 00:13	WG1470473
Bromodichloromethane	U		13.6	50.0	100	05/05/2020 00:13	WG1470473
Bromochloromethane	U		12.8	50.0	100	05/05/2020 00:13	WG1470473
Bromoform	U		12.9	50.0	100	05/05/2020 00:13	WG1470473
Bromomethane	U		60.5	250	100	05/05/2020 00:13	WG1470473
n-Butylbenzene	U		15.7	50.0	100	05/05/2020 00:13	WG1470473
sec-Butylbenzene	U		12.5	50.0	100	05/05/2020 00:13	WG1470473

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
tert-Butylbenzene	U		12.7	50.0	100	05/05/2020 00:13	WG1470473
Carbon disulfide	U	UJ J0	9.62	50.0	100	05/05/2020 00:13	WG1470473
Carbon tetrachloride	U		12.8	50.0	100	05/05/2020 00:13	WG1470473
Chlorobenzene	U		11.7	50.0	100	05/05/2020 00:13	WG1470473
Chlorodibromomethane	U		14.0	50.0	100	05/05/2020 00:13	WG1470473
Chloroethane	U		19.2	250	100	05/05/2020 00:13	WG1470473
Chloroform	U		11.1	50.0	100	05/05/2020 00:13	WG1470473
Chloromethane	U		96.0	125	100	05/05/2020 00:13	WG1470473
2-Chlorotoluene	U		10.6	50.0	100	05/05/2020 00:13	WG1470473
4-Chlorotoluene	U		11.4	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dibromo-3-Chloropropane	U		27.6	250	100	05/05/2020 00:13	WG1470473
1,2-Dibromoethane	U		12.6	50.0	100	05/05/2020 00:13	WG1470473
Dibromomethane	U		12.2	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dichlorobenzene	U		10.7	50.0	100	05/05/2020 00:13	WG1470473
1,3-Dichlorobenzene	U		29.9	50.0	100	05/05/2020 00:13	WG1470473
1,4-Dichlorobenzene	U		12.0	50.0	100	05/05/2020 00:13	WG1470473
Dichlorodifluoromethane	U		37.4	250	100	05/05/2020 00:13	WG1470473
1,1-Dichloroethane	U		10.0	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dichloroethane	U		8.19	50.0	100	05/05/2020 00:13	WG1470473
1,1-Dichloroethene	U		18.8	50.0	100	05/05/2020 00:13	WG1470473
cis-1,2-Dichloroethene	2100		12.6	50.0	100	05/05/2020 00:13	WG1470473
trans-1,2-Dichloroethene	U		14.9	50.0	100	05/05/2020 00:13	WG1470473
1,2-Dichloropropane	U		14.9	50.0	100	05/05/2020 00:13	WG1470473
1,1-Dichloropropene	U		14.2	50.0	100	05/05/2020 00:13	WG1470473
1,3-Dichloropropane	U		10.9	100	100	05/05/2020 00:13	WG1470473
cis-1,3-Dichloropropene	U		11.1	50.0	100	05/05/2020 00:13	WG1470473
trans-1,3-Dichloropropene	U		11.8	50.0	100	05/05/2020 00:13	WG1470473
trans-1,4-Dichloro-2-butene	U		46.7	500	100	05/05/2020 00:13	WG1470473
2,2-Dichloropropane	U		16.1	50.0	100	05/05/2020 00:13	WG1470473
Di-isopropyl ether	U		10.5	50.0	100	05/05/2020 00:13	WG1470473
Ethylbenzene	U		13.7	50.0	100	05/05/2020 00:13	WG1470473
Hexachloro-1,3-butadiene	U		33.7	100	100	05/05/2020 00:13	WG1470473
2-Hexanone	U		78.7	500	100	05/05/2020 00:13	WG1470473
n-Hexane	U		74.9	500	100	05/05/2020 00:13	WG1470473
Iodomethane	U		55.4	500	100	05/05/2020 00:13	WG1470473
Isopropylbenzene	U		10.5	50.0	100	05/05/2020 00:13	WG1470473
p-Isopropyltoluene	U		12.0	50.0	100	05/05/2020 00:13	WG1470473
2-Butanone (MEK)	U		119	500	100	05/05/2020 00:13	WG1470473
Methylene Chloride	U		43.0	250	100	05/05/2020 00:13	WG1470473
4-Methyl-2-pentanone (MIBK)	U		47.8	500	100	05/05/2020 00:13	WG1470473
Methyl tert-butyl ether	U		10.1	50.0	100	05/05/2020 00:13	WG1470473
Naphthalene	U		17.4	250	100	05/05/2020 00:13	WG1470473
n-Propylbenzene	U		9.93	50.0	100	05/05/2020 00:13	WG1470473
Styrene	U		11.8	50.0	100	05/05/2020 00:13	WG1470473
1,1,1,2-Tetrachloroethane	U		14.7	50.0	100	05/05/2020 00:13	WG1470473
1,1,2,2-Tetrachloroethane	U		13.3	50.0	100	05/05/2020 00:13	WG1470473
1,1,2-Trichlorotrifluoroethane	U		18.0	50.0	100	05/05/2020 00:13	WG1470473
Tetrachloroethene	U		30.0	50.0	100	05/05/2020 00:13	WG1470473
Toluene	U		27.8	50.0	100	05/05/2020 00:13	WG1470473
1,2,3-Trichlorobenzene	U		16.4	50.0	100	05/05/2020 00:13	WG1470473
1,2,4-Trichlorobenzene	U		48.1	100	100	05/05/2020 00:13	WG1470473
1,1,1-Trichloroethane	U		14.9	50.0	100	05/05/2020 00:13	WG1470473
1,1,2-Trichloroethane	U		15.8	50.0	100	05/05/2020 00:13	WG1470473
Trichloroethene	U		19.0	50.0	100	05/05/2020 00:13	WG1470473
Trichlorofluoromethane	U		16.0	250	100	05/05/2020 00:13	WG1470473
1,2,3-Trichloropropane	U		23.7	250	100	05/05/2020 00:13	WG1470473

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,2,4-Trimethylbenzene	U		32.2	50.0	100	05/05/2020 00:13	WG1470473
1,2,3-Trimethylbenzene	U		10.4	50.0	100	05/05/2020 00:13	WG1470473
1,3,5-Trimethylbenzene	U		10.4	50.0	100	05/05/2020 00:13	WG1470473
Vinyl acetate	U		69.2	500	100	05/05/2020 00:13	WG1470473
Vinyl chloride	6040		23.4	50.0	100	05/05/2020 00:13	WG1470473
Xylenes, Total	U		17.4	150	100	05/05/2020 00:13	WG1470473
(S) Toluene-d8	*109*			*80.0-120*		*05/05/2020 00:13*	WG1470473
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*05/05/2020 00:13*	WG1470473
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*05/05/2020 00:13*	WG1470473

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Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

August 06, 2020

Revised Report

PES Environmental, Inc.- WA

Sample Delivery Group:	L1238146
Samples Received:	07/10/2020
Project Number:	1413-001-02-501E
Description:	American Linen
Site:	AMERICAN LINEN
Report To:	Brian O'Neal/Bill Haldeman
	1215 Fourth Ave., Suite 1350
	Seattle, WA 98161

Entire Report Reviewed By:

Jared Starkey
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

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MW-146-070920 L1238146-01 GW

Collected by: BH/HC/SK | Collected date/time: 07/09/20 13:10 | Received date/time: 07/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1508214	1	07/15/20 18:15	07/15/20 18:15	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1506965	1	07/10/20 13:18	07/10/20 13:18	GB	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1507486	1	07/11/20 20:12	07/11/20 20:12	MJA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1507536	1	07/12/20 16:40	07/12/20 21:02	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1507440	1	07/11/20 14:34	07/11/20 14:34	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1509623	1	07/15/20 23:21	07/15/20 23:21	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1510200	500	07/17/20 06:37	07/17/20 06:37	ADM	Mt. Juliet, TN

MW-172-070920 L1238146-02 GW

Collected by: BH/HC/SK | Collected date/time: 07/09/20 13:40 | Received date/time: 07/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1508214	1	07/15/20 18:23	07/15/20 18:23	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1506965	1	07/10/20 13:35	07/10/20 13:35	GB	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1507486	1	07/11/20 20:24	07/11/20 20:24	MJA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1507536	1	07/12/20 16:40	07/12/20 21:05	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1508114	1	07/13/20 13:08	07/13/20 13:08	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1507440	1	07/11/20 14:37	07/11/20 14:37	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1509623	1	07/15/20 23:40	07/15/20 23:40	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1510200	200	07/17/20 06:18	07/17/20 06:18	ADM	Mt. Juliet, TN

MW-170-070920 L1238146-03 GW

Collected by: BH/HC/SK | Collected date/time: 07/09/20 14:45 | Received date/time: 07/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1508214	1	07/15/20 18:33	07/15/20 18:33	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1506965	1	07/10/20 13:51	07/10/20 13:51	GB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1506965	5	07/10/20 14:08	07/10/20 14:08	GB	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1507486	1	07/11/20 21:34	07/11/20 21:34	MJA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1507536	1	07/12/20 16:40	07/12/20 21:09	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1508114	10	07/13/20 19:51	07/13/20 19:51	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1507440	1	07/11/20 14:40	07/11/20 14:40	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1508536	10	07/14/20 12:53	07/14/20 12:53	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1509623	10	07/16/20 03:27	07/16/20 03:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1510200	500	07/17/20 06:56	07/17/20 06:56	ADM	Mt. Juliet, TN

MW-147-070920 L1238146-04 GW

Collected by: BH/HC/SK | Collected date/time: 07/09/20 14:50 | Received date/time: 07/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1508214	1	07/15/20 18:42	07/15/20 18:42	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1506965	1	07/10/20 14:25	07/10/20 14:25	GB	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1507486	1	07/11/20 21:46	07/11/20 21:46	MJA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1507536	1	07/12/20 16:40	07/12/20 21:12	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1507440	1	07/11/20 14:48	07/11/20 14:48	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1509623	1	07/15/20 23:59	07/15/20 23:59	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1510200	500	07/17/20 07:15	07/17/20 07:15	ADM	Mt. Juliet, TN

MW-171-070920 L1238146-05 GW

Collected by: BH/HC/SK
Collected date/time: 07/09/20 14:50
Received date/time: 07/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1508214	1	07/15/20 18:50	07/15/20 18:50	LEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1506965	1	07/10/20 14:59	07/10/20 14:59	GB	Mt. Juliet, TN
Wet Chemistry by Method 9060A	WG1507486	1	07/11/20 22:32	07/11/20 22:32	MJA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1507536	1	07/12/20 16:40	07/12/20 21:25	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1508114	1	07/13/20 13:31	07/13/20 13:31	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1507440	1	07/11/20 14:51	07/11/20 14:51	JAL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1509623	1	07/16/20 00:18	07/16/20 00:18	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1510200	1	07/17/20 05:21	07/17/20 05:21	ADM	Mt. Juliet, TN

TB-070920 L1238146-06 GW

Collected by: BH/HC/SK
Collected date/time: 07/09/20 16:00
Received date/time: 07/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1508114	1	07/13/20 12:22	07/13/20 12:22	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1509623	1	07/15/20 21:27	07/15/20 21:27	DWR	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jared Starkey
Project Manager

Report Revision History

Level II Report - Version 1: 07/20/20 16:01
Level II Report - Version 2: 07/24/20 14:53

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	383000		8450	20000	1	07/15/2020 18:15	WG1508214

Sample Narrative:
L1238146-01 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	42900		379	1000	1	07/10/2020 13:18	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 13:18	WG1506965
Sulfate	16600		594	5000	1	07/10/2020 13:18	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	2920	B	102	1000	1	07/11/2020 20:12	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	3080		48.9	100	1	07/12/2020 21:02	WG1507536
Manganese	1140		1.32	5.00	1	07/12/2020 21:02	WG1507536

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	5990		0.287	0.678	1	07/11/2020 14:34	WG1507440
Ethane	U		0.296	1.29	1	07/11/2020 14:34	WG1507440
Ethene	463		0.422	1.27	1	07/11/2020 14:34	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		0.548	1.00	1	07/15/2020 23:21	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/15/2020 23:21	WG1509623
Benzene	0.0740		0.0160	0.0400	1	07/15/2020 23:21	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/15/2020 23:21	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/15/2020 23:21	WG1509623
Bromoform	U		0.239	1.00	1	07/15/2020 23:21	WG1509623
Bromomethane	U		0.148	0.500	1	07/15/2020 23:21	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/15/2020 23:21	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/15/2020 23:21	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/15/2020 23:21	WG1509623
Carbon tetrachloride	U		0.0432	0.200	1	07/15/2020 23:21	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/15/2020 23:21	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/15/2020 23:21	WG1509623
Chloroethane	U		0.0432	0.200	1	07/15/2020 23:21	WG1509623
Chloroform	U		0.0166	0.100	1	07/15/2020 23:21	WG1509623
Chloromethane	U		0.0556	0.500	1	07/15/2020 23:21	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/15/2020 23:21	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/15/2020 23:21	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/15/2020 23:21	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/15/2020 23:21	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dibromomethane	U		0.0400	0.200	1	07/15/2020 23:21	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/15/2020 23:21	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/15/2020 23:21	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/15/2020 23:21	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/15/2020 23:21	WG1509623
1,1-Dichloroethane	U		0.0230	0.100	1	07/15/2020 23:21	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/15/2020 23:21	WG1509623
1,1-Dichloroethene	3.77		0.0200	0.100	1	07/15/2020 23:21	WG1509623
cis-1,2-Dichloroethene	2750		13.8	50.0	500	07/17/2020 06:37	WG1510200
trans-1,2-Dichloroethene	15.5		0.0572	0.200	1	07/15/2020 23:21	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/15/2020 23:21	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/15/2020 23:21	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/15/2020 23:21	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/15/2020 23:21	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/15/2020 23:21	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/15/2020 23:21	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/15/2020 23:21	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/15/2020 23:21	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/15/2020 23:21	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/15/2020 23:21	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/15/2020 23:21	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/15/2020 23:21	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/15/2020 23:21	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/15/2020 23:21	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/15/2020 23:21	WG1509623
Naphthalene	U		0.124	0.500	1	07/15/2020 23:21	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/15/2020 23:21	WG1509623
Styrene	U		0.109	0.500	1	07/15/2020 23:21	WG1509623
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/15/2020 23:21	WG1509623
1,1,2,2-Tetrachloroethane	U	J0	0.0156	0.100	1	07/15/2020 23:21	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/15/2020 23:21	WG1509623
Tetrachloroethene	0.781		0.0280	0.100	1	07/15/2020 23:21	WG1509623
Toluene	1.13		0.0500	0.200	1	07/15/2020 23:21	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/15/2020 23:21	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/15/2020 23:21	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/15/2020 23:21	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/15/2020 23:21	WG1509623
Trichloroethene	3.17		0.0160	0.0400	1	07/15/2020 23:21	WG1509623
Trichlorofluoromethane	U		0.0200	0.100	1	07/15/2020 23:21	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/15/2020 23:21	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/15/2020 23:21	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/15/2020 23:21	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/15/2020 23:21	WG1509623
Vinyl chloride	8610		13.6	50.0	500	07/17/2020 06:37	WG1510200
Xylenes, Total	U		0.191	0.260	1	07/15/2020 23:21	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/15/2020 23:21	WG1509623
Tetrahydrofuran	U		0.0900	0.500	1	07/15/2020 23:21	WG1509623
Iodomethane	U		0.242	0.500	1	07/15/2020 23:21	WG1509623
Allyl chloride	U		0.580	1.00	1	07/15/2020 23:21	WG1509623
Trans-1,4-Dichloro-2-butene	U	J0	0.0560	0.200	1	07/15/2020 23:21	WG1509623
(S) Toluene-d8	*99.6*			*75.0-131*		*07/15/2020 23:21*	WG1509623
(S) Toluene-d8	*93.2*			*75.0-131*		*07/17/2020 06:37*	WG1510200
(S) 4-Bromofluorobenzene	*94.6*			*67.0-138*		*07/15/2020 23:21*	WG1509623
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*07/17/2020 06:37*	WG1510200
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*07/15/2020 23:21*	WG1509623
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*07/17/2020 06:37*	WG1510200

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	204000		8450	20000	1	07/15/2020 18:23	WG1508214

Sample Narrative:

L1238146-02 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21300		379	1000	1	07/10/2020 13:35	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 13:35	WG1506965
Sulfate	34300		594	5000	1	07/10/2020 13:35	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	6990		102	1000	1	07/11/2020 20:24	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4880		48.9	100	1	07/12/2020 21:05	WG1507536
Manganese	2050		1.32	5.00	1	07/12/2020 21:05	WG1507536

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	4430		31.6	100	1	07/13/2020 13:08	WG1508114
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*07/13/2020 13:08*	WG1508114

Sample Narrative:

L1238146-02 WG1508114: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	256		0.287	0.678	1	07/11/2020 14:37	WG1507440
Ethane	U		0.296	1.29	1	07/11/2020 14:37	WG1507440
Ethene	U		0.422	1.27	1	07/11/2020 14:37	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		0.548	1.00	1	07/15/2020 23:40	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/15/2020 23:40	WG1509623
Benzene	0.0550		0.0160	0.0400	1	07/15/2020 23:40	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/15/2020 23:40	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/15/2020 23:40	WG1509623
Bromoform	U		0.239	1.00	1	07/15/2020 23:40	WG1509623
Bromomethane	U		0.148	0.500	1	07/15/2020 23:40	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/15/2020 23:40	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/15/2020 23:40	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/15/2020 23:40	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Carbon tetrachloride	U		0.0432	0.200	1	07/15/2020 23:40	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/15/2020 23:40	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/15/2020 23:40	WG1509623
Chloroethane	U		0.0432	0.200	1	07/15/2020 23:40	WG1509623
Chloroform	U		0.0166	0.100	1	07/15/2020 23:40	WG1509623
Chloromethane	U		0.0556	0.500	1	07/15/2020 23:40	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/15/2020 23:40	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/15/2020 23:40	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/15/2020 23:40	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/15/2020 23:40	WG1509623
Dibromomethane	U		0.0400	0.200	1	07/15/2020 23:40	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/15/2020 23:40	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/15/2020 23:40	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/15/2020 23:40	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/15/2020 23:40	WG1509623
1,1-Dichloroethane	0.270		0.0230	0.100	1	07/15/2020 23:40	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/15/2020 23:40	WG1509623
1,1-Dichloroethene	66.1		0.0200	0.100	1	07/15/2020 23:40	WG1509623
cis-1,2-Dichloroethene	668		5.52	20.0	200	07/17/2020 06:18	WG1510200
trans-1,2-Dichloroethene	56.9		0.0572	0.200	1	07/15/2020 23:40	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/15/2020 23:40	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/15/2020 23:40	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/15/2020 23:40	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/15/2020 23:40	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/15/2020 23:40	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/15/2020 23:40	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/15/2020 23:40	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/15/2020 23:40	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/15/2020 23:40	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/15/2020 23:40	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/15/2020 23:40	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/15/2020 23:40	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/15/2020 23:40	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/15/2020 23:40	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/15/2020 23:40	WG1509623
Naphthalene	U		0.124	0.500	1	07/15/2020 23:40	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/15/2020 23:40	WG1509623
Styrene	U		0.109	0.500	1	07/15/2020 23:40	WG1509623
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/15/2020 23:40	WG1509623
1,1,2,2-Tetrachloroethane	U	J0	0.0156	0.100	1	07/15/2020 23:40	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/15/2020 23:40	WG1509623
Tetrachloroethene	6570		5.60	20.0	200	07/17/2020 06:18	WG1510200
Toluene	0.757		0.0500	0.200	1	07/15/2020 23:40	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/15/2020 23:40	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/15/2020 23:40	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/15/2020 23:40	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/15/2020 23:40	WG1509623
Trichloroethene	4660		3.20	8.00	200	07/17/2020 06:18	WG1510200
Trichlorofluoromethane	U		0.0200	0.100	1	07/15/2020 23:40	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/15/2020 23:40	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/15/2020 23:40	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/15/2020 23:40	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/15/2020 23:40	WG1509623
Vinyl chloride	5.57		0.0273	0.100	1	07/15/2020 23:40	WG1509623
Xylenes, Total	0.402		0.191	0.260	1	07/15/2020 23:40	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/15/2020 23:40	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Tetrahydrofuran	U		0.0900	0.500	1	07/15/2020 23:40	WG1509623
Iodomethane	U		0.242	0.500	1	07/15/2020 23:40	WG1509623
Allyl chloride	U		0.580	1.00	1	07/15/2020 23:40	WG1509623
Trans-1,4-Dichloro-2-butene	U	J0	0.0560	0.200	1	07/15/2020 23:40	WG1509623
(S) Toluene-d8	*103*			*75.0-131*		*07/15/2020 23:40*	WG1509623
(S) Toluene-d8	*93.6*			*75.0-131*		*07/17/2020 06:18*	WG1510200
(S) 4-Bromofluorobenzene	*96.9*			*67.0-138*		*07/15/2020 23:40*	WG1509623
(S) 4-Bromofluorobenzene	*99.2*			*67.0-138*		*07/17/2020 06:18*	WG1510200
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*07/15/2020 23:40*	WG1509623
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*07/17/2020 06:18*	WG1510200

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	481000		8450	20000	1	07/15/2020 18:33	WG1508214

Sample Narrative:

L1238146-03 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	186000		1900	5000	5	07/10/2020 14:08	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 13:51	WG1506965
Sulfate	16900		594	5000	1	07/10/2020 13:51	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	13200		102	1000	1	07/11/2020 21:34	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	12100		48.9	100	1	07/12/2020 21:09	WG1507536
Manganese	1220		1.32	5.00	1	07/12/2020 21:09	WG1507536

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	24300		316	1000	10	07/13/2020 19:51	WG1508114
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*07/13/2020 19:51*	WG1508114

Sample Narrative:

L1238146-03 WG1508114: No discernable petroleum pattern

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	13000		2.87	6.78	10	07/14/2020 12:53	WG1508536
Ethane	31.5		0.296	1.29	1	07/11/2020 14:40	WG1507440
Ethene	1120		0.422	1.27	1	07/11/2020 14:40	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		5.48	10.0	10	07/16/2020 03:27	WG1509623
Acrylonitrile	U		0.760	5.00	10	07/16/2020 03:27	WG1509623
Benzene	0.450		0.160	0.400	10	07/16/2020 03:27	WG1509623
Bromobenzene	U		0.420	5.00	10	07/16/2020 03:27	WG1509623
Bromodichloromethane	U		0.315	1.00	10	07/16/2020 03:27	WG1509623
Bromoform	U		2.39	10.0	10	07/16/2020 03:27	WG1509623
Bromomethane	U		1.48	5.00	10	07/16/2020 03:27	WG1509623
n-Butylbenzene	U		1.53	5.00	10	07/16/2020 03:27	WG1509623
sec-Butylbenzene	U		1.01	5.00	10	07/16/2020 03:27	WG1509623
tert-Butylbenzene	U		0.620	2.00	10	07/16/2020 03:27	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Carbon tetrachloride	U		0.432	2.00	10	07/16/2020 03:27	WG1509623
Chlorobenzene	U		0.229	1.00	10	07/16/2020 03:27	WG1509623
Chlorodibromomethane	U		0.180	1.00	10	07/16/2020 03:27	WG1509623
Chloroethane	U		0.432	2.00	10	07/16/2020 03:27	WG1509623
Chloroform	U		0.166	1.00	10	07/16/2020 03:27	WG1509623
Chloromethane	U		0.556	5.00	10	07/16/2020 03:27	WG1509623
2-Chlorotoluene	U		0.368	1.00	10	07/16/2020 03:27	WG1509623
4-Chlorotoluene	U		0.452	2.00	10	07/16/2020 03:27	WG1509623
1,2-Dibromo-3-Chloropropane	U		2.04	10.0	10	07/16/2020 03:27	WG1509623
1,2-Dibromoethane	U		0.210	1.00	10	07/16/2020 03:27	WG1509623
Dibromomethane	U		0.400	2.00	10	07/16/2020 03:27	WG1509623
1,2-Dichlorobenzene	U		0.580	2.00	10	07/16/2020 03:27	WG1509623
1,3-Dichlorobenzene	U		0.680	2.00	10	07/16/2020 03:27	WG1509623
1,4-Dichlorobenzene	U		0.788	2.00	10	07/16/2020 03:27	WG1509623
Dichlorodifluoromethane	U		0.327	1.00	10	07/16/2020 03:27	WG1509623
1,1-Dichloroethane	U		0.230	1.00	10	07/16/2020 03:27	WG1509623
1,2-Dichloroethane	U		0.190	1.00	10	07/16/2020 03:27	WG1509623
1,1-Dichloroethene	82.9		0.200	1.00	10	07/16/2020 03:27	WG1509623
cis-1,2-Dichloroethene	32700		13.8	50.0	500	07/17/2020 06:56	WG1510200
trans-1,2-Dichloroethene	211		0.572	2.00	10	07/16/2020 03:27	WG1509623
1,2-Dichloropropane	U		0.508	2.00	10	07/16/2020 03:27	WG1509623
1,1-Dichloropropene	U		0.280	1.00	10	07/16/2020 03:27	WG1509623
1,3-Dichloropropane	U		0.700	2.00	10	07/16/2020 03:27	WG1509623
cis-1,3-Dichloropropene	U		0.271	1.00	10	07/16/2020 03:27	WG1509623
trans-1,3-Dichloropropene	U		0.612	2.00	10	07/16/2020 03:27	WG1509623
2,2-Dichloropropane	U		0.317	1.00	10	07/16/2020 03:27	WG1509623
Di-isopropyl ether	U		0.140	0.400	10	07/16/2020 03:27	WG1509623
Ethylbenzene	U		0.212	1.00	10	07/16/2020 03:27	WG1509623
Hexachloro-1,3-butadiene	U		5.08	10.0	10	07/16/2020 03:27	WG1509623
Isopropylbenzene	U		0.345	1.00	10	07/16/2020 03:27	WG1509623
p-Isopropyltoluene	U		0.932	2.00	10	07/16/2020 03:27	WG1509623
2-Butanone (MEK)	U		5.00	10.0	10	07/16/2020 03:27	WG1509623
Methylene Chloride	U		2.65	10.0	10	07/16/2020 03:27	WG1509623
4-Methyl-2-pentanone (MIBK)	U		4.00	10.0	10	07/16/2020 03:27	WG1509623
Methyl tert-butyl ether	U		0.118	0.400	10	07/16/2020 03:27	WG1509623
Naphthalene	U		1.24	5.00	10	07/16/2020 03:27	WG1509623
n-Propylbenzene	U		0.472	2.00	10	07/16/2020 03:27	WG1509623
Styrene	U		1.09	5.00	10	07/16/2020 03:27	WG1509623
1,1,1,2-Tetrachloroethane	U		0.200	1.00	10	07/16/2020 03:27	WG1509623
1,1,2,2-Tetrachloroethane	U	J0	0.156	1.00	10	07/16/2020 03:27	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.270	1.00	10	07/16/2020 03:27	WG1509623
Tetrachloroethene	2340		14.0	50.0	500	07/17/2020 06:56	WG1510200
Toluene	2.54		0.500	2.00	10	07/16/2020 03:27	WG1509623
1,2,3-Trichlorobenzene	U		0.250	5.00	10	07/16/2020 03:27	WG1509623
1,2,4-Trichlorobenzene	U		1.93	5.00	10	07/16/2020 03:27	WG1509623
1,1,1-Trichloroethane	U		0.110	1.00	10	07/16/2020 03:27	WG1509623
1,1,2-Trichloroethane	U		0.353	1.00	10	07/16/2020 03:27	WG1509623
Trichloroethene	3050		8.00	20.0	500	07/17/2020 06:56	WG1510200
Trichlorofluoromethane	U		0.200	1.00	10	07/16/2020 03:27	WG1509623
1,2,3-Trichloropropane	U		2.04	5.00	10	07/16/2020 03:27	WG1509623
1,2,4-Trimethylbenzene	0.850	J	0.464	2.00	10	07/16/2020 03:27	WG1509623
1,2,3-Trimethylbenzene	U		0.460	2.00	10	07/16/2020 03:27	WG1509623
1,3,5-Trimethylbenzene	U		0.432	2.00	10	07/16/2020 03:27	WG1509623
Vinyl chloride	7520		13.6	50.0	500	07/17/2020 06:56	WG1510200
Xylenes, Total	U		1.91	2.60	10	07/16/2020 03:27	WG1509623
Ethyl Ether	U		0.170	1.00	10	07/16/2020 03:27	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Tetrahydrofuran	U		0.900	5.00	10	07/16/2020 03:27	WG1509623
Iodomethane	U		2.42	5.00	10	07/16/2020 03:27	WG1509623
Allyl chloride	U		5.80	10.0	10	07/16/2020 03:27	WG1509623
Trans-1,4-Dichloro-2-butene	U	J0	0.560	2.00	10	07/16/2020 03:27	WG1509623
(S) Toluene-d8	*96.8*			*75.0-131*		*07/16/2020 03:27*	WG1509623
(S) Toluene-d8	*95.3*			*75.0-131*		*07/17/2020 06:56*	WG1510200
(S) 4-Bromofluorobenzene	*99.2*			*67.0-138*		*07/16/2020 03:27*	WG1509623
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*07/17/2020 06:56*	WG1510200
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*07/16/2020 03:27*	WG1509623
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*07/17/2020 06:56*	WG1510200

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	401000		8450	20000	1	07/15/2020 18:42	WG1508214

Sample Narrative:
L1238146-04 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	43300		379	1000	1	07/10/2020 14:25	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 14:25	WG1506965
Sulfate	14000		594	5000	1	07/10/2020 14:25	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3290	B	102	1000	1	07/11/2020 21:46	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	13300		48.9	100	1	07/12/2020 21:12	WG1507536
Manganese	1040		1.32	5.00	1	07/12/2020 21:12	WG1507536

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5490		0.287	0.678	1	07/11/2020 14:48	WG1507440
Ethane	4.65		0.296	1.29	1	07/11/2020 14:48	WG1507440
Ethene	641		0.422	1.27	1	07/11/2020 14:48	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.48		0.548	1.00	1	07/15/2020 23:59	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/15/2020 23:59	WG1509623
Benzene	0.0890		0.0160	0.0400	1	07/15/2020 23:59	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/15/2020 23:59	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/15/2020 23:59	WG1509623
Bromoform	U		0.239	1.00	1	07/15/2020 23:59	WG1509623
Bromomethane	U		0.148	0.500	1	07/15/2020 23:59	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/15/2020 23:59	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/15/2020 23:59	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/15/2020 23:59	WG1509623
Carbon tetrachloride	U		0.0432	0.200	1	07/15/2020 23:59	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/15/2020 23:59	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/15/2020 23:59	WG1509623
Chloroethane	U		0.0432	0.200	1	07/15/2020 23:59	WG1509623
Chloroform	U		0.0166	0.100	1	07/15/2020 23:59	WG1509623
Chloromethane	U		0.0556	0.500	1	07/15/2020 23:59	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/15/2020 23:59	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/15/2020 23:59	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/15/2020 23:59	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/15/2020 23:59	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dibromomethane	U		0.0400	0.200	1	07/15/2020 23:59	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/15/2020 23:59	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/15/2020 23:59	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/15/2020 23:59	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/15/2020 23:59	WG1509623
1,1-Dichloroethane	0.0510	J	0.0230	0.100	1	07/15/2020 23:59	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/15/2020 23:59	WG1509623
1,1-Dichloroethene	4.11		0.0200	0.100	1	07/15/2020 23:59	WG1509623
cis-1,2-Dichloroethene	2220		13.8	50.0	500	07/17/2020 07:15	WG1510200
trans-1,2-Dichloroethene	11.9		0.0572	0.200	1	07/15/2020 23:59	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/15/2020 23:59	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/15/2020 23:59	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/15/2020 23:59	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/15/2020 23:59	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/15/2020 23:59	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/15/2020 23:59	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/15/2020 23:59	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/15/2020 23:59	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/15/2020 23:59	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/15/2020 23:59	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/15/2020 23:59	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/15/2020 23:59	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/15/2020 23:59	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/15/2020 23:59	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/15/2020 23:59	WG1509623
Naphthalene	U		0.124	0.500	1	07/15/2020 23:59	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/15/2020 23:59	WG1509623
Styrene	U		0.109	0.500	1	07/15/2020 23:59	WG1509623
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/15/2020 23:59	WG1509623
1,1,2,2-Tetrachloroethane	U	J0	0.0156	0.100	1	07/15/2020 23:59	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/15/2020 23:59	WG1509623
Tetrachloroethene	4.29		0.0280	0.100	1	07/15/2020 23:59	WG1509623
Toluene	3.52		0.0500	0.200	1	07/15/2020 23:59	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/15/2020 23:59	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/15/2020 23:59	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/15/2020 23:59	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/15/2020 23:59	WG1509623
Trichloroethene	12.4		0.0160	0.0400	1	07/15/2020 23:59	WG1509623
Trichlorofluoromethane	U		0.0200	0.100	1	07/15/2020 23:59	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/15/2020 23:59	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/15/2020 23:59	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/15/2020 23:59	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/15/2020 23:59	WG1509623
Vinyl chloride	6970		13.6	50.0	500	07/17/2020 07:15	WG1510200
Xylenes, Total	U		0.191	0.260	1	07/15/2020 23:59	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/15/2020 23:59	WG1509623
Tetrahydrofuran	U		0.0900	0.500	1	07/15/2020 23:59	WG1509623
Iodomethane	U		0.242	0.500	1	07/15/2020 23:59	WG1509623
Allyl chloride	U		0.580	1.00	1	07/15/2020 23:59	WG1509623
Trans-1,4-Dichloro-2-butene	U	J0	0.0560	0.200	1	07/15/2020 23:59	WG1509623
(S) Toluene-d8	*96.3*			*75.0-131*		*07/15/2020 23:59*	WG1509623
(S) Toluene-d8	*95.3*			*75.0-131*		*07/17/2020 07:15*	WG1510200
(S) 4-Bromofluorobenzene	*98.6*			*67.0-138*		*07/15/2020 23:59*	WG1509623
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*07/17/2020 07:15*	WG1510200
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*07/15/2020 23:59*	WG1509623
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*07/17/2020 07:15*	WG1510200

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity	276000		8450	20000	1	07/15/2020 18:50	WG1508214

Sample Narrative:

L1238146-05 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	30300		379	1000	1	07/10/2020 14:59	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 14:59	WG1506965
Sulfate	9590		594	5000	1	07/10/2020 14:59	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TOC (Total Organic Carbon)	3760		102	1000	1	07/11/2020 22:32	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Iron	4180		48.9	100	1	07/12/2020 21:25	WG1507536
Manganese	176		1.32	5.00	1	07/12/2020 21:25	WG1507536

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/13/2020 13:31	WG1508114
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*07/13/2020 13:31*	WG1508114

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Methane	963		0.287	0.678	1	07/11/2020 14:51	WG1507440
Ethane	14.1		0.296	1.29	1	07/11/2020 14:51	WG1507440
Ethene	72.3		0.422	1.27	1	07/11/2020 14:51	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		0.548	1.00	1	07/16/2020 00:18	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/16/2020 00:18	WG1509623
Benzene	0.0280	J	0.0160	0.0400	1	07/16/2020 00:18	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/16/2020 00:18	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/16/2020 00:18	WG1509623
Bromoform	U		0.239	1.00	1	07/16/2020 00:18	WG1509623
Bromomethane	U		0.148	0.500	1	07/16/2020 00:18	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/16/2020 00:18	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/16/2020 00:18	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/16/2020 00:18	WG1509623
Carbon tetrachloride	U		0.0432	0.200	1	07/16/2020 00:18	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/16/2020 00:18	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/16/2020 00:18	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloroethane	U		0.0432	0.200	1	07/16/2020 00:18	WG1509623
Chloroform	U		0.0166	0.100	1	07/16/2020 00:18	WG1509623
Chloromethane	U		0.0556	0.500	1	07/16/2020 00:18	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/16/2020 00:18	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/16/2020 00:18	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/16/2020 00:18	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/16/2020 00:18	WG1509623
Dibromomethane	U		0.0400	0.200	1	07/16/2020 00:18	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/16/2020 00:18	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/16/2020 00:18	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/16/2020 00:18	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/16/2020 00:18	WG1509623
1,1-Dichloroethane	U		0.0230	0.100	1	07/16/2020 00:18	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/16/2020 00:18	WG1509623
1,1-Dichloroethene	U		0.0200	0.100	1	07/16/2020 00:18	WG1509623
cis-1,2-Dichloroethene	1.53		0.0276	0.100	1	07/17/2020 05:21	WG1510200
trans-1,2-Dichloroethene	U		0.0572	0.200	1	07/16/2020 00:18	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/16/2020 00:18	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/16/2020 00:18	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/16/2020 00:18	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/16/2020 00:18	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/16/2020 00:18	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/16/2020 00:18	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/16/2020 00:18	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/16/2020 00:18	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/16/2020 00:18	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/16/2020 00:18	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/16/2020 00:18	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/16/2020 00:18	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/16/2020 00:18	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/16/2020 00:18	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/16/2020 00:18	WG1509623
Naphthalene	U		0.124	0.500	1	07/16/2020 00:18	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/16/2020 00:18	WG1509623
Styrene	U		0.109	0.500	1	07/16/2020 00:18	WG1509623
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/16/2020 00:18	WG1509623
1,1,2,2-Tetrachloroethane	U	J0	0.0156	0.100	1	07/16/2020 00:18	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/16/2020 00:18	WG1509623
Tetrachloroethene	0.103		0.0280	0.100	1	07/17/2020 05:21	WG1510200
Toluene	0.0850	J	0.0500	0.200	1	07/16/2020 00:18	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/16/2020 00:18	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/16/2020 00:18	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/16/2020 00:18	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/16/2020 00:18	WG1509623
Trichloroethene	0.288		0.0160	0.0400	1	07/17/2020 05:21	WG1510200
Trichlorofluoromethane	U		0.0200	0.100	1	07/16/2020 00:18	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/16/2020 00:18	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/16/2020 00:18	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/16/2020 00:18	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/16/2020 00:18	WG1509623
Vinyl chloride	8.43		0.0273	0.100	1	07/17/2020 05:21	WG1510200
Xylenes, Total	U		0.191	0.260	1	07/16/2020 00:18	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/16/2020 00:18	WG1509623
Tetrahydrofuran	U		0.0900	0.500	1	07/16/2020 00:18	WG1509623
Iodomethane	U		0.242	0.500	1	07/16/2020 00:18	WG1509623
Allyl chloride	U		0.580	1.00	1	07/16/2020 00:18	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Trans-1,4-Dichloro-2-butene	U	J0	0.0560	0.200	1	07/16/2020 00:18	WG1509623
(S) Toluene-d8	*99.9*			*75.0-131*		*07/16/2020 00:18*	WG1509623
(S) Toluene-d8	*95.9*			*75.0-131*		*07/17/2020 05:21*	WG1510200
(S) 4-Bromofluorobenzene	*94.6*			*67.0-138*		*07/16/2020 00:18*	WG1509623
(S) 4-Bromofluorobenzene	*101*			*67.0-138*		*07/17/2020 05:21*	WG1510200
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*07/16/2020 00:18*	WG1509623
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*07/17/2020 05:21*	WG1510200

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	U		31.6	100	1	07/13/2020 12:22	WG1508114
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*07/13/2020 12:22*	WG1508114

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		0.548	1.00	1	07/15/2020 21:27	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/15/2020 21:27	WG1509623
Benzene	U		0.0160	0.0400	1	07/15/2020 21:27	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/15/2020 21:27	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/15/2020 21:27	WG1509623
Bromoform	U		0.239	1.00	1	07/15/2020 21:27	WG1509623
Bromomethane	U		0.148	0.500	1	07/15/2020 21:27	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/15/2020 21:27	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/15/2020 21:27	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/15/2020 21:27	WG1509623
Carbon tetrachloride	U		0.0432	0.200	1	07/15/2020 21:27	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/15/2020 21:27	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/15/2020 21:27	WG1509623
Chloroethane	U		0.0432	0.200	1	07/15/2020 21:27	WG1509623
Chloroform	U		0.0166	0.100	1	07/15/2020 21:27	WG1509623
Chloromethane	U		0.0556	0.500	1	07/15/2020 21:27	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/15/2020 21:27	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/15/2020 21:27	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/15/2020 21:27	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/15/2020 21:27	WG1509623
Dibromomethane	U		0.0400	0.200	1	07/15/2020 21:27	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/15/2020 21:27	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/15/2020 21:27	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/15/2020 21:27	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/15/2020 21:27	WG1509623
1,1-Dichloroethane	U		0.0230	0.100	1	07/15/2020 21:27	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/15/2020 21:27	WG1509623
1,1-Dichloroethene	U		0.0200	0.100	1	07/15/2020 21:27	WG1509623
cis-1,2-Dichloroethene	U		0.0276	0.100	1	07/15/2020 21:27	WG1509623
trans-1,2-Dichloroethene	U		0.0572	0.200	1	07/15/2020 21:27	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/15/2020 21:27	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/15/2020 21:27	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/15/2020 21:27	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/15/2020 21:27	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/15/2020 21:27	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/15/2020 21:27	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/15/2020 21:27	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/15/2020 21:27	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/15/2020 21:27	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/15/2020 21:27	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/15/2020 21:27	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/15/2020 21:27	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/15/2020 21:27	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/15/2020 21:27	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/15/2020 21:27	WG1509623
Naphthalene	U		0.124	0.500	1	07/15/2020 21:27	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/15/2020 21:27	WG1509623
Styrene	U		0.109	0.500	1	07/15/2020 21:27	WG1509623

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/15/2020 21:27	WG1509623
1,1,2,2-Tetrachloroethane	U	J0	0.0156	0.100	1	07/15/2020 21:27	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/15/2020 21:27	WG1509623
Tetrachloroethene	U		0.0280	0.100	1	07/15/2020 21:27	WG1509623
Toluene	U		0.0500	0.200	1	07/15/2020 21:27	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/15/2020 21:27	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/15/2020 21:27	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/15/2020 21:27	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/15/2020 21:27	WG1509623
Trichloroethene	U		0.0160	0.0400	1	07/15/2020 21:27	WG1509623
Trichlorofluoromethane	U		0.0200	0.100	1	07/15/2020 21:27	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/15/2020 21:27	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/15/2020 21:27	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/15/2020 21:27	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/15/2020 21:27	WG1509623
Vinyl chloride	U		0.0273	0.100	1	07/15/2020 21:27	WG1509623
Xylenes, Total	U		0.191	0.260	1	07/15/2020 21:27	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/15/2020 21:27	WG1509623
Tetrahydrofuran	U		0.0900	0.500	1	07/15/2020 21:27	WG1509623
Iodomethane	U		0.242	0.500	1	07/15/2020 21:27	WG1509623
Allyl chloride	U		0.580	1.00	1	07/15/2020 21:27	WG1509623
Trans-1,4-Dichloro-2-butene	U	J0	0.0560	0.200	1	07/15/2020 21:27	WG1509623
(S) Toluene-d8	*94.6*			*75.0-131*		*07/15/2020 21:27*	WG1509623
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*07/15/2020 21:27*	WG1509623
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*07/15/2020 21:27*	WG1509623

Method Blank (MB)

(MB) R3549985-1 07/15/20 16:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000

Sample Narrative:
BLANK: Endpoint pH 4.5

L1237181-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1237181-01 07/15/20 16:55 • (DUP) R3549985-2 07/15/20 17:06

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	209000	209000	1	0.0746		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

L1238113-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1238113-05 07/15/20 17:45 • (DUP) R3549985-4 07/15/20 18:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	U	U	1	0.000		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3549985-3 07/15/20 17:54

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Alkalinity	100000	105000	105	85.0-115	

Sample Narrative:
LCS: Endpoint pH 4.5

Method Blank (MB)

(MB) R3548869-1 07/10/20 11:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Nitrate	U		48.0	100
Sulfate	U		594	5000

L1238146-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1238146-04 07/10/20 14:25 • (DUP) R3548869-3 07/10/20 14:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	43300	43300	1	0.0318		15
Nitrate	U	U	1	0.000		15
Sulfate	14000	14300	1	1.91		15

L1238175-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1238175-06 07/10/20 18:23 • (DUP) R3548869-6 07/10/20 18:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	12000	12000	1	0.355		15
Nitrate	U	U	1	0.000		15
Sulfate	U	U	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3548869-2 07/10/20 12:13

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39500	98.8	80.0-120	
Nitrate	8000	7950	99.4	80.0-120	
Sulfate	40000	40000	99.9	80.0-120	

L1238146-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1238146-05 07/10/20 14:59 • (MS) R3548869-4 07/10/20 15:16 • (MSD) R3548869-5 07/10/20 16:07

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	30300	78400	78600	96.2	96.5	1	80.0-120			0.199	15
Nitrate	5000	U	4950	4980	99.0	99.5	1	80.0-120			0.560	15
Sulfate	50000	9590	58600	58600	98.0	98.1	1	80.0-120			0.121	15

L1238175-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1238175-08 07/10/20 19:14 • (MS) R3548869-7 07/10/20 20:05

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	33500	82800	98.6	1	80.0-120	
Nitrate	5000	U	5070	101	1	80.0-120	
Sulfate	50000	879	51300	101	1	80.0-120	

Method Blank (MB)

(MB) R3549545-1 07/11/20 12:22

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TOC (Total Organic Carbon)	368	J	102	1000

L1238139-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1238139-04 07/11/20 17:20 • (DUP) R3549545-3 07/11/20 17:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	5380	5350	1	0.652		20

L1238139-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1238139-08 07/11/20 19:49 • (DUP) R3549545-6 07/11/20 20:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	901	901	1	0.0111	J	20

Laboratory Control Sample (LCS)

(LCS) R3549545-2 07/11/20 12:50

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	75000	75300	100	85.0-115	

Method Blank (MB)

(MB) R3548682-1 07/12/20 20:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Iron	U		48.9	100
Manganese	U		1.32	5.00

Laboratory Control Sample (LCS)

(LCS) R3548682-2 07/12/20 20:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Iron	5000	4680	93.6	80.0-120	
Manganese	50.0	46.9	93.8	80.0-120	

L1238059-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1238059-02 07/12/20 20:48 • (MS) R3548682-4 07/12/20 20:55 • (MSD) R3548682-5 07/12/20 20:59

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Iron	5000	187	4860	4920	93.4	94.7	1	75.0-125			1.32	20
Manganese	50.0	25.1	71.3	71.2	92.4	92.3	1	75.0-125			0.0655	20

Method Blank (MB)

(MB) R3548994-2 07/13/20 11:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3548994-1 07/13/20 10:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5590	102	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*78.0-120*	

L1238146-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1238146-03 07/13/20 19:51 • (MS) R3548994-3 07/13/20 20:13 • (MSD) R3548994-4 07/13/20 20:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	55000	24300	57600	59800	60.5	64.5	10	10.0-155			3.75	21
(S) a,a,a-Trifluorotoluene(FID)					*100*	*102*		*78.0-120*				

Sample Narrative:

OS: No discernable petroleum pattern

Method Blank (MB)

(MB) R3548492-2 07/11/20 14:11

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		0.287	0.678
Ethane	U		0.296	1.29
Ethene	U		0.422	1.27

L1238201-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1238201-01 07/11/20 14:24 • (DUP) R3548492-3 07/11/20 15:04

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	U	U	1	0.000		20
Ethane	U	U	1	0.000		20
Ethene	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3548492-1 07/11/20 14:02

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Methane	67.8	64.5	95.1	85.0-115	
Ethane	129	123	95.3	85.0-115	
Ethene	127	118	92.9	85.0-115	

Method Blank (MB)

(MB) R3549303-2 07/14/20 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Methane	U		0.287	0.678

L1238333-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1238333-03 07/14/20 13:34 • (DUP) R3549303-3 07/14/20 13:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	12.4	11.7	1	5.81		20

Laboratory Control Sample (LCS)

(LCS) R3549303-1 07/14/20 12:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Methane	67.8	64.8	95.6	85.0-115	

Method Blank (MB)

(MB) R3550044-2 07/15/20 20:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		0.548	1.00
Acrylonitrile	U		0.0760	0.500
Benzene	U		0.0160	0.0400
Bromobenzene	U		0.0420	0.500
Bromodichloromethane	U		0.0315	0.100
Bromoform	U		0.239	1.00
Bromomethane	U		0.148	0.500
n-Butylbenzene	U		0.153	0.500
sec-Butylbenzene	U		0.101	0.500
tert-Butylbenzene	U		0.0620	0.200
Carbon tetrachloride	U		0.0432	0.200
Chlorobenzene	U		0.0229	0.100
Chlorodibromomethane	U		0.0180	0.100
Chloroethane	U		0.0432	0.200
Chloroform	U		0.0166	0.100
Chloromethane	U		0.0556	0.500
2-Chlorotoluene	U		0.0368	0.100
4-Chlorotoluene	U		0.0452	0.200
1,2-Dibromo-3-Chloropropane	U		0.204	1.00
1,2-Dibromoethane	U		0.0210	0.100
Dibromomethane	U		0.0400	0.200
1,2-Dichlorobenzene	U		0.0580	0.200
1,3-Dichlorobenzene	U		0.0680	0.200
1,4-Dichlorobenzene	U		0.0788	0.200
trans-1,4-Dichloro-2-butene	U		0.0560	0.200
Dichlorodifluoromethane	U		0.0327	0.100
1,1-Dichloroethane	U		0.0230	0.100
1,2-Dichloroethane	U		0.0190	0.100
1,1-Dichloroethene	U		0.0200	0.100
cis-1,2-Dichloroethene	U		0.0276	0.100
trans-1,2-Dichloroethene	U		0.0572	0.200
1,2-Dichloropropane	U		0.0508	0.200
1,1-Dichloropropene	U		0.0280	0.100
1,3-Dichloropropane	U		0.0700	0.200
cis-1,3-Dichloropropene	U		0.0271	0.100
trans-1,3-Dichloropropene	U		0.0612	0.200
2,2-Dichloropropane	U		0.0317	0.100
Di-isopropyl ether	U		0.0140	0.0400
Ethylbenzene	U		0.0212	0.100
Ethyl ether	U		0.0170	0.100

Method Blank (MB)

(MB) R3550044-2 07/15/20 20:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.508	1.00
Iodomethane	U		0.242	0.500
Isopropylbenzene	U		0.0345	0.100
p-Isopropyltoluene	U		0.0932	0.200
2-Butanone (MEK)	U		0.500	1.00
Methylene Chloride	U		0.265	1.00
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00
Methyl tert-butyl ether	U		0.0118	0.0400
Naphthalene	U		0.124	0.500
n-Propylbenzene	U		0.0472	0.200
Styrene	U		0.109	0.500
1,1,1,2-Tetrachloroethane	U		0.0200	0.100
1,1,2,2-Tetrachloroethane	U		0.0156	0.100
Tetrachloroethene	U		0.0280	0.100
Tetrahydrofuran	U		0.0900	0.500
Toluene	U		0.0500	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100
1,2,3-Trichlorobenzene	U		0.0250	0.500
1,2,4-Trichlorobenzene	U		0.193	0.500
1,1,1-Trichloroethane	U		0.0110	0.100
1,1,2-Trichloroethane	U		0.0353	0.100
Trichloroethene	U		0.0160	0.0400
Trichlorofluoromethane	U		0.0200	0.100
1,2,3-Trichloropropane	U		0.204	0.500
1,2,3-Trimethylbenzene	U		0.0460	0.200
1,2,4-Trimethylbenzene	U		0.0464	0.200
1,3,5-Trimethylbenzene	U		0.0432	0.200
Vinyl chloride	U		0.0273	0.100
Xylenes, Total	U		0.191	0.260
Allyl Chloride	U		0.580	1.00
(S) Toluene-d8	*97.9*			*75.0-131*
(S) 4-Bromofluorobenzene	*98.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3550044-1 07/15/20 19:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	15.9	63.6	10.0-160	
Acrylonitrile	25.0	20.4	81.6	45.0-153	
Benzene	5.00	4.02	80.4	70.0-123	
Bromobenzene	5.00	4.05	81.0	73.0-121	
Bromodichloromethane	5.00	5.52	110	73.0-121	
Bromoform	5.00	3.98	79.6	64.0-132	
Bromomethane	5.00	4.79	95.8	56.0-147	
n-Butylbenzene	5.00	4.56	91.2	68.0-135	
sec-Butylbenzene	5.00	4.13	82.6	74.0-130	
tert-Butylbenzene	5.00	5.48	110	75.0-127	
Carbon tetrachloride	5.00	4.72	94.4	66.0-128	
Chlorobenzene	5.00	4.33	86.6	76.0-128	
Chlorodibromomethane	5.00	3.94	78.8	74.0-127	
Chloroethane	5.00	5.15	103	61.0-134	
Chloroform	5.00	5.18	104	72.0-123	
Chloromethane	5.00	5.32	106	51.0-138	
2-Chlorotoluene	5.00	4.72	94.4	75.0-124	
4-Chlorotoluene	5.00	4.33	86.6	75.0-124	
1,2-Dibromo-3-Chloropropane	5.00	4.51	90.2	59.0-130	
1,2-Dibromoethane	5.00	4.79	95.8	74.0-128	
Dibromomethane	5.00	4.46	89.2	75.0-122	
1,2-Dichlorobenzene	5.00	3.82	76.4	76.0-124	
1,3-Dichlorobenzene	5.00	4.30	86.0	76.0-125	
1,4-Dichlorobenzene	5.00	4.08	81.6	77.0-121	
trans-1,4-Dichloro-2-butene	5.00	3.36	67.2	45.0-143	
Dichlorodifluoromethane	5.00	5.72	114	43.0-156	
1,1-Dichloroethane	5.00	4.79	95.8	70.0-127	
1,2-Dichloroethane	5.00	4.11	82.2	65.0-131	
1,1-Dichloroethene	5.00	4.48	89.6	65.0-131	
cis-1,2-Dichloroethene	5.00	3.67	73.4	73.0-125	
trans-1,2-Dichloroethene	5.00	5.84	117	71.0-125	
1,2-Dichloropropane	5.00	4.34	86.8	74.0-125	
1,1-Dichloropropene	5.00	4.29	85.8	73.0-125	
1,3-Dichloropropane	5.00	4.23	84.6	80.0-125	
cis-1,3-Dichloropropene	5.00	4.34	86.8	76.0-127	
trans-1,3-Dichloropropene	5.00	4.32	86.4	73.0-127	
2,2-Dichloropropane	5.00	4.70	94.0	59.0-135	
Di-isopropyl ether	5.00	4.02	80.4	60.0-136	
Ethylbenzene	5.00	4.62	92.4	74.0-126	
Ethyl ether	5.00	4.35	87.0	64.0-137	

Laboratory Control Sample (LCS)

(LCS) R3550044-1 07/15/20 19:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexachloro-1,3-butadiene	5.00	4.79	95.8	57.0-150	
Iodomethane	25.0	23.2	92.8	74.0-134	
Isopropylbenzene	5.00	4.67	93.4	72.0-127	
p-Isopropyltoluene	5.00	4.37	87.4	72.0-133	
2-Butanone (MEK)	25.0	22.1	88.4	30.0-160	
Methylene Chloride	5.00	3.89	77.8	68.0-123	
4-Methyl-2-pentanone (MIBK)	25.0	21.4	85.6	56.0-143	
Methyl tert-butyl ether	5.00	5.15	103	66.0-132	
Naphthalene	5.00	4.69	93.8	59.0-130	
n-Propylbenzene	5.00	4.00	80.0	74.0-126	
Styrene	5.00	4.54	90.8	72.0-127	
1,1,1,2-Tetrachloroethane	5.00	4.77	95.4	74.0-129	
1,1,2,2-Tetrachloroethane	5.00	3.86	77.2	68.0-128	
Tetrachloroethene	5.00	4.70	94.0	70.0-136	
Tetrahydrofuran	5.00	3.83	76.6	37.0-146	
Toluene	5.00	4.20	84.0	75.0-121	
1,1,2-Trichlorotrifluoroethane	5.00	4.94	98.8	61.0-139	
1,2,3-Trichlorobenzene	5.00	4.84	96.8	59.0-139	
1,2,4-Trichlorobenzene	5.00	4.49	89.8	62.0-137	
1,1,1-Trichloroethane	5.00	4.83	96.6	69.0-126	
1,1,2-Trichloroethane	5.00	5.59	112	78.0-123	
Trichloroethene	5.00	4.78	95.6	76.0-126	
Trichlorofluoromethane	5.00	5.78	116	61.0-142	
1,2,3-Trichloropropane	5.00	4.95	99.0	67.0-129	
1,2,3-Trimethylbenzene	5.00	3.86	77.2	74.0-124	
1,2,4-Trimethylbenzene	5.00	3.61	72.2	70.0-126	
1,3,5-Trimethylbenzene	5.00	4.18	83.6	73.0-127	
Vinyl chloride	5.00	5.16	103	63.0-134	
Xylenes, Total	15.0	12.6	84.0	72.0-127	
Allyl chloride	25.0	20.8	83.2	70.0-131	
(S) Toluene-d8			*97.9*	*75.0-131*	
(S) 4-Bromofluorobenzene			*100*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*106*	*70.0-130*	

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3550634-2 07/17/20 04:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.0276	0.100
Tetrachloroethene	U		0.0280	0.100
Trichloroethene	U		0.0160	0.0400
Vinyl chloride	U		0.0273	0.100
(S) Toluene-d8	*95.4*			*75.0-131*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3550634-1 07/17/20 03:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	5.00	3.99	79.8	73.0-125	
Tetrachloroethene	5.00	4.64	92.8	70.0-136	
Trichloroethene	5.00	4.82	96.4	76.0-126	
Vinyl chloride	5.00	5.25	105	63.0-134	
(S) Toluene-d8			*96.7*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

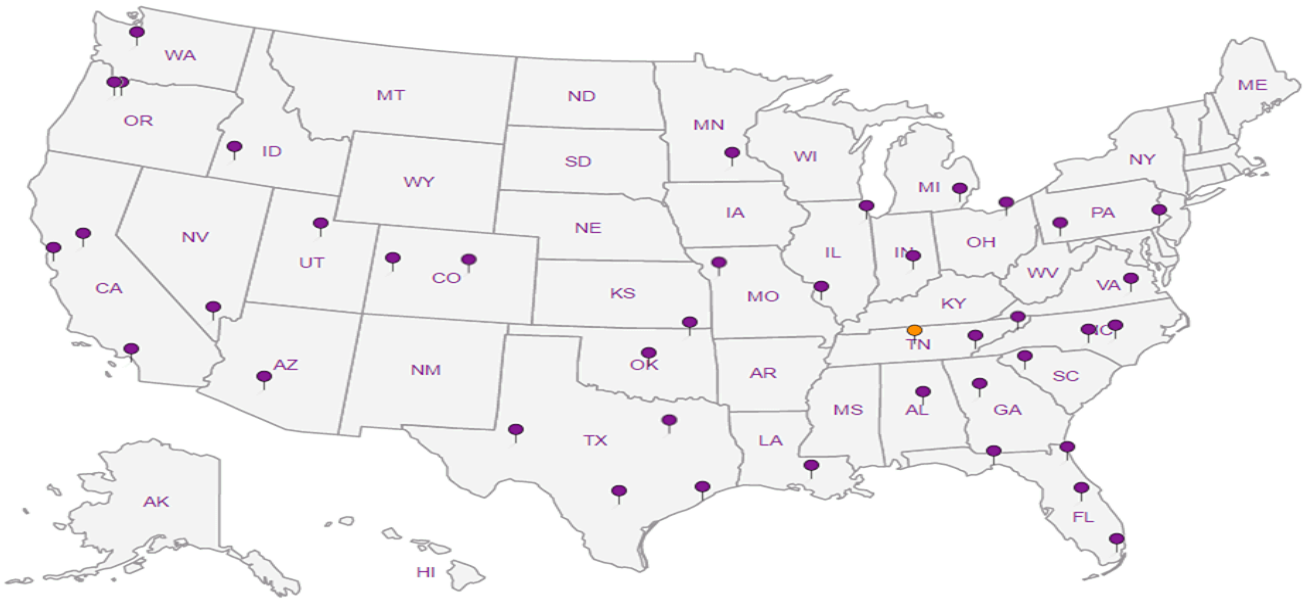
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



PES Environmental, Inc.- WA

1215 Fourth Ave., Suite 1350
Seattle, WA 98161

Billing Information:
Attn: Accounts Payable
1215 Fourth Ave., Ste. 1350
Seattle, WA 98161

Pres Chk

Report to: Brian O'Neal/Bill Haldeman

Email To: boneal@pesenv.com;bhaldeman@pesenv.com;

Project Description: American Linen

City/State Collected: Seattle, WA

Please Circle: PT MT CT ET

Phone: 206-529-3980

Client Project # 1413.001.02.SITE 1413.001.05601

Lab Project # PESENVSWA-ALP

Collected by (print): Hannah C / Sean H. / Sean K.

Site/Facility ID # American Linen

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*NO3,Cl,SO4 125mlHDPE-NoPres	ALK 125mlHDPE-NoPres	EEM RSK175LL 40mlAmb-HCl	NWTPHGX 40mlAmb HCl	RSK175LL 40mlAmb-HCl	TOC 250mlHDPE-HCl	Total Fe Mn 6020 250mlHDPE-HNO3	V8260ULLC 40mlAmb HCl			
MW-146-070920	Grab	GW	45	7/9/20	1310	9	X	X	X		X	X	X	X			-01
MW-172-070920		GW	61.4		1340	12	X	X	X	X	X	X	X	X			-02
MW-170-070920		GW	31.5		1445	12	X	X	X	X	X	X	X	X			-03
MW-147-070920		GW	~~75~~		1450	9	X	X	X		X	X	X	X			-04
MW-171-070920	↓	GW	32.6		1450	12	X	X	X	X	X	X	X	X			-05
TB-070920	—	GW	—	↓	1600	2	·			X				X			-06
		GW															
		GW															
BH		GW															
		GW															

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG: L1238146

D122

Acctnum: PESENVSWA

Template: T170353

Prelogin: P784065

PM: 546 - Jared Starkey

PB:

Shipped Via:

Remarks | Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1815 2345 1174

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y	N
COC Signed/Accurate:		Y	N
Bottles arrive intact:		Y	N
Correct bottles used:		Y	N
Sufficient volume sent:		Y	N
If Applicable			
VOA Zero Headspace:		Y	N
Preservation Correct/Checked:		Y	N
RAD Screen <0.5 mR/hr:		Y	N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	7/9/20	16:30			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: NA °C Bottles Received: 2.1-1=2.6 54	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7-10-20 Time: 0830	Hold: Condition: NCF / OK

MEMORANDUM

TO: Project File **DATE:** August 3, 2020

FROM: Jessie Compeau

SUBJECT: Laboratory Data Validation Review

PROJECT: American Linen Data Validation

PROJECT #: 1413.001.02.501G

TASK: EIM Data Validation Level EPA2A for 3rd Quarter Monitoring – Groundwater Samples – Group 1

LAB: Pace Sample Delivery Groups (SDGs): L1234588, L1237210, L1237219, L1237678, and L1238146

Thirty-four (34) groundwater samples and three trip blanks were collected as part of the 3rd Quarterly Monitoring Round for 2020 for the ongoing Remedial Investigation (RI) sampling at the Former American Linen Supply Site, in Seattle, Washington in late June and early July 2020. The samples were shipped and delivered to Pace Lab Sciences (Pace) of Mount Juliet, TN for laboratory analysis. Selected samples were analyzed for the following:

- Volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260D;
- Total petroleum hydrocarbons as gasoline (TPH-Gx) by NWTPH-Gx per analytical method stipulated by Washington State Department of Ecology;
- VOCs (dissolved gases – methane, ethane, and ethene) by EPA SOP RSK 175;
- Alkalinity by Method 2320 B-2011;
- Anions (chloride, nitrate, and sulfate) by USEPA Method 9056A;
- Total Organic Carbon (TOC) by USEPA Method 9060A; and
- Metals (iron and manganese) by USEPA Method 6020B.

Results are reported in multiple SDGs from Pace. Pace SDGs are reviewed in small groups for each data validation report. Group 1 analytical results are reported in SDGs L1234588, L1237210, L1237219, L1237678, and L1238146. The quality assurance review of the laboratory data associated with Group 1 is summarized below.

DATA QUALIFICATIONS

Guidelines established by USEPA for a limited data validation review of analytical data along with Pace control limit criteria were used to validate the data. The comments presented in this memorandum refer to the laboratory's performance in meeting the quality control criteria outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017) and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review

(USEPA, 2017). Following Guidelines, non-project-specific laboratory duplicates and matrix spike results were not evaluated as part of this data validation.

DATA VALIDATION

Completeness

All samples were collected and analyzed as requested with the following exceptions:

- SDG L1237210: Dates of sample collection are not listed on the chain of custody for nine samples (drop down arrow was not included). No action is taken other than to note that the dates of collection are included within the sample identification.

- SDGs L1237678, and L1238146: Per PES's (via email on August 5, 2020) request detected gasoline range results were reviewed by Pace. SDGs were revised, where appropriate, to include requested footnote "no discernable petroleum pattern" on gasoline range organic results. Refer to Section on Compound Identification for further discussion.

Sample Collection and Preservation

Samples were collected in laboratory-supplied sample containers preserved as appropriate for the individual analyses conducted. The samples were packed on ice in coolers and delivered by courier to the analytical laboratory. The laboratory reported that the coolers were received at a cooler temperature less than the recommended temperature preservation of 6°C. Samples were received in good condition. No data were qualified based upon the sample collection and preservation information.

Holding Times

USEPA Method 8260D:
All samples were analyzed for VOCs within the EPA recommended holding time of fourteen days for preserved waters from the date of collection. All holding time criteria are met.

NWTPH-Gx Method:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
All samples were analyzed within the WA State recommended holding time of fourteen days for preserved waters from the date of sample collection. All holding time criteria are met.

USEPA Method 6020B:
All samples were analyzed within the USEPA recommended holding time for iron and manganese of 180 days for preserved waters from the date of sample collection. All holding time criteria are met.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

All samples were analyzed within the USEPA recommended holding time for alkalinity (14 days), chloride (28 days), sulfate (28 days), and nitrate (48 hours), and TOC (28 days) for preserved waters from the date of sample collection. All holding time criteria are met with the following exceptions:

- SDG L1237219: Samples MW-331-070620 and MW103-070620 were analyzed for nitrate a few hours past the 48-hour holding time. **Sample MW-331-070620 and MW103-070620 nitrate results are estimated (UJ) due to holding time exceedance.**

Initial and Continuing Calibration

Calibration data for this project are not required for this deliverable however Pace's notes indicate the following:

- Multiple SDGs - *USEPA Method 8260D:* Continuing calibration verification (CCV) issues were noted by Pace for multiple compounds associated with analytical batches in each SDG. These compounds are qualified by the laboratory "J0" to indicate that percent difference CCV is outside of laboratory acceptance criteria. **Associated sample results with laboratory qualified (J0) results are estimated and qualified (J/UJ).**

Method Blank Results

USEPA Method 8260D:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were not detected in the method blanks at or above the reporting detection limits (RDLs) with the following exception:

- SDG L1234588 - Analytical batch WG1504320: A low level of methylene chloride is detected in the method blank. No action is required since methylene chloride is not detected in the associated sample (MW128-062920).

NWTPH-Gx Method:
Laboratory method blanks were included with the analytical batches per method requirement. The target analyte (gasoline) was not detected in the method blanks at or above the RDLs with the following exception:

- SDG L1237678 – Analytical batch WG1507596: A low level gasoline concentration is detected in the method blank and in the trip blank. **Low levels of gasoline, below the RDL, are detected in five samples (MW-183-070820, MW-188-070820, MW-185-070820, MW-186-070820, and MW-187-070820) and are laboratory qualified (BJ). Gasoline detections in these samples are qualified as not detected (U).**

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory method blanks were included with the analytical batches per method requirement. The target analytes (dissolved gases) are not detected in the method blanks at or above the RDLs.

USEPA Method 6020B and General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):

Laboratory method blanks were included with the analytical batches per method requirement. The target analytes were detected in the method blanks below the RDLs. Per Guidance, no action is taken for blank detections less than the RDL when associated sample detections are greater than the RDL. General chemistry and metal blank detections are shown below:

SDG	Batch	Method	Analyte	Method Blank Result	Qualifier	RDL	Units	Associated Result(s) Qualified
L1234588	WG1504356	9060A	TOC	340	J	1000	µg/L	NO
L1237210	WG1506939	9060A	TOC	301	J	1000	µg/L	NO
L1237219	WG1506939	9060A	TOC	301	J	1000	µg/L	NO
L1237678	WG1506941	9060A	TOC	268	J	1000	µg/L	NO
L1238146	WG1507486	9060A	TOC	368	J	1000	µg/L	NO

Target analytes were detected in method blanks at low levels with no impact to the associated samples with the following discussion:

- SDG L1237678: TOC was detected at 268 µg/L in the method blank and is detected in associated sample MW-188-070820 at 958 µg/L slightly below the RDL of 1000 µg/L. In this case no action is taken.

Trip Blank Results

USEPA Method 8260D and NWTPH-Gx:
Three trip blanks (TB-070620 (SDG L1237219), TB-070820 (SDG L1237678), and TB-070920 (SDG L1238146)) were collected and analyzed for VOCs only or both VOCs and gasoline. The target analytes were not detected in the associated samples with the following exceptions:

- SDG L1237678: A low level of gasoline was detected in the trip blank (TB-070820) and in the associated method blank. **Low levels of gasoline, below the RDL, are detected in samples MW-183-070820, MW-188-070820, MW-185-070820, MW-186-070820, and MW-187-070820 and laboratory qualified (BJ). Gasoline detections in these samples are qualified as not detected (U).**

Field, Rinsate, or Equipment Blank Results

All Analytical Methods:
Field, rinsate, and/or equipment blanks were not collected.

Field Duplicate Analyses

Field duplicate pairs were not collected. Refer to LCS/LCSD and laboratory duplicate results for precision data.

Laboratory Duplicate Analyses

USEPA Method 8260D:
Laboratory duplicate samples were not analyzed. Refer to laboratory control sample/sample duplicate (LCS/LCSD) or matrix spike/matrix spike duplicate (MS/MSD) results for precision data.

NWTPH-Gx Method:
Laboratory duplicate samples were not analyzed. Precision data are not provided for (SDGs L1237219 and L1237678). Refer to MS/MSD results associated with SDG L1238146 for precision data.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
Laboratory duplicate sample analyses were performed on client and non-client samples within the analytical batches. The primary/duplicate RPDs for dissolved gas analyses are within the laboratory control limit of 20%.

USEPA Method 6020B:
Laboratory duplicate samples were not analyzed. Precision data are not available for Refer to MS/MSD results for precision data.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
Laboratory duplicate sample analyses were performed on client samples and/or on non-client samples. The primary/duplicate RPDs for general chemistry parameters are within the laboratory control RPD limits or $\pm$ 1x RDL for groundwater results <5X the RDL with one exception:

- SDG L1237678: A laboratory duplicate on sulfate was performed on a non-client sample. Sulfate RPD is high however no action is taken since the laboratory duplicate was performed on a nonclient sample.

Surrogate Recoveries

USEPA Method 8260D:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the method blanks are within the laboratory surrogate control limits for all the analyses.

NWTPH-Gx Method:
The surrogate recovery results for the samples, laboratory control samples, matrix spike samples, and the method blanks are within the laboratory surrogate control limits for all analyses.

Laboratory Control Samples

USEPA Method 8260D:
Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or laboratory control sample (LCS) were analyzed by USEPA Method 8260D method. The LCS % Rs or LCS/LCSD % Rs and RPDs for the all target compounds are within the laboratory control criteria for waters with the following discussion:

- SDG L1234588 - Analytical batch WG1504320: LCS % recoveries for carbon tetrachloride and chlorodibromomethane, hexachloro-1,3-butadiene, and tetrahydrofuran are above laboratory acceptance criteria and laboratory qualified (J4). No action is needed for these compound as they are not detected in the associated sample.

- SDG L1237210 - Analytical batch WG1506638: LCS % recoveries for 1,2-dichlorobenzene and is below laboratory acceptance criteria and laboratory qualified (J4). **associated sample 1,2-dichlorobenzene results below the RDL are estimated and qualified (UJ).**

- SDG L1237210 - Analytical batch WG1507807: LCS % recovery for trans-1,2-dichloroethene recovery is greater than laboratory acceptance criteria and laboratory qualified (J4). No action is taken since the LCSD recovery for trans-1,2-dichloroethene is acceptable.

- SDG L1237210 - Analytical batch WG1507807: LCS tetrahydrofuran RPD is greater than laboratory acceptance criteria and laboratory qualified (J3). No action is taken since the recoveries are within criteria but are recovered wide.

- SDGs L1237219 and L1237678 - Analytical batch WG1508223: LCS tetrahydrofuran RPD is greater than laboratory acceptance criteria and laboratory qualified (J3). No action is taken since the recoveries are within criteria but are recovered wide.

- SDGs L1237219 and L1237678 - Analytical batch WG1508223: LCS % recovery for trans-1,2-dichloroethene recovery is greater than laboratory acceptance criteria and laboratory qualified (J4). No action is taken since the LCSD recovery for trans-1,2-dichloroethene is acceptable.

NWTPH-Gx Method:
The LCS % Rs for the target compound (gasoline) are within the laboratory control criteria for waters. In many cases, no measure of precision is provided with the analytical batch. No action is taken other than to note this.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
The LCS/LCSD % Rs and RPDs for the target compound (dissolved gases) are within the laboratory control criteria for waters.

USEPA Method 6020B:
The LCS/LCSD % Rs and RPDs for the target compound (iron and manganese) are within the laboratory control criteria for waters.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
The LCS % Rs for general chemistry parameters are within the laboratory control criteria for waters.

Matrix Spike/Matrix Spike Duplicates

USEPA Method 8260D:
Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed on client and on non-client samples within select analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples.

NWTPH-Gx Method:
MS/MSD analyses were not performed. Refer to LCS results. No measure of precision was provided. No action was taken other than to note this.

Dissolved Gases (Methane, Ethane, and Ethene) by RSK 175:
MS/MSD analyses were not performed. Refer to LCS results and field duplicate sample for accuracy and precision data.

USEPA Method 6020B:
MS/MSD analyses were performed on client and on non-client samples within the analytical batches. The MS/MSD % Rs and RPD were acceptable and within laboratory control limit criteria for water samples with the following discussion:

- SDG L1234588: Matrix spike analysis was performed on client sample MW128-062920 and manganese spike results are laboratory qualified (V) to indicate that the sample concentration is greater than 4X the spike amount. Per Guidance no action is taken.

- SDGs L1237210 and L1237219: Matrix spike analysis was performed on client sample FMW-140-070720 (SDG L1237210) and manganese spike result is laboratory qualified (V) to indicate that the sample concentration is greater than 4X the spike amount. Per Guidance no action is taken.

General Chemistry (Alkalinity, Chloride, Sulfate, Nitrate, and TOC):
MS or MS/MSD analyses were performed on client and/or non-client samples within the analytical batches. In cases where MS/MSD spike analyses are not performed refer to LCS/LCSD or laboratory duplicate data for accuracy and precision data. The MS/MSD % Rs and RPDs are acceptable and within laboratory control limit criteria for water samples.

Other Quality Control Issues

No laboratory quality control issues were identified in the laboratory report with the following discussions:

- SDG L1234588: Sample MW128-062920 results for iron and manganese are laboratory qualified (O1) because serial dilution results are >10% D (results >50X MDL). **Sample MW128-062920 iron and manganese results are estimated and qualified (J).**

- Multiple SDGs: Selected sample narratives for alkalinity results indicate that several sample containers had some headspace and exposure to air may have impacted the reported results. No action was taken other than to note this.

- Electronic data deliverables (EDDs) for these SDGs were provided by the laboratory and data validator qualifiers were entered. In some cases, different chemical synonyms are used between the EDD and the hardcopy however associated Chemical Abstracts Service (CAS) numbers are provided in the EDD to confirm chemical identifications.

Compound Identification and Quantitation Limits

Results of the analyses were reported based on laboratory RDLs for all compounds. RDLs for selected compounds are elevated due to method-required dilutions. No action is taken other than to note this.

Gasoline and gasoline range organics are analyzed for via Volatile Organic Compounds (GC) by Washington State Method NWTPHGx (using a gas chromatograph/flame ionization detector (GC/FID)) and Pace reported gasoline range organic-NWTPH results. Several chlorinated VOC compounds (including cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichloroethene, and tetrachloroethene) elute within the gasoline range organics (GRO) retention time range as specified by Washington State (detections falling between the toluene and dodecane range).

Non-petroleum organics (e.g. chlorinated VOC compounds) eluting within the gasoline range contribute to the GRO result and GRO results are likely biased high (J+). PES requested that Pace evaluate chromatograms associated with positive sample detections to confirm the potential presence of gasoline. Per PES's request Pace reviewed selected sample chromatograms against the gasoline standard chromatograms and assigned "no discernible petroleum pattern" to GRO results associated with this Task. PES assigned an additional project level qualifier (Z) to GRO results when the chromatogram for the sample does not match a discernible gasoline standard pattern. Associated chromatograms and qualified samples for this Task are as follows:

Sample ID	Laboratory Identification	Gasoline Range Organic Result (µg/L)	DV Qualifier	Data Validation Comments	Pace Chromatogram Review Notes
MW-181-070820	L1237678-02	15,400	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.
MW-184-070820	L1237678-03	260	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.
MW-182-070820	L1237678-05	1000	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.
MW-172-070920	L1238146-02	4430	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.
MW-170-070920	L1238146-03	24300	Z, J+	Elevated chlorinated VOCs detected within the GRO elution range	No discernible petroleum pattern present.

Project level qualifiers have been included to the PES's project database (Epiphany) as (ZJ+). Washington State EIM valid values were reviewed. In this case no Washington State EIM valid value descriptor is ideal, and the default estimated value (J) has been selected as the best match to qualify GRO (Z, J+) data.

Data Assessment

The laboratory data reported for this project were reviewed based on the criteria outlined in:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2017); and

- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017).

Data qualifiers are assigned and laboratory report pages with qualifiers are attached. All data, including qualified data, are judged to be acceptable for their intended use.

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	383000		8450	20000	1	07/15/2020 18:15	WG1508214

Sample Narrative:
L1238146-01 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	42900		379	1000	1	07/10/2020 13:18	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 13:18	WG1506965
Sulfate	16600		594	5000	1	07/10/2020 13:18	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	2920	B	102	1000	1	07/11/2020 20:12	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	3080		48.9	100	1	07/12/2020 21:02	WG1507536
Manganese	1140		1.32	5.00	1	07/12/2020 21:02	WG1507536

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5990		0.287	0.678	1	07/11/2020 14:34	WG1507440
Ethane	U		0.296	1.29	1	07/11/2020 14:34	WG1507440
Ethene	463		0.422	1.27	1	07/11/2020 14:34	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		0.548	1.00	1	07/15/2020 23:21	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/15/2020 23:21	WG1509623
Benzene	0.0740		0.0160	0.0400	1	07/15/2020 23:21	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/15/2020 23:21	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/15/2020 23:21	WG1509623
Bromoform	U		0.239	1.00	1	07/15/2020 23:21	WG1509623
Bromomethane	U		0.148	0.500	1	07/15/2020 23:21	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/15/2020 23:21	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/15/2020 23:21	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/15/2020 23:21	WG1509623
Carbon tetrachloride	U		0.0432	0.200	1	07/15/2020 23:21	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/15/2020 23:21	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/15/2020 23:21	WG1509623
Chloroethane	U		0.0432	0.200	1	07/15/2020 23:21	WG1509623
Chloroform	U		0.0166	0.100	1	07/15/2020 23:21	WG1509623
Chloromethane	U		0.0556	0.500	1	07/15/2020 23:21	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/15/2020 23:21	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/15/2020 23:21	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/15/2020 23:21	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/15/2020 23:21	WG1509623

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dibromomethane	U		0.0400	0.200	1	07/15/2020 23:21	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/15/2020 23:21	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/15/2020 23:21	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/15/2020 23:21	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/15/2020 23:21	WG1509623
1,1-Dichloroethane	U		0.0230	0.100	1	07/15/2020 23:21	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/15/2020 23:21	WG1509623
1,1-Dichloroethene	3.77		0.0200	0.100	1	07/15/2020 23:21	WG1509623
cis-1,2-Dichloroethene	2750		13.8	50.0	500	07/17/2020 06:37	WG1510200
trans-1,2-Dichloroethene	15.5		0.0572	0.200	1	07/15/2020 23:21	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/15/2020 23:21	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/15/2020 23:21	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/15/2020 23:21	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/15/2020 23:21	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/15/2020 23:21	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/15/2020 23:21	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/15/2020 23:21	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/15/2020 23:21	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/15/2020 23:21	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/15/2020 23:21	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/15/2020 23:21	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/15/2020 23:21	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/15/2020 23:21	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/15/2020 23:21	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/15/2020 23:21	WG1509623
Naphthalene	U		0.124	0.500	1	07/15/2020 23:21	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/15/2020 23:21	WG1509623
Styrene	U		0.109	0.500	1	07/15/2020 23:21	WG1509623
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/15/2020 23:21	WG1509623
1,1,2,2-Tetrachloroethane	U	UJ J0	0.0156	0.100	1	07/15/2020 23:21	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/15/2020 23:21	WG1509623
Tetrachloroethene	0.781		0.0280	0.100	1	07/15/2020 23:21	WG1509623
Toluene	1.13		0.0500	0.200	1	07/15/2020 23:21	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/15/2020 23:21	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/15/2020 23:21	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/15/2020 23:21	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/15/2020 23:21	WG1509623
Trichloroethene	3.17		0.0160	0.0400	1	07/15/2020 23:21	WG1509623
Trichlorofluoromethane	U		0.0200	0.100	1	07/15/2020 23:21	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/15/2020 23:21	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/15/2020 23:21	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/15/2020 23:21	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/15/2020 23:21	WG1509623
Vinyl chloride	8610		13.6	50.0	500	07/17/2020 06:37	WG1510200
Xylenes, Total	U		0.191	0.260	1	07/15/2020 23:21	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/15/2020 23:21	WG1509623
Tetrahydrofuran	U		0.0900	0.500	1	07/15/2020 23:21	WG1509623
Iodomethane	U		0.242	0.500	1	07/15/2020 23:21	WG1509623
Allyl chloride	U		0.580	1.00	1	07/15/2020 23:21	WG1509623
Trans-1,4-Dichloro-2-butene	U	UJ J0	0.0560	0.200	1	07/15/2020 23:21	WG1509623
(S) Toluene-d8	*99.6*			*75.0-131*		*07/15/2020 23:21*	WG1509623
(S) Toluene-d8	*93.2*			*75.0-131*		*07/17/2020 06:37*	WG1510200
(S) 4-Bromofluorobenzene	*94.6*			*67.0-138*		*07/15/2020 23:21*	WG1509623
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*07/17/2020 06:37*	WG1510200
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*07/15/2020 23:21*	WG1509623
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*07/17/2020 06:37*	WG1510200

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Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	401000		8450	20000	1	07/15/2020 18:42	WG1508214

Sample Narrative:
L1238146-04 WG1508214: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	43300		379	1000	1	07/10/2020 14:25	WG1506965
Nitrate	U		48.0	100	1	07/10/2020 14:25	WG1506965
Sulfate	14000		594	5000	1	07/10/2020 14:25	WG1506965

Wet Chemistry by Method 9060A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	3290	B	102	1000	1	07/11/2020 21:46	WG1507486

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Iron	13300		48.9	100	1	07/12/2020 21:12	WG1507536
Manganese	1040		1.32	5.00	1	07/12/2020 21:12	WG1507536

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	5490		0.287	0.678	1	07/11/2020 14:48	WG1507440
Ethane	4.65		0.296	1.29	1	07/11/2020 14:48	WG1507440
Ethene	641		0.422	1.27	1	07/11/2020 14:48	WG1507440

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	1.48		0.548	1.00	1	07/15/2020 23:59	WG1509623
Acrylonitrile	U		0.0760	0.500	1	07/15/2020 23:59	WG1509623
Benzene	0.0890		0.0160	0.0400	1	07/15/2020 23:59	WG1509623
Bromobenzene	U		0.0420	0.500	1	07/15/2020 23:59	WG1509623
Bromodichloromethane	U		0.0315	0.100	1	07/15/2020 23:59	WG1509623
Bromoform	U		0.239	1.00	1	07/15/2020 23:59	WG1509623
Bromomethane	U		0.148	0.500	1	07/15/2020 23:59	WG1509623
n-Butylbenzene	U		0.153	0.500	1	07/15/2020 23:59	WG1509623
sec-Butylbenzene	U		0.101	0.500	1	07/15/2020 23:59	WG1509623
tert-Butylbenzene	U		0.0620	0.200	1	07/15/2020 23:59	WG1509623
Carbon tetrachloride	U		0.0432	0.200	1	07/15/2020 23:59	WG1509623
Chlorobenzene	U		0.0229	0.100	1	07/15/2020 23:59	WG1509623
Chlorodibromomethane	U		0.0180	0.100	1	07/15/2020 23:59	WG1509623
Chloroethane	U		0.0432	0.200	1	07/15/2020 23:59	WG1509623
Chloroform	U		0.0166	0.100	1	07/15/2020 23:59	WG1509623
Chloromethane	U		0.0556	0.500	1	07/15/2020 23:59	WG1509623
2-Chlorotoluene	U		0.0368	0.100	1	07/15/2020 23:59	WG1509623
4-Chlorotoluene	U		0.0452	0.200	1	07/15/2020 23:59	WG1509623
1,2-Dibromo-3-Chloropropane	U		0.204	1.00	1	07/15/2020 23:59	WG1509623
1,2-Dibromoethane	U		0.0210	0.100	1	07/15/2020 23:59	WG1509623

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Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Dibromomethane	U		0.0400	0.200	1	07/15/2020 23:59	WG1509623
1,2-Dichlorobenzene	U		0.0580	0.200	1	07/15/2020 23:59	WG1509623
1,3-Dichlorobenzene	U		0.0680	0.200	1	07/15/2020 23:59	WG1509623
1,4-Dichlorobenzene	U		0.0788	0.200	1	07/15/2020 23:59	WG1509623
Dichlorodifluoromethane	U		0.0327	0.100	1	07/15/2020 23:59	WG1509623
1,1-Dichloroethane	0.0510	J	0.0230	0.100	1	07/15/2020 23:59	WG1509623
1,2-Dichloroethane	U		0.0190	0.100	1	07/15/2020 23:59	WG1509623
1,1-Dichloroethene	4.11		0.0200	0.100	1	07/15/2020 23:59	WG1509623
cis-1,2-Dichloroethene	2220		13.8	50.0	500	07/17/2020 07:15	WG1510200
trans-1,2-Dichloroethene	11.9		0.0572	0.200	1	07/15/2020 23:59	WG1509623
1,2-Dichloropropane	U		0.0508	0.200	1	07/15/2020 23:59	WG1509623
1,1-Dichloropropene	U		0.0280	0.100	1	07/15/2020 23:59	WG1509623
1,3-Dichloropropane	U		0.0700	0.200	1	07/15/2020 23:59	WG1509623
cis-1,3-Dichloropropene	U		0.0271	0.100	1	07/15/2020 23:59	WG1509623
trans-1,3-Dichloropropene	U		0.0612	0.200	1	07/15/2020 23:59	WG1509623
2,2-Dichloropropane	U		0.0317	0.100	1	07/15/2020 23:59	WG1509623
Di-isopropyl ether	U		0.0140	0.0400	1	07/15/2020 23:59	WG1509623
Ethylbenzene	U		0.0212	0.100	1	07/15/2020 23:59	WG1509623
Hexachloro-1,3-butadiene	U		0.508	1.00	1	07/15/2020 23:59	WG1509623
Isopropylbenzene	U		0.0345	0.100	1	07/15/2020 23:59	WG1509623
p-Isopropyltoluene	U		0.0932	0.200	1	07/15/2020 23:59	WG1509623
2-Butanone (MEK)	U		0.500	1.00	1	07/15/2020 23:59	WG1509623
Methylene Chloride	U		0.265	1.00	1	07/15/2020 23:59	WG1509623
4-Methyl-2-pentanone (MIBK)	U		0.400	1.00	1	07/15/2020 23:59	WG1509623
Methyl tert-butyl ether	U		0.0118	0.0400	1	07/15/2020 23:59	WG1509623
Naphthalene	U		0.124	0.500	1	07/15/2020 23:59	WG1509623
n-Propylbenzene	U		0.0472	0.200	1	07/15/2020 23:59	WG1509623
Styrene	U		0.109	0.500	1	07/15/2020 23:59	WG1509623
1,1,1,2-Tetrachloroethane	U		0.0200	0.100	1	07/15/2020 23:59	WG1509623
1,1,2,2-Tetrachloroethane	U	UJ J0	0.0156	0.100	1	07/15/2020 23:59	WG1509623
1,1,2-Trichlorotrifluoroethane	U		0.0270	0.100	1	07/15/2020 23:59	WG1509623
Tetrachloroethene	4.29		0.0280	0.100	1	07/15/2020 23:59	WG1509623
Toluene	3.52		0.0500	0.200	1	07/15/2020 23:59	WG1509623
1,2,3-Trichlorobenzene	U		0.0250	0.500	1	07/15/2020 23:59	WG1509623
1,2,4-Trichlorobenzene	U		0.193	0.500	1	07/15/2020 23:59	WG1509623
1,1,1-Trichloroethane	U		0.0110	0.100	1	07/15/2020 23:59	WG1509623
1,1,2-Trichloroethane	U		0.0353	0.100	1	07/15/2020 23:59	WG1509623
Trichloroethene	12.4		0.0160	0.0400	1	07/15/2020 23:59	WG1509623
Trichlorofluoromethane	U		0.0200	0.100	1	07/15/2020 23:59	WG1509623
1,2,3-Trichloropropane	U		0.204	0.500	1	07/15/2020 23:59	WG1509623
1,2,4-Trimethylbenzene	U		0.0464	0.200	1	07/15/2020 23:59	WG1509623
1,2,3-Trimethylbenzene	U		0.0460	0.200	1	07/15/2020 23:59	WG1509623
1,3,5-Trimethylbenzene	U		0.0432	0.200	1	07/15/2020 23:59	WG1509623
Vinyl chloride	6970		13.6	50.0	500	07/17/2020 07:15	WG1510200
Xylenes, Total	U		0.191	0.260	1	07/15/2020 23:59	WG1509623
Ethyl Ether	U		0.0170	0.100	1	07/15/2020 23:59	WG1509623
Tetrahydrofuran	U		0.0900	0.500	1	07/15/2020 23:59	WG1509623
Iodomethane	U		0.242	0.500	1	07/15/2020 23:59	WG1509623
Allyl chloride	U		0.580	1.00	1	07/15/2020 23:59	WG1509623
Trans-1,4-Dichloro-2-butene	U	UJ J0	0.0560	0.200	1	07/15/2020 23:59	WG1509623
(S) Toluene-d8	*96.3*			*75.0-131*		*07/15/2020 23:59*	WG1509623
(S) Toluene-d8	*95.3*			*75.0-131*		*07/17/2020 07:15*	WG1510200
(S) 4-Bromofluorobenzene	*98.6*			*67.0-138*		*07/15/2020 23:59*	WG1509623
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*07/17/2020 07:15*	WG1510200
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*07/15/2020 23:59*	WG1509623
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*07/17/2020 07:15*	WG1510200

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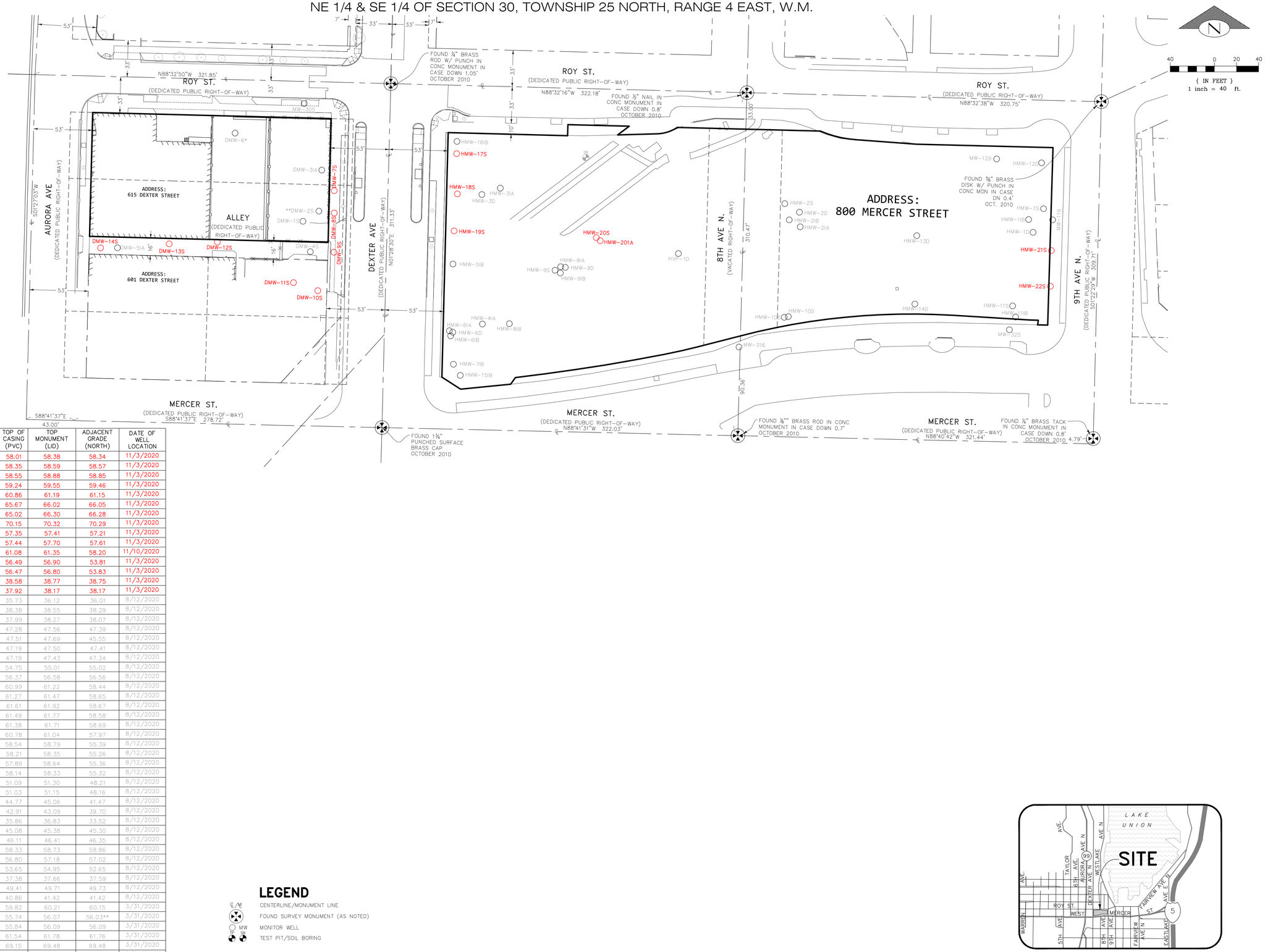
APPENDIX E
Survey Data

NE 1/4 & SE 1/4 OF SECTION 30, TOWNSHIP 25 NORTH, RANGE 4 EAST, W.M.



WELL ID	NORTHING	EASTING	TOP OF CASING (PVC)	TOP MONUMENT (LID)	ADJACENT GRADE (NORTH)	DATE OF WELL LOCATION
DMW-7S	231679.41	1268275.54	58.01	58.38	58.34	11/3/2020
DMW-8S	231659.22	1268275.52	58.35	58.59	58.57	11/3/2020
DMW-9S	231623.75	1268275.18	58.55	58.88	58.85	11/3/2020
DMW-10S	231588.90	1268260.63	59.24	59.55	59.46	11/3/2020
DMW-11S	231596.22	1268238.63	60.86	61.19	61.15	11/3/2020
DMW-12S	231632.93	1268169.70	65.67	66.02	66.05	11/3/2020
DMW-13S	231631.33	1268126.09	65.02	66.30	66.28	11/3/2020
DMW-14S	231627.59	1268064.11	70.15	70.32	70.29	11/3/2020
HMW-17S	231712.89	1268386.26	57.35	57.41	57.21	11/3/2020
HMW-18S	231676.51	1268386.87	57.44	57.70	57.61	11/3/2020
HMW-19S	231643.01	1268383.91	61.08	61.35	58.20	11/10/2020
HMW-20S	231636.97	1268512.50	56.49	56.90	53.81	11/3/2020
HMW-201A	231634.12	1268516.08	56.47	56.80	53.83	11/3/2020
HMW-22S	231592.91	1268923.29	38.58	38.77	38.75	11/3/2020
HMW-21S	231625.19	1268924.20	37.92	38.17	38.17	11/3/2020
HMW-1S	231663.10	1268917.06	35.73	36.12	36.01	8/12/2020
HMW-1IB	231653.29	1268903.63	38.38	38.55	38.29	8/12/2020
HMW-1D	231641.70	1268907.55	37.99	38.27	38.07	8/12/2020
HMW-2S	231667.68	1268683.01	47.28	47.56	47.39	8/12/2020
HMW-2IA	231646.71	1268696.97	47.51	47.69	45.55	8/12/2020
HMW-2IB	231653.04	1268687.05	47.19	47.50	47.41	8/12/2020
HMW-2D	231659.90	1268696.25	47.19	47.43	47.34	8/12/2020
HMW-3IA	231681.70	1268425.73	54.75	55.01	55.02	8/12/2020
HMW-3D	231675.94	1268408.98	56.37	56.58	56.56	8/12/2020
HMW-5IB	231613.05	1268382.91	60.99	61.22	58.44	8/12/2020
HMW-6IA	231552.63	1268379.59	61.27	61.47	58.65	8/12/2020
HMW-6IB	231548.05	1268380.83	61.61	61.92	58.67	8/12/2020
HMW-6D	231551.38	1268382.74	61.49	61.77	58.58	8/12/2020
HMW-7IB	231522.40	1268383.31	61.38	61.71	58.69	8/12/2020
HMW-8IB	231559.08	1268433.89	60.78	61.04	57.97	8/12/2020
HMW-9S	231607.46	1268475.23	58.54	58.79	55.39	8/12/2020
HMW-9IA	231610.61	1268480.34	58.21	58.35	55.26	8/12/2020
HMW-9IB	231604.99	1268480.04	57.89	58.64	55.36	8/12/2020
HMW-9D	231610.07	1268484.49	58.14	58.33	55.32	8/12/2020
HMW-10S	231564.84	1268682.52	51.09	51.30	48.21	8/12/2020
HMW-10D	231565.49	1268686.21	51.03	51.15	48.16	8/12/2020
HMW-11S	231575.12	1268889.09	44.77	45.06	41.47	8/12/2020
HMW-11IB	231565.07	1268891.80	42.91	43.09	39.70	8/12/2020
HMW-12D	231704.59	1268915.29	35.86	36.83	33.52	8/12/2020
HMW-13D	231638.70	1268802.38	45.08	45.38	45.30	8/12/2020
HMW-14D	231576.89	1268800.72	46.11	46.41	46.35	8/12/2020
HMW-15IB	231512.28	1268389.55	58.33	58.73	58.86	8/12/2020
HMW-16IB	231724.01	1268386.49	56.80	57.18	57.02	8/12/2020
HVP-1D	231622.55	1268586.83	53.65	54.95	52.65	8/12/2020
MW-119	231653.05	1268925.27	37.38	37.66	37.59	8/12/2020
MW-316	231537.98	1268641.56	49.41	49.71	49.73	8/12/2020
MW-325	231553.60	1268886.16	40.86	41.42	41.42	8/12/2020
MW-305	231758.30	1268253.85	59.82	60.21	60.15	3/31/2020
DMW-2S	231660.91	1268261.67	55.74	56.07	56.03**	3/31/2020
DMW-3IA	231698.01	1268264.20	55.84	56.09	56.09	3/31/2020
DMW-4S	231624.26	1268253.85	61.54	61.78	61.76	3/31/2020
DMW-5IA	231627.71	1268079.48	69.15	69.48	69.48	3/31/2020
DMW-6*	231731.47	1268185.83	66.08	66.30	66.30	3/31/2020
MW-129	231708.13	1268874.63	38.32	38.59		4/3/2019
HMW-441A	231558.72	1268409.56	58.53	58.78		4/3/2019
DMW-1S	231651.70	1268247.24	55.76	56.06		4/3/2019

LEGEND

- ℄/M — CENTERLINE/MONUMENT LINE
- FOUND SURVEY MONUMENT (AS NOTED)
- MW — MONITOR WELL
- TP SB — TEST PIT/SOIL BORING

* IDENTIFIED AS "DMW-6" ON "PROPOSED EXPLORATION MAP" FURNISHED BY HART CROWSER IDENTIFIED AS "DMW-7" BY PAINT ON CONCRETE ON-SITE.
** ADJACENT GRADE MEASURED AT 5'± NORTH OF MONITOR WELL.

VICINITY MAP

NO SCALE

BUSH, ROED & HITCHINGS, INC.
LAND SURVEYORS & CIVIL ENGINEERS
2009 MINOR AVE. EAST
SEATTLE, Washington 98102
(206) 323-4144
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NO	REVISION	DATE
2	TABLE CORRECTION	11-12-20
1	WELL UPDATE	11-10-20

MONITOR WELL EXHIBIT
800 MERCER / 615 DEXTER
HART CROWSER
CITY OF SEATTLE, KING COUNTY, WASHINGTON

drawn by	checked by
TTB	OQR
scale	date
1"=40'	11/09/20

job no. 2019046.08

sheet 1 of 1

24"x36" 11/12/2020 U:\C3D\2019\20190046\SURVEY\NG\DWG\XS-WELLS.DWG

APPENDIX F
Supporting Documentation for Arsenic in Groundwater Screening Levels

APPENDIX F
SUPPORTING DOCUMENTATION FOR ARSENIC IN GROUNDWATER SCREENING LEVEL

This appendix provides the rationale for our conclusion that arsenic concentrations in groundwater at the Seattle DOT Mercer Parcels Site (Mercer site) are consistent with natural background levels in this area and why Ecology's proposed background value for arsenic of 8 µg/L in the Puget Sound basin is appropriate for use as a screening level at this Site (Ecology 2018).

Site arsenic concentrations are consistent with federal, state, and county background levels

Arsenic concentrations in on-site groundwater ranges from <0.12 to 12.3 µg/L (see Attachments F-1 and F-2). This distribution is well within the range of natural background concentrations for groundwater nationally, in Washington state, and in the Puget Sound basin (see extensive literature cited in Ecology 2018).

On-site concentrations are also consistent with a recent King County study, which documented natural arsenic concentrations ranging from less than 0.5 µg/L to 75 µg/L in domestic wells and over 100 µg/L in monitoring wells associated with natural peat deposits (King County 2006). (We note that the highest on-Site arsenic concentration, 12.3 µg/L, was in a well installed in a peat deposit.)

Site arsenic concentrations are consistent with local background levels

Arsenic data from three nearby, cross-gradient monitoring wells, representative of local background conditions, is consistent with arsenic data from the Mercer site. The three now-decommissioned wells, Wells 1, 2, and 101, were located at the IRIS Holdings (IRIS) petroleum cleanup site at 500 5th Avenue North. The wells were located well outside the zone of former petroleum contamination and contained no detectable GRO, DRO, and ORO (whose breakdown tends to mobilize arsenic). Arsenic in groundwater was not identified as a constituent of concern in groundwater at the IRIS site and Ecology granted the site a no-further-action determination that required no cleanup action or further monitoring for arsenic. The IRIS wells were installed in glacial sediments similar to the Mercer site wells. The elevations of the IRIS wells correspond to the elevations of the shallow, intermediate, and deep zones at the Mercer site.

Arsenic concentrations in the IRIS wells ranged from <0.1 to 14 µg/L. This range encompasses the observed range of arsenic the Site. In addition, formal statistical hypothesis testing of the arsenic distributions at the Mercer and IRIS sites concluded that there is no evidence for a difference in distributions and that the data sets from the two sites appear comparable (see Attachment F-1).

Site arsenic concentrations do not reflect mobilization caused by petroleum degradation

Arsenic levels in groundwater are typically controlled the amount of naturally occurring arsenic in the aquifer material along with the groundwater redox conditions, with reducing conditions mobilizing the naturally occurring arsenic in the aquifer material. Reducing conditions can be associated with decomposition of soil organic material, such as occurs in glacial deposits or peat; this is explained in Ecology (2018). Similarly, naturally occurring arsenic can be mobilized by decomposition of petroleum, as explained in Ecology (2016). As shown in Figures F-a and F-b, the higher levels of arsenic at the site are associated with reducing conditions, as expected; however, higher levels of arsenic are not associated with higher levels of petroleum hydrocarbons. Taken together, these two pieces of evidence corroborate the conclusion that on-site arsenic levels are due to variations in natural background conditions and not from on-site, anthropogenic sources (i.e., petroleum impacts).

An arsenic value of 8 µg/L is appropriate to use as a screening level at the Site

Ecology (2018) proposed a background level of arsenic in Puget Sound basin groundwater of 8 µg/L based on statistical analysis of sample data from a large number of drinking water wells. Ecology determined, with a high degree of statistical confidence, that 90 percent of the data points in the background population would be equal to or less than 8 µg/L. The table below shows that the 90th percentile for the local background data for the IRIS site is 8 µg/L and for the SDOT Mercer Parcels site is 9 µg/L (rounded to one significant figure as was done in the Ecology report). Given the similarity of these three values, we conclude that the use of 8 µg/L as a conservative, background-based screening level, for the purposes of identifying COPCs, is reasonable for the SDOT Mercer Parcels site. MTCA*Stat* 3.0 input/output files are presented in Attachment F-3.

Site	Arsenic in Groundwater (µg/L) (distribution & statistics calc'd using Ecology's MTCA*Stat* 3.0)				
	Distribution	50th Percentile	4 X 50th Percentile	80th Percentile	90th Percentile
SDOT Mercer Parcels	Normal	4.61	18.43	7.46	8.95
IRIS	Normal	4.02	16.08	6.58	7.92
Mercer + IRIS	Normal	4.44	17.77	7.16	8.59

References

Ecology 2016. Guidance for Remediation of Petroleum Contaminated Sites. Toxics Cleanup Program. Washington State Department of Ecology. Olympia, Washington. Publication No. 10-09-057. REVISED June 2016.

Ecology 2018. Natural Background Groundwater Arsenic Concentrations in Washington State. Toxics Cleanup Program. May 2018 (Review Draft). Publication No. 14-09-044.

King County. 2006. Naturally Occurring Arsenic in Groundwater from Glacial Deposits in King County, Washington. NGWA Naturally Occurring Contaminants Conference. February 6, 2006. Eric Ferguson and Ken Johnson, King County Groundwater Protection Program.

Attachments and Figures

Attachment F-1. Technical memorandum titled "Notes on the evaluation of Mercer Street well arsenic concentrations compared to IRIS well arsenic concentrations (from EIM)." March 29, 2021. Lorraine Read (Exa Data & Mapping).

Attachment F-2. Summary of arsenic values used in statistical analyses.
Attachment F-3. MTCA*Stat* input/output files.
Figure F-a. Arsenic versus ORP in Groundwater.
Figure F-b. Arsenic versus TPH in Groundwater.

ATTACHMENT F1

Notes on the evaluation of Mercer Street well arsenic concentrations compared to IRIS well arsenic concentrations (from EIM). March 29, 2021 Lorraine Read (Exa Data & Mapping).

Data prep:

- Turbidity screen: if turbidity > 50 NTU or not available use dissolved arsenic; otherwise use total.
- If both dissolved and total arsenic were available for the same sample, used the maximum value (a conservative decision, intended to avoid underestimating the arsenic concentrations; the Pearson correlation between dissolved and total was very high (0.985) and most points fell on the 1:1 line, so little positive bias is introduced with this approach; Figure 1).
- Reviewed the spatial distribution of spring vs fall samples from mercer street site (Figure 2). Spring and fall sampled wells are interspersed across site; sampling does not appear to have a spatial-seasonal confounding (e.g., spring and fall sampled wells are in different portions of the site), especially as it relates to groundwater flow (west to east).

Final datasets [presented in Attachment F-2]:

- Mercer street: n=31 (21 wells from spring; 10 wells from fall); includes shallow, intermediate, and deep wells.
    - The 31 wells capture the 3-dimensional spatial variability within the site.
    - Different locations were sampled spring and fall; there is no spatial-seasonal confounding; a seasonal signal is not expected and is not apparent. Consequently, the data across the two seasons were pooled.
    - 26 detects and 5 non-detects.
- IRIS data: n=12 (3 wells from each of 4 seasons in 2011)
    - Both spatial and temporal variability is represented
    - Assumes temporal and spatial independence, and no seasonal signal.
    - 10 detects and 2 non-detects.

Assumptions: Each dataset assumed to represent independent and identically distributed (iid) data drawn from a single population (unique to each site). The datasets capture temporal variability within a year and 3-dimensional spatial variability at each site. Due to presence of non-detects (5/31 in Mercer Street wells and 2/12 in IRIS wells), Kaplan-Meier (KM) estimates of mean and sd will be used (calculated in ProUCL).

Results:

Both datasets appear normally distributed (based on goodness-of-fit tests in ProUCL not rejected for detected data).

Distributional comparison between Mercer Street wells (n=31) and IRIS wells (n=12):

- Graphical comparison of the empirical cumulative distribution function (ecdf) plots (Figure 3) shows the relationship between the two datasets. Steeper functions have less variance (a tighter distribution); functions shifted to the right have higher concentrations than those to the left; a large X-distance (concentration) for a given Y-distance (proportion) indicates a big gap in observed concentration values: this can be particularly noteworthy at the high end as it can indicate potential outliers. These datasets do not appear to have outliers.

- Kolmogorov-Smirnoff (K-S) is a formal hypothesis test comparing the two distribution functions. K-S test is non-parametric and is sensitive to differences in both location and shape (e.g., mean and variance).
- The K-S test interp: the larger the p-value the less evidence AGAINST the null hypothesis of equality of the two distributions; the smaller the p-value the more evidence AGAINST the null, and if the p-value is sufficiently small, e.g., $p < 0.10$ or $p < 0.05$, we would want to reject the null hypothesis.
- The data do not suggest we should reject hypothesis of distributional equality between the two distributions (K-S test $p = 0.89$, $n_1 = 12$, $n_2=31$).

Quantitative comparison between the two datasets:

- Summary statistics for the IRIS background wells and the Mercer Street wells are summarized in Table 1.
- Outlier analysis: The highest concentration (12.3 µg/L) is from well HMW-1S. This value is <u>not</u> a statistical outlier, but it is from a well installed in a natural peat deposit and peat deposits are known to contain high levels of arsenic. Consequently, it may be reasonable to exclude results from this well because of its unique geology. Summary stats from the Mercer Street dataset with this well excluded are also provided in the table.
- Comparison to 90/90 UTL threshold:
    - If the value of 8 µg/L is the 90/90 UTL of background data, we expect approximately 10% of background data to exceed this threshold. The UTL itself is a random variable derived from a random sample of background wells; so > 10% exceedance may occur even within the background population from which the UTL was derived. A value close to 10% should not be alarming, but a value > 10% may warrant testing additional samples from the site wells.
- Comparison of Means/Medians:
    - Two non-parametric tests comparing the means/medians were used based on tests available in ProUCL. Both the Tarone-Ware ($p=0.77$) and Gehan's test ($p=0.33$) failed to reject the null hypothesis of equality. The data do not suggest that the null hypothesis of equality of means should be rejected.
    - The magnitude of difference between means (Mercer – IRIS) = 0.59 ug/L with 90% CI [-1.04 ug/L, 2.22 ug/L].

Conclusions:

- Using all values, the two datasets appear comparable. Their distributions are not substantively different, and the magnitude of the difference in mean concentrations is approximately 0.6 µg/L (90% CI of [-1.04 µg/L , 2.22 µg/L]).
- There is a slightly higher range of concentrations in the Mercer Street well, but this is largely driven by one well (HMW-1S).

TABLES and FIGURES

Table 1. Summary statistics for IRIS Background and Mercer Street wells

Summary Statistic	IRIS Background Wells	Mercer Street Wells	Mercer Street Wells Excluding HMW-1S
Sample size	12	31	30
Detection Frequency (# detects/sample size)	83% (10/12)	84% (26/31)	87% (26/30)
Mean ± SD	4.02 ± 2.72 µg/L	4.61 ± 3.18 µg/L	4.35 ± 2.90 µg/L
Range	< 0.12 to 9.3 µg/L	< 0.12 to 12.3 µg/L	< 0.12 to 10.7 µg/L
Proportion exceeding 8 µg/L threshold	8.3% (1/12)	12.9% (4/31)	10% (3/30)
Maximum EF			
5 µg/L	1.86	2.46	2.14
8 µg/L	1.16	1.54	1.34
Normal 95 UCL	5.5 µg/L	5.6 µg/L	5.3 µg/L

Abbreviations:
EF = exceedance factor
SD = standard deviation
UCL = upper confidence limit (for the mean)

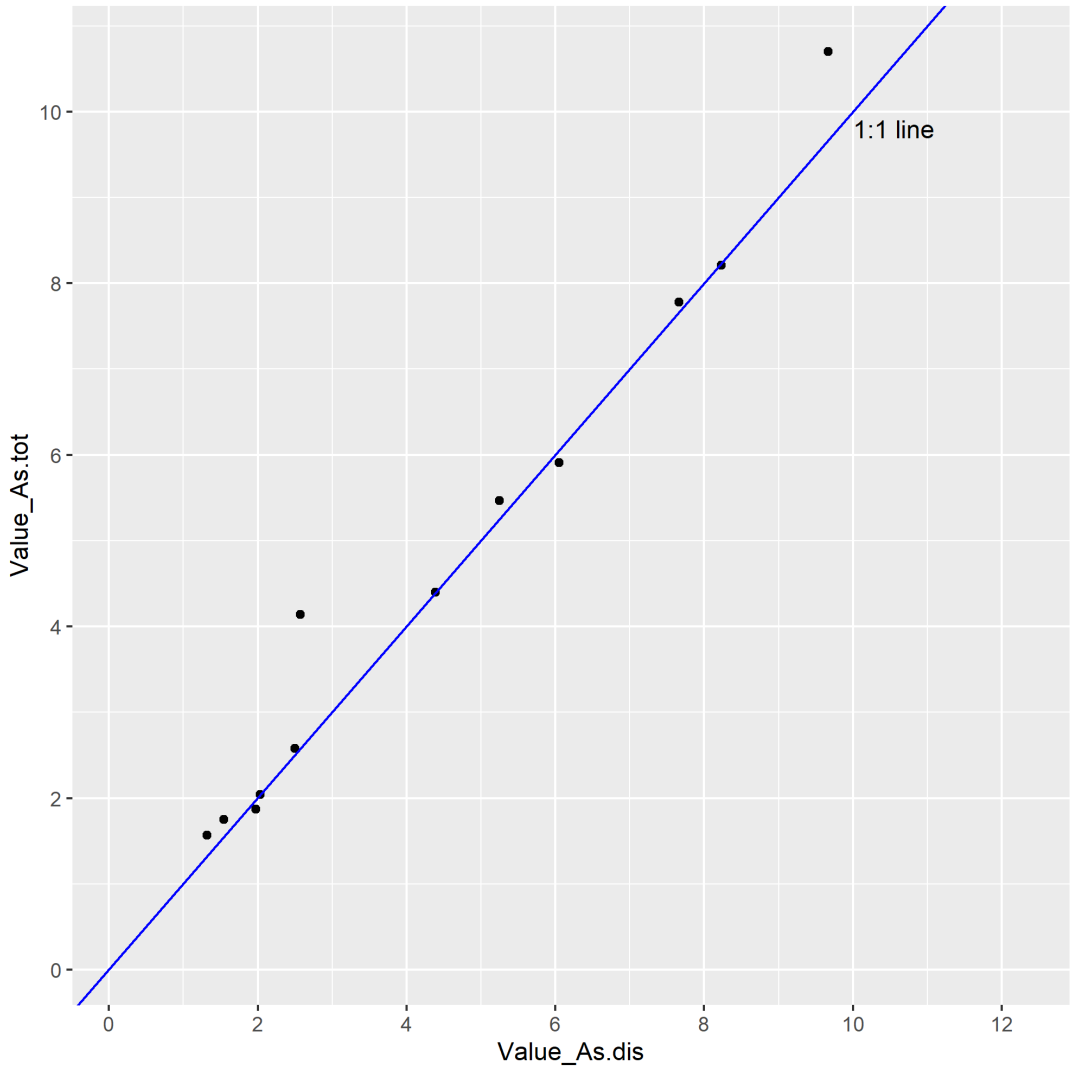


Figure 1. Correlation between dissolved and total arsenic concentrations in Mercer Street Wells.

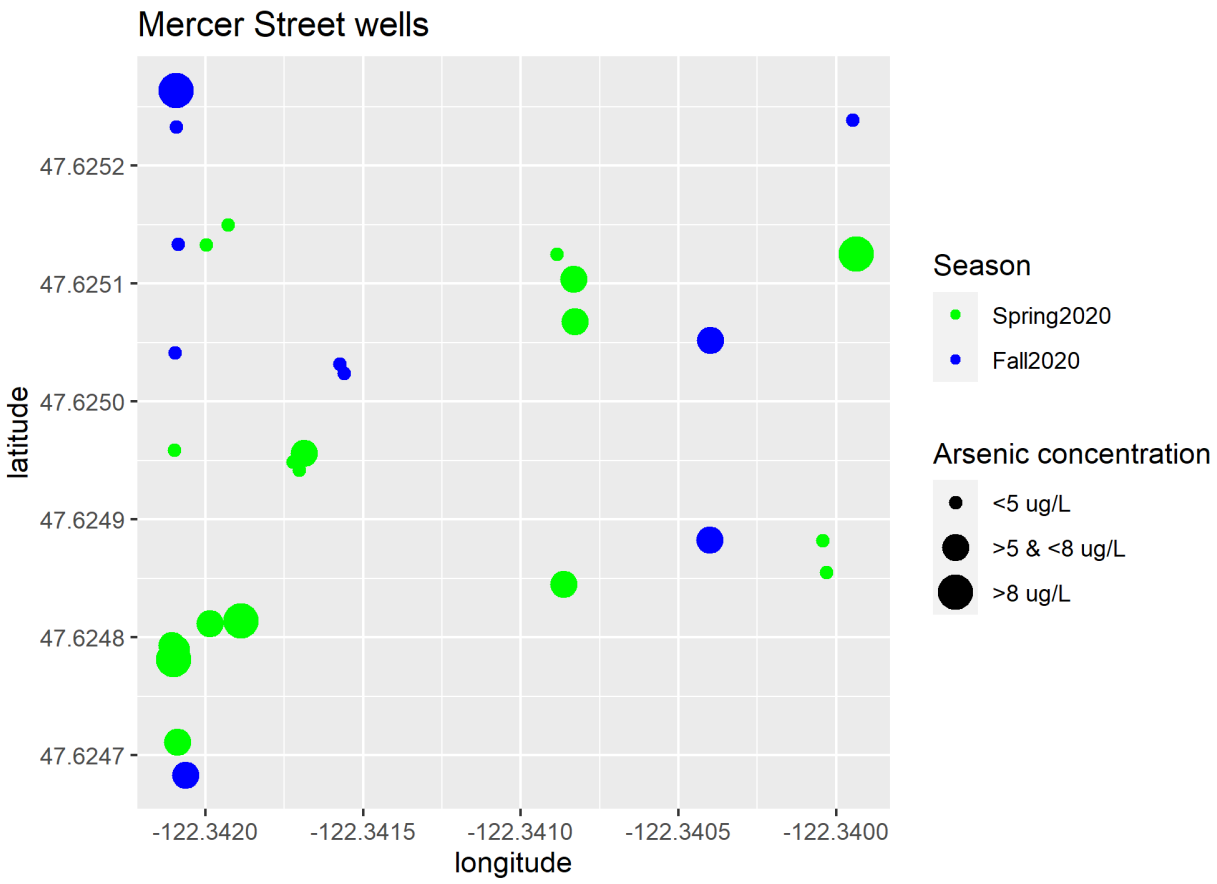


Figure 2. Spatial plot of well locations at 800 Mercer Street, indicating season well was sampled and concentration range for arsenic values used in analysis.

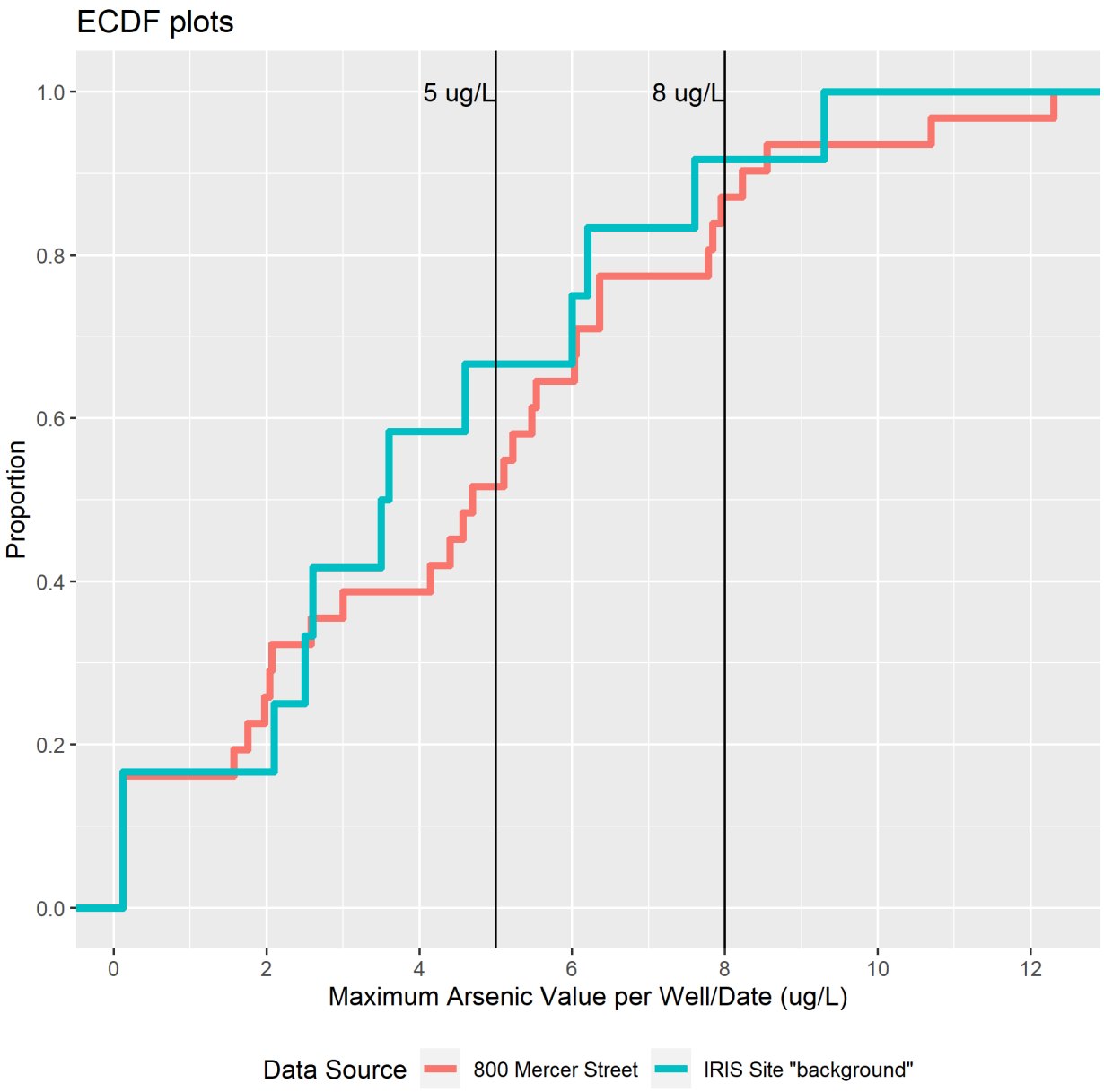


Figure 3. Empirical cumulative distribution function (ecdf) plots for arsenic concentrations from Mercer Street and IRIS background wells. Vertical lines indicate concentrations of the screening thresholds at 5 µg/L and 8 µg/L.

ATTACHMENT F2

Table F-2 - Arsenic for Statistics

Data provider	Location ID	Field Collection Start Date	Sample ID	Subfacility code	Result Parameter Name	Result Value	Result Value Units	lab qualifiers	Use?
HC	HMW10D	03/16/20	HMW-10D-GW-20200316	800 Mercer Street	Arsenic, Total	5.2	ug/L		Yes; turbidity <= 50 NTU
HC	HMW10S	03/16/20	HMW-10S-GW-20200316	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
HC	HMW11IB	03/16/20	HMW-11IB-GW-20200316	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
HC	HMW11S	03/11/20	HMW-11S-GW-20200311	800 Mercer Street	Arsenic, Dissolved	2.57	ug/L		No; used paired total result since it is higher
HC	HMW11S	03/11/20	HMW-11S-GW-20200311	800 Mercer Street	Arsenic, Total	4.1	ug/L		Yes; turbidity <= 50 NTU
HC	HMW12D	09/10/20	HMW-12D-20200910	800 Mercer Street	Arsenic, Dissolved	1.54	ug/L		No; used paired total result since it is higher
HC	HMW12D	09/10/20	HMW-12D-20200910	800 Mercer Street	Arsenic, Total	1.8	ug/L		Yes; turbidity <= 50 NTU
HC	HMW13D	09/10/20	HMW-13D-20200910	800 Mercer Street	Arsenic, Dissolved	5.25	ug/L		No; used paired total result since it is higher
HC	HMW13D	09/10/20	HMW-13D-20200910	800 Mercer Street	Arsenic, Total	5.5	ug/L		Yes; turbidity <= 50 NTU
HC	HMW14D	09/16/20	HMW-14D-20200916	800 Mercer Street	Arsenic, Total	5.91	ug/L		No; used paired total result since it is higher
HC	HMW14D	09/16/20	HMW-14D-20200916	800 Mercer Street	Arsenic, Dissolved	6.1	ug/L		Yes
HC	HMW15IB	09/16/20	HMW-15IB-20200916	800 Mercer Street	Arsenic, Dissolved	7.66	ug/L		No; used paired total result since it is higher
HC	HMW15IB	09/16/20	HMW-15IB-20200916	800 Mercer Street	Arsenic, Total	7.8	ug/L		Yes; turbidity <= 50 NTU
HC	HMW16IB	09/18/20	HMW-16IB-20200918	800 Mercer Street	Arsenic, Dissolved	8.23	ug/L		No; used paired total result since it is higher
HC	HMW16IB	09/18/20	HMW-16IB-20200918	800 Mercer Street	Arsenic, Total	8.2	ug/L		Yes; turbidity <= 50 NTU
HC	HMW17S	09/17/20	HMW-17S-20200917	800 Mercer Street	Arsenic, Dissolved	1.32	ug/L		No; used paired total result since it is higher
HC	HMW17S	09/17/20	HMW-17S-20200917	800 Mercer Street	Arsenic, Total	1.6	ug/L		Yes; turbidity <= 50 NTU
HC	HMW18S	09/17/20	HMW-18S-20200917	800 Mercer Street	Arsenic, Dissolved	2.5	ug/L		No; used paired total result since it is higher
HC	HMW18S	09/17/20	HMW-18S-20200917	800 Mercer Street	Arsenic, Total	2.6	ug/L		Yes; turbidity <= 50 NTU
HC	HMW19S	09/17/20	HMW-19S-20200917	800 Mercer Street	Arsenic, Total	1.87	ug/L		No; used paired dissolved result since it is higher
HC	HMW19S	09/17/20	HMW-19S-20200917	800 Mercer Street	Arsenic, Dissolved	2.0	ug/L		Yes
HC	HMW1D	03/09/20	HMW-1D-GW-20200309	800 Mercer Street	Arsenic, Total	2.59	ug/L		No, turbidity > 50 NTU; no other data avail from this well
HC	HMW1IB	03/10/20	HMW-1IB-GW-20200310	800 Mercer Street	Arsenic, Total	0.12	ug/L	U	No, turbidity > 50 NTU; no other data avail from this well
HC	HMW1S	03/25/19	HMW-1S-GW-20190325	800 Mercer Street	Arsenic, Total	14	ug/L		No, turbidity > 50 NTU; used 3/11/20 dissolved result instead
HC	HMW1S	03/11/20	HMW-1S-GW-20200311	800 Mercer Street	Arsenic, Total	13.5	ug/L		No, turbidity > 50 NTU; used paired dissolved result instead
HC	HMW1S	03/11/20	HMW-1S-GW-20200311	800 Mercer Street	Arsenic, Dissolved	12.3	ug/L		Yes
HC	HMW20IA	09/18/20	HMW-20IA-20200918	800 Mercer Street	Arsenic, Dissolved	4.39	ug/L		No; used paired total result since it is higher
HC	HMW20IA	09/18/20	HMW-20IA-20200918	800 Mercer Street	Arsenic, Total	4.4	ug/L		Yes; turbidity <= 50 NTU
HC	HMW20S	09/18/20	HMW-20S-20200918	800 Mercer Street	Arsenic, Dissolved	2.03	ug/L		No; used paired total result since it is higher
HC	HMW20S	09/18/20	HMW-20S-20200918	800 Mercer Street	Arsenic, Total	2.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW2D	03/12/20	HMW-2D-GW-20200312	800 Mercer Street	Arsenic, Total	6.4	ug/L		Yes; no turbidity measurement, but field notes indicate "clear" sample.
HC	HMW2IA	03/12/20	HMW-2IA-GW-20200312	800 Mercer Street	Arsenic, Total	5.1	ug/L		Yes; turbidity <= 50 NTU
HC	HMW2IB	03/12/20	HMW-2IB-GW-20200312	800 Mercer Street	Arsenic, Total	7.49	ug/L		No, turbidity > 50 NTU; no other data avail from this well
HC	HMW2S	03/12/20	HMW-2S-GW-20200312	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity > 50 NTU, but field notes indicate "clear" sample.
HC	HMW3D	03/13/20	HMW-3D-GW-20200313	800 Mercer Street	Arsenic, Total	4.7	ug/L		Yes; no turbidity measurement, but field notes indicate "clear" sample.
HC	HMW3IA	03/13/20	HMW-3IA-GW-20200313	800 Mercer Street	Arsenic, Total	4.6	ug/L		Yes; no turbidity measurement, but field notes indicate "clear" sample.
HC	HMW4IA	03/10/20	HMW-4IA-GW-20200310	800 Mercer Street	Arsenic, Total	6.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW5IB	03/17/20	HMW-5IB-GW-20200317	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
HC	HMW6D	03/16/20	HMW-6D-GW-20200316	800 Mercer Street	Arsenic, Total	5.5	ug/L		Yes; turbidity <= 50 NTU
HC	HMW6IA	03/13/20	HMW-6IA-GW-20200313	800 Mercer Street	Arsenic, Total	7.8	ug/L		Yes; turbidity <= 50 NTU
HC	HMW6IB	03/13/20	HMW-6IB-GW-20200313	800 Mercer Street	Arsenic, Total	8.6	ug/L		Yes; turbidity <= 50 NTU
HC	HMW7IB	03/12/20	HMW-7IB-GW-20200312	800 Mercer Street	Arsenic, Total	6.4	ug/L		Yes; turbidity <= 50 NTU
HC	HMW8IB	03/11/20	HMW-8IB-GW-20200311	800 Mercer Street	Arsenic, Dissolved	9.67	ug/L		No; used paired total result since it is higher
HC	HMW8IB	03/11/20	HMW-8IB-GW-20200311	800 Mercer Street	Arsenic, Total	10.7	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9D	03/17/20	HMW-9D-GW-20200317	800 Mercer Street	Arsenic, Total	8.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9IA	03/19/20	HMW-9IA-GW-20200319	800 Mercer Street	Arsenic, Total	3.0	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9IB	03/19/20	HMW-9IB-GW-20200319	800 Mercer Street	Arsenic, Total	2.1	ug/L		Yes; turbidity <= 50 NTU
HC	HMW9S	03/17/20	HMW-9S-GW-20200317	800 Mercer Street	Arsenic, Total	0.1	ug/L	U	Yes; turbidity <= 50 NTU
EIM	WELL_1	02/01/11	WELL_1	IRIS Site "background"	Arsenic, Total	8.8	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	04/15/11	WELL_1	IRIS Site "background"	Arsenic, Total	5.5	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	07/22/11	WELL_1	IRIS Site "background"	Arsenic, Total	5	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	10/21/11	WELL_1	IRIS Site "background"	Arsenic, Total	4.9	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_1	02/01/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	3.6	ug/L		Yes
EIM	WELL_1	04/15/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	2.1	ug/L		Yes

Table F-2 - Arsenic for Statistics

Data provider	Location ID	Field Collection Start Date	Sample ID	Subfacility code	Result Parameter Name	Result Value	Result Value Units	lab qualifiers	Use?
EIM	WELL_1	07/22/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	4.6	ug/L		Yes
EIM	WELL_1	10/21/11	WELL_1	IRIS Site "background"	Arsenic, Dissolved	0.1	ug/L	U	Yes
EIM	WELL_101	02/01/11	WELL_101	IRIS Site "background"	Arsenic, Total	6.2	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	04/15/11	WELL_101	IRIS Site "background"	Arsenic, Total	12	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	07/22/11	WELL_101	IRIS Site "background"	Arsenic, Total	14	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	10/21/11	WELL_101	IRIS Site "background"	Arsenic, Total	6.1	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_101	02/01/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	0.1	ug/L	U	Yes
EIM	WELL_101	04/15/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	3.5	ug/L		Yes
EIM	WELL_101	07/22/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	7.6	ug/L		Yes
EIM	WELL_101	10/21/11	WELL_101	IRIS Site "background"	Arsenic, Dissolved	2.5	ug/L		Yes
EIM	WELL_2	02/01/11	WELL_2	IRIS Site "background"	Arsenic, Total	12	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	04/15/11	WELL_2	IRIS Site "background"	Arsenic, Total	9.8	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	07/22/11	WELL_2	IRIS Site "background"	Arsenic, Total	12	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	10/21/11	WELL_2	IRIS Site "background"	Arsenic, Total	8.9	ug/L		No; no turbidity measurement, used paired dissolved value
EIM	WELL_2	02/01/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	6.0	ug/L		Yes
EIM	WELL_2	04/15/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	6.2	ug/L		Yes
EIM	WELL_2	07/22/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	9.3	ug/L		Yes
EIM	WELL_2	10/21/11	WELL_2	IRIS Site "background"	Arsenic, Dissolved	2.6	ug/L		Yes

ATTACHMENT F3

0.12	HMW10S	**As in Mercer Parcel Site Groundwater**
0.12	HMW11IB	
0.12	HMW2S	
0.12	HMW5IB	
0.12	HMW9S	
1.57	HMW17S	
1.75	HMW12D	
1.97	HMW19S	
2.04	HMW20S	
2.07	HMW9IB	
2.58	HMW18S	
3	HMW9IA	
4.14	HMW11S	
4.4	HMW20IA	
4.57	HMW3IA	
4.69	HMW3D	
5.1	HMW2IA	
5.22	HMW10D	
5.47	HMW13D	
5.53	HMW6D	
6.03	HMW4IA	
6.05	HMW14D	
6.36	HMW2D	
6.36	HMW7IB	
7.78	HMW15IB	
7.84	HMW6IA	
7.95	HMW9D	
8.21	HMW16IB	
8.55	HMW6IB	
10.7	HMW8IB	
12.3	HMW1S	

MTCA*Stat* 3.0

Number of samples			Uncensored values	
	Uncensored	31	Mean	4.61
	Censored	0	Lognormal mean	7.74
	TOTAL	31	Std. devn.	3.24
			Median	4.69
			Min.	0.12
			Max.	12.3

Lognormal distribution?		Normal distribution?	
r-squared is:	0.76	r-squared is:	0.96

Recommendations:

Use normal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
2	80.00	7.46
1 = Lognormal	50th	4.61
2 = Normal	4 X 50th	18.43
3 = Nonparametric method	Coefficient of Variation = 0.74	

0.12	HMW10S	**As in Mercer Parcel Site Groundwater**
0.12	HMW11IB	
0.12	HMW2S	
0.12	HMW5IB	
0.12	HMW9S	
1.57	HMW17S	
1.75	HMW12D	
1.97	HMW19S	
2.04	HMW20S	
2.07	HMW9IB	
2.58	HMW18S	
3	HMW9IA	
4.14	HMW11S	
4.4	HMW20IA	
4.57	HMW3IA	
4.69	HMW3D	
5.1	HMW2IA	
5.22	HMW10D	
5.47	HMW13D	
5.53	HMW6D	
6.03	HMW4IA	
6.05	HMW14D	
6.36	HMW2D	
6.36	HMW7IB	
7.78	HMW15IB	
7.84	HMW6IA	
7.95	HMW9D	
8.21	HMW16IB	
8.55	HMW6IB	
10.7	HMW8IB	
12.3	HMW1S	

MTCA*Stat* 3.0

Number of samples			Uncensored values	
	Uncensored	31	Mean	4.61
	Censored	0	Lognormal mean	7.74
	TOTAL	31	Std. devn.	3.24
			Median	4.69
			Min.	0.12
			Max.	12.3

Lognormal distribution?		Normal distribution?	
r-squared is:	0.76	r-squared is:	0.96

Recommendations:

Use normal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
2	90.00	8.95
1 = Lognormal	50th	4.61
2 = Normal	4 X 50th	18.43
3 = Nonparametric method	Coefficient of Variation = 0.74	

0.12	WELL_1	**As in IRIS Site Groundwater**
0.12	WELL_101	
2.1	WELL_1	
2.5	WELL_101	
2.6	WELL_2	
3.5	WELL_101	
3.6	WELL_1	
4.6	WELL_1	
6	WELL_2	
6.2	WELL_2	
7.6	WELL_101	
9.3	WELL_2	

MTCA*Stat* 3.0

Number of samples		Uncensored values	
Uncensored	12	Mean	4.02
Censored	0	Lognormal mean	6.90
TOTAL	12	Std. devn.	2.84
		Median	3.55
		Min.	0.12
		Max.	9.3

Lognormal distribution?	Normal distribution?
r-squared is: 0.75	r-squared is: 0.97

Recommendations:

Use normal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
2	80.00	6.58
1 = Lognormal	50th	4.02
2 = Normal	4 X 50th	16.08
3 = Nonparametric method	Coefficient of Variation = 0.76	

0.12	WELL_1	**As in IRIS Site Groundwater**
0.12	WELL_101	
2.1	WELL_1	
2.5	WELL_101	
2.6	WELL_2	
3.5	WELL_101	
3.6	WELL_1	
4.6	WELL_1	
6	WELL_2	
6.2	WELL_2	
7.6	WELL_101	
9.3	WELL_2	

MTCA*Stat* 3.0

Number of samples			Uncensored values	
	Uncensored	12	Mean	4.02
	Censored	0	Lognormal mean	6.90
	TOTAL	12	Std. devn.	2.84
			Median	3.55
			Min.	0.12
			Max.	9.3

Lognormal distribution?	Normal distribution?
r-squared is: 0.75	r-squared is: 0.97

Recommendations:

Use normal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
2	90.00	7.92
1 = Lognormal	50th	4.02
2 = Normal	4 X 50th	16.08
3 = Nonparametric method	Coefficient of Variation = 0.76	

0.12 HMW10S **As in Mercer Parcels & IRIS Site groundwater combined**
0.12 HMW11IB
0.12 HMW2S
0.12 HMW5IB
0.12 HMW9S
0.12 WELL_1
0.12 WELL_101
1.57 HMW17S
1.75 HMW12D
1.97 HMW19S
2.04 HMW20S
2.07 HMW9IB
2.1 WELL_1
2.5 WELL_101
2.58 HMW18S
2.6 WELL_2
3 HMW9IA
3.5 WELL_101
3.6 WELL_1
4.14 HMW11S
4.4 HMW20IA
4.57 HMW3IA
4.6 WELL_1
4.69 HMW3D
5.1 HMW2IA
5.22 HMW10D
5.47 HMW13D
5.53 HMW6D
6 WELL_2
6.03 HMW4IA
6.05 HMW14D
6.2 WELL_2
6.36 HMW2D
6.36 HMW7IB
7.6 WELL_101
7.78 HMW15IB
7.84 HMW6IA
7.95 HMW9D
8.21 HMW16IB
8.55 HMW6IB
9.3 WELL_2
10.7 HMW8IB
12.3 HMW1S

MTCA*Stat* 3.0

Number of samples			Uncensored values	
	Uncensored	43	Mean	4.44
	Censored	0	Lognormal mean	7.31
	TOTAL	43	Std. devn.	3.11
			Median	4.57
			Min.	0.12
			Max.	12.3

Lognormal distribution?		Normal distribution?	
r-squared is:	0.76	r-squared is:	0.96

Recommendations:

Use normal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
2	80.00	7.16
1 = Lognormal	50th	4.44
2 = Normal	4 X 50th	17.77
3 = Nonparametric method	Coefficient of Variation = 0.73	

0.12 HMW10S **As in Mercer Parcels & IRIS Site groundwater combined**
0.12 HMW11IB
0.12 HMW2S
0.12 HMW5IB
0.12 HMW9S
0.12 WELL_1
0.12 WELL_101
1.57 HMW17S
1.75 HMW12D
1.97 HMW19S
2.04 HMW20S
2.07 HMW9IB
2.1 WELL_1
2.5 WELL_101
2.58 HMW18S
2.6 WELL_2
3 HMW9IA
3.5 WELL_101
3.6 WELL_1
4.14 HMW11S
4.4 HMW20IA
4.57 HMW3IA
4.6 WELL_1
4.69 HMW3D
5.1 HMW2IA
5.22 HMW10D
5.47 HMW13D
5.53 HMW6D
6 WELL_2
6.03 HMW4IA
6.05 HMW14D
6.2 WELL_2
6.36 HMW2D
6.36 HMW7IB
7.6 WELL_101
7.78 HMW15IB
7.84 HMW6IA
7.95 HMW9D
8.21 HMW16IB
8.55 HMW6IB
9.3 WELL_2
10.7 HMW8IB
12.3 HMW1S

MTCA*Stat* 3.0

Number of samples			Uncensored values	
	Uncensored	43	Mean	4.44
	Censored	0	Lognormal mean	7.31
	TOTAL	43	Std. devn.	3.11
			Median	4.57
			Min.	0.12
			Max.	12.3

Lognormal distribution?		Normal distribution?	
r-squared is:	0.76	r-squared is:	0.96

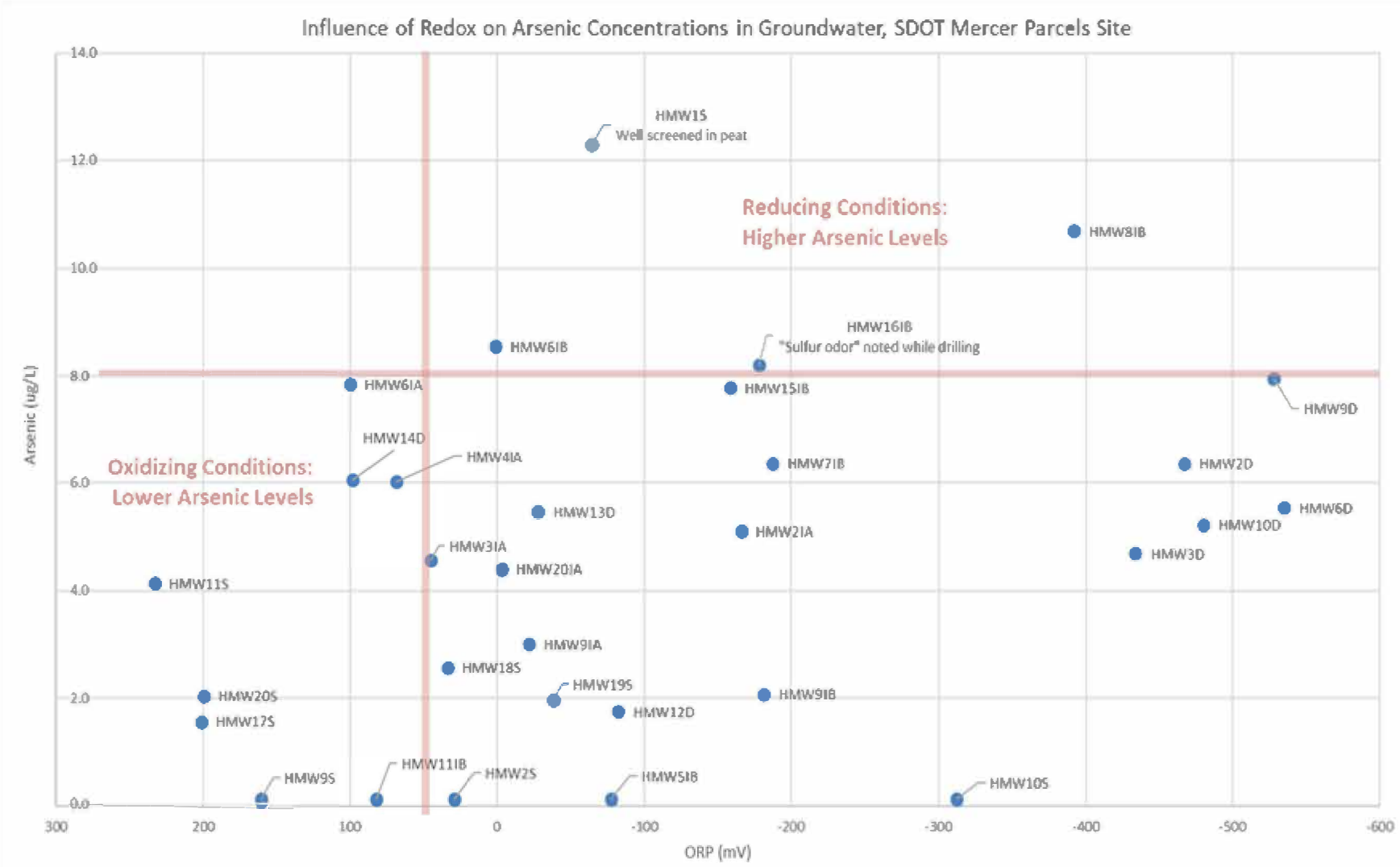
Recommendations:

Use normal distribution.

Distribution selection	Enter percentile	Value corresponding to that percentile is:
2	90.00	8.59
1 = Lognormal	50th	4.44
2 = Normal	4 X 50th	17.77
3 = Nonparametric method	Coefficient of Variation = 0.73	

FIGURES

File: L:\Notebooks\1940904_Mercer_Mega_Block_Remedial_Investigations\CAD\1940904-011 (App_F_Figs).dwg Layout:F-b Date: 04-15-2021 Author: ericlindquist



Seattle DOT Mercer Parcels Site
Seattle, Washington

Arsenic versus ORP in Groundwater

19409-04 04/21

HARTCROWSER
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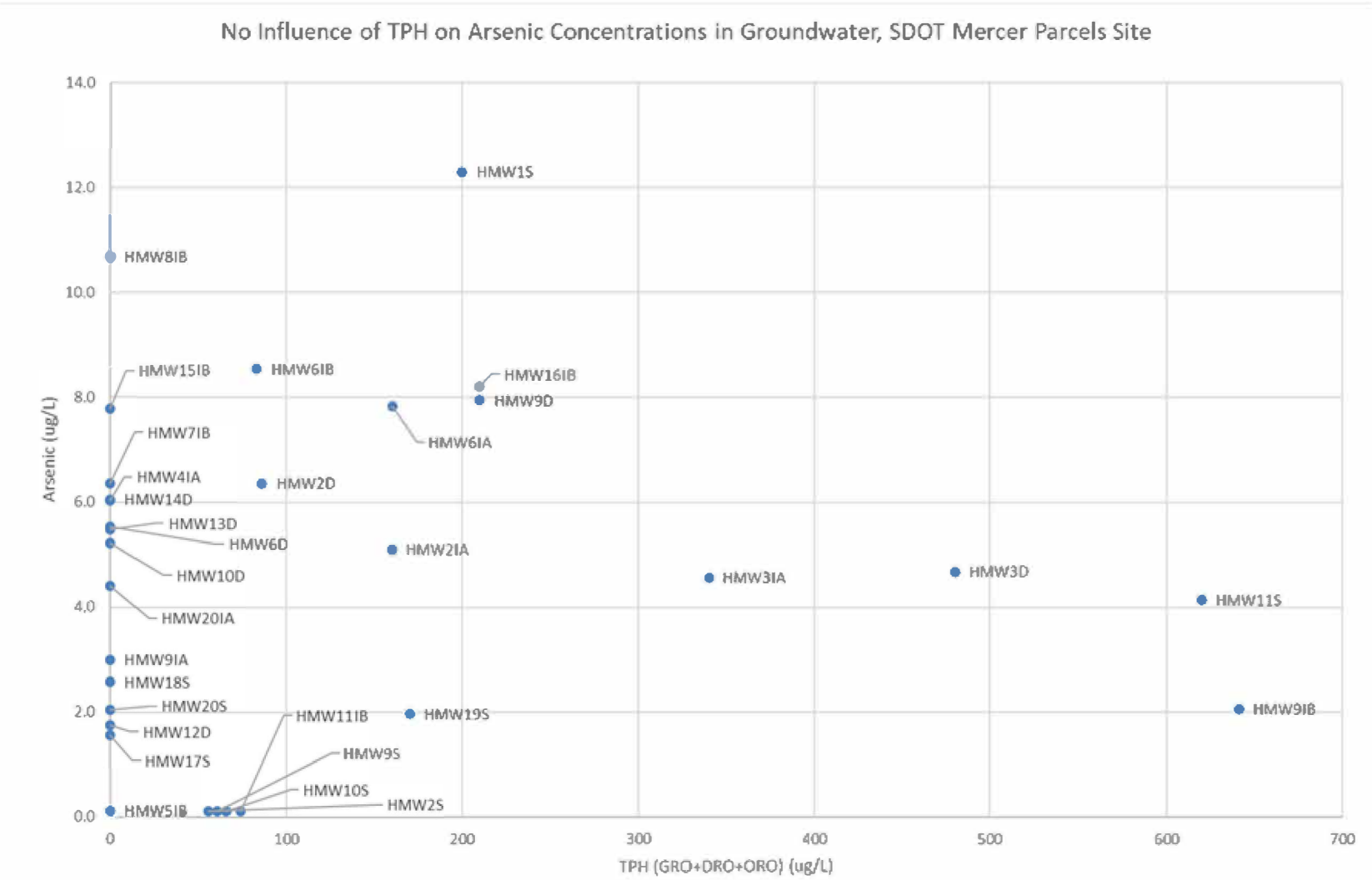
FIGURE
F-a

File: L:\Notebooks\1940904_Mercer_Mega_Block_Remedial_Investigations\CAD\1940904-011 (App_F_Figs).dwg Layout:8.5x11 - H Date: 04-15-2021 Author: ericlindquist



Seattle DOT Mercer Parcels Site
Seattle, Washington

Arsenic versus TPH in Groundwater

19409-04 04/21

HARTCROWSER
A division of Haley & Aldrich

FIGURE
F-b