

Kennedy/Jenks Consultants

Engineers & Scientists

32001 32nd Avenue South, Suite 100
Federal Way, Washington 98001
253-835-6400
FAX: 253-952-3435

21 October 2014

Mr. Eugene Freeman
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008

Subject: Summary of Groundwater Sampling and Drilling Activities through September 2014
Former Precision Engineering Facility
K/J 1396024*00

Dear Mr. Freeman:

This letter report transmits data collected during field investigation activities conducted by Kennedy/Jenks Consultants at the Former Precision Engineering Facility (Site) on behalf of the Washington State Department of Ecology (Ecology). This letter report is intended as an interim submittal of field investigation findings and activities conducted to support a remedial investigation at the Site. Interpretation of data contained herein will be provided in subsequent submittals to Ecology.

Field investigation activities conducted between 30 April 2014 and 5 September 2014 included:

- First quarter groundwater sampling event.
- Conducting a soil and reconnaissance groundwater investigation.
- Construction of three new groundwater monitoring wells.
- Second quarter groundwater sampling event.
- Surveying horizontal locations and top of casing elevations for new and existing groundwater monitoring wells.

Field investigation activities were conducted in general accordance with the *DRAFT Remedial Investigation and Feasibility Study Work Plan for the Former Precision Engineering Facility* prepared by Kennedy/Jenks Consultants and submitted to Ecology on 25 March 2014.

Attachments to this letter report include:

- Tables summarizing well construction details, groundwater elevation measurements, and analytical results from groundwater and soil sampling activities.

Mr. Eugene Freeman
Washington State Department of Ecology
21 October 2014
Page 2

- A figure depicting sampling locations.
- An attachment containing analytical laboratory reports and chain-of-custody documentation for samples submitted for chemical analysis in May and August 2014.
- An attachment containing groundwater purge and sample forms and well development forms.
- An attachment containing soil boring and well construction logs generated during the August 2014 field investigation activities.

First Quarter Groundwater Sampling Event – May 2014

Between 30 April and 2 May 2014, Kennedy/Jenks Consultants conducted an initial (first quarter) groundwater monitoring and sampling event at the Site. Prior to sampling activities, existing monitoring wells MW-1 through MW-8 were inspected, and field measurements, including depth to groundwater and total well depth, were collected. Because well construction specifications were unavailable for existing wells MW-1 through MW-4, a small down-hole, submersible video camera was used to identify and observe the screened interval. The length of screened interval in wells MW-1 through MW-3 was estimated to be 10 feet long, and at well MW-4, the screened interval was estimated to be 5 feet long. Available information on well construction for Site wells is summarized in Table 1. The aboveground well monument at well MW-4 was observed to be leaning, and the casing within was also observed to be cracked and partially broken. While suitable for water level measurements and groundwater sample collection, well MW-4 is in need of repair.

Groundwater samples were collected from monitoring wells MW-2 through MW-8. Well MW-1 was not sampled in May 2014 due to access constraints at the Site. Groundwater purge and sample forms are included in Attachment 1. Groundwater samples were analyzed by Analytical Resources Inc (ARI) of Tukwila, Washington, for volatile organic compounds (VOCs) using U.S. Environmental Protection Agency (EPA) Method 8260C, total metals (arsenic, lead, chromium, and selenium) using EPA Method 6010C, hexavalent chromium using EPA Method 3500Cr-B, and diesel-range petroleum hydrocarbons using Method Northwest Total Petroleum Hydrocarbons as Diesel and Oil Extended (NWTPH-Dx). Analytical results for groundwater samples collected in May 2014 are summarized in Table 2. Laboratory analytical reports and chain-of-custody documentation are provided in Attachment 2.

Soil and Reconnaissance Groundwater Investigation – August 2014

Additional field investigation of Site soil and groundwater conditions was conducted in August 2014 using direct-push (Geoprobe) drill rig provided by Cascade Drilling, Inc., of Woodinville, Washington. Prior to intrusive investigation activities, a one-call utility locate request was made for the proposed investigation area, and a private utility locator was contracted to provide an additional check of possible underground utilities. Four of the boreholes located along the 14th Avenue South right-of-way required traffic control measures, coordination, and permitting with Washington State Department of Transportation (WSDOT) prior to access and drilling activities. A site-specific traffic control plan was prepared for this work.

Mr. Eugene Freeman
Washington State Department of Ecology
21 October 2014
Page 3

Soil and reconnaissance groundwater investigation activities were conducted on 7 and 8 August 2014. Soil boring locations are depicted on attached Figure 1 and include nine locations on the Site (locations SB1 through SB8 and SB10) and four locations on WSDOT right-of-way adjacent to southbound 14th Avenue South and the WA-99 entrance ramp accessed from southbound 14th Avenue South (locations SB11 through SB14). Because boring location SB9 is outside the impacted area based on historical results and field conditions observed at boring locations SB10 and SB8, sampling at this location was not performed.

Each of the soil boreholes were advanced to the top of the till surface. Continuous cores were collected and soil conditions were recorded at each soil boring location. Soil samples were collected from depths corresponding to just above the till unit and/or other depths where field indications (staining, odor, or sheen) suggested impacted soils may be present. Lithologic soil boring logs were prepared based on the soil conditions encountered and are provided in Attachment 3. Reconnaissance groundwater samples were collected from saturated soils above the top of the till unit.

Selected soil samples were submitted to ARI for analysis of metals using EPA Method 6010C, hexavalent chromium using EPA Method 7196A, VOCs using EPA Method 8260C, and/or diesel-range petroleum hydrocarbons using Method NWTPH-Dx. Analytical results for soil samples are summarized in Table 3. Reconnaissance groundwater samples were submitted to ARI for analysis of metals using EPA Method 6010C, hexavalent chromium using EPA Method 3500Cr-B, VOCs using EPA Method 8260C, and/or diesel-range petroleum hydrocarbons using Method NWTPH-Dx. Analytical results for reconnaissance groundwater samples are summarized in Table 4. Laboratory analytical reports and chain-of-custody documentation for soil and reconnaissance groundwater samples are provided in Attachment 2.

Proposed location SB9 was not drilled or sampled due to time limitations. Reconnaissance groundwater samples were not collected from locations SB1 and SB2, where groundwater was not encountered.

Monitoring Well Construction – August 2014

Three new groundwater monitoring wells (MW-9 through MW-11) were constructed at the Site on 16 August 2014. The new well locations are depicted on Figure 1 and were selected based on field observations of groundwater occurrence and expected flow direction and preliminary analytical results from reconnaissance groundwater samples.

Boreholes for the new monitoring wells were drilled using a hollow-stem auger drill rig operated by Holt Services, Inc. of Edgewood, Washington, and new monitoring wells were constructed of 2-inch Schedule 40 polyvinyl chloride (PVC) casing with 0.010-inch slotted PVC screens.

Well MW-9 was located near soil borehole location SB4. Well MW-9 borehole was advanced to a total depth of 45 feet below ground surface (bgs) to characterize Site lithology below the till interface. The well was screened from 31 to 36 feet bgs within a sandy unit immediately below the base of the observed till unit. Three soil samples were collected and analyzed to characterize materials present just above the till interface and at two depth intervals beneath the till. Because data from the soil boring and reconnaissance groundwater sample at location SB4

Mr. Eugene Freeman
Washington State Department of Ecology
21 October 2014
Page 4

did not display impacts to groundwater, a permanent conductor casing was not installed at this location.

Well MW-10 was constructed approximately 6 feet north of well MW-9. Wells MW-9 and MW-10 are intended to serve as a pair of wells constructed at different depth intervals. Well MW-10 was constructed with a screened interval from 10 to 20 feet bgs, comparable to other shallow wells currently present adjacent to the eastern property line of the Site. No soil samples were collected during construction of well MW-10, due its proximity to well MW-9.

Well MW-11 was constructed approximately 250 feet north of the MW-9/MW-10 well pair, adjacent to soil borehole location SB8. Well MW-11 borehole was advanced to a total depth of 20 feet bgs, and the well constructed with the screened interval from 10 to 20 feet bgs. One soil sample was collected from material present in the saturated zone. The location of monitoring well MW-11 was selected to help understand deeper groundwater flow and contaminant concentrations north of the areas where release are known to have occurred. Soil samples collected during construction of wells MW-9 and MW-11 were submitted to ARI for analysis of metals using EPA Method 6010C, hexavalent chromium using EPA Method 7196A, VOCs using EPA Method 8260C, and diesel-range petroleum hydrocarbons using Method NWTPH-Dx. The results of soil sampling are summarized in Table 3. Laboratory analytical reports and chain-of-custody documentation are provided in Attachment 2. Lithologic boring and well construction logs with well construction details are provided in Attachment 3.

The three new monitoring wells were developed by Kennedy/Jenks Consultants on 18 and 19 August 2014 to remove fine sands and silts present in the screened interval and in preparation for groundwater sampling. Well development forms documenting volumes purged and groundwater conditions during well development activities are provided in Attachment 1.

Following well construction activities, a surveyor (KPG of Tacoma, Washington) was contracted to conduct a horizontal and vertical survey of new and existing monitoring well locations, ground surface, and top of casing elevations. Surveying activities were conducted on 5 September 2014. The survey data generated by KPG have been included in Table 1.

Second Quarter Groundwater Sampling Event – August 2014

Kennedy/Jenks Consultants conducted a second groundwater monitoring and sampling event at the Site on 20 and 21 August 2014. Depth to groundwater measurements were made at wells MW-1 through MW-11 prior to sampling and are summarized in Table 1. Groundwater purge and sample forms are provided in Attachment 1.

Groundwater samples were collected from monitoring wells MW-1 through MW-11. Groundwater samples were analyzed by ARI for VOCs using EPA Method 8260C, total metals (arsenic, lead, chromium, and selenium) using EPA Method 6010C, hexavalent chromium using EPA Method 3500Cr-B, and diesel-range petroleum hydrocarbons using Method NWTPH-Dx. Analytical results from groundwater sampling conducted in August 2014 are summarized in Table 5. Laboratory analytical reports and chain-of-custody documentation are provided in Attachment 2.

Mr. Eugene Freeman
Washington State Department of Ecology
21 October 2014
Page 5

Future Activities

Future Site investigations to be conducted by Kennedy/Jenks Consultants on behalf of Ecology include the following:

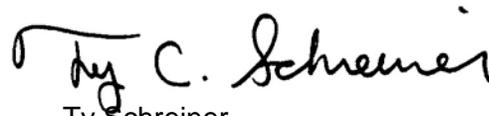
- Construction of three new groundwater monitoring wells along the 14th Avenue South right-of-way. Ecology is leading the effort to gain access from WSDOT to construct wells at these locations. The schedule for conducting this work will be determined upon permit approval from WSDOT (anticipated November/December 2014).
- Conduct third and fourth quarter groundwater sampling events in November 2014 and February 2015, respectively.
- Incorporate investigation findings into a Remedial Investigation report, including data interpretation.

Kennedy/Jenks Consultants appreciates the opportunity to provide assistance to Ecology on this project. Should you have any questions on the information contained in this document, please contact us at (253) 835-6428.

Very truly yours,

KENNEDY/JENKS CONSULTANTS


Jessica Faragalli
Project Manager


Ty Schreiner
Vice President

Enclosures: Table 1 – Well Construction Information and Groundwater Elevations
Table 2 – First Quarter Groundwater Sampling Results -May 2014
Table 3 – Soil Sampling Results – August 2014
Table 4 – Reconnaissance Groundwater Sampling Results – August 2014
Table 5 – Second Quarter Groundwater Sampling Results -August 2014
Figure 1 – Monitoring Well and Soil Boring Locations
Attachment 1 – Groundwater Purge and Sample/Well Development Forms
Attachment 2 – Laboratory Analytical Reports and Chain-of-Custody Documentation
Attachment 3 –Soil Boring and Well Construction Logs

cc: Louise Bardy, Washington State Department of Ecology
Lee Frazier, Pacific Industrial Supply

Tables

TABLE 1: Well Construction Information and Groundwater Elevations

**Former Precision Engineering
1231 South Director Street
Seattle, Washington**

Monitoring Well ID	Screened Interval (ft bgs)	Top of Casing Elevation ^{(a)(b)} (ft msl)	30 April 2014		12 August 2014		20 August 2014	
			Depth to water (ft bgs)	Water Elevation (ft msl)	Depth to Water (ft bgs)	Water Elevation (ft msl)	Depth to Water (ft bgs)	Water Elevation (ft msl)
MW1	33-43 ^(c)	26.66	0.15	26.51	not measured		3.19	23.47
MW2	10-20 ^(c)	22.39	4.15	18.24	5.55	16.84	5.21	17.18
MW3	10-20 ^(c)	23.05	5.42	17.63	6.40	16.65	6.69	16.36
MW4	20-25 ^(c)	24.09	2.49	21.60	3.51	20.58	3.05	21.04
MW5	10-20	23.40	4.72	18.68	5.96	17.44	5.77	17.63
MW6	10-20	21.49	4.92	16.57	4.21	17.28	4.43	17.06
MW7	26.5-31.5	21.35	5.52	15.83	5.03	16.32	5.87	15.48
MW8	9.5-19.5	20.88	5.14	15.74	6.10	14.78	5.53	15.35
MW9	31-36	20.47	not applicable		not applicable		5.84	14.63
MW10	10-20	20.32	not applicable		not applicable		3.93	16.39
MW11	10-20	22.30	not applicable		not applicable		5.42	16.88

Notes:

- (a) Top of casing elevations were surveyed 5 September 2014.
 - (b) Top of casing elevations are taken from the northern side, except for well MW-4, which was taken on the southern side.
 - (c) Screened interval estimated using submersible video camera.
- ft = feet.
bgs = below ground surface.
msl = mean sea level.

TABLE 2: First Quarter Groundwater Sampling Results - May 2014

**Former Precision Engineering
1231 South Director Street
Seattle, Washington**

Sample ID	Date	Hydrocarbons		Total Metals					VOCs (detected only)
		Diesel (µg/L)	Oil (µg/L)	Arsenic (µg/L)	Total Chromium (µg/L)	Lead (µg/L)	Selenium (µg/L)	Hexavalent Chromium (µg/L)	Trichloroethene (µg/L)
MW-2	5/1/2014	240	260	<50	7	<20	<50	<10	<5.0
MW-3	4/30/2014	<100	<200	<50	<5	<20	<50	28	<1.0
MW-4	5/1/2014	<100	<200	<50	5	<20	<50	13	<1.0
MW-5/Duplicate	5/1/2014	<100/ <100	<200/ <200	<50/ <50	75,100/ 80,100	<20/ <20	<50/ <50	80,000/ 84,500	3.1/ 3.6
MW-6	4/30/2014	720	850	80	31	<20	<50	<10	<5.0
MW-7	4/30/2014	<100	<200	<50	<5	<20	<50	<10	<1.0
MW-8	5/1/2014	340	290	<50	11	<20	<50	23	<5.0
Cleanup Levels									
MTCA Method A Unrestricted		500	500	5	50	15	-	-	5.0
MTCA Method B Non-cancer		-	-	4.8	-	-	80	48	4.0
MTCA Method B Cancer		-	-	0.0583	-	-	-	-	0.54

Notes:

VOCs = volatile organic compounds.

µg/L =micrograms per liter.

"<" indicates substance was not detected above the specified laboratory reporting limit.

"-" indicates a cleanup level is not established.

Bold results are above the most conservative MTCA cleanup level shown.

TABLE 3: Soil Sampling Results - August 2014

**Former Precision Engineering
1231 South Director Street
Seattle, Washington**

Sample ID	Depth (feet)	Date	Hydrocarbons		Metals					VOCs (detected only) (µg/kg)																			
			Diesel (mg/kg)	Oil (mg/kg)	Arsenic (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Selenium (mg/kg)	Hexavalent chromium (mg/kg)	Chloro methane	Methylene Chloride	Acetone	Carbon Disulfide	Benzene	Toluene	Ethyl benzene	m,p-Xylene	o-Xylene	Total Xylenes	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	isopropyl benzene	n-propyl benzene	sec-butyl benzene	4-isopropyl toluene	n-butyl benzene	naphthalene		
SB1-5	5	8/8/2014	7.5	62	<5	48.7	<2	<5	<0.440	<1.0	<2.0	15 Q	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.9	
SB3-2	2	8/8/2014	10,000	12,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SB3-8	8	8/8/2014	<5.8	14	<6	67.3	<2	<6	<0.452	<0.7	2.4	25 Q	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	NA	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<3.7	
SB4-5	4	8/7/2014	65	220	7	22.7	11	<6	<0.572	<1.8	3.9	32 Q	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	NA	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<8.8	
SB4-20	20	8/7/2014	<6.2	<12	6	14.9	<2	<6	<0.482	<1.1	2.8	36 Q	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	NA	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<5.5	
SB5-11	11	8/8/2014	420	1900	<7	15.7	<3	<7	<0.552	<1.4	4.8	58 Q	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<6.8	
SB6-16	16	8/8/2014	15	49	<7	10.0	<3	<7	<0.571	<1.4	4.8	27 Q	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<7.0	
SB7-11	11	8/8/2014	38	440	<7	17.7	4	<7	<0.554	<1.5	9.4	61 Q	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	NA	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<7.7	
SB7-19	19	8/8/2014	<5.9	<12	<6	24.8	<2	<6	<0.462	<0.6	2.4	16 Q	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	NA	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<3.2	
SB8-16	16	8/8/2014	74	560	<7	23.7	7	<7	<0.544	<1.5	<3.0	70 Q	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	NA	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<7.6	
SB10-7	7	8/8/2014	<5.6	<11	<5	30.3	2	<5	<0.445	<1.1	2.6	17 Q	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	NA	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<5.5	
SB11-10	10	8/7/2014	9.7	30	<6	11.7	6	<6	<0.472	<1.3	8.3	35 Q	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	NA	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<6.4	
SB11-30	30	8/7/2014	NA	NA	6	20.9	<2	<6	<0.484	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SB12-12	12	8/7/2014	<6.5	19	<7	17.0	<3	<7	<0.516	<1.2	<2.4	55 Q	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	NA	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<6.0	
SB13-9	9	8/7/2014	<6.7	18	<8	16.8	<3	<8	<0.534	<1.4	3.5	37 Q	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	<1.4	<1.4	<1.4	<1.4	<1.4	8.1	<1.4	4.5 Q	<7.2	
SB14-6	6	8/7/2014	74	730	<5	27.6	56	<5	<0.425	<4.1	<4.1	<10	6.7 Q	2.1	7.1	56	29	<2.1	29	16	8.0	15	46	3.6	4.0	11 Q	28		
MW9-18-19	18-19	8/16/2014	<6.2	14	10	19	<6	<10	<0.492	<1.0	5.1 B	28	1.8 Q	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.1	
MW9-32.5-33.5	32.5-33.5	8/16/2014	<5.7	<11	<5	17.8	<2	<5	<0.448	<0.9	5.5 B	8.6	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	NA	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<4.7	
MW9-38-39	38-39	8/16/2014	9.3	14	<5	32.3	<2	<5	<0.471	1.5	5.5 B	16	1.6 Q	<1.0	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.8	
MW11-18-19/ duplicate	18-19	8/16/2014	6.2/ NA	<11/ NA	<6/ <5	38.0/ 37.8	2/ <2	<6/ <5	<0.455/ <0.448	<0.9/ 1.8	5.0 B/ 4.1 B	13/ 16	1.0 Q/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	NA/NA	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<0.9/ <1.1	<4.4/ <5.3		
Cleanup Levels																													
MTCA Method A Unrestricted			2,000	2,000	20	2,000	250	-	19	-	20	-	-	30	7,000	6,000	-	-	9,000	-	-	-	-	-	-	-	-	-	5,000
MTCA Method B Non-cancer			-	-	24	1.20E+05	-	400	240	-	4.80E+05	7.20E+07	8.00E+06	3.20E+05	6.40E+06	8.00E+06	-	-	1.60E+07	8.00E+05	-	8.00E+06	8.00E+06	8.00E+06	-	4.00E+06	1.60E+06		
MTCA Method B Cancer			-	-	0.67	-	-	-	-	-	5.00E+05	-	-	1.82E+04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Notes:
 VOCs = volatile organic compounds.
 µg/kg = micrograms per kilogram.
 mg/kg = milligrams per kilogram.
 "<" indicates substance was not detected above the specified laboratory reporting limit.
 NA = not analyzed.
 "-" indicates a cleanup level is not established.
 Q qualifier indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria.
 B qualifier indicates analyte detected in an associated Method blank at a concentration greater than 1/2 the reporting limit or 5% of either the regulatory limit or analyte concentration in the sample.
 Cleanup levels listed for chromium are for trivalent chromium.
Bold results are above the most conservative MTCA cleanup level shown.

TABLE 4: Reconnaissance Groundwater Sampling Results - August 2014

**Former Precision Engineering
1231 South Director Street
Seattle, Washington**

Sample ID	Sample Depth (feet)	Date	NWTPH-Dx		Total Metals					VOCs (detected only) (µg/L)								
			Diesel (µg/L)	Oil (µg/L)	Arsenic (µg/L)	Chromium (µg/L)	Lead (µg/L)	Selenium (µg/L)	Hexavalent chromium (µg/L)	Naphthalene	Toluene	Ethylbenzene	m,p-xylene	o-xylene	1,3,5-trimethyl benzene	1,2,4-trimethyl benzene	isopropyl benzene	n-propyl benzene
SB3 / duplicate	12-17	8/8/2014	450/ 540	300/ 320	60/ 60	418/ 265	80/ 120	<50/ <50	<10/ <10	<2.5/ <2.5	<1.0/ <1.0	<1.0/ <1.0	<2.0/ <2.0	<1.0/ <1.0	<1.0/ <1.0	<1.0/ <1.0	<1.0/ <1.0	<1.0/ <1.0
SB4	7-12	8/7/2014	NA	NA	80	63	40	<50	<10	3.1	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB5	11-16	8/8/2014	500	530	300	570	100	<200	<10	<2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB6	12-17	8/8/2014	380	290	<50	91	<20	<50	<10	<2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB7	14-19	8/8/2014	200	220	100	340	70	<100	<10	<2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB10	4.5-14.5	8/8/2014	<100	<200	<50	331	<20	<50	<10	<2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB11	6-11	8/7/2014	440	490	60	10	40	<50	<10	<2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
SB12	8-13	8/7/2014	NA	NA	60	76	60	<50	14	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB13	5-10	8/7/2014	NA	NA	<50	31	20	<50	12	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB14	4-14	8/7/2014	380	460	<50	47	70	<50	<10	6.2	2.2	16	26	5.0	6.6	13	2.3	5.0
Cleanup Levels																		
MTCA Method A Unrestricted			500	500	5	50	15	-	-	160	1,000	700	-	-	-	-	-	-
MTCA Method B Non-cancer			-	-	4.8	-	-	80	48	160	640	800	1,600	1,600	80	-	800	800
MTCA Method B Cancer			-	-	0.0583	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
 NWTPH-Dx = Northwest Total Petroleum Hydrocarbons as Diesel and Oil Extended.
 VOCs = volatile organic compounds.
 µg/L = micrograms per liter.
 < indicates substance was not detected above the specified laboratory reporting limit.
 NA = not analyzed.
 "-" indicates a cleanup level is not established.
Bold results are above the most conservative MTCA cleanup level shown.

TABLE 5: Second Quarter Groundwater Sampling Results - August 2014

Precision Engineering
1231 S Director Street
Seattle, Washington

Sample ID	Date	Hydrocarbons		Total Metals					VOCs (detected only)	
		Diesel (µg/L)	Oil (µg/L)	Arsenic (µg/L)	Total Chromium (µg/L)	Lead (µg/L)	Selenium (µg/L)	Hexavalent chromium (µg/L)	Trichloroethene (µg/L)	Bromoform (µg/L)
MW-1	8/20/2014	<100	<200	<50	<5	<20	<50	<10	<1.0	1.5
MW-2	8/20/2014	490	490	<50	6	<20	<50	<10	<1.0	<1.0
MW-3	8/21/2014	<100	<200	<50	<5	<20	<50	12	<1.0	<1.0
MW-4/ duplicate	8/20/2014	<100/ 100	<200/ <200	<50/ <50	<5/ <5	<20/ <20	<50/ <50	<10/ <10	<1.0/ <1.0	<1.0/ <1.0
MW-5	8/21/2014	<100	<200	<50	82,400	<20	<50	95,500	3.1	<1.0
MW-6	8/21/2014	300	<200	80	23	<20	<50	<10	<1.0	<1.0
MW-7	8/20/2014	140	<200	<50	<5	<20	<50	<10	<1.0	<1.0
MW-8	8/20/2014	440	380	50	8	<20	<50	17	<1.0	<1.0
MW-9	8/21/2014	<100	<200	<50	<5	<20	<50	<10	<1.0	<1.0
MW-10	8/21/2014	130	<200	<50	<5	<20	<50	<10	<1.0	<1.0
MW-11	8/21/2014	120	<200	<50	<5	<20	<50	<10	<1.0	<1.0
Cleanup Levels										
MTCA Method A Unrestricted		500	500	5	50	15	-	-	5.0	-
MTCA Method B Non-cancer		-	-	4.8	-	-	80	48	4.0	160
MTCA Method B Cancer		-	-	0.0583	-	-	-	-	0.54	5.54

Notes:

VOCs = volatile organic compounds.

µg/L = micrograms per liter.

"<" = indicates substance was not detected above the specified laboratory reporting limit.

"-" indicates a cleanup level is not established.

Bold results are above the most conservative MTCA cleanup level shown.

Figure



\\FY01\data\Projects\20131396024\00 Ecology Precision Engineering\GIS\Events\RI Work Plan\Fig1_UpdatedLocations.mxd

Map Source: Maui Foster & Alongi, Final Feasibility Study, Former Precision Engineering, Inc., Site, March 3, 2011.
 Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

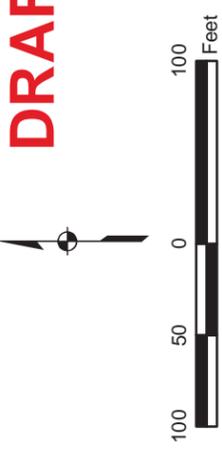
Legend

- + Deep Monitoring Well
- + Shallow Monitoring Well
- 2005 Geoprobe Boring
- 2005 Reconnaissance Groundwater Sampling Location
- 2014 Geoprobe Boring

- Approximate Parcel Boundary

Notes:

1. All locations are approximate



DRAFT

Kennedy Jenks Consultants
 Precision Engineering Facility
 Seattle, Washington

**Monitoring Well and
 Soil Boring Locations**

Figure 1

K/J Project Number 1396024.00

Attachment 1

Groundwater Purge and Sample/Well Development Forms

Project Name: Precision Engineering

Well Number: MW 2

Project Number: 13960211 - 80

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 3.17

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 1405 1410

PURGE DEPTH (FT.): 17

TIME END PURGE: 1515

TIME SAMPLED: 1510

COMMENTS: Sample MW 2 / heavy chrome / metals As, Cr, Pb & Se / NWTPH-DX/000

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	x	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	43.58		3.17		40.31		0.16	0.64	1.44		6.46

TIME	1410	1420	1425	1430	1440	1450	1505
VOLUME PURGED (GAL)	.8	1.4	2	2.5	3.5	4.5	6.1
PURGE RATE (GPM)							
TEMPERATURE (°C)	15.55	15.43	15.11	14.93	14.63	13.22	13.05
pH	8.16	8.08	8.00	7.97	7.99	8.13	8.19
SPECIFIC CONDUCTIVITY (uncorrected) (micromhos/cm)	0.300	0.305	0.305	0.305	0.305	0.307	0.306
DISSOLVED OXYGEN (mg/L)	2.38	2.38	2.30	2.17	3.31	0.55	0.21
Eh(mv) Pt-AgCl ref.	7.3	18.5	30.6	39.6	45.6	51.9	55.6
TURBIDITY / COLOR	clear 9.86	10.90 clear	5.93 clear	5.88 clear	6.86 clear	6.60 clear	6.78
ODOR	no	←-----→					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	7.11	8.69	10.59	12.06	13.88	16.35	19.12
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Project Name: Precision Engineering

Well Number: W

Project Number: 13960241 . 60

Personnel: R L cz

STATIC WATER LEVEL (FT.): 5.21

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 0830

PURGE DEPTH (FT.): 12

TIME END PURGE: 1725

TIME SAMPLED: ~~0915~~ 1720

COMMENTS: dewatered during sampling, sampled later in day
Sample Mv12 / hex chrome / metals As, Cr, Pb, Se / VOCs / NWTPH-Dr

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	19.44	-	5.21	=	14.23	X	0.16	0.64	1.44	=	2.28

TIME	0835	0840	0845	0850	0855	0900	0905
VOLUME PURGED (GAL)	.1	.4	1	1.4	1.7	2	2.5
PURGE RATE (GPM)							
TEMPERATURE (°C)	17.54	17.67	18.17	18.78	18.06	16.17	16.05
pH	6.84	6.97	7.02	7.10	7.11	7.20	7.20
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	3.453	3.431	3.345	3.454	3.187	3.477	3.477
DISSOLVED OXYGEN (mg/L)	1.49	0.91	0.33	0.30	0.71	0.30	1.10
Ek(mv)Pt-AgCl ref.	-92.9	-107.10	-101.4	-102.0	-96.7	-88.7	-89.5
TURBIDITY / COLOR	5.49 clear/yellow	8.62 clear/tan	5.75 clear/tan	8.05 clear/tan	27.32 clear/tan	5.45 clear/tan	12.77 clear/tan
ODOR	no						
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	7.73	9.79	11.83	13.55	14.18	16.25	17.93
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form

Date: 8/24/14 Kennedy/Jenks Consultants

Project Name: Precision Engineering

Well Number: MW3

Project Number: 1396024 . 00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 6.69

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 0940

PURGE DEPTH (FT.): 15

TIME END PURGE: 1020

TIME SAMPLED: 1015

COMMENTS: Sample MW3 / Hex chrome / Metals As, Cr, Pb + Se / VOCs / NWTPH-Dx

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	<u>20.16</u>		<u>6.69</u>		<u>13.47</u>		<u>0.16</u>	<u>0.64</u>	<u>1.44</u>		<u>2.155</u>

TIME	<u>0940</u>	<u>0945</u>	<u>0950</u>	<u>0955</u>	<u>1000</u>	<u>1005</u>		
VOLUME PURGED (GAL)	<u>.6</u>	<u>1</u>	<u>1.4</u>	<u>2</u>	<u>2.4</u>			
PURGE RATE (GPM)								
TEMPERATURE (°C)	<u>15.38</u>	<u>15.20</u>	<u>15.27</u>	<u>15.30</u>	<u>15.29</u>			
pH	<u>7.71</u>	<u>7.61</u>	<u>7.57</u>	<u>7.55</u>	<u>7.54</u>			
SPECIFIC CONDUCTIVITY (uncorrected) <small>(micromhos/cm)</small>	<u>0.406</u>	<u>0.422</u>	<u>0.411</u>	<u>0.405</u>	<u>0.404</u>			
DISSOLVED OXYGEN (mg/L)	<u>0.97</u>	<u>0.60</u>	<u>0.44</u>	<u>0.35</u>	<u>0.27</u>			
Eh(mv)Pt-AgClref.	<u>0.6</u>	<u>-13.7</u>	<u>-20.7</u>	<u>-27.0</u>	<u>-31.0</u>			
TURBIDITY / COLOR	<u>12.79 clear</u>	<u>11.02 clear</u>	<u>8.00 clear</u>	<u>10.24 clear</u>	<u>7.20 clear</u>			
ODOR	<u>no</u>	<u>-----</u>						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)	<u>7.85</u>	<u>7.94</u>	<u>8.05</u>	<u>8.09</u>	<u>8.12</u>			
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form

Date: 8/20/14

Kennedy/Jenks Consultants

Project Name: Precision Engineering
 Project Number: 1246024 . 00

Well Number: MW4
 Personnel: R Lopez

STATIC WATER LEVEL (FT.): 3.05
 WATER LEVEL MEASUREMENT METHOD: interface probe
 TIME START PURGE: 1210
 TIME END PURGE: 1215
 TIME SAMPLED: 1300 / duplicate 1305

MEASURING POINT DESCRIPTION: ~~interface~~ top of well
 PURGE METHOD: peristaltic pump
 PURGE DEPTH (FT.): 15

COMMENTS: Samples MW4 and MW4-1 (Hex Chrome/ Metals Ar, Cr, Pb, As, U, Ni) / ~~MS~~
 MWSPH-Dx

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	25.63	-	3.05	=	22.58	X	0.16	0.64	1.44	=	3.61

TIME	1215	1220	1225	1230	1235	1240	1250
VOLUME PURGED (GAL)	.5	1	1.5	2	2.5	3.1	3.6
PURGE RATE (GPM)							
TEMPERATURE (°C)	16.25	18.54	18.77	18.78	18.74	18.59	17.49
pH	8.06	7.89	7.85	7.85	7.87	7.88	7.85
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	0.5411	0.503	0.500	0.501	0.503	0.505	0.508
DISSOLVED OXYGEN (mg/L)	0.90	0.89	0.89	1.38	1.71	1.89	0.97
Eh(mV)Pt-AgCl ref: ORP	13.7	21.5	25.8	29.1	31.8	34.0	40.4
TURBIDITY / COLOR	9.98 clear	8.33 clear	7.78 clear	8.32 clear	8.73 clear	8.43 clear	6.26 clear
ODOR	10	10					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	10.23	8.45	10.48	12.12	14.44	15.80	15.90
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form

Date: 8/21/14

Kennedy/Jenks Consultants

Project Name: Precision Engineering
 Project Number: 1396024 .00

Well Number: MW5
 Personnel: R Lopez

STATIC WATER LEVEL (FT.): 5.77
 WATER LEVEL MEASUREMENT METHOD: interface probe
 TIME START PURGE: 1055
 TIME END PURGE: 1135
 TIME SAMPLED: 1130

MEASURING POINT DESCRIPTION: top of well
 PURGE METHOD: peristaltic pump
 PURGE DEPTH (FT.): #15

COMMENTS: Sample MW5 / Hex chrome / Metals As, Cr, Pb & Se / VOCs / Ni / TPH-Dx

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	19.87	-	5.77	=	14.1	X	0.16	0.64	1.44	=	2.25

TIME	1055	1100	1105	1110	1115	1120		
VOLUME PURGED (GAL)		.5	1	1.5	2.1	2.6		
PURGE RATE (GPM)								
TEMPERATURE (°C)		19.00	19.13	19.21	19.27	19.28		
pH		7.67	7.74	7.78	7.76	7.60		
SPECIFIC CONDUCTIVITY (uncorrected) <small>(micromhos/cm)</small>		0.509	0.517	0.517	0.574	0.674		
DISSOLVED OXYGEN (mg/L)		0.85	0.53	0.41	0.35	0.30		
Eh(mv)Pt-AgClref. <small>ORP</small>		19.8	19.1	21.7	24.8	29.4		
TURBIDITY / COLOR		9.87 clear	6.71 clear/yel	8.36 clear/yellow	8.46 clear/yellow	8.59 clear/yellow		
ODOR		no	_____					
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		6.93	7.19	7.27	7.32	7.41		
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Project Name: Precision Engineering
 Project Number: 1396024 . 00

Well Number: M16
 Personnel: R Lopez

STATIC WATER LEVEL (FT.): 11.43
 WATER LEVEL MEASUREMENT METHOD: interface probe
 TIME START PURGE: 0705
 TIME END PURGE: 0745
 TIME SAMPLED: 0740

MEASURING POINT DESCRIPTION: top of well
 PURGE METHOD: peristaltic pump
 PURGE DEPTH (FT.): 12

COMMENTS: Sample M16 / Hex chrome / Metals As, Cr, Pb & Se / VOCs / Ni / TPH-Dx

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	20.08	-	4.43	=	15.65	X	0.16	0.64	1.44	=	2.50

TIME	0705	0710	0715	0720	0725	0730		
VOLUME PURGED (GAL)		5	.9	1.4	2	2.5		
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.46	16.69	16.91	17.0	17.16		
pH		7.30	7.52	7.57	7.57	7.54		
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		3.616	3.668	3.621	3.158	3.165		
DISSOLVED OXYGEN (mg/L)		1.46	0.51	0.32	0.23	0.19		
Eh(mv)Pt-AgCl-ref.	ORP	-10.2	-22.8	-109.1	-118.8	-122.9		
TURBIDITY / COLOR		6.61 clear/yellow	6.37 light brown	6.26 brown	5.95 brown	6.07 brown		
ODOR		no	no					
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		5.57	6.14	6.65	7.42	9.12		
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Project Name: Precision Engineering

Well Number: MW7

Project Number: 12A6024 . 00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 5.87

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 1010

PURGE DEPTH (FT.): 15

TIME END PURGE: 1105

TIME SAMPLED: 1100

COMMENTS: Sample MW7 / Hex Chrome / Metals As, Cr, Pb & Se / VOCs / NW:PH-DX

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	31.49		5.87		25.62		0.16	0.64	1.44		4.1

TIME	1010	1015	1020	1025	1030	1035	1040	1045
VOLUME PURGED (GAL)		.55	1	1.5	2	2.6	3.1	3.5
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.94	17.14	17.03	18.65	16.68	14.31	16.19
pH		7.09	7.13	7.15	7.16	7.08	7.06	7.07
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		2.369	2.370	2.372	2.370	2.372	2.379	2.711
DISSOLVED OXYGEN (mg/L)		1.02	0.45	0.35	0.26	0.22	0.22	0.20
Eh(mv)Pt-AgCl-ref. ORP		5.3	8.2	11.6	14.8	17.7	19.8	24.5
TURBIDITY / COLOR		clear/5.00	5.56 clear	5.24 clear	5.49 clear	4.42 clear	4.44 clear	4.36 clear
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		9.42	10.61	11.49	12.78	13.83	14.63	15.18
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Groundwater Purge and Sample Form

Date: 8/20/11

Kennedy/Jenks Consultants

Project Name: Precision Engineering

Well Number: MW7 Cont.

Project Number: 13960241 . 00

Personnel:

STATIC WATER LEVEL (FT.):	MEASURING POINT DESCRIPTION:
WATER LEVEL MEASUREMENT METHOD:	PURGE METHOD:
TIME START PURGE:	PURGE DEPTH (FT.):
TIME END PURGE:	
TIME SAMPLED:	
COMMENTS:	

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
							0.16	0.64	1.44		

TIME	1050	1055									
VOLUME PURGED (GAL)	4	4.3									
PURGE RATE (GPM)											
TEMPERATURE (°C)	16.44	16.43									
pH	7.10	7.08									
SPECIFIC CONDUCTIVITY (uncorrected) <small>(micromhos/cm)</small>	2.814	2.760									
DISSOLVED OXYGEN (mg/L)	0.23	0.19									
ERT (mV) Pt-AgCl Ref. <small>OR?</small>	24.0	23.2									
TURBIDITY / COLOR	clear 4.59	4.25 clear									
ODOR	no	—									
DEPTH OF PURGE INTAKE (FT)											
DEPTH TO WATER DURING PURGE (FT)	15.75	16.11									
NUMBER OF CASING VOLUMES REMOVED											
DEWATERED?											

Project Name: Precision Engineering

Well Number: MWE

Project Number: 1396024 . 00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 5.53

MEASURING POINT DESCRIPTION:

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 1620

PURGE DEPTH (FT.): 12

TIME END PURGE: 1715

TIME SAMPLED: 1705

COMMENTS: Samples MWE | Hex chrome | Metals | As, Cr, Pb, Cd, Se | VOCs | NWTPH-DY

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	19.79		5.53		14.26		0.16	0.64	1.44		2.28

TIME	1620	1625	1630	1635	1640	1645	1650
VOLUME PURGED (GAL)		.4	.9	1.4	1.8	2.1	2.4
PURGE RATE (GPM)							
TEMPERATURE (°C)		17.35	17.51	17.85	18.07	18.12	17.90
pH		7.37	7.14	7.01	6.98	6.92	6.91
SPECIFIC CONDUCTIVITY (uncorrected) <small>(micromhos/cm)</small>		2,006	2,018	2,014	1,920	1,871	1,894
DISSOLVED OXYGEN (mg/L)		1.35	0.58	0.39	0.29	0.24	0.27
Eh(mv)Pt-AgClref. O2		-31.6	-55.9	-70.4	-84.1	-86.1	-85.4
TURBIDITY / COLOR		10.60 clear	2.36 clear/tan	11.22 clear/tan	22.92 clear/tan	28.57 clear/tan	30.27 clear/tan
ODOR		NO					
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)		7.25					
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Project Name: Precision Engineering

Well Number: ~~MWA~~ MWA

Project Number: 1396024 . 00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 5.84

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface rise

PURGE METHOD: peristaltic pump

TIME START PURGE: 400

PURGE DEPTH (FT.): 20

TIME END PURGE: 1445

TIME SAMPLED: 1440

COMMENTS: Sample MWA / hexchrome / Metals As, Cr, Pb + Se / VOCs / NH₄P-H-DX

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	35.72		5.84		29.88		0.16	0.64	1.44		47

TIME	1400	1405	1410	1415	1420	1425	1430	1435
VOLUME PURGED (GAL)		.8	1.4	2	2.6	3.4	4.1	4.75
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.90	16.67	16.47	16.42	16.39	16.35	16.49
pH		7.65	7.53	7.44	7.39	7.34	7.29	7.22
SPECIFIC CONDUCTIVITY (uncorrected) <small>(micromhos/cm)</small>		2.441	2.426	2.426	2.453	2.489	2.502	2.507
DISSOLVED OXYGEN (mg/L)		0.71	0.46	0.43	0.42	0.40	0.40	0.31
Eh(mV)Pt-AgCl _{ref} OR		6.2	9.4	11.2	11.4	10.2	8.2	5.6
TURBIDITY / COLOR		27.67 clear	24.05 clear	27.63 clear	30.23 clear	26.07 clear	17.73 clear	16.51 clear
ODOR		no	_____					
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		7.04	7.31	7.46	7.56	7.65	7.73	7.79
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Project Name: Precision Engineering

Well Number: MW10

Project Number: 1396024 .00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 3.93

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 1250

PURGE DEPTH (FT.): 15

TIME END PURGE: 1335

TIME SAMPLED: 1330

COMMENTS: Sample MW10 / Hex Chrome / Metals / Cr, Pb, Se / VOCs / NWTP(L-D)X

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	19.87		3.93		15.94		0.16	0.64	1.44		2.5

TIME	1250	1255	1300	1305	1310	1315	1320		
VOLUME PURGED (GAL)	.5	1	1.1	2	2.6	3.1			
PURGE RATE (GPM)									
TEMPERATURE (°C)	17.70	17.60	17.56	17.54	17.50	17.46			
pH	7.03	7.10	7.04	6.97	6.97	7.07			
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	3.409	3.774	3.718	3.689	3.669	3.675			
DISSOLVED OXYGEN (mg/L)	1.42	0.95	0.91	0.77	0.66	0.58			
Eh(mV)Pt-AgCl Ref. ORP	69.4	55.5	50.7	47.2	43.7	40.6			
TURBIDITY / COLOR	46.52 clear/tan	31.05 tan	23.60 clear/tan	27.65 clear/tan	25.10 clear/tan	23.87 clear/tan			
ODOR	no								
DEPTH OF PURGE INTAKE (FT)									
DEPTH TO WATER DURING PURGE (FT)	4.90	5.20	5.55	5.71	5.93	6.03			
NUMBER OF CASING VOLUMES REMOVED									
DEWATERED?									

Groundwater Purge and Sample Form

Date 8/21/14

Kennedy/Jenks Consultants

Project Name: Precision Engineering

Well Number: ~~MW11~~ MW11

Project Number: 13A6024 . 00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 5.42

MEASURING POINT DESCRIPTION: top of well

WATER LEVEL MEASUREMENT METHOD: interface probe

PURGE METHOD: peristaltic pump

TIME START PURGE: 0835

PURGE DEPTH (FT.): 15

TIME END PURGE: 0915

TIME SAMPLED: 0910

COMMENTS: Sample MW11 / Hex chrome / Metals As, Cr, Pb + Se / VOCs / NW TPC-DX

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	20.03		5.42		14.61		0.16	0.64	1.44		2.3

TIME	0835	0840	0845	0850	0855	0900		
VOLUME PURGED (GAL)		1.0	1.2	1.75	2.2	2.75		
PURGE RATE (GPM)								
TEMPERATURE (°C)		16.21	16.11	16.05	16.02	15.99		
pH		7.54	7.50	7.53	7.55	7.55		
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)		1.285	1.255	1.247	1.241	1.241		
DISSOLVED OXYGEN (mg/L)		1.02	0.49	0.34	0.29	0.25		
Eh(mV)Pt-AgCl-ref. ORP		7.4	-13.6	-31.3	-43.6	-51.2		
TURBIDITY / COLOR		32.04 clear	26.48 clear	19.71 clear	14.21 clear	14.91 clear		
ODOR		no						
DEPTH OF PURGE INTAKE (FT)								
DEPTH TO WATER DURING PURGE (FT)		5.84	5.89	5.80	5.71	5.93		
NUMBER OF CASING VOLUMES REMOVED								
DEWATERED?								

Project Name: Ecology Precision Engineering

Well Number: MWA

Project Number: RA6024 . 00

Personnel: R Lopez

STATIC WATER LEVEL (FT.): 5.89
 WATER LEVEL MEASUREMENT METHOD: interface probe
 TIME START PURGE: 1030
 TIME END PURGE: 1230
 TIME SAMPLED:

MEASURING POINT DESCRIPTION: top of well
 PURGE METHOD: double stage purge pump Gerdoh
 PURGE DEPTH (FT.): 35

COMMENTS: initial well development
 ~100 gal total purge

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	35.86		5.89		29.97		0.16	0.64	1.44		4.8 x 5 = 24 gal

TIME	1030-1105	1045-1104	1107-1111	1109-1124	1145-1149	1200-1205	015-1219
VOLUME PURGED (GAL)	5 gal	5 gal	5 gal	5 gal	5 gal	5 gal	5 gal
PURGE RATE (GPM)	1	~1	~1	~1	~1	1	1
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	clear @ 23ft dark @ 29ft	mil brown faint	at 35ft many fines D23ft	mil/brown few fines	tan 395.09 TSD FAU	tan & light brown 281.3 179.7	light brown 309.6 359.3 153.7
ODOR	NO	NO	NO				
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	110 fast recharge rate	14.35	6.73-15.40	7.61-19.13	7.31-18.58	8.60-19.65	8.61-17.104
NUMBER OF CASING VOLUMES REMOVED							
DEWATERED?							

Groundwater Purge and Sample Form

Date: 2/18/14

Kennedy/Jenks Consultants

Project Name: Ecology Cornet Bay

Well Number: MWA cont.

Project Number: .

Personnel: R Lopez

STATIC WATER LEVEL (FT) 65.3
 WATER LEVEL MEASUREMENT METHOD:
 TIME START PUR:
 TIME END PURGE:
 TIME SAMPLED:

MEASURING POINT DESCRIPTION:
 PURGE METHOD:
 PURGE DEPTH (FT.):

COMMENTS:

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
							0.16	0.64	1.44		

TIME	1:25 - 1:45										
VOLUME PURGED (GAL)	25										
PURGE RATE (GPM)	1										
TEMPERATURE (°C)											
pH											
SPECIFIC CONDUCTIVITY (micromhos) (uncorrected) cm											
DISSOLVED OXYGEN (mg/L)											
Eh(mv)Pt-AgCl ref.											
TURBIDITY / COLOR	grey brown → clear		69.06 45.15								
ODOR	no		60.36 59.11 55.11 50.61								
DEPTH OF PURGE INTAKE (FT)											
DEPTH TO WATER DURING PURGE (FT)	6.53 → 21.83 +D -35.73 → 21.83 35.94										
NUMBER OF CASING VOLUMES REMOVED											
DEWATERED?											

Project Name: Process Engineering
 Project Number: 139609-10 . 00

Well Number: MW10
 Personnel: R. Lopez

STATIC WATER LEVEL (FT.):
 WATER LEVEL MEASUREMENT METHOD: interface probe
 TIME START PURGE: 1240
 TIME END PURGE: 1420
 TIME SAMPLED:

MEASURING POINT DESCRIPTION: top of well
 PURGE METHOD: double stage purge pump technique
 PURGE DEPTH (FT.): 19

COMMENTS: vertical well development
~37 gal total purge, ~45 gal total discharge, turbidity
clear 33 min

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	<u>14.84</u>		<u>3.73</u>		<u>16.11</u>		<u>0.16</u>	<u>0.64</u>	<u>1.44</u>		<u>2.6 x 5 = 13 gal</u>

TIME	1240-1243	1250-1255	1300-1303	1309-1315	1333-1337	1355-1420	1455-1503
VOLUME PURGED (GAL)	<u>5</u>	<u>8</u>	<u>power (15 for pump changes)</u>	<u>~3</u>	<u>24</u>	<u>~12</u>	<u>~8</u>
PURGE RATE (GPM)	<u>~1.2</u>					<u>pump stalls</u>	<u>pump stalls</u>
TEMPERATURE (°C)							
pH							
SPECIFIC CONDUCTIVITY (uncorrected) (micromhos/cm)							
DISSOLVED OXYGEN (mg/L)							
Eh(mv)Pt-AgCl ref.							
TURBIDITY / COLOR	<u>brown still clear</u>		<u>brown still clear</u>	<u>light brown</u>	<u>240.2</u>	<u>12.4</u>	<u>light brown</u>
ODOR						<u>12.1</u>	
DEPTH OF PURGE INTAKE (FT)							
DEPTH TO WATER DURING PURGE (FT)	<u>3.73 -> 9.64</u>	<u>6.62 -> 15.42</u>	<u>12.98 -> 16.33</u>		<u>10.74 -> 11.53</u>	<u>12.04 -> 17.35</u>	<u>10.48 -> 11.82</u>
NUMBER OF CASING VOLUMES REMOVED					<u>Total depth 19.86</u>		<u>20.1984</u>
DEWATERED?						<u>yes</u>	<u>yes</u>

Groundwater Purge and Sample Form

Date: _____

Kennedy/Jenks Consultants

Project Name: _____

Well Number: ~~M-1000~~, MW10 cont

Project Number: _____

Personnel: _____

STATIC WATER LEVEL (FT.): _____

MEASURING POINT DESCRIPTION: _____

WATER LEVEL MEASUREMENT METHOD: _____

PURGE METHOD: _____

TIME START PURGE: _____

PURGE DEPTH (FT.): _____

TIME END PURGE: _____

TIME SAMPLED: _____

COMMENTS: _____

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
							0.16	0.64	1.44		

TIME	1:25-1:30										
VOLUME PURGED (GAL)	5										
PURGE RATE (GPM)	1										
TEMPERATURE (°C)											
pH											
SPECIFIC CONDUCTIVITY (uncorrected) <small>(micromhos/cm)</small>											
DISSOLVED OXYGEN (mg/L)											
Eh(mv)Pt-AgCl ref.											
TURBIDITY / COLOR	clear 33.46										
ODOR	no										
DEPTH OF PURGE INTAKE (FT)											
DEPTH TO WATER DURING PURGE (FT)	11.25 -> 12.63										
NUMBER OF CASING VOLUMES REMOVED											
DEWATERED?											

Groundwater Purge and Sample Form

Date: 8/19/14

Kennedy/Jenks Consultants

Project Name: Ecology Precision Engineering
 Project Number: 13960241 . 00

Well Number: MW 11
 Personnel: R Lopez

STATIC WATER LEVEL (FT.): 4.75
 WATER LEVEL MEASUREMENT METHOD: interface probe
 TIME START PURGE: 0845
 TIME END PURGE: 1035
 TIME SAMPLED:

MEASURING POINT DESCRIPTION: top of well
 PURGE METHOD: double stage purge pump (Geotech)
 PURGE DEPTH (FT.): 17

COMMENTS: 10AD - MEASURE TD=20.04' btop; hard

WELL VOLUME CALCULATION Fill in before purging	TOTAL DEPTH (FT.)	-	DEPTH TO WATER (FT.)	=	WATER COLUMN (FT.)	X	MULTIPLIER FOR CASING DIAMETER (IN)			=	CASING VOLUME (GAL)
							2	4	6		
	19.75	-	4.75	=	2.4	X	0.16	0.64	1.44	=	2.4 x 5 = 12

TIME	0845	1017	1035						
VOLUME PURGED (GAL)	start	80	100						
PURGE RATE (GPM)		n1	STOP						
TEMPERATURE (°C)									
pH									
SPECIFIC CONDUCTIVITY (micromhos) (uncorrected) cm									
DISSOLVED OXYGEN (mg/L)									
Eh(mv)Pt-AgCl ref.									
TURBIDITY / COLOR	orange	cloudy yellow 230	cloudy yellow 260 n1						
ODOR		no	no						
DEPTH OF PURGE INTAKE (FT)		15-17	15-17'						
DEPTH TO WATER DURING PURGE (FT)	4.75-4		7.15						
NUMBER OF CASING VOLUMES REMOVED									
DEWATERED?		no	no						

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 5/1/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: N/A
 Purge Depth (ft): N/A
 Total Discharge (gal): N/A
 Water Disposal: N/A
 Weather: Sunny

Well Number: MW-1
 Monument Type: Stickup: X (ft PVC) Flush: _____
 Well Diameter (in): 2 inch
 Well Condition: Good
 Total Casing Depth (ft): 43.57 toc
 Screened Interval (ft): 33-43 toc
 Depth to Groundwater (ft): <1' (~2.5") toc
 Depth to LNAPL (ft): N/A

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)		=	Casing Volume (gal)
<u>43.35</u>		<u>0.16</u>			<u>6.93</u>

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	
Other: Turbidity	Micro TPI	
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time	min							
Parameter (every 5 min)								
Flow Rate (gal/min)								
Volume Purged (gal)								
Water Depth (ft)								
Temperature (Celsius)								
pH								
Sp. Conductance (mS/cm)								
DO (mg/L)								
ORP (mV)								
Turbidity (NTU)								
Color								
Odor/Evidence of LNAPL								

Notes: Not sampled due to limited access.
Needs batt.

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 5/1/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: 1:30
 Purge Depth (ft): 15.5
 Total Discharge (gal): 4.25
 Water Disposal: Drum onsite
 Weather: Sunny

Well Number: MW-2
 Monument Type: Stickup: X in vault. (ft PVC) Flush: _____
 Well Diameter (in): 2"
 Well Condition: Good
 Total Casing Depth (ft): 19.54 toc
 Screened Interval (ft): _____ toc
 Depth to Groundwater (ft): 4.15 toc
 Depth to LNAPL (ft): N/A

Well Volume Calculation:

Water Column (ft)	Multiplier for Casing Diameter (in)			
<u>15</u>	2	0.16	=	Casing Volume (gal) <u>2.4</u>
	4	0.64		
	6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	<u>4/30/14 0650</u>
Other: Turbidity	Micro TPI	<u>4/30/14 0700</u>
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time	1200	1205	1210	1215	1225	1300		
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	<u>0.125</u>	<u>0.125</u>	<u>0.125</u>	<u>0.125</u>	<u>0.125</u>	<u>0.125</u>		
Volume Purged (gal)	<u>0.5</u>	<u>0.75</u>	<u>1.0</u>	<u>1.25</u>	<u>1.5</u>	<u>2.0</u>		
Water Depth (ft)	<u>9.66</u>	<u>10.75</u>	<u>12.59</u>	<u>15.09</u>	<u>15.54</u>	<u>17.5</u>		
Temperature (Celsius)	<u>16.33</u>	<u>16.04</u>	<u>16.42</u>	<u>17.47</u>	<u>17.65</u>	<u>23.19</u>		
pH	<u>6.91</u>	<u>6.88</u>	<u>6.85</u>	<u>6.82</u>	<u>6.82</u>	<u>6.82</u>		
Sp. Conductance (mS/cm)	<u>3394</u>	<u>3389</u>	<u>3389</u>	<u>3388</u>	<u>3400</u>	<u>3430</u>		
DO (mg/L)	<u>1.30</u>	<u>0.94</u>	<u>0.60</u>	<u>0.49</u>	<u>0.43</u>	<u>0.49</u>		
ORP (mV)	<u>-119.7</u>	<u>-114.5</u>	<u>-115.6</u>	<u>-115.0</u>	<u>-114.8</u>	<u>-110.0</u>		
Turbidity (NTU)	<u>25.44</u>	<u>22.52</u>	<u>15.99</u>	<u>14.19</u>	<u>—</u>	<u>37.17</u>		
Color	<u>Light Yellow</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>		
Odor/Evidence of LNAPL	<u>No O/S</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>		

Notes: Well in good condition, had to cut off bolt. In vault (~1 ft deep). Well has slow recharge. Had to stop purge, restarted purge at 1300 and collected sample at purge depth ~19 ft below TOC.
 Needs new bolt

2

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 4/30/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: 1045
 Purge Depth (ft): 15
 Total Discharge (gal): 3.75
 Water Disposal: Down onsite
 Weather: sunny

Well Number: MW-3
 Monument Type: Stickup: X (ft PVC) Flush: _____
 Well Diameter (in): 2 inch
 Well Condition: _____

Total Casing Depth (ft): 20.17 toc
 Screened Interval (ft): _____ toc
 Depth to Groundwater (ft): 5.35 toc
 Depth to LNAPL (ft): N/A

Reference:
 TOC

Well Volume Calculation:

Water Column (ft)	15
-------------------	----

Multiplier for Casing Diameter (in)	2	0.16
	4	0.64
	6	1.44

Casing Volume (gal)	2.4
---------------------	-----

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/22/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time	1603	1607	1612	1617	1622	1627	1632	1641
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.128	0.125	0.125	0.125
Volume Purged (gal)	0.25	0.5	0.75	1	1.5	2.25	2.75	3.25
Water Depth (ft)	6.34	6.57	6.61	6.58	6.57	6.58	6.94	6.57
Temperature (Celsius)	16.70	15.86	15.59	15.77	15.68	15.67	15.74	15.79
pH	7.45	7.04	6.98	6.95	6.92	6.88	6.85	6.81
Sp. Conductance (mS/cm)	0.434	0.426	0.420	0.414	0.414	0.413	0.413	0.412
DO (mg/L) %	13.5	8.7	8.2	7.9	7.1	6.4	5.3	4.2
ORP (mV)	-87.6	-38.5	-102.4	-110.2	-112.6	-113.4	-117.6	-122.0
Turbidity (NTU)	104.7	93.8	66.4	67.08	58.80	46.53	40.08	33.61
Color	light yellow							
Odor/Evidence of LNAPL	None							

Notes: Water is light yellow, transparent with light brown particulates.
Needs new bolt.

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 5/1/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: ~~20:50~~ 16:30
 Purge Depth (ft): 20 ft
 Total Discharge (gal): 3.5
 Water Disposal: Drum onsite
 Weather: sunny

Well Number: MW-4
 Monument Type: Stickup: X (ft PVC) Flush:
 Well Diameter (in): 2 inch
 Well Condition: Fair, stick up is tilted; PVC is broken in places
 Total Casing Depth (ft): 25.74 toc
 Screened Interval (ft): toc
 Depth to Groundwater (ft): 2.40 toc
 Depth to LNAPL (ft): N/A

Well Volume Calculation:

Water Column (ft)	*	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
			4	0.64		
			6	1.44		
<u>23.3</u>		<u>0.16</u>				<u>3.73</u>

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

1555	Time	1600	1605	1610	1615	1620	1625	1630	
Parameter (every 5 min)		min	min						
Flow Rate (gal/min)		0.125	0.125	0.125	0.125	0.125	0.125		
Volume Purged (gal)		0.25	0.5	1	1.5	2	2.5	3.0	
Water Depth (ft)		6.44	7.15	7.10	10.35	11.34	12.69	13.57	
Temperature (Celsius)		14.71	14.49	14.29	14.44	14.37	14.33	14.38	
pH		7.84	7.85	7.90	7.93	7.95	7.97	7.98	
Sp. Conductance (mS/cm)		0.539	0.538	0.537	0.538	0.538	0.538	0.537	
DO (mg/L)		1.25	0.96	0.60	0.57	0.59	0.62	0.64	
ORP (mV)		-47.0	-49.6	-48.4	-50.0	-50.4	-50.3	-50.4	
Turbidity (NTU)		14.17	12.87	11.23	9.45	9.04	7.86	6.58	
Color		Clear							
Odor/Evidence of LNAPL		NOO/S							

Notes: Clear with black sediment (suspended)
Needs New bolt

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 5/1/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: 1500 / Dwg MW-10 @ 1510
 Purge Depth (ft): _____
 Total Discharge (gal): 4.5
 Water Disposal: Drum onsite
 Weather: sunny

Well Number: MW-5
 Monument Type: Stickup: _____ (ft PVC) Flush: X
 Well Diameter (in): 2 in
 Well Condition: Good
 Total Casing Depth (ft): 19.90 toc
 Screened Interval (ft): 10 toc
 Depth to Groundwater (ft): 4.52 toc
 Depth to LNAPL (ft): N/A

Reference:
 TOC

Well Volume Calculation:

Water Column (ft)	Multiplier for Casing Diameter (in)			Casing Volume (gal)
15.4	2	0.16	=	246
	4	0.64		
	6	1.44		

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0630
Other: Turbidity	Micro TPI	4/30/14 0700
Other		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time	1400	1405	1410	1415	1420	1430	1440	1445	1450	1455
Parameter (every 5 min)	min	min	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Volume Purged (gal)	0.25	0.5	1	1.25	2	2.5	3	3.5	4	4.5
Water Depth (ft)	5.34	5.44	5.23	5.25	5.69	5.73	5.74	5.78	5.78	5.79
Temperature (Celsius)	18.52	18.37	18.38	18.36	18.25	18.24	18.25	18.3	18.3	18.31
pH	8.26	8.13	8.06	8.00	7.71	7.44	7.31	7.22	7.18	7.18
Sp. Conductance (mS/cm)	0.545	0.533	0.532	0.538	0.603	0.637	0.652	0.676	0.675	0.675
DO (mg/L)	0.84	0.9	1.10	1.57	0.16	0.57	0.15	1.57	1.53	1.53
ORP (mV)	-54.8	-53.3	-51.9	-49.5	-39.0	-30.2	26.1	-22.1	-20.5	-20.5
Turbidity (NTU)	20.62	9.03	7.67	5.84	4.31	3.71	2.91	5.43	5.24	5.24
Color	clear				slightly yellow	yellow				
Odor/Evidence of LNAPL	No O/S	No O/S								

Notes: First gallon was clear, steadily getting brighter yellow with time

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 4/30/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: 1335
 Purge Depth (ft): 15ft
 Total Discharge (gal): 3.25
 Water Disposal: Drum onsite
 Weather: Sunny

Well Number: MW-6
 Monument Type: Stickup (ft PVC) Flush: X
 Well Diameter (in): 2 inch
 Well Condition: Good
 Total Casing Depth (ft): 20.07 toc
 Screened Interval (ft): 10-20 ft toc
 Depth to Groundwater (ft): 4.97 toc
 Depth to LNAPL (ft): N/A
 Well Volume Calculation:

Water Column (ft)
15.0

Multiplier for Casing Diameter (in)	2	0.16
	4	0.64
	6	1.44

Casing Volume (gal)
2.4

Reference:
TOC

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time	1255	1300	1307	1318	1326	1331		
Parameter (every 5 min)	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125		
Volume Purged (gal)	0.25	0.5	1.0	1.75	2.25	2.75		
Water Depth (ft)	7.66	5.07	6.46	6.34	7.64	8.23		
Temperature (Celsius)	17.02	15.93	15.84	16.19	16.48	16.54		
pH	6.81	6.95	7.01	7.02	7.02	7.03		
Sp. Conductance (mS/cm)	3.951	3.984	3.972	3.968	3.963	3.960		
DO (mg/L)	10.17	2.35	4.18	0.52	0.30	0.35		
ORP (mV)	-1678	-1725	-1633	-1620	-1718	-1693		
Turbidity (NTU)	58.68	41.71	36.54	32.88	41.54	36.85		
Color	Eushyonyl →		Yellow →		→			
Odor/Evidence of LNAPL	No				→			

Notes: Rubber gasket disintegrated. High sediment & water accumulation in well head. Evidence of fine, suspended sediment.

Groundwater Purge and Sample Form (Minimal Drawdown)

Kennedy/Jenks Consultants

Date: 4/30/14
 Project Name: Precision Engineering Facility
 Project Number: 1396024.00
 Sampling Personnel: DKR
 Water Level Meter: Geotech Interface Probe
 Purging Equipment: Geopump Peristaltic w/ New PE & Silicon Tubing
 Sampling Time: 1530
 Purge Depth (ft): 26 ft
 Total Discharge (gal): 5
 Water Disposal: Down drain 5/2/14
 Weather: Sunny, 72°F

Well Number: MW 7
 Monument Type: Stickup (ft PVC) Flush:
 Well Diameter (in): 2 inch
 Well Condition: _____
 Total Casing Depth (ft): 31.40 toc
 Screened Interval (ft): _____ toc
 Depth to Groundwater (ft): 5.41 toc
 Depth to LNAPL (ft): N/A

Well Volume Calculation:

Water Column (ft)	Multiplier for Casing Diameter (in)	2	0.16	=	Casing Volume (gal)
26	4	0.64			
	6	1.44			
	0.10			4.10	

Water Quality Meter(s)	Model	Calibration Date/Time
Temp/pH/SC/ORP/DO:	YSI 556	4/30/14 0650
Other: Turbidity	Micro TPI	4/30/14 0700
Other:		

QA/QC Samples		
Type	Sample ID	Time

Sample ID	Sample Containers				Field Filtered	Turbidity/Color	Analysis Requested	MS/MSD & Comments
	No.	Type	Pres.	Vol.				

Time	1415	1420	1425	1435	1445	1455	1505	1515	1525
Parameter (every 5 min)	min	min	min	min	min	min	min	min	min
Flow Rate (gal/min)	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125
Volume Purged (gal)	0.25	0.5	1	1.75	2.5	3.0	3.75	4.5	4.5
Water Depth (ft)	7.11	8.37	9.40	10.58	11.38	11.97	12.24	12.4	12.4
Temperature (Celsius)	17.81	17.54	17.41	17.49	17.53	17.62	17.82	17.91	17.91
pH	6.98	6.88	6.84	6.80	6.89	6.97	7.02	7.04	7.04
Sp. Conductance (mS/cm)	2.487	2.646	3.068	3.140	2.825	2.547	2.465	2.443	2.443
DO (mg/L)	10.81	4.31	3.01	2.05	1.49	1.24	1.31	1.27	1.27
ORP (mV)	-39.5	-36.0	-41.0	-42.9	-43.4	42.5	-43.7	-44.0	-44.0
Turbidity (NTU)	5.40	3.19	1.08	0.89	0.82	0.07	0.90	0.82	0.82
Color	clear	clear	clear	clear					
Odor/Evidence of LNAPL	No O/S	No O/S	No O/S	No O/S					

Notes:

Attachment 2

Laboratory Analytical Reports and Chain-of-Custody Documentation



Analytical Resources, Incorporated
Analytical Chemists and Consultants

9 May 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering, 1396024*00
ARI Job No.: YI59

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received three water samples on May 1, 2014. The samples were analyzed for hexavalent chromium as requested.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW-6. Hexavalent chromium was not recovered following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.


Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YI59

Enclosures



Cooler Receipt Form

ARI Client Kennedy Jenks
 COC No(s): _____ (NA)
 Assigned ARI Job No: Y159

Project Name: Precision Engineering
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 2.3
 Time: 815

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90817952

Cooler Accepted by: AV Date: 5/1/14 Time: 815

Complete custody forms and attach all shipping documents

Log-In Phase:

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

Samples Logged by AV Date: 5/1/14 Time: 840

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

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



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

Sample ID Cross Reference Report



ARI Job No: YI59
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. MW-6	YI59A	14-8319	Water	04/30/14 13:35	05/01/14 08:15
2. MW-7	YI59B	14-8320	Water	04/30/14 15:30	05/01/14 08:15
3. MW-3	YI59C	14-8321	Water	04/30/14 16:45	05/01/14 08:15



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



**Analytical Resources,
Incorporated**
Analytical Chemists and
Consultants

- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



**Analytical Resources,
Incorporated**
Analytical Chemists and
Consultants

Geotechnical Data

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

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B



Data Release Authorized: 
Reported: 05/02/14
Date Received: 05/01/14
Page 1 of 1

QC Report No: YI59-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-6 YI59A 14-8319	04/30/14	Water	05/01/14	0.010	< 0.010 U
MW-7 YI59B 14-8320	04/30/14	Water	05/01/14	0.010	< 0.010 U
MW-3 YI59C 14-8321	04/30/14	Water	05/01/14	0.010	0.028

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	05/01/14 08:45	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	05/01/14 08:45	mg/L	0.625	0.630	99.2%

REPLICATE RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 05/02/14

A handwritten signature in black ink, appearing to be 'JK', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YI59A Client ID: MW-6					
Hexavalent Chromium	05/01/14	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
YI59-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YI59A Client ID: MW-6						
Hexavalent Chromium	05/01/14	mg/L	< 0.010	< 0.010 U	0.063	NA



Analytical Resources, Incorporated
Analytical Chemists and Consultants

9 May 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering, 1396024*00
ARI Job No.: YI78

Dear Jessica:

Please find enclosed the original Chain-of-Custody record (COC) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received eight water samples and one trip blank on May 1, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCALs that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The percent recoveries for several compounds were high following the analyses of the LCS/LCSD associated with the VOC analyses of these samples. Since none of these compounds were detected in any sample associated with these LCS/LCSD, the high biases do not compromise any LOQ. No corrective actions were taken.

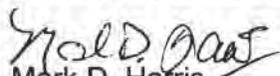
A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW-8. The percent recovery for hexavalent chromium was low following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.


Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YI78

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **1578** Turn-around Requested: _____

ARI Client Company: **Kennedy Jenks** Phone: **253-835-6400**

Client Contact: **Jessica Faragalli**

Client Project Name: **Precision Engineering**

Client Project #: **1396024*00** Samplers: **JF & Diane Ranch**

Page: **1** of **1**

Date: **5/1/14** Ice Present? **Y**

No. of Coolers: **2** Cooler Temps: **3.8, 3.7**

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



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
					KMTPH-DX	Metals	VOCs	Hex Chrome	
MW-6	4/30/14	1335	GW	6	✓	✓	✓		Metals: Cr, Pb, As & Se
MW-7	4/30/14	1530	GW	6	✓	✓	✓		Very aerated
MW-3	4/30/14	11045	GW	6	✓	✓	✓		
MW-8	5/1/14	1035	GW	6	✓	✓	✓		moderately aerated
MW-2	5/1/14	1300	GW	6	✓	✓	✓		
MW-5	5/1/14	1400	GW	6	✓	✓	✓		
MW-10	5/1/14	1410	GW	6	✓	✓	✓		
MW-4	5/1/14	1630	GW	6	✓	✓	✓		
Trip Blank	5/1/14			2					

Comments/Special Instructions: _____

Relinquished by: **Diane Ranch** (Signature)
 Printed Name: **Diane Ranch**
 Company: **Kennedy Jenks Consultants**

Received by: _____ (Signature)
 Printed Name: _____
 Company: _____

Date & Time: **5/1/14 1730**

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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



Cooler Receipt Form

ARI Client Kennedy Jenks
COC No(s): _____ NA
Assigned ARI Job No: Y178

Project Name: Precision Engineering
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
Were custody papers included with the cooler? YES NO
Were custody papers properly filled out (ink, signed, etc.) YES NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 3.8 3.7
Time: _____
If cooler temperature is out of compliance fill out form 00070F
Cooler Accepted by: JM Date: 5/1/14 Time: 1730 Temp Gun ID#: 90877952

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
Was sufficient ice used (if appropriate)? NA YES NO
Were all bottles sealed in individual plastic bags? YES NO
Did all bottles arrive in good condition (unbroken)? YES NO
Were all bottle labels complete and legible? YES NO
Did the number of containers listed on COC match with the number of containers received? YES NO
Did all bottle labels and tags agree with custody papers? YES NO
Were all bottles used correct for the requested analyses? YES NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO
Were all VOC vials free of air bubbles? NA YES NO
Was sufficient amount of sample sent in each bottle? YES NO
Date VOC Trip Blank was made at ARI NA 4-30-14
Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____
Samples Logged by: TB Date: 5-2-14 Time: 810

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

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

Additional Notes, Discrepancies, & Resolutions: NA W-6 2 Lg
TB- 2 pb

By: TC Date: 5-2-14

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

Y178: 00073



ARI Job No: YI78

PC: Mark
VTSR: 05/02/14

Inquiry Number: NONE
 Analysis Requested: 05/02/14
 Contact: Faragalli, Jessica
 Client: Kennedy Jenks Consultants, Inc.
 Logged by: TS
 Sample Set Used: Yes-481
 Validatable Package: No
 Deliverables:

Project #: 1396024*00
 Project: Precision Engineering
 Sample Site:
 SDG No:
 Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET DOC FLT FLT	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-8405 YI78A	MW-6						TOT Pass												
14-8406 YI78B	MW-7						TOT Pass												
14-8407 YI78C	MW-3						TOT Pass												
14-8408 YI78D	MW-8						TOT Pass												
14-8409 YI78E	MW-2						TOT Pass												
14-8410 YI78F	MW-5						TOT Pass												
14-8411 YI78G	MW-10						TOT Pass												
14-8412 YI78H	MW-4						TOT Pass												

4 14 14 02 14 05 05 05 05 14

Checked By TS Date 5-2-14

Sample ID Cross Reference Report



ARI Job No: YI78
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. MW-6	YI78A	14-8405	Water	04/30/14 13:35	05/02/14 17:30
2. MW-7	YI78B	14-8406	Water	04/30/14 15:30	05/02/14 17:30
3. MW-3	YI78C	14-8407	Water	04/30/14 16:45	05/02/14 17:30
4. MW-8	YI78D	14-8408	Water	05/01/14 10:35	05/02/14 17:30
5. MW-2	YI78E	14-8409	Water	05/01/14 13:00	05/02/14 17:30
6. MW-5	YI78F	14-8410	Water	05/01/14 14:00	05/02/14 17:30
7. MW-10	YI78G	14-8411	Water	05/01/14 14:10	05/02/14 17:30
8. MW-4	YI78H	14-8412	Water	05/01/14 16:30	05/02/14 17:30
9. Trip Blanks	YI78I	14-8413	Water	04/30/14	05/02/14 17:30



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



**Analytical Resources,
Incorporated**
Analytical Chemists and
Consultants

- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-6

Page 1 of 2

SAMPLE

Lab Sample ID: YI78A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8405

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized:

Date Sampled: 04/30/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 2.00 mL

Date Analyzed: 05/02/14 18:00

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-6

Page 2 of 2

SAMPLE

Lab Sample ID: YI78A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8405

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/02/14 18:00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	100%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-7

Page 1 of 2

SAMPLE

Lab Sample ID: YI78B

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8406

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *[Signature]*

Date Sampled: 04/30/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 05/02/14 16:04

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-7

Page 2 of 2

SAMPLE

Lab Sample ID: YI78B

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8406

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/02/14 16:04

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	98.5%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-3

Page 1 of 2

SAMPLE

Lab Sample ID: YI78C

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8407

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *[Signature]*

Date Sampled: 04/30/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 05/02/14 16:32

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW-3

SAMPLE

Lab Sample ID: YI78C

LIMS ID: 14-8407

Matrix: Water

Date Analyzed: 05/02/14 16:32

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	99.2%
Bromofluorobenzene	98.0%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-8

Page 1 of 2

SAMPLE

Lab Sample ID: YI78D

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8408

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized:

Date Sampled: 05/01/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 2.00 mL

Date Analyzed: 05/02/14 18:30

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-8

Page 2 of 2

SAMPLE

Lab Sample ID: YI78D

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8408

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/02/14 18:30

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	96.9%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-2

Page 1 of 2

SAMPLE

Lab Sample ID: YI78E

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8409

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *AS*

Date Sampled: 05/01/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 2.00 mL

Date Analyzed: 05/02/14 19:01

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	5.0	< 5.0	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	5.0	< 5.0	U
75-00-3	Chloroethane	5.0	< 5.0	U
75-09-2	Methylene Chloride	10	< 10	U
67-64-1	Acetone	50	< 50	U
75-15-0	Carbon Disulfide	5.0	< 5.0	U
75-35-4	1,1-Dichloroethene	5.0	< 5.0	U
75-34-3	1,1-Dichloroethane	5.0	< 5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	< 5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	< 5.0	U
67-66-3	Chloroform	5.0	< 5.0	U
107-06-2	1,2-Dichloroethane	5.0	< 5.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	5.0	< 5.0	U
56-23-5	Carbon Tetrachloride	5.0	< 5.0	U
108-05-4	Vinyl Acetate	25	< 25	U
75-27-4	Bromodichloromethane	5.0	< 5.0	U
78-87-5	1,2-Dichloropropane	5.0	< 5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	< 5.0	U
79-01-6	Trichloroethene	5.0	< 5.0	U
124-48-1	Dibromochloromethane	5.0	< 5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	< 5.0	U
71-43-2	Benzene	5.0	< 5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	< 5.0	U
110-75-8	2-Chloroethylvinylether	25	< 25	U
75-25-2	Bromoform	5.0	< 5.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	5.0	< 5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	< 5.0	U
108-88-3	Toluene	5.0	< 5.0	U
108-90-7	Chlorobenzene	5.0	< 5.0	U
100-41-4	Ethylbenzene	5.0	< 5.0	U
100-42-5	Styrene	5.0	< 5.0	U
75-69-4	Trichlorofluoromethane	5.0	< 5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	10	< 10	U
179601-23-1	m,p-Xylene	10	< 10	U
95-47-6	o-Xylene	5.0	< 5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	< 5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	< 5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	< 5.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW-2

SAMPLE



Lab Sample ID: YI78E

LIMS ID: 14-8409

Matrix: Water

Date Analyzed: 05/02/14 19:01

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	10	< 10	U
107-13-1	Acrylonitrile	25	< 25	U
563-58-6	1,1-Dichloropropene	5.0	< 5.0	U
74-95-3	Dibromomethane	5.0	< 5.0	U
630-20-6	1,1,1,2-Tetrachloroethane	5.0	< 5.0	U
96-12-8	1,2-Dibromo-3-chloropropane	25	< 25	U
96-18-4	1,2,3-Trichloropropane	10	< 10	U
110-57-6	trans-1,4-Dichloro-2-butene	25	< 25	U
108-67-8	1,3,5-Trimethylbenzene	5.0	< 5.0	U
95-63-6	1,2,4-Trimethylbenzene	5.0	< 5.0	U
87-68-3	Hexachlorobutadiene	25	< 25	U
106-93-4	1,2-Dibromoethane	5.0	< 5.0	U
74-97-5	Bromochloromethane	5.0	< 5.0	U
594-20-7	2,2-Dichloropropane	5.0	< 5.0	U
142-28-9	1,3-Dichloropropane	25	< 25	U
98-82-8	Isopropylbenzene	5.0	< 5.0	U
103-65-1	n-Propylbenzene	5.0	< 5.0	U
108-86-1	Bromobenzene	5.0	< 5.0	U
95-49-8	2-Chlorotoluene	5.0	< 5.0	U
106-43-4	4-Chlorotoluene	5.0	< 5.0	U
98-06-6	tert-Butylbenzene	5.0	< 5.0	U
135-98-8	sec-Butylbenzene	5.0	< 5.0	U
99-87-6	4-Isopropyltoluene	5.0	< 5.0	U
104-51-8	n-Butylbenzene	5.0	< 5.0	U
120-82-1	1,2,4-Trichlorobenzene	25	< 25	U
91-20-3	Naphthalene	25	< 25	U
87-61-6	1,2,3-Trichlorobenzene	25	< 25	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	97.0%
Bromofluorobenzene	94.9%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-5

Page 1 of 2

SAMPLE

Lab Sample ID: YI78F

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8410

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *M*

Date Sampled: 05/01/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 05/05/14 14:33

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	3.1	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-5

Page 2 of 2

SAMPLE

Lab Sample ID: YI78F

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8410

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/05/14 14:33

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	102%
Bromofluorobenzene	96.5%
d4-1,2-Dichlorobenzene	99.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

**Sample ID: MW-10
SAMPLE**

Page 1 of 2

Lab Sample ID: YI78G
LIMS ID: 14-8411
Matrix: Water
Data Release Authorized: 
Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 05/05/14 15:02

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	3.6	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-10

Page 2 of 2

SAMPLE

Lab Sample ID: YI78G

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8411

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/05/14 15:02

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.5%
Bromofluorobenzene	96.2%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW-4

Page 1 of 2

SAMPLE

Lab Sample ID: YI78H

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8412

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *5*

Date Sampled: 05/01/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 05/02/14 17:01

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW-4

SAMPLE

Lab Sample ID: YI78H

LIMS ID: 14-8412

Matrix: Water

Date Analyzed: 05/02/14 17:01

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	99.2%
Bromofluorobenzene	98.8%
d4-1,2-Dichlorobenzene	98.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Trip Blanks
SAMPLE

Page 1 of 2

Lab Sample ID: YI78I

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8413

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *B*

Date Sampled: 04/30/14

Reported: 05/06/14

Date Received: 05/01/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 05/02/14 17:29

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

**Sample ID: Trip Blanks
SAMPLE**

Page 2 of 2

Lab Sample ID: YI78I

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8413

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/02/14 17:29

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	100%
Bromofluorobenzene	97.0%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-050214A

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-050214A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8405

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *AS*

Date Sampled: NA

Reported: 05/06/14

Date Received: NA

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 05/02/14 12:55

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2



Sample ID: MB-050214A

METHOD BLANK

Lab Sample ID: MB-050214A

LIMS ID: 14-8405

Matrix: Water

Date Analyzed: 05/02/14 12:55

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	100%
Bromofluorobenzene	97.7%
d4-1,2-Dichlorobenzene	99.3%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-050514A

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-050514A
 LIMS ID: 14-8410
 Matrix: Water
 Data Release Authorized: *B*
 Reported: 05/06/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00
 Date Sampled: NA
 Date Received: NA

Instrument/Analyst: NT3/PAB
 Date Analyzed: 05/05/14 14:05

Sample Amount: 10.0 mL
 Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-050514A

METHOD BLANK

Page 2 of 2

Lab Sample ID: MB-050514A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8410

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 05/05/14 14:05

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	98.9%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-050214A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050214A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8405

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 05/06/14

Date Received: NA

Instrument/Analyst LCS: NT3/PAB

Sample Amount LCS: 10.0 mL

LCSD: NT3/PAB

LCSD: 10.0 mL

Date Analyzed LCS: 05/02/14 11:58

Purge Volume LCS: 10.0 mL

LCSD: 05/02/14 12:26

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.9	10.0	109%	10.2	10.0	102%	6.6%
Bromomethane	11.4	10.0	114%	11.3	10.0	113%	0.9%
Vinyl Chloride	11.3	10.0	113%	10.4	10.0	104%	8.3%
Chloroethane	11.8	10.0	118%	8.47	10.0	84.7%	32.9%
Methylene Chloride	10.6	10.0	106%	10.0	10.0	100%	5.8%
Acetone	48.6	50.0	97.2%	47.3	50.0	94.6%	2.7%
Carbon Disulfide	11.0	10.0	110%	10.6	10.0	106%	3.7%
1,1-Dichloroethene	9.32	10.0	93.2%	9.67	10.0	96.7%	3.7%
1,1-Dichloroethane	10.7	10.0	107%	10.7	10.0	107%	0.0%
trans-1,2-Dichloroethene	10.2	10.0	102%	10.3	10.0	103%	1.0%
cis-1,2-Dichloroethene	11.0	10.0	110%	10.4	10.0	104%	5.6%
Chloroform	10.4	10.0	104%	9.43	10.0	94.3%	9.8%
1,2-Dichloroethane	11.1	10.0	111%	10.8	10.0	108%	2.7%
2-Butanone	61.8	50.0	124%	58.8	50.0	118%	5.0%
1,1,1-Trichloroethane	10.1	10.0	101%	9.59	10.0	95.9%	5.2%
Carbon Tetrachloride	11.7	10.0	117%	11.0	10.0	110%	6.2%
Vinyl Acetate	11.9	10.0	119%	11.4	10.0	114%	4.3%
Bromodichloromethane	11.2	10.0	112%	10.6	10.0	106%	5.5%
1,2-Dichloropropane	11.2	10.0	112%	10.6	10.0	106%	5.5%
cis-1,3-Dichloropropene	12.0	10.0	120%	11.4	10.0	114%	5.1%
Trichloroethene	10.8	10.0	108%	10.6	10.0	106%	1.9%
Dibromochloromethane	11.6	10.0	116%	11.3	10.0	113%	2.6%
1,1,2-Trichloroethane	11.2	10.0	112%	10.7	10.0	107%	4.6%
Benzene	11.3	10.0	113%	10.8	10.0	108%	4.5%
trans-1,3-Dichloropropene	12.4	10.0	124%	11.7	10.0	117%	5.8%
2-Chloroethylvinylether	11.7	10.0	117%	11.5	10.0	115%	1.7%
Bromoform	12.5	10.0	125%	12.1	10.0	121%	3.3%
4-Methyl-2-Pentanone (MIBK)	60.9	50.0	122%	59.8	50.0	120%	1.8%
2-Hexanone	59.4	50.0	119%	59.1	50.0	118%	0.5%
Tetrachloroethene	10.7	10.0	107%	10.5	10.0	105%	1.9%
1,1,2,2-Tetrachloroethane	12.2	10.0	122%	12.0	10.0	120%	1.7%
Toluene	11.3	10.0	113%	10.9	10.0	109%	3.6%
Chlorobenzene	11.3	10.0	113%	11.0	10.0	110%	2.7%
Ethylbenzene	11.6	10.0	116%	11.2	10.0	112%	3.5%
Styrene	11.0	10.0	110%	10.9	10.0	109%	0.9%
Trichlorofluoromethane	11.7	10.0	117%	10.9	10.0	109%	7.1%
1,1,2-Trichloro-1,2,2-trifluoroethane	10.2 Q	10.0	102%	9.25 Q	10.0	92.5%	9.8%
m,p-Xylene	22.4	20.0	112%	21.9	20.0	110%	2.3%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-050214A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050214A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8405

Project: Precision Engineering

Matrix: Water

1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.9	10.0	109%	10.6	10.0	106%	2.8%
1,2-Dichlorobenzene	11.4	10.0	114%	10.9	10.0	109%	4.5%
1,3-Dichlorobenzene	11.5	10.0	115%	10.9	10.0	109%	5.4%
1,4-Dichlorobenzene	11.4	10.0	114%	10.8	10.0	108%	5.4%
Acrolein	89.6 Q	50.0	179%	91.9 Q	50.0	184%	2.5%
Iodomethane	12.9 Q	10.0	129%	11.1 Q	10.0	111%	15.0%
Bromoethane	10.9	10.0	109%	9.96	10.0	99.6%	9.0%
Acrylonitrile	10.3	10.0	103%	9.98	10.0	99.8%	3.2%
1,1-Dichloropropene	11.1	10.0	111%	10.5	10.0	105%	5.6%
Dibromomethane	10.7	10.0	107%	10.8	10.0	108%	0.9%
1,1,1,2-Tetrachloroethane	11.5	10.0	115%	11.2	10.0	112%	2.6%
1,2-Dibromo-3-chloropropane	11.9	10.0	119%	11.9	10.0	119%	0.0%
1,2,3-Trichloropropane	11.5	10.0	115%	11.2	10.0	112%	2.6%
trans-1,4-Dichloro-2-butene	11.9	10.0	119%	11.4	10.0	114%	4.3%
1,3,5-Trimethylbenzene	11.5	10.0	115%	11.3	10.0	113%	1.8%
1,2,4-Trimethylbenzene	11.8	10.0	118%	11.3	10.0	113%	4.3%
Hexachlorobutadiene	12.3	10.0	123%	11.5	10.0	115%	6.7%
1,2-Dibromoethane	11.2	10.0	112%	11.1	10.0	111%	0.9%
Bromochloromethane	10.8	10.0	108%	10.5	10.0	105%	2.8%
2,2-Dichloropropane	11.8	10.0	118%	10.8	10.0	108%	8.8%
1,3-Dichloropropane	11.1	10.0	111%	10.7	10.0	107%	3.7%
Isopropylbenzene	11.8	10.0	118%	11.3	10.0	113%	4.3%
n-Propylbenzene	11.8	10.0	118%	11.4	10.0	114%	3.4%
Bromobenzene	11.5	10.0	115%	11.0	10.0	110%	4.4%
2-Chlorotoluene	11.4	10.0	114%	10.2	10.0	102%	11.1%
4-Chlorotoluene	11.5	10.0	115%	11.4	10.0	114%	0.9%
tert-Butylbenzene	11.5	10.0	115%	11.1	10.0	111%	3.5%
sec-Butylbenzene	11.8	10.0	118%	11.4	10.0	114%	3.4%
4-Isopropyltoluene	11.6	10.0	116%	11.3	10.0	113%	2.6%
n-Butylbenzene	12.1	10.0	121%	11.7	10.0	117%	3.4%
1,2,4-Trichlorobenzene	12.8	10.0	128%	12.4	10.0	124%	3.2%
Naphthalene	16.0 Q	10.0	160%	15.9 Q	10.0	159%	0.6%
1,2,3-Trichlorobenzene	13.2	10.0	132%	13.2	10.0	132%	0.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	99.1%	99.6%
d8-Toluene	99.8%	100%
Bromofluorobenzene	97.5%	97.5%
d4-1,2-Dichlorobenzene	102%	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-050514A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050514A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8410

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: 

Date Sampled: NA

Reported: 05/06/14

Date Received: NA

Instrument/Analyst LCS: NT3/PAB

Sample Amount LCS: 10.0 mL

LCSD: NT3/PAB

LCSD: 10.0 mL

Date Analyzed LCS: 05/05/14 12:16

Purge Volume LCS: 10.0 mL

LCSD: 05/05/14 12:45

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.5	10.0	105%	10.4	10.0	104%	1.0%
Bromomethane	10.9	10.0	109%	11.5	10.0	115%	5.4%
Vinyl Chloride	11.0	10.0	110%	11.0	10.0	110%	0.0%
Chloroethane	9.61	10.0	96.1%	10.2	10.0	102%	6.0%
Methylene Chloride	10.6	10.0	106%	10.7	10.0	107%	0.9%
Acetone	49.3	50.0	98.6%	52.2	50.0	104%	5.7%
Carbon Disulfide	10.8	10.0	108%	10.9	10.0	109%	0.9%
1,1-Dichloroethene	9.87	10.0	98.7%	10.5	10.0	105%	6.2%
1,1-Dichloroethane	11.2	10.0	112%	10.6	10.0	106%	5.5%
trans-1,2-Dichloroethene	10.4	10.0	104%	10.7	10.0	107%	2.8%
cis-1,2-Dichloroethene	10.7	10.0	107%	10.8	10.0	108%	0.9%
Chloroform	11.0	10.0	110%	11.0	10.0	110%	0.0%
1,2-Dichloroethane	11.0	10.0	110%	11.0	10.0	110%	0.0%
2-Butanone	53.4	50.0	107%	54.6	50.0	109%	2.2%
1,1,1-Trichloroethane	11.3	10.0	113%	10.8	10.0	108%	4.5%
Carbon Tetrachloride	11.6	10.0	116%	11.4	10.0	114%	1.7%
Vinyl Acetate	11.3	10.0	113%	11.3	10.0	113%	0.0%
Bromodichloromethane	11.2	10.0	112%	10.8	10.0	108%	3.6%
1,2-Dichloropropane	11.0	10.0	110%	10.9	10.0	109%	0.9%
cis-1,3-Dichloropropene	11.7	10.0	117%	11.8	10.0	118%	0.9%
Trichloroethene	10.4	10.0	104%	10.4	10.0	104%	0.0%
Dibromochloromethane	10.8	10.0	108%	10.8	10.0	108%	0.0%
1,1,2-Trichloroethane	10.8	10.0	108%	10.6	10.0	106%	1.9%
Benzene	11.1	10.0	111%	11.1	10.0	111%	0.0%
trans-1,3-Dichloropropene	12.0	10.0	120%	12.0	10.0	120%	0.0%
2-Chloroethylvinylether	11.4	10.0	114%	11.3	10.0	113%	0.9%
Bromoform	11.5	10.0	115%	11.2	10.0	112%	2.6%
4-Methyl-2-Pentanone (MIBK)	56.6	50.0	113%	57.6	50.0	115%	1.8%
2-Hexanone	53.7	50.0	107%	54.3	50.0	109%	1.1%
Tetrachloroethene	10.6	10.0	106%	10.0	10.0	100%	5.8%
1,1,2,2-Tetrachloroethane	11.2	10.0	112%	11.4	10.0	114%	1.8%
Toluene	11.1	10.0	111%	11.1	10.0	111%	0.0%
Chlorobenzene	11.0	10.0	110%	10.8	10.0	108%	1.8%
Ethylbenzene	11.2	10.0	112%	11.0	10.0	110%	1.8%
Styrene	11.0	10.0	110%	10.6	10.0	106%	3.7%
Trichlorofluoromethane	11.3	10.0	113%	11.6	10.0	116%	2.6%
1,1,2-Trichloro-1,2,2-trifluoroethane	9.76	10.0	97.6%	9.01	10.0	90.1%	8.0%
m,p-Xylene	22.3	20.0	112%	21.9	20.0	110%	1.8%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: LCS-050514A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-050514A

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-8410

Project: Precision Engineering

Matrix: Water

1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.9	10.0	109%	10.6	10.0	106%	2.8%
1,2-Dichlorobenzene	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,3-Dichlorobenzene	10.8	10.0	108%	10.6	10.0	106%	1.9%
1,4-Dichlorobenzene	10.6	10.0	106%	10.6	10.0	106%	0.0%
Acrolein	95.0 Q	50.0	190%	99.8 Q	50.0	200%	4.9%
Iodomethane	12.6 Q	10.0	126%	11.9 Q	10.0	119%	5.7%
Bromoethane	11.0	10.0	110%	11.5	10.0	115%	4.4%
Acrylonitrile	10.2	10.0	102%	10.6	10.0	106%	3.8%
1,1-Dichloropropene	11.2	10.0	112%	10.8	10.0	108%	3.6%
Dibromomethane	10.8	10.0	108%	11.1	10.0	111%	2.7%
1,1,1,2-Tetrachloroethane	11.2	10.0	112%	10.9	10.0	109%	2.7%
1,2-Dibromo-3-chloropropane	10.9	10.0	109%	11.1	10.0	111%	1.8%
1,2,3-Trichloropropane	10.4	10.0	104%	10.4	10.0	104%	0.0%
trans-1,4-Dichloro-2-butene	11.2	10.0	112%	10.8	10.0	108%	3.6%
1,3,5-Trimethylbenzene	11.2	10.0	112%	10.8	10.0	108%	3.6%
1,2,4-Trimethylbenzene	11.2	10.0	112%	11.0	10.0	110%	1.8%
Hexachlorobutadiene	11.4	10.0	114%	10.6	10.0	106%	7.3%
1,2-Dibromoethane	11.1	10.0	111%	11.0	10.0	110%	0.9%
Bromochloromethane	11.0	10.0	110%	11.1	10.0	111%	0.9%
2,2-Dichloropropane	11.9 Q	10.0	119%	11.7 Q	10.0	117%	1.7%
1,3-Dichloropropane	10.6	10.0	106%	10.5	10.0	105%	0.9%
Isopropylbenzene	11.1	10.0	111%	10.9	10.0	109%	1.8%
n-Propylbenzene	11.6	10.0	116%	11.3	10.0	113%	2.6%
Bromobenzene	10.6	10.0	106%	10.3	10.0	103%	2.9%
2-Chlorotoluene	11.1	10.0	111%	10.9	10.0	109%	1.8%
4-Chlorotoluene	11.1	10.0	111%	11.0	10.0	110%	0.9%
tert-Butylbenzene	11.0	10.0	110%	10.8	10.0	108%	1.8%
sec-Butylbenzene	11.2	10.0	112%	11.2	10.0	112%	0.0%
4-Isopropyltoluene	11.0	10.0	110%	11.0	10.0	110%	0.0%
n-Butylbenzene	11.7	10.0	117%	11.2	10.0	112%	4.4%
1,2,4-Trichlorobenzene	12.0	10.0	120%	11.6	10.0	116%	3.4%
Naphthalene	13.7 Q	10.0	137%	13.7 Q	10.0	137%	0.0%
1,2,3-Trichlorobenzene	12.2	10.0	122%	12.1	10.0	121%	0.8%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.2%	98.7%
d8-Toluene	100%	102%
Bromofluorobenzene	98.0%	100%
d4-1,2-Dichlorobenzene	100%	100%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-050214A	Method Blank	10	104%	100%	97.7%	99.3%	0
LCS-050214A	Lab Control	10	99.1%	99.8%	97.5%	102%	0
LCSD-050214A	Lab Control Dup	10	99.6%	100%	97.5%	100%	0
YI78A	MW-6	10	104%	100%	99.8%	101%	0
YI78B	MW-7	10	106%	98.5%	96.8%	100%	0
YI78C	MW-3	10	107%	99.2%	98.0%	102%	0
YI78D	MW-8	10	101%	96.9%	97.4%	101%	0
YI78E	MW-2	10	103%	97.0%	94.9%	101%	0
MB-050514A	Method Blank	10	102%	98.9%	96.3%	104%	0
LCS-050514A	Lab Control	10	96.2%	100%	98.0%	100%	0
LCSD-050514A	Lab Control Dup	10	98.7%	102%	100%	100%	0
YI78F	MW-5	10	101%	102%	96.5%	99.2%	0
YI78G	MW-10	10	101%	99.5%	96.2%	101%	0
YI78H	MW-4	10	107%	99.2%	98.8%	98.9%	0
YI78I	Trip Blanks	10	101%	100%	97.0%	101%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane
 (TOL) = d8-Toluene
 (BFB) = Bromofluorobenzene
 (DCB) = d4-1,2-Dichlorobenzene

(80-120)
 (80-120)
 (80-120)
 (80-120)

(80-130)
 (80-120)
 (80-120)
 (80-120)

Prep Method: SW5030B
 Log Number Range: 14-8405 to 14-8413

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 02-MAY-2014 11:12
 Lab File ID: cc0502.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
 Analysis Type: WATER Init. Cal. Times: 13:20 16:37
 Lab Sample ID: CC0502 Quant Type: ISTD
 Method: /chem3/nt3.i/05022014.b/8260C042314L.m

COMPOUND	RF10		CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
1 Dichlorodifluoromethane	0.53144	0.58387	0.58387	0.010	9.86560	20.00000	Averaged
2 Chloromethane	1.21653	1.29968	1.29968	0.100	6.83502	20.00000	Averaged
3 Vinyl Chloride	0.95257	1.02915	1.02915	0.010	8.03942	20.00000	Averaged
4 Bromomethane	0.37041	0.38361	0.38361	0.010	3.56427	20.00000	Averaged
5 Chloroethane	0.49151	0.41731	0.41731	0.010	-15.09564	20.00000	Averaged
6 Trichlorofluoromethane	0.72009	0.80362	0.80362	0.010	11.59984	20.00000	Averaged
7 1,1-Dichloroethene	0.50198	0.44043	0.44043	0.010	-12.26023	20.00000	Averaged
8 Carbon Disulfide	1.65954	1.74707	1.74707	0.010	5.27432	20.00000	Averaged
9 112Trichloro122Trifluoroeth	0.34588	0.25907	0.25907	0.010	-25.09924	20.00000	Averaged <-
10 Iodomethane	0.57602	0.72006	0.72006	0.010	25.00676	20.00000	Averaged <-
11 Bromoethane	0.36089	0.38688	0.38688	0.010	7.19956	20.00000	Averaged
12 Acrolein	79.89032	50.00000	0.11390	0.010	59.78064	20.00000	Quadratic <-
13 Methylene Chloride	0.54584	0.54548	0.54548	0.010	-0.06677	20.00000	Averaged
14 Acetone	0.21454	0.19143	0.19143	0.010	-10.77262	20.00000	Averaged
15 Trans-1,2-Dichloroethene	0.53810	0.52447	0.52447	0.010	-2.53264	20.00000	Averaged
16 Methyl tert butyl ether	1.50580	1.61103	1.61103	0.010	6.98838	20.00000	Averaged
17 1,1-Dichloroethane	1.22143	1.24088	1.24088	0.100	1.59277	20.00000	Averaged
18 Acrylonitrile	0.31627	0.31209	0.31209	0.010	-1.32119	20.00000	Averaged
19 Vinyl Acetate	1.72716	1.89258	1.89258	0.010	9.57755	20.00000	Averaged
20 Cis-1,2-Dichloroethene	0.56798	0.58409	0.58409	0.010	2.83720	20.00000	Averaged
22 2,2-Dichloropropane	0.62566	0.59500	0.59500	0.010	-4.90066	20.00000	Averaged
23 Bromochloromethane	0.25742	0.28562	0.28562	0.010	10.95742	20.00000	Averaged
24 Chloroform	0.87582	0.92929	0.92929	0.010	6.10451	20.00000	Averaged
25 Carbon Tetrachloride	0.40994	0.45339	0.45339	0.010	10.59883	20.00000	Averaged
§ 26 Dibromofluoromethane	0.43900	0.43735	0.43735	0.010	-0.37683	20.00000	Averaged
27 1,1,1-Trichloroethane	0.76457	0.76701	0.76701	0.010	0.31821	20.00000	Averaged
28 2-Butanone	0.37628	0.41316	0.41316	0.010	9.80247	20.00000	Averaged
29 1,1-Dichloropropene	0.46146	0.47949	0.47949	0.010	3.90701	20.00000	Averaged
30 Benzene	1.31503	1.41206	1.41206	0.010	7.37791	20.00000	Averaged
§ 32 d4-1,2-Dichloroethane	0.59083	0.58951	0.58951	0.010	-0.22284	20.00000	Averaged
33 1,2-Dichloroethane	0.51599	0.53672	0.53672	0.010	4.01755	20.00000	Averaged
34 Trichloroethene	0.35741	0.35365	0.35365	0.010	-1.05265	20.00000	Averaged
37 Dibromomethane	0.18911	0.19251	0.19251	0.010	1.79533	20.00000	Averaged
38 1,2-Dichloropropane	0.46053	0.47916	0.47916	0.010	4.04677	20.00000	Averaged
39 Bromodichloromethane	0.41403	0.44047	0.44047	0.010	6.38657	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 02-MAY-2014 11:12
 Lab File ID: cc0502.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
 Analysis Type: WATER Init. Cal. Times: 13:20 16:37
 Lab Sample ID: CC0502 Quant Type: ISTD
 Method: /chem3/nt3.i/05022014.b/8260C042314L.m

COMPOUND	RRF / AMOUNT		CCAL		MIN		MAX		CURVE TYPE
	RRF	AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT		
41 2-Chloroethyl Vinyl Ether	0.28809	0.31484	0.31484	0.31484	0.010	9.28503	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.51469	0.58107	0.58107	0.58107	0.010	12.89717	20.00000	Averaged	
43 d8-Toluene	1.20634	1.19556	1.19556	1.19556	0.010	-0.89401	20.00000	Averaged	
44 Toluene	0.84892	0.89296	0.89296	0.89296	0.010	5.18770	20.00000	Averaged	
45 Tetrachloroethene	0.37670	0.39051	0.39051	0.39051	0.010	3.66432	20.00000	Averaged	
46 4-Methyl-2-Pentanone	0.50504	0.55680	0.55680	0.55680	0.010	10.24802	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.45528	0.52008	0.52008	0.52008	0.010	14.23326	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.27983	0.29854	0.29854	0.29854	0.010	6.68469	20.00000	Averaged	
49 Chlorodibromomethane	0.33912	0.36951	0.36951	0.36951	0.010	8.96318	20.00000	Averaged	
50 1,3-Dichloropropane	0.54930	0.57222	0.57222	0.57222	0.010	4.17350	20.00000	Averaged	
51 1,2-Dibromoethane	0.28189	0.29118	0.29118	0.29118	0.010	3.29708	20.00000	Averaged	
52 2-Hexanone	0.40606	0.43866	0.43866	0.43866	0.010	8.02784	20.00000	Averaged	
54 Chlorobenzene	0.97973	1.04722	1.04722	1.04722	0.300	6.88881	20.00000	Averaged	
55 Ethyl Benzene	1.70801	1.83368	1.83368	1.83368	0.010	7.35757	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.33175	0.36378	0.36378	0.36378	0.010	9.65705	20.00000	Averaged	
57 m,p-xylene	0.67700	0.72305	0.72305	0.72305	0.010	6.80231	20.00000	Averaged	
58 o-Xylene	0.68178	0.71440	0.71440	0.71440	0.010	4.78419	20.00000	Averaged	
59 Styrene	1.12033	1.18302	1.18302	1.18302	0.010	5.59573	20.00000	Averaged	
60 Bromoform	0.40083	0.45790	0.45790	0.45790	0.100	14.23854	20.00000	Averaged	
61 Isopropyl Benzene	3.04336	3.39226	3.39226	3.39226	0.010	11.46439	20.00000	Averaged	
62 4-Bromofluorobenzene	0.53998	0.51917	0.51917	0.51917	0.010	-3.85312	20.00000	Averaged	
63 Bromobenzene	0.74025	0.78381	0.78381	0.78381	0.010	5.88446	20.00000	Averaged	
64 N-Propyl Benzene	3.43426	3.80825	3.80825	3.80825	0.010	10.89002	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.70376	0.78699	0.78699	0.78699	0.010	11.82684	20.00000	Averaged	
66 2-Chloro Toluene	2.49530	2.50358	2.50358	2.50358	0.010	0.33173	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.62644	2.84536	2.84536	2.84536	0.010	8.33521	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.22508	0.23525	0.23525	0.23525	0.010	4.51887	20.00000	Averaged	
70 Trans-1,4-Dichloro 2-Butene	0.37679	0.40601	0.40601	0.40601	0.010	7.75494	20.00000	Averaged	
71 4-Chloro Toluene	2.34022	2.55873	2.55873	2.55873	0.010	9.33743	20.00000	Averaged	
72 T-Butyl Benzene	2.13375	2.29671	2.29671	2.29671	0.010	7.63713	20.00000	Averaged	
73 1,2,4-Trimethylbenzene	2.61952	2.87040	2.87040	2.87040	0.010	9.57760	20.00000	Averaged	
74 S-Butyl Benzene	2.91751	3.16641	3.16641	3.16641	0.010	8.53146	20.00000	Averaged	
75 4-Isopropyl Toluene	2.52029	2.65059	2.65059	2.65059	0.010	5.16990	20.00000	Averaged	
76 1,3-Dichlorobenzene	1.44214	1.55217	1.55217	1.55217	0.010	7.62973	20.00000	Averaged	
78 1,4-Dichlorobenzene	1.50299	1.60054	1.60054	1.60054	0.010	6.49061	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 02-MAY-2014 11:12
 Lab File ID: cc0502.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
 Analysis Type: WATER Init. Cal. Times: 13:20 16:37
 Lab Sample ID: CC0502 Quant Type: ISTD
 Method: /chem3/nt3.i/05022014.b/8260C042314L.m

COMPOUND	CCAL		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
79 N-Butyl Benzene	2.12732	2.30896	2.30896	0.010	8.53827	20.00000	Averaged
80 d4-1,2-Dichlorobenzene	0.91989	0.92756	0.92756	0.010	0.83350	20.00000	Averaged
81 1,2-Dichlorobenzene	1.41127	1.50742	1.50742	0.010	6.81267	20.00000	Averaged
82 1,2-Dibromo 3-Chloropropane	0.14674	0.16264	0.16264	0.010	10.83321	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0.28306	0.28003	0.28003	0.010	-1.07135	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.75936	0.85314	0.85314	0.010	12.35054	20.00000	Averaged
85 Naphthalene	1.56626	2.09652	2.09652	0.010	33.85492	20.00000	Averaged <-
86 1,2,3-Trichlorobenzene	0.63346	0.72655	0.72655	0.010	14.69525	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 05-MAY-2014 11:43
 Lab File ID: cc0505.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
 Analysis Type: WATER Init. Cal. Times: 13:20 16:37
 Lab Sample ID: CC0505 Quant Type: ISTD
 Method: /chem3/nt3.i/05052014.b/8260C042314L.m

COMPOUND	—		CCAL		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT			
1 Dichlorodifluoromethane	0.53144	0.59221	0.59221	0.010	11.43590	20.00000	Averaged		
2 Chloromethane	1.21653	1.31166	1.31166	0.100	7.81973	20.00000	Averaged		
3 Vinyl Chloride	0.95257	1.08195	1.08195	0.010	13.58214	20.00000	Averaged		
4 Bromomethane	0.37041	0.40752	0.40752	0.010	10.01874	20.00000	Averaged		
5 Chloroethane	0.49151	0.47754	0.47754	0.010	-2.84241	20.00000	Averaged		
6 Trichlorofluoromethane	0.72009	0.82450	0.82450	0.010	14.49837	20.00000	Averaged		
7 1,1-Dichloroethene	0.50198	0.48583	0.48583	0.010	-3.21697	20.00000	Averaged		
8 Carbon Disulfide	1.65954	1.92951	1.92951	0.010	16.26782	20.00000	Averaged		
9 112Trichloro122Trifluoroeth	0.34588	0.40771	0.40771	0.010	17.87443	20.00000	Averaged		
10 Iodomethane	0.57602	0.76342	0.76342	0.010	32.53334	20.00000	Averaged <-		
11 Bromoethane	0.36089	0.41024	0.41024	0.010	13.67224	20.00000	Averaged		
12 Acrolein	92.52100	50.00000	0.13315	0.010	85.04200	20.00000	Quadratic <-		
13 Methylene Chloride	0.54584	0.62088	0.62088	0.010	13.74687	20.00000	Averaged		
14 Acetone	0.21454	0.22106	0.22106	0.010	3.03834	20.00000	Averaged		
15 Trans-1,2-Dichloroethene	0.53810	0.55921	0.55921	0.010	3.92313	20.00000	Averaged		
16 Methyl tert butyl ether	1.50580	1.69326	1.69326	0.010	12.44972	20.00000	Averaged		
17 1,1-Dichloroethane	1.22143	1.40464	1.40464	0.100	14.99978	20.00000	Averaged		
18 Acrylonitrile	0.31627	0.33387	0.33387	0.010	5.56607	20.00000	Averaged		
19 Vinyl Acetate	1.72716	2.00016	2.00016	0.010	15.80632	20.00000	Averaged		
20 Cis-1,2-Dichloroethene	0.56798	0.61596	0.61596	0.010	8.44780	20.00000	Averaged		
22 2,2-Dichloropropane	0.62566	0.75482	0.75482	0.010	20.64363	20.00000	Averaged <-		
23 Bromochloromethane	0.25742	0.29822	0.29822	0.010	15.85032	20.00000	Averaged		
24 Chloroform	0.87582	0.99972	0.99972	0.010	14.14610	20.00000	Averaged		
25 Carbon Tetrachloride	0.40994	0.47253	0.47253	0.010	15.26762	20.00000	Averaged		
\$ 26 Dibromofluoromethane	0.43900	0.44451	0.44451	0.010	1.25431	20.00000	Averaged		
27 1,1,1-Trichloroethane	0.76457	0.86603	0.86603	0.010	13.26901	20.00000	Averaged		
28 2-Butanone	0.37628	0.40892	0.40892	0.010	8.67358	20.00000	Averaged		
29 1,1-Dichloropropene	0.46146	0.50120	0.50120	0.010	8.61253	20.00000	Averaged		
30 Benzene	1.31503	1.44154	1.44154	0.010	9.61983	20.00000	Averaged		
\$ 32 d4-1,2-Dichloroethane	0.59083	0.60061	0.60061	0.010	1.65601	20.00000	Averaged		
33 1,2-Dichloroethane	0.51599	0.56679	0.56679	0.010	9.84567	20.00000	Averaged		
34 Trichloroethene	0.35741	0.37238	0.37238	0.010	4.18721	20.00000	Averaged		
37 Dibromomethane	0.18911	0.20177	0.20177	0.010	6.69120	20.00000	Averaged		
38 1,2-Dichloropropane	0.46053	0.51345	0.51345	0.010	11.49141	20.00000	Averaged		
39 Bromodichloromethane	0.41403	0.44473	0.44473	0.010	7.41501	20.00000	Averaged		

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 05-MAY-2014 11:43
 Lab File ID: cc0505.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
 Analysis Type: WATER Init. Cal. Times: 13:20 16:37
 Lab Sample ID: CC0505 Quant Type: ISTD
 Method: /chem3/nt3.i/05052014.b/8260C042314L.m

COMPOUND	___		CCAL		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT			
41 2-Chloroethyl Vinyl Ether	0.28809	0.31527	0.31527	0.010	9.43569	20.00000	Averaged		
42 Cis 1,3-dichloropropene	0.51469	0.59841	0.59841	0.010	16.26566	20.00000	Averaged		
\$ 43 d8-Toluene	1.20634	1.20166	1.20166	0.010	-0.38817	20.00000	Averaged		
44 Toluene	0.84892	0.92391	0.92391	0.010	8.83361	20.00000	Averaged		
45 Tetrachloroethene	0.37670	0.38616	0.38616	0.010	2.51027	20.00000	Averaged		
46 4-Methyl-2-Pentanone	0.50504	0.56531	0.56531	0.010	11.93412	20.00000	Averaged		
47 Trans 1,3-Dichloropropene	0.45528	0.53980	0.53980	0.010	18.56297	20.00000	Averaged		
48 1,1,2-Trichloroethane	0.27983	0.29992	0.29992	0.010	7.18079	20.00000	Averaged		
49 Chlorodibromomethane	0.33912	0.37459	0.37459	0.010	10.46033	20.00000	Averaged		
50 1,3-Dichloropropane	0.54930	0.59659	0.59659	0.010	8.60937	20.00000	Averaged		
51 1,2-Dibromoethane	0.28189	0.30694	0.30694	0.010	8.88702	20.00000	Averaged		
52 2-Hexanone	0.40606	0.43673	0.43673	0.010	7.55387	20.00000	Averaged		
54 Chlorobenzene	0.97973	1.06083	1.06083	0.300	8.27760	20.00000	Averaged		
55 Ethyl Benzene	1.70801	1.89998	1.89998	0.010	11.23945	20.00000	Averaged		
56 1,1,1,2-Tetrachloroethane	0.33175	0.37143	0.37143	0.010	11.96352	20.00000	Averaged		
57 m,p-xylene	0.67700	0.75525	0.75525	0.010	11.55806	20.00000	Averaged		
58 o-Xylene	0.68178	0.73958	0.73958	0.010	8.47765	20.00000	Averaged		
59 Styrene	1.12033	1.23150	1.23150	0.010	9.92290	20.00000	Averaged		
60 Bromoform	0.40083	0.46568	0.46568	0.100	16.17817	20.00000	Averaged		
61 Isopropyl Benzene	3.04336	3.39192	3.39192	0.010	11.45316	20.00000	Averaged		
\$ 62 4-Bromofluorobenzene	0.53998	0.53944	0.53944	0.010	-0.10002	20.00000	Averaged		
63 Bromobenzene	0.74025	0.78942	0.78942	0.010	6.64278	20.00000	Averaged		
64 N-Propyl Benzene	3.43426	3.92163	3.92163	0.010	14.19145	20.00000	Averaged		
65 1,1,2,2-Tetrachloroethane	0.70376	0.77944	0.77944	0.010	10.75391	20.00000	Averaged		
66 2-Chloro Toluene	2.49530	2.75930	2.75930	0.010	10.57968	20.00000	Averaged		
67 1,3,5-Trimethyl Benzene	2.62644	2.91639	2.91639	0.010	11.03961	20.00000	Averaged		
68 1,2,3-Trichloropropane	0.22508	0.22736	0.22736	0.010	1.01328	20.00000	Averaged		
70 Trans-1,4-Dichloro 2-Butene	0.37679	0.43382	0.43382	0.010	15.13570	20.00000	Averaged		
71 4-Chloro Toluene	2.34022	2.60663	2.60663	0.010	11.38434	20.00000	Averaged		
72 T-Butyl Benzene	2.13375	2.32199	2.32199	0.010	8.82196	20.00000	Averaged		
73 1,2,4-Trimethylbenzene	2.61952	2.92630	2.92630	0.010	11.71146	20.00000	Averaged		
74 S-Butyl Benzene	2.91751	3.24927	3.24927	0.010	11.37133	20.00000	Averaged		
75 4-Isopropyl Toluene	2.52029	2.73483	2.73483	0.010	8.51246	20.00000	Averaged		
76 1,3-Dichlorobenzene	1.44214	1.56343	1.56343	0.010	8.41043	20.00000	Averaged		
78 1,4-Dichlorobenzene	1.50299	1.57563	1.57563	0.010	4.83299	20.00000	Averaged		

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt3.i Injection Date: 05-MAY-2014 11:43
Lab File ID: cc0505.d Init. Cal. Date(s): 23-APR-2014 23-APR-2014
Analysis Type: WATER Init. Cal. Times: 13:20 16:37
Lab Sample ID: CC0505 Quant Type: ISTD
Method: /chem3/nt3.i/05052014.b/8260C042314L.m

COMPOUND	CCAL		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
79 N-Butyl Benzene	2.12732	2.38401	2.38401	0.010	12.06608	20.00000	Averaged
80 d4-1,2-Dichlorobenzene	0.91989	0.93658	0.93658	0.010	1.81409	20.00000	Averaged
81 1,2-Dichlorobenzene	1.41127	1.48370	1.48370	0.010	5.13210	20.00000	Averaged
82 1,2-Dibromo 3-Chloropropane	0.14674	0.15596	0.15596	0.010	6.28535	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	0.28306	0.29423	0.29423	0.010	3.94596	20.00000	Averaged
84 1,2,4-Trichlorobenzene	0.75936	0.84807	0.84807	0.010	11.68247	20.00000	Averaged
85 Naphthalene	1.56626	1.99299	1.99299	0.010	27.24479	20.00000	Averaged <-
86 1,2,3-Trichlorobenzene	0.63346	0.72125	0.72125	0.010	13.85781	20.00000	Averaged

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YI78-Kennedy Jenks Consultants,
Project: Precision Engineering
1396024*00

Matrix: Water

Date Received: 05/01/14

Data Release Authorized: *AB*
Reported: 05/08/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-050314	Method Blank	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8405	HC ID: ---		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	< 0.20 U 98.3%
YI78A	MW-6	05/03/14	05/05/14	1.00	Diesel Range	0.10	0.72
14-8405	HC ID: DIESEL/MOTOR OIL		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	0.85 76.0%
YI78B	MW-7	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8406	HC ID: ---		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	< 0.20 U 78.0%
YI78C	MW-3	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8407	HC ID: ---		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	< 0.20 U 91.4%
YI78D	MW-8	05/03/14	05/05/14	1.00	Diesel Range	0.10	0.34
14-8408	HC ID: DRO/MOTOR OIL		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	0.29 87.8%
YI78E	MW-2	05/03/14	05/05/14	1.00	Diesel Range	0.10	0.24
14-8409	HC ID: DIESEL/MOTOR OIL		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	0.26 66.4%
YI78F	MW-5	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8410	HC ID: ---		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	< 0.20 U 86.1%
YI78G	MW-10	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8411	HC ID: ---		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	< 0.20 U 80.2%
YI78H	MW-4	05/03/14	05/05/14	1.00	Diesel Range	0.10	< 0.10 U
14-8412	HC ID: ---		FID9	1.0	Motor Oil Range o-Terphenyl	0.20	< 0.20 U 71.2%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: MW-6

MS/MSD

Lab Sample ID: YI78A

LIMS ID: 14-8405

Matrix: Water

Data Release Authorized: *J*

Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 04/30/14

Date Received: 05/01/14

Date Extracted MS/MSD: 05/03/14

Sample Amount MS: 240 mL

MSD: 240 mL

Date Analyzed MS: 05/05/14 19:22

Final Extract Volume MS: 1.0 mL

MSD: 05/05/14 19:43

MSD: 1.0 mL

Instrument/Analyst MS: FID9/JLW

Dilution Factor MS: 1.00

MSD: FID9/JLW

MSD: 1.00

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	0.72	5.95	6.25	83.7%	6.11	6.25	86.2%	2.7%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	86.3%	82.1%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
 Page 1 of 1

Sample ID: LCS-050314
LCS/LCSD

Lab Sample ID: LCS-050314
 LIMS ID: 14-8405
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00
 Date Sampled: NA
 Date Received: NA

Date Extracted LCS/LCSD: 05/03/14

Sample Amount LCS: 500 mL
 LCSD: 500 mL

Date Analyzed LCS: 05/05/14 17:16
 LCSD: 05/05/14 17:37

Final Extract Volume LCS: 1.0 mL
 LCSD: 1.0 mL

Instrument/Analyst LCS: FID9/JLW
 LCSD: FID9/JLW

Dilution Factor LCS: 1.00
 LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.39	3.00	79.7%	2.60	3.00	86.7%	8.4%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	93.1%	103%

Results reported in mg/L
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 05/01/14

ARI Job: YI78
Project: Precision Engineering
1396024*00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-8405-050314MB1	Method Blank	500 mL	1.00 mL	05/03/14
14-8405-050314LCS1	Lab Control	500 mL	1.00 mL	05/03/14
14-8405-050314LCSD1	Lab Control Dup	500 mL	1.00 mL	05/03/14
14-8405-YI78A	MW-6	500 mL	1.00 mL	05/03/14
14-8405-YI78AMS	MW-6	240 mL	1.00 mL	05/03/14
14-8405-YI78AMSD	MW-6	240 mL	1.00 mL	05/03/14
14-8406-YI78B	MW-7	500 mL	1.00 mL	05/03/14
14-8407-YI78C	MW-3	500 mL	1.00 mL	05/03/14
14-8408-YI78D	MW-8	500 mL	1.00 mL	05/03/14
14-8409-YI78E	MW-2	500 mL	1.00 mL	05/03/14
14-8410-YI78F	MW-5	500 mL	1.00 mL	05/03/14
14-8411-YI78G	MW-10	500 mL	1.00 mL	05/03/14
14-8412-YI78H	MW-4	500 mL	1.00 mL	05/03/14

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

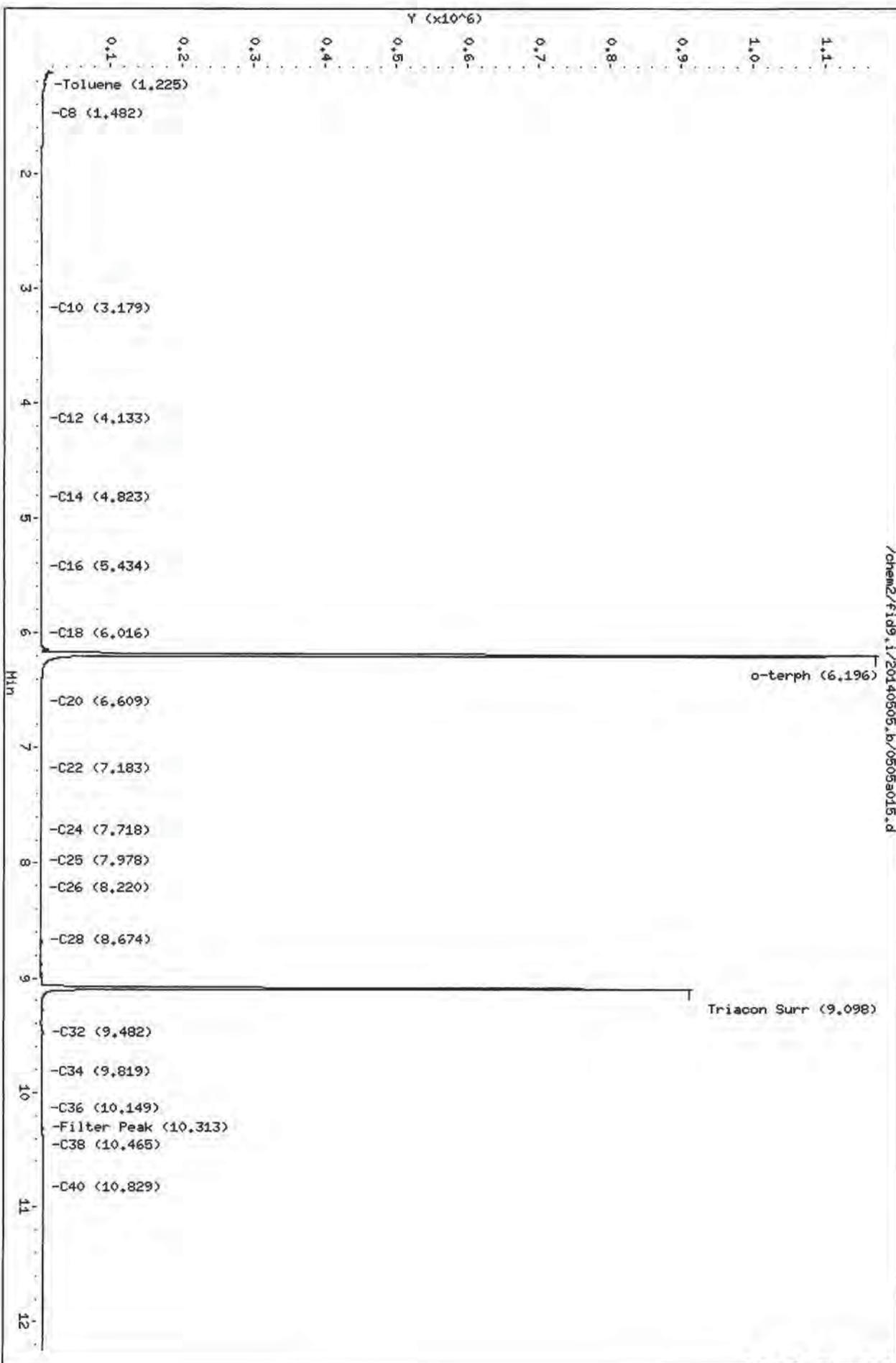
<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-050314	98.3%	0
LCS-050314	93.1%	0
LCSD-050314	103%	0
MW-6	76.0%	0
MW-6 MS	86.3%	0
MW-6 MSD	82.1%	0
MW-7	78.0%	0
MW-3	91.4%	0
MW-8	87.8%	0
MW-2	66.4%	0
MW-5	86.1%	0
MW-10	80.2%	0
MW-4	71.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

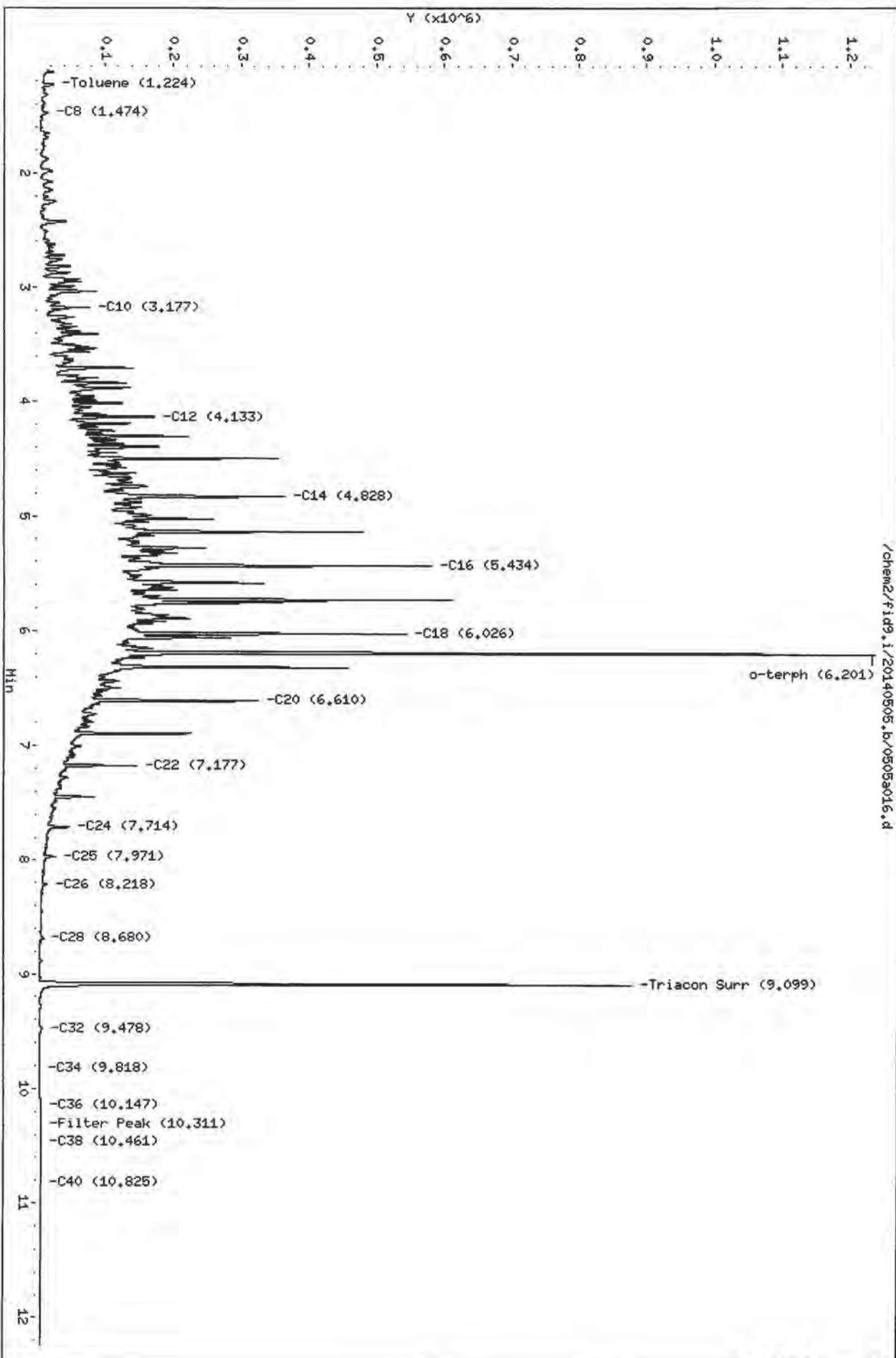
Prep Method: SW3510C
Log Number Range: 14-8405 to 14-8412

Data File: /chem2/fid9.i/20140505.b/0505a015.d
Date: 05-MAY-2014 16:55
Client ID: Y179HBM1
Sample Info: Y179HBM1
Column phase: RTX-1

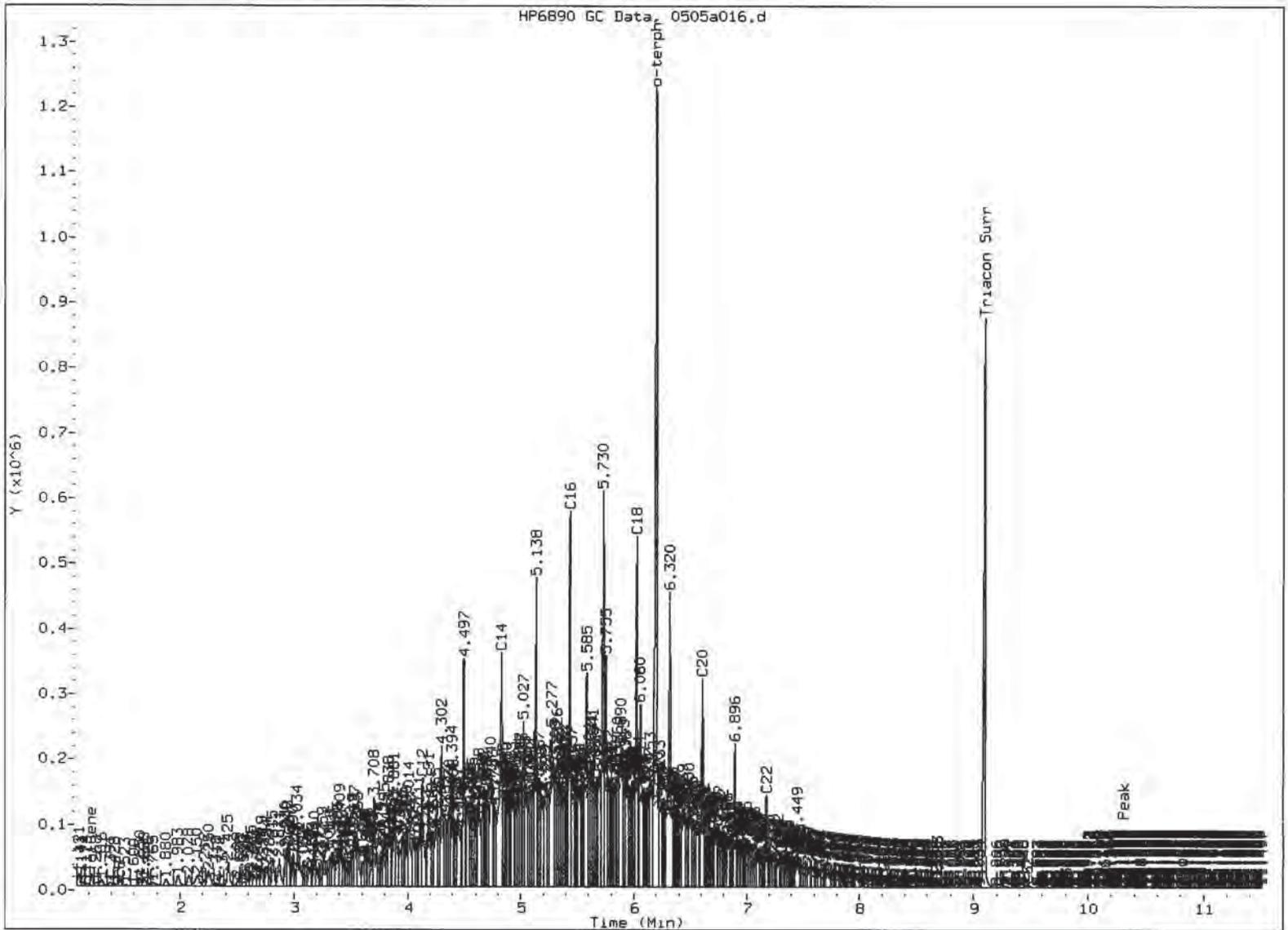
Instrument: fid9.i
Operator: JM
Column diameter: 0.25



/chem2/fid9.i/20140505.b/0505a016.d



HP6890 GC Data_0505a016.d



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skimmed

Analyst: JW

Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a017.d

Date: 05-MAY-2014 17:37

Client ID: Y178LCSDM1

Sample Info: Y178LCSDM1

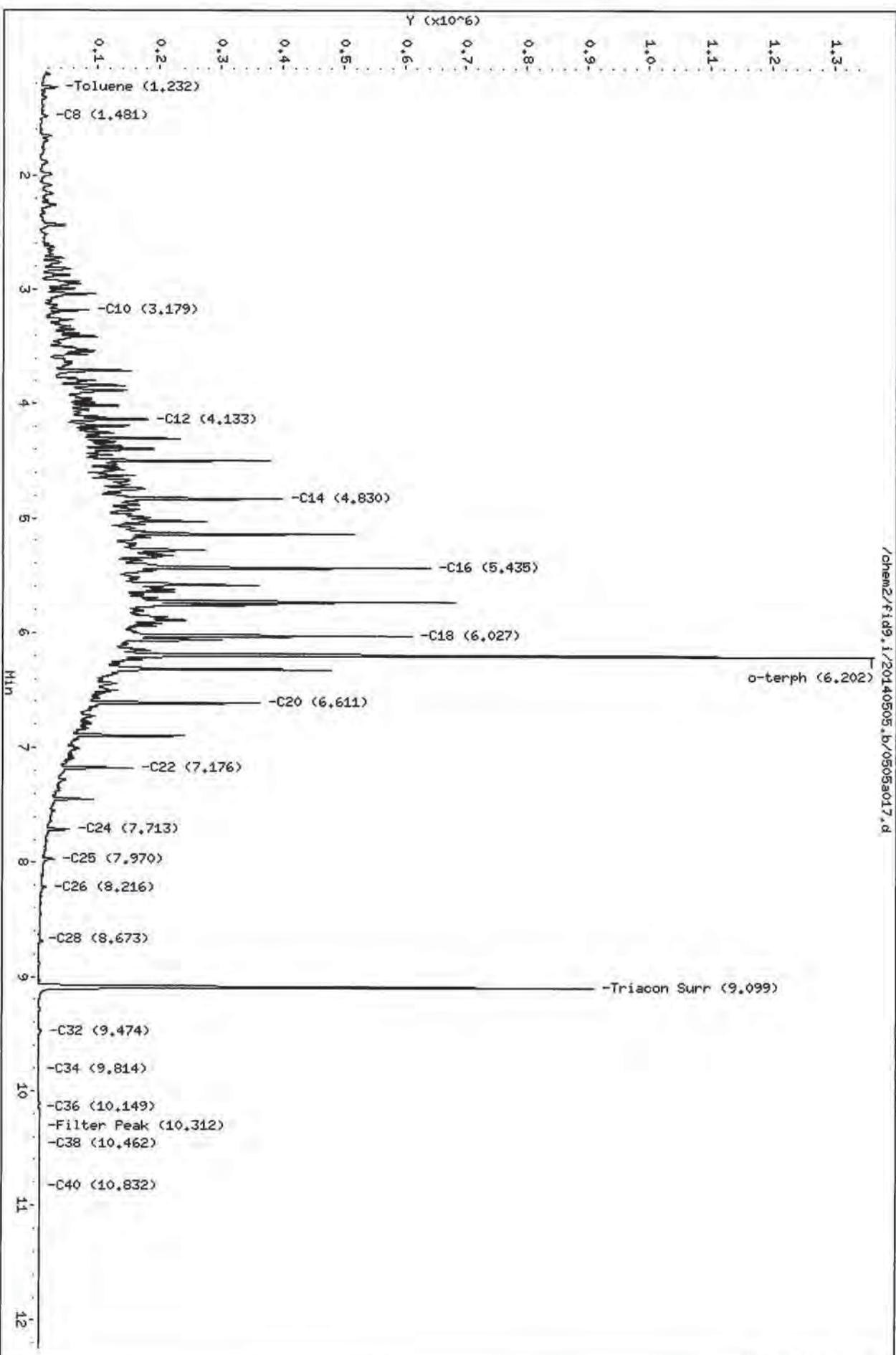
Column phase: RTX-1

Instrument: fid9.i

Operator: JM

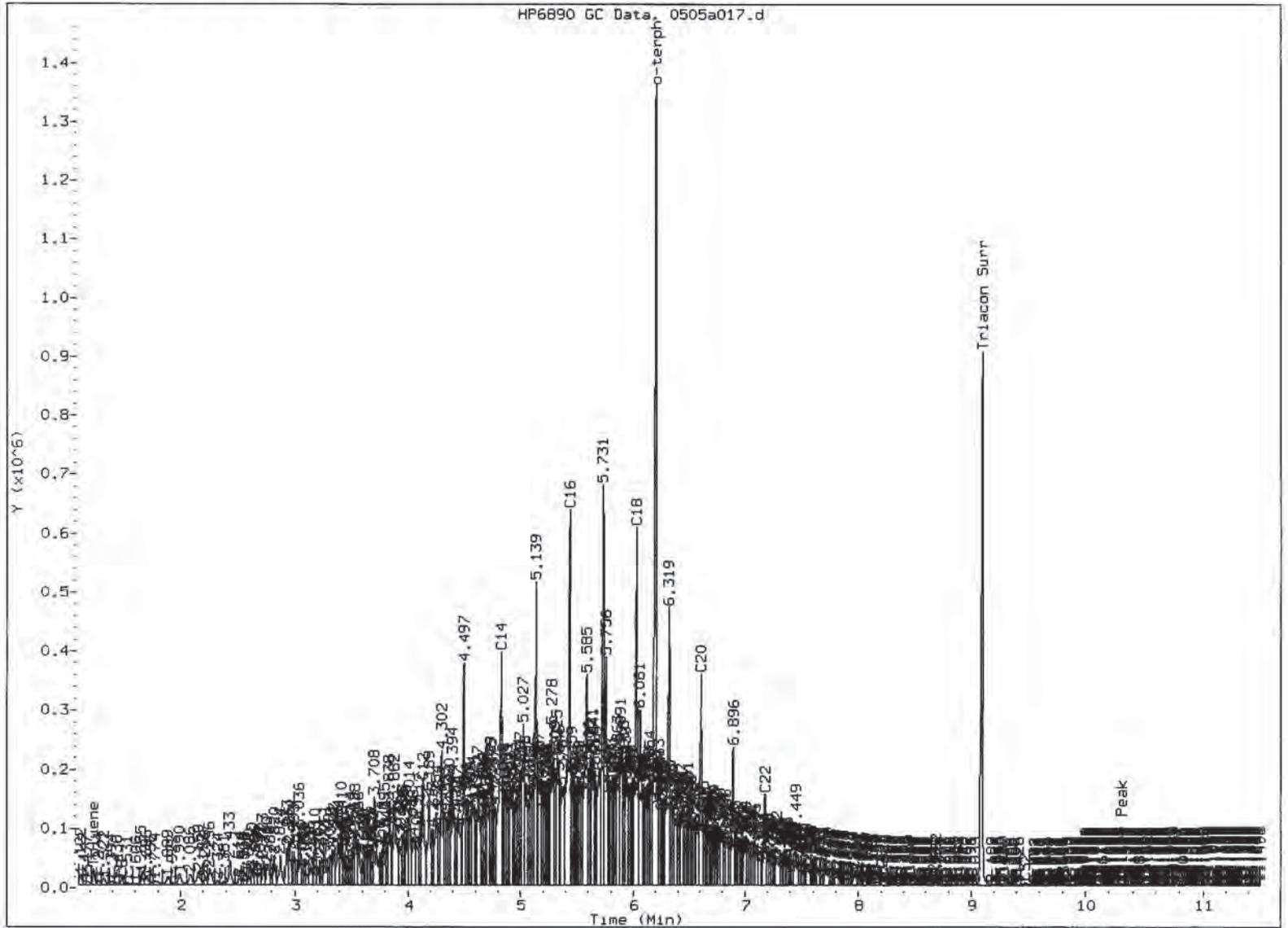
Column diameter: 0.25

/chem2/fid9.i/20140505.b/0505a017.d



01 09 09 10 11 12

HP6890 GC Data_0505a017.d



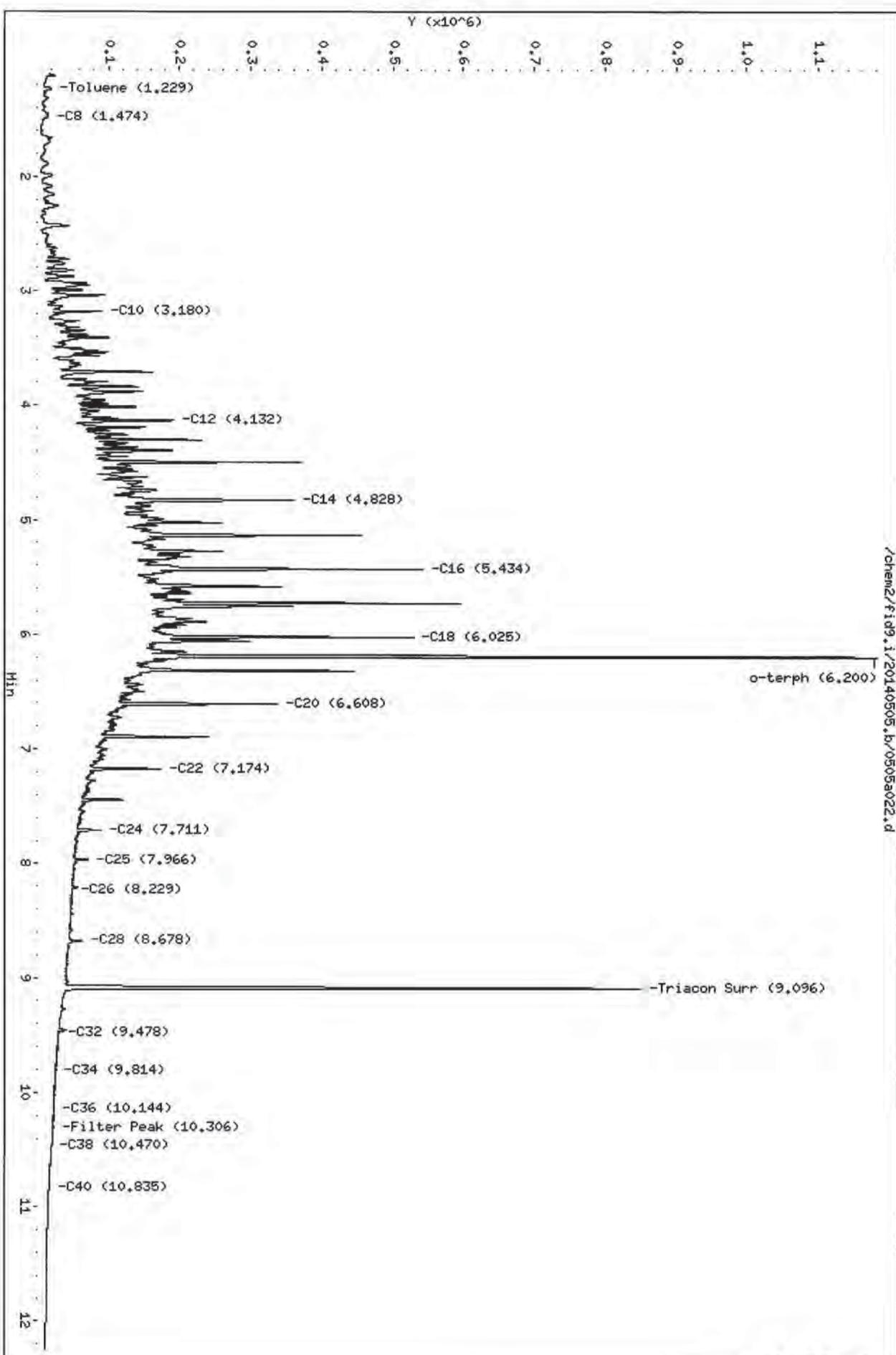
MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

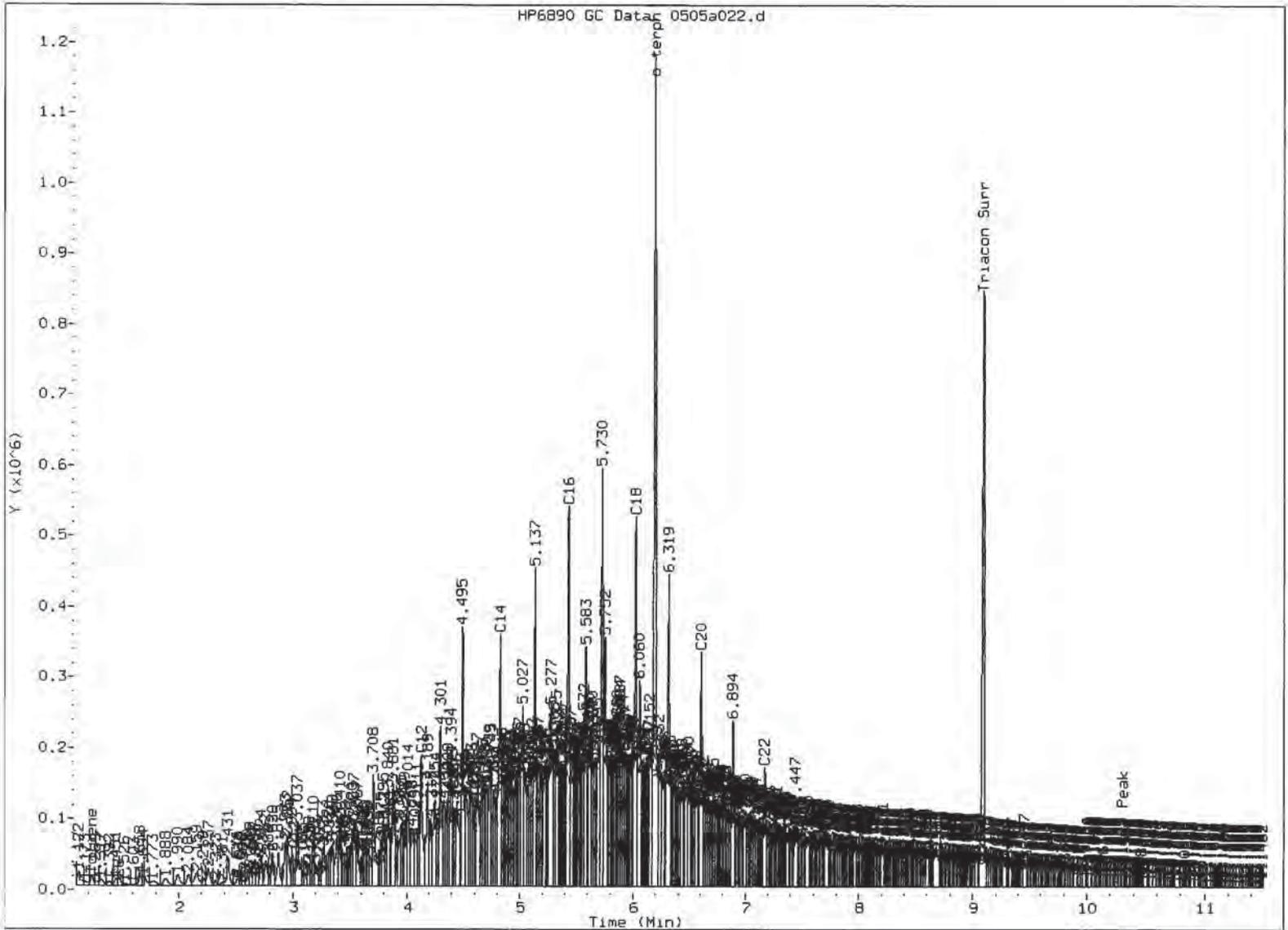
Analyst: JW

Date: 5/6/14

/chem2/fid9.i/20140505.b/0505a022.d



HP6890 GC Data 0505a022.d



MANUAL INTEGRATION

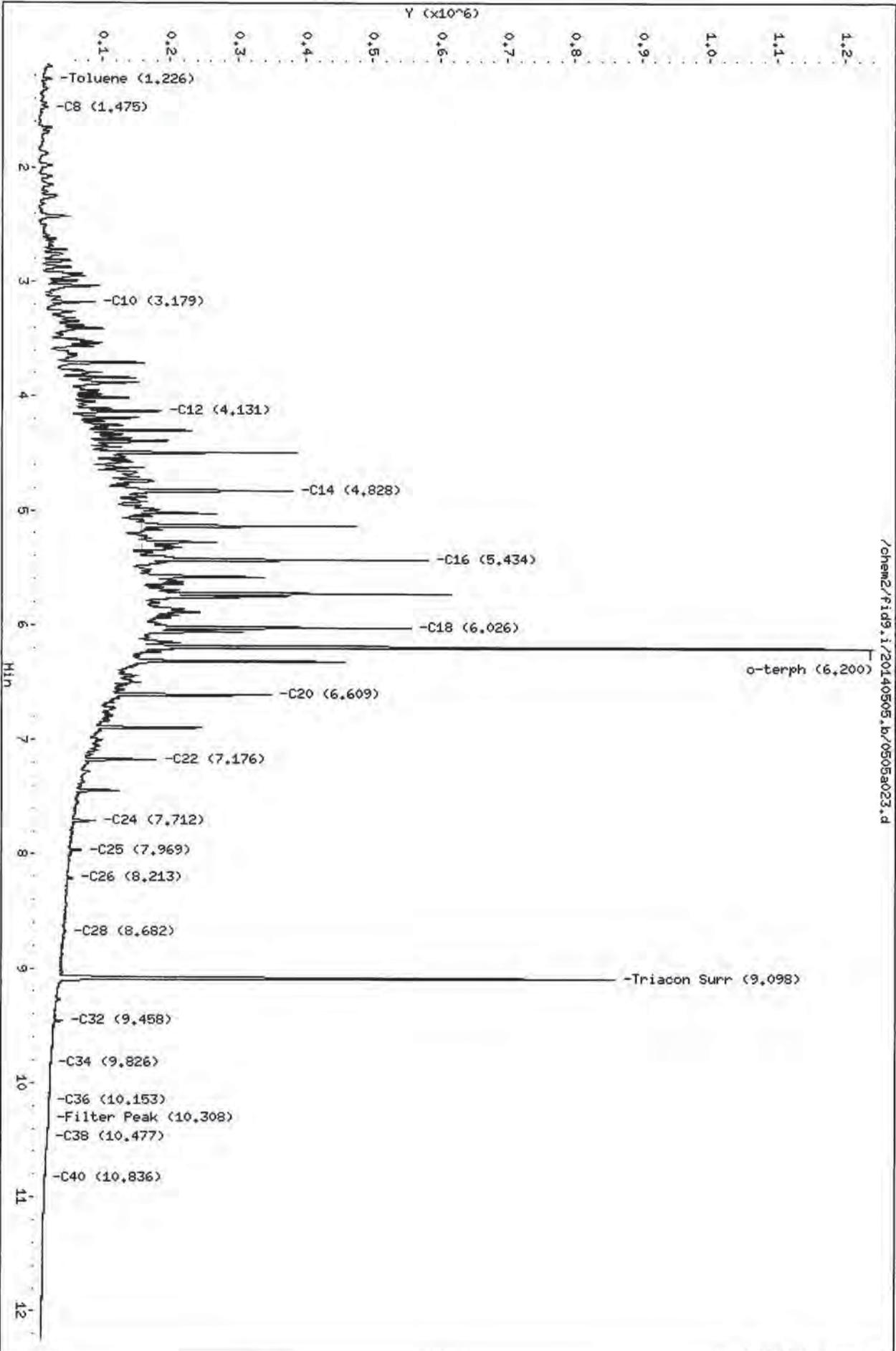
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skipped

Analyst: JL

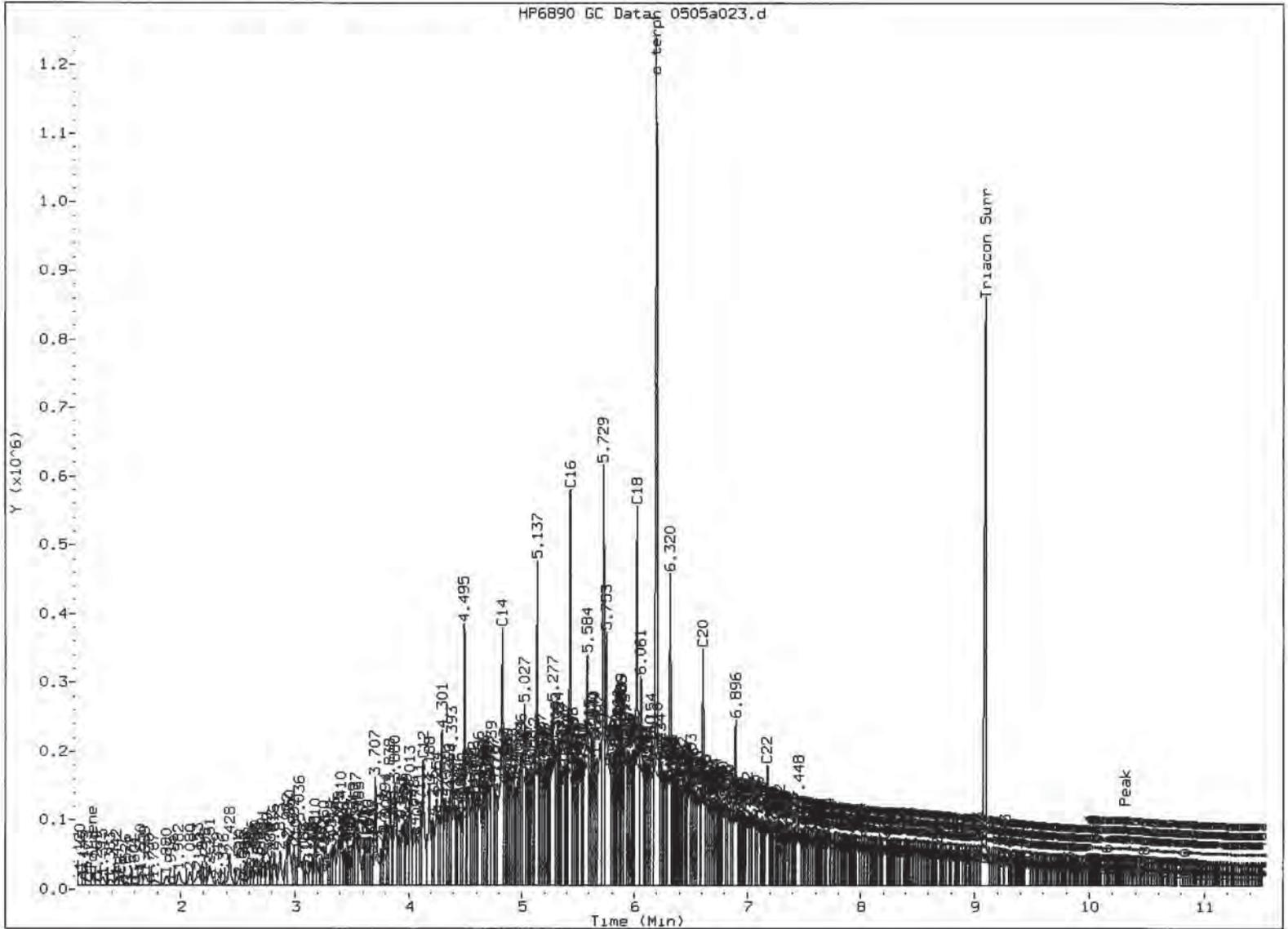
Date: 5/6/14

Data File: /chem2/fid9.i/20140505.b/0505a023.d
Date: 05-MAY-2014 19:43
Client ID: HM-6 HSD
Sample Info: Y179AHSD
Column phase: RTX-1

Instrument: fid9.i
Operator: JM
Column diameter: 0.25



HP6890 GC Data 0505a023.d



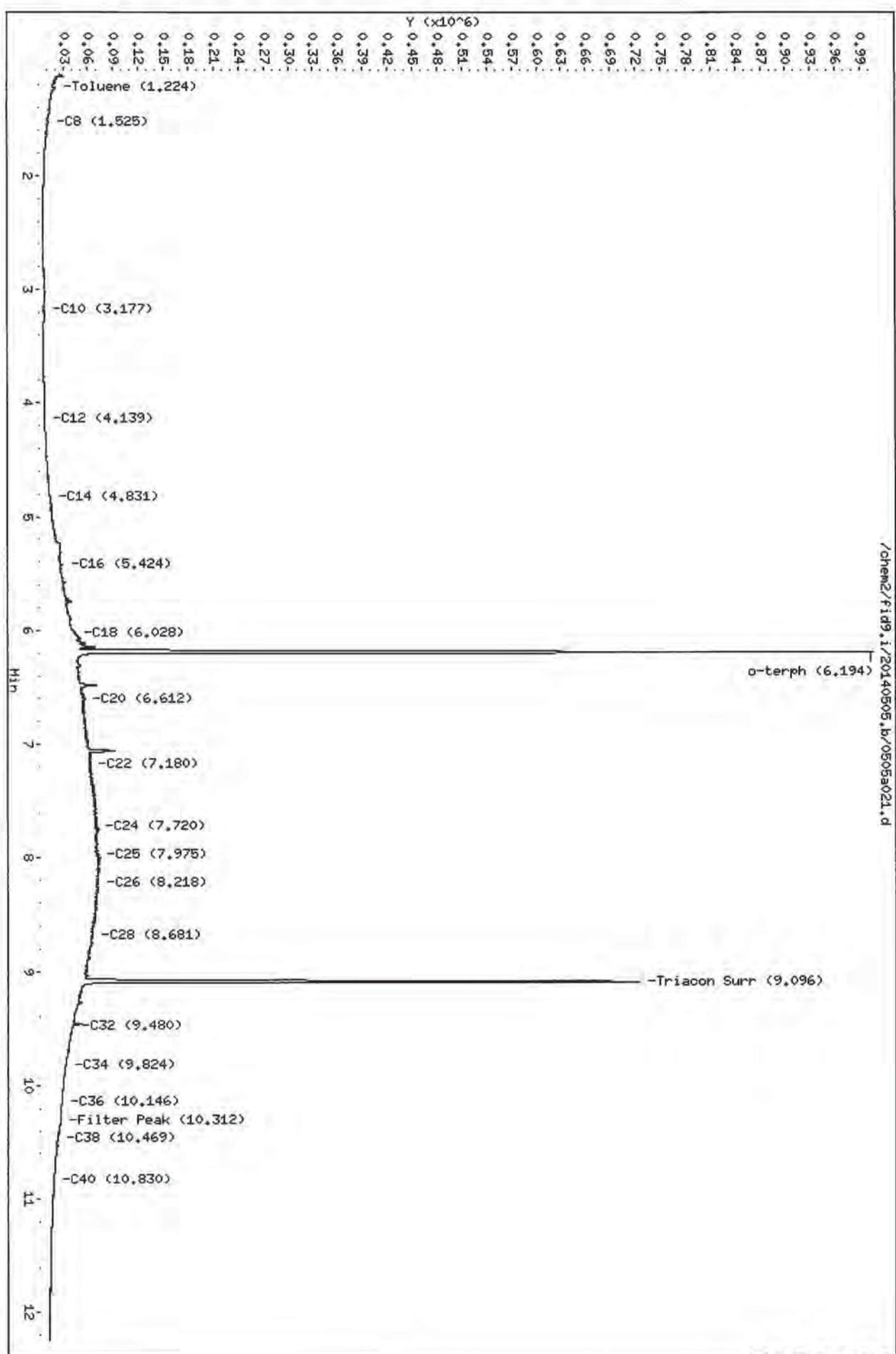
MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
- ⑤. Surrogate Skipped

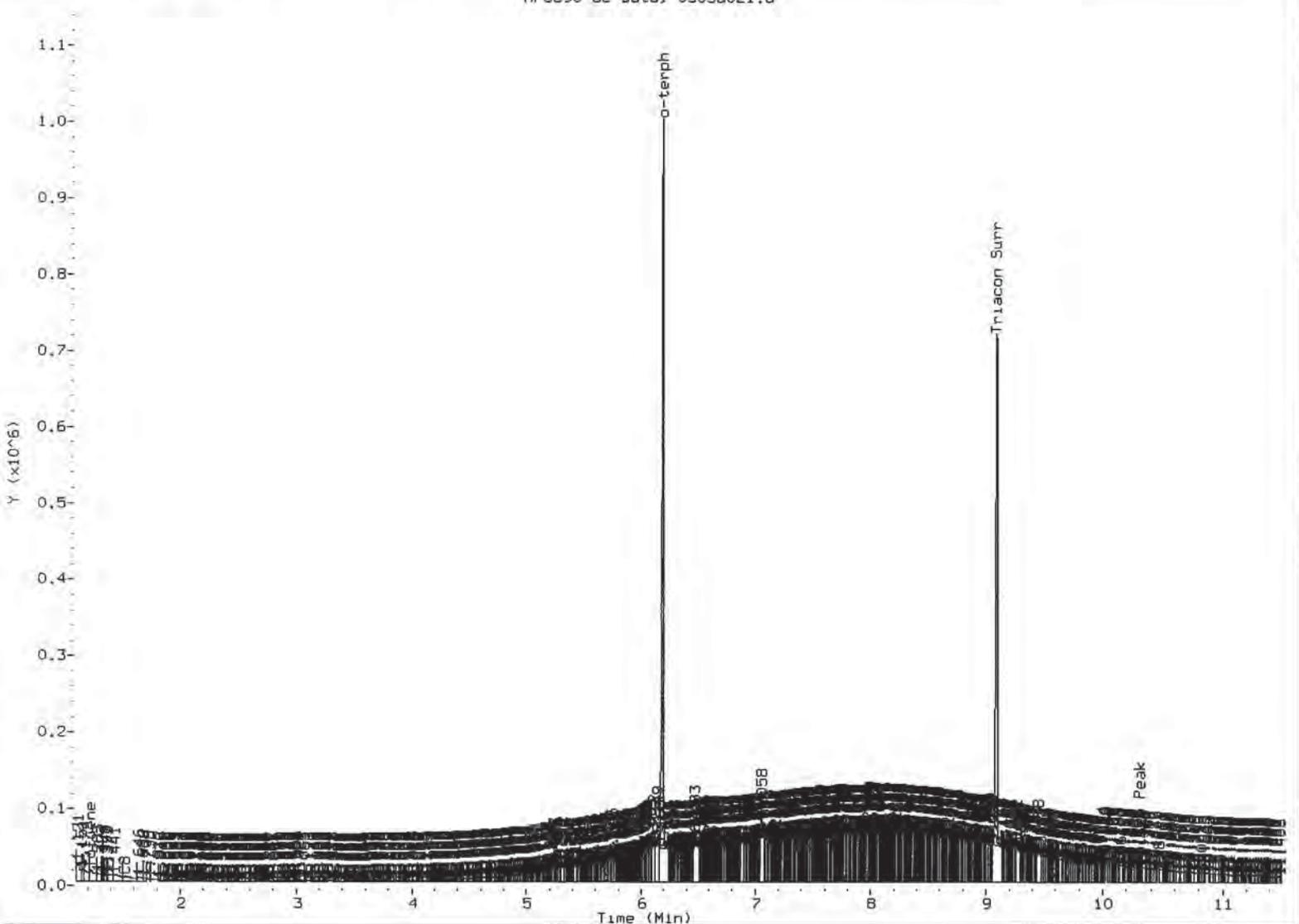
Analyst: JAJ

Date: 5/6/14

/chem2/fid9.1/20140505.b/0505a021.d



Y178A 0505a021.d



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

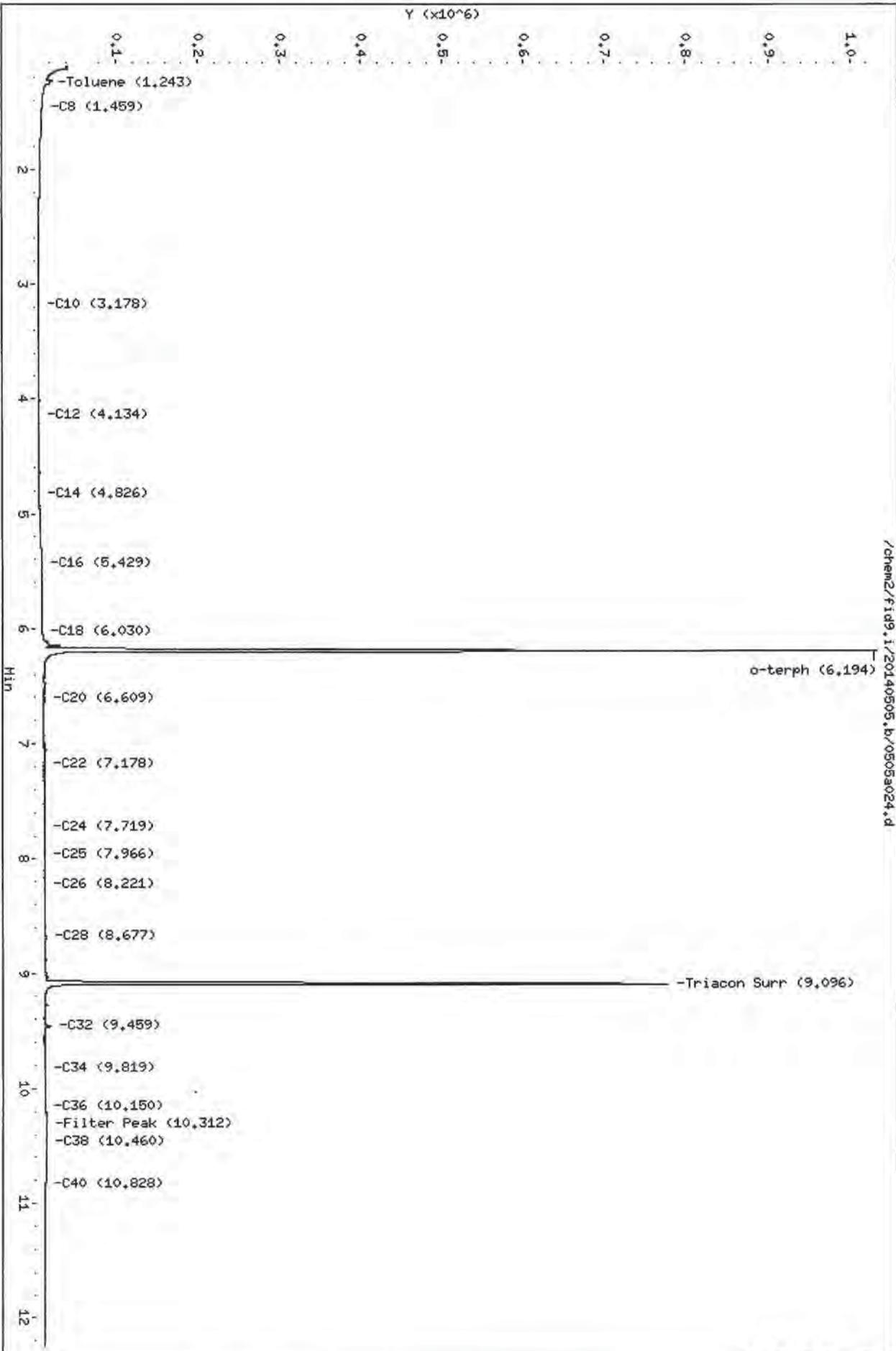
Analyst: JW

Date: 5/6/14

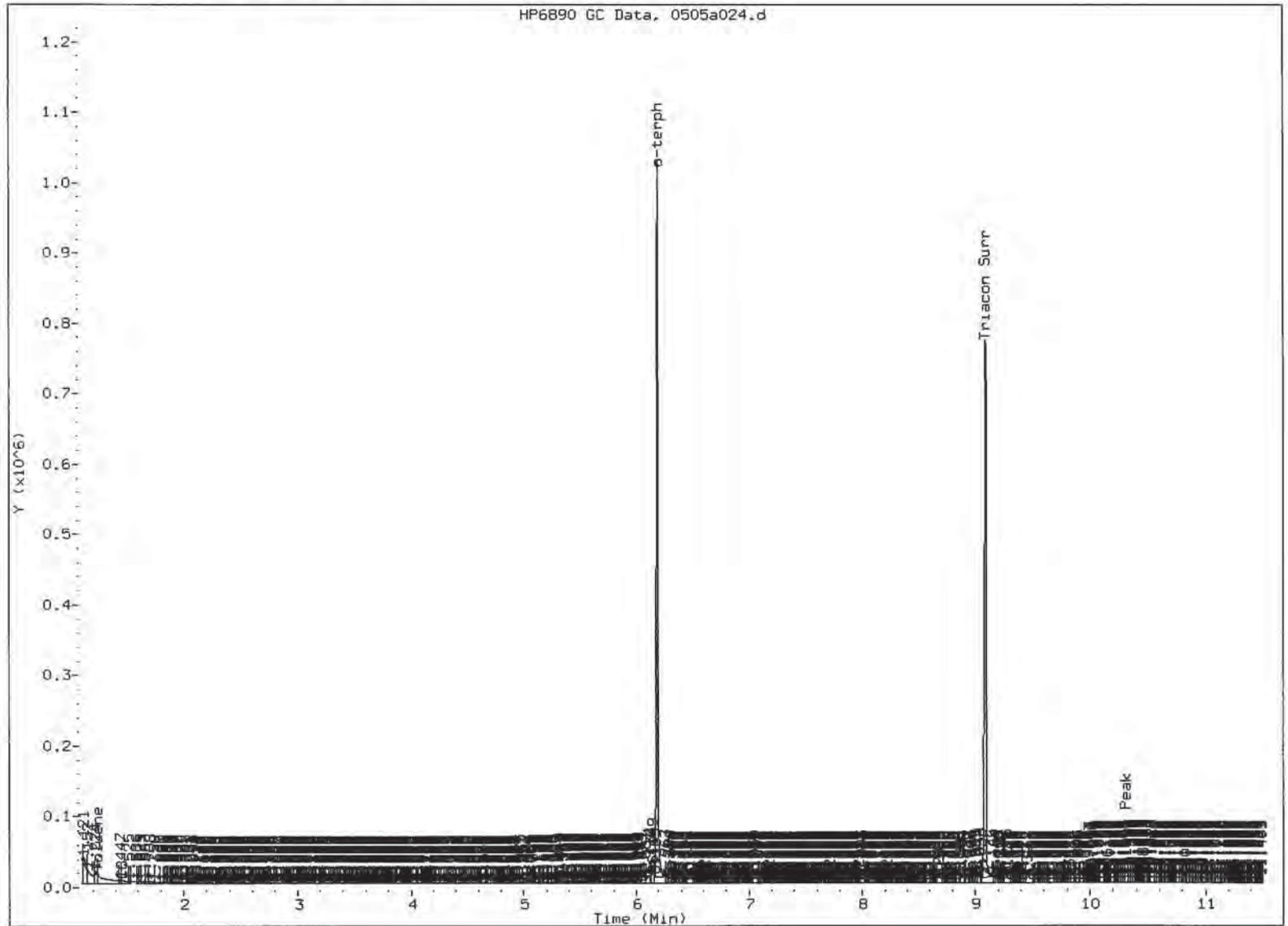
Data File: /chem2/fid9.i/20140505.b/0505a024.d
Date: 05-MAY-2014 20:04
Client ID: MM-7
Sample Info: Y1788

Column phase: RTX-1

Instrument: fid9.i
Operator: JM
Column diameter: 0.25



1170.9860

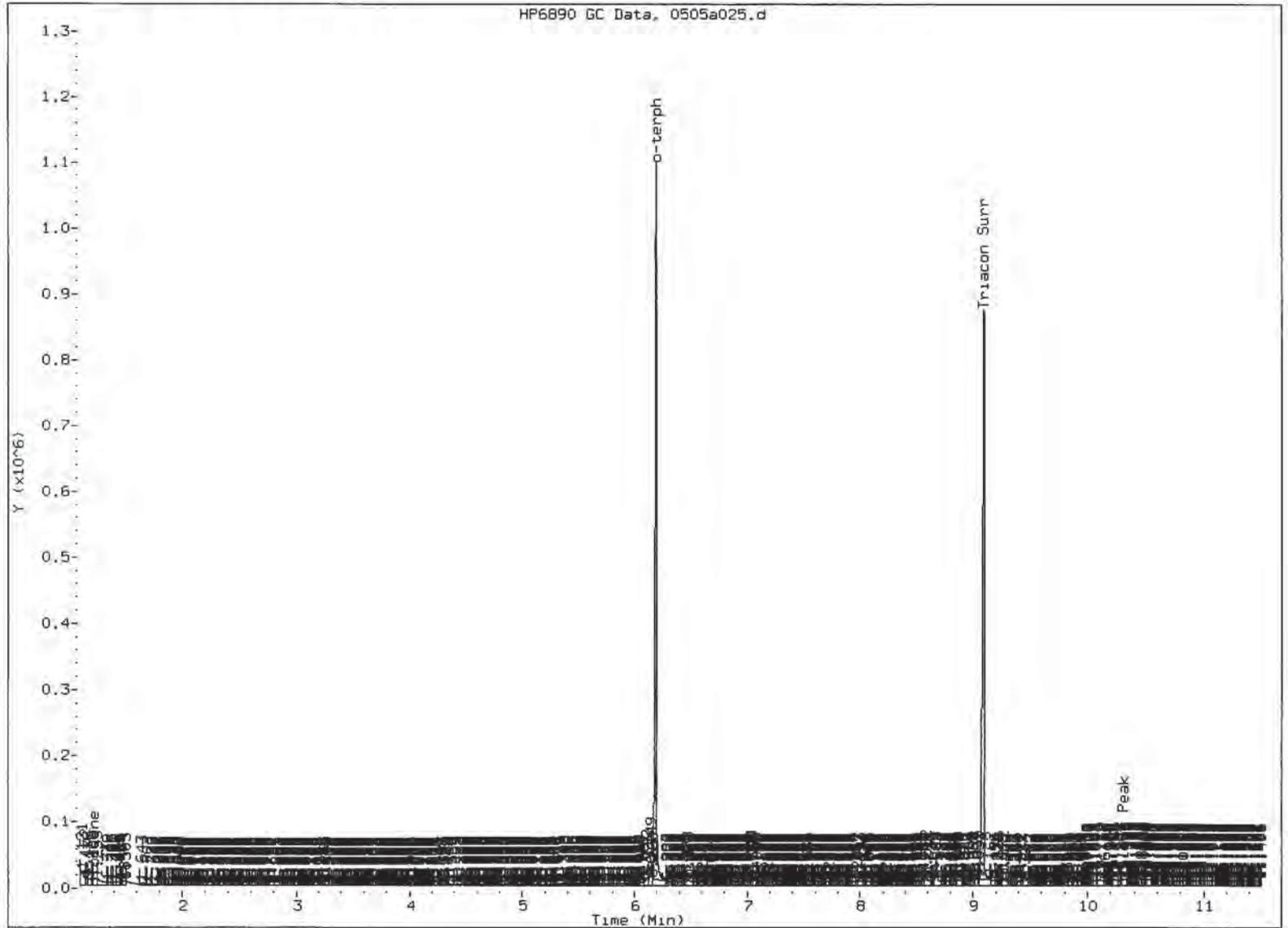


MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

Analyst: JU

Date: 5/6/24



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

Analyst: JW

Date: 5/6/04

Data File: /chem2/fid9.i/20140505.b/0505a026.d

Date: 05-MAY-2014 20:46

Client ID: MW-8

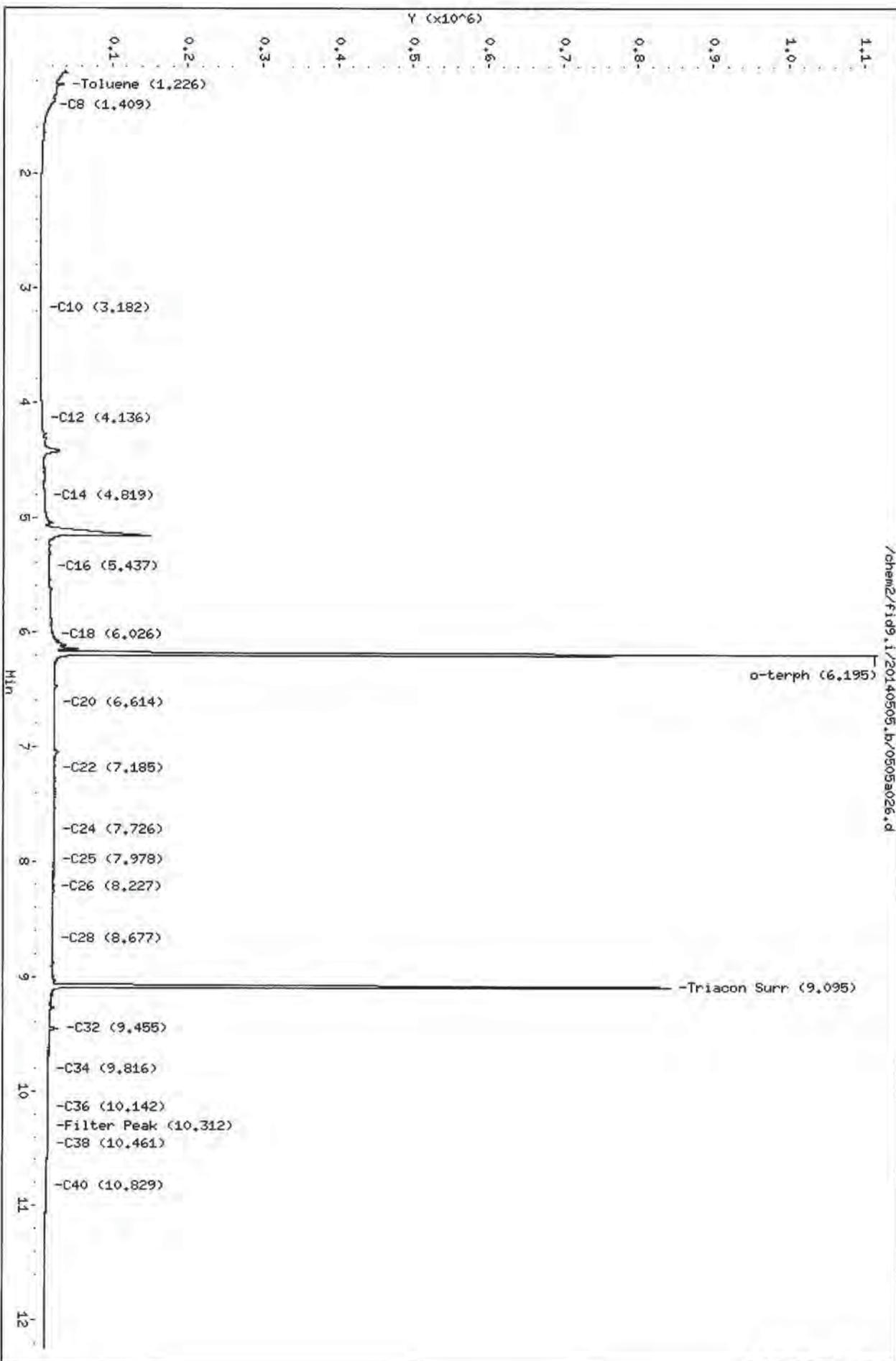
Sample Infor: Y178D

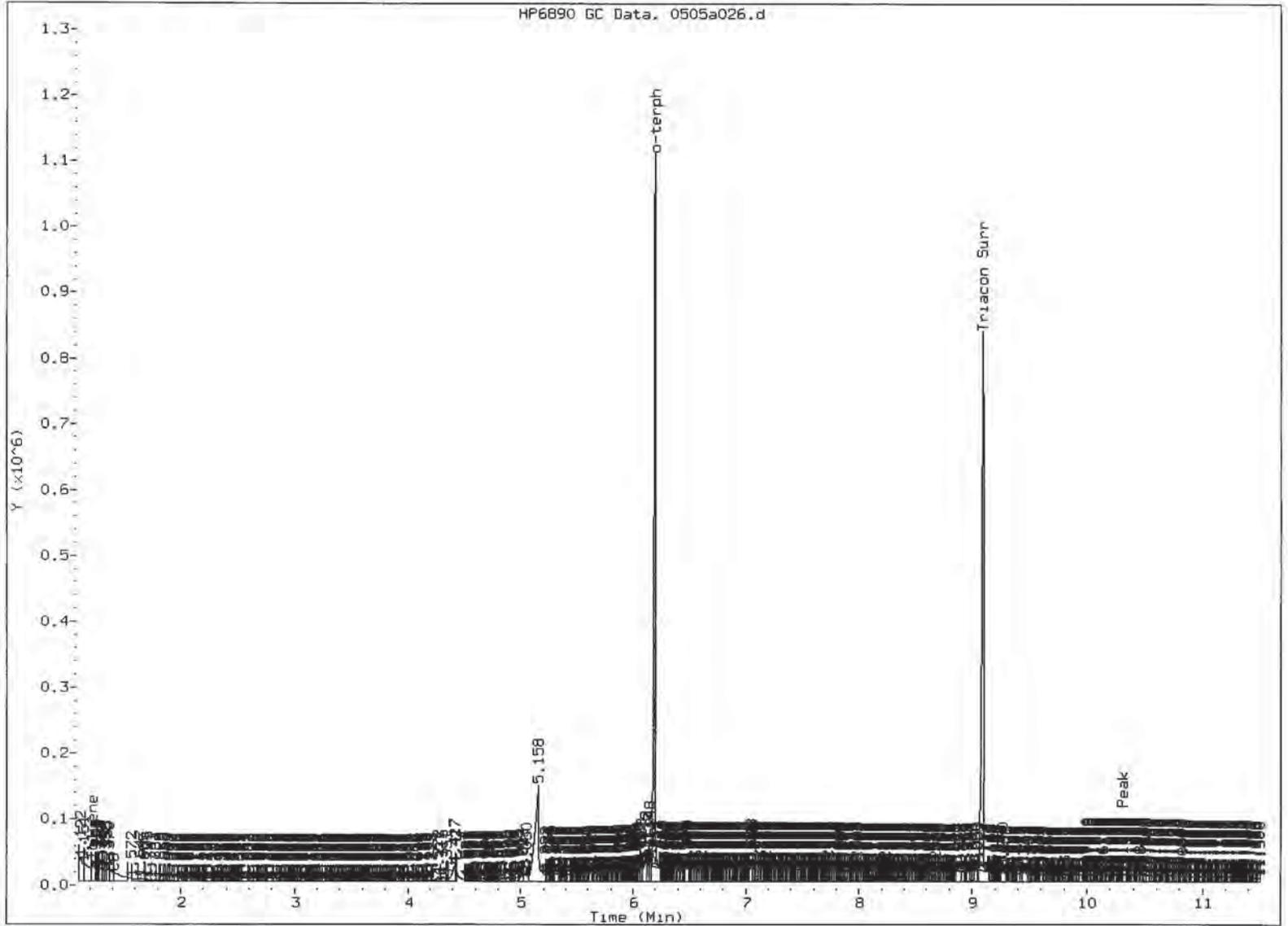
Column phase: RTX-1

Instrument: fid9.i

Operator: JM

Column diameter: 0.25





MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

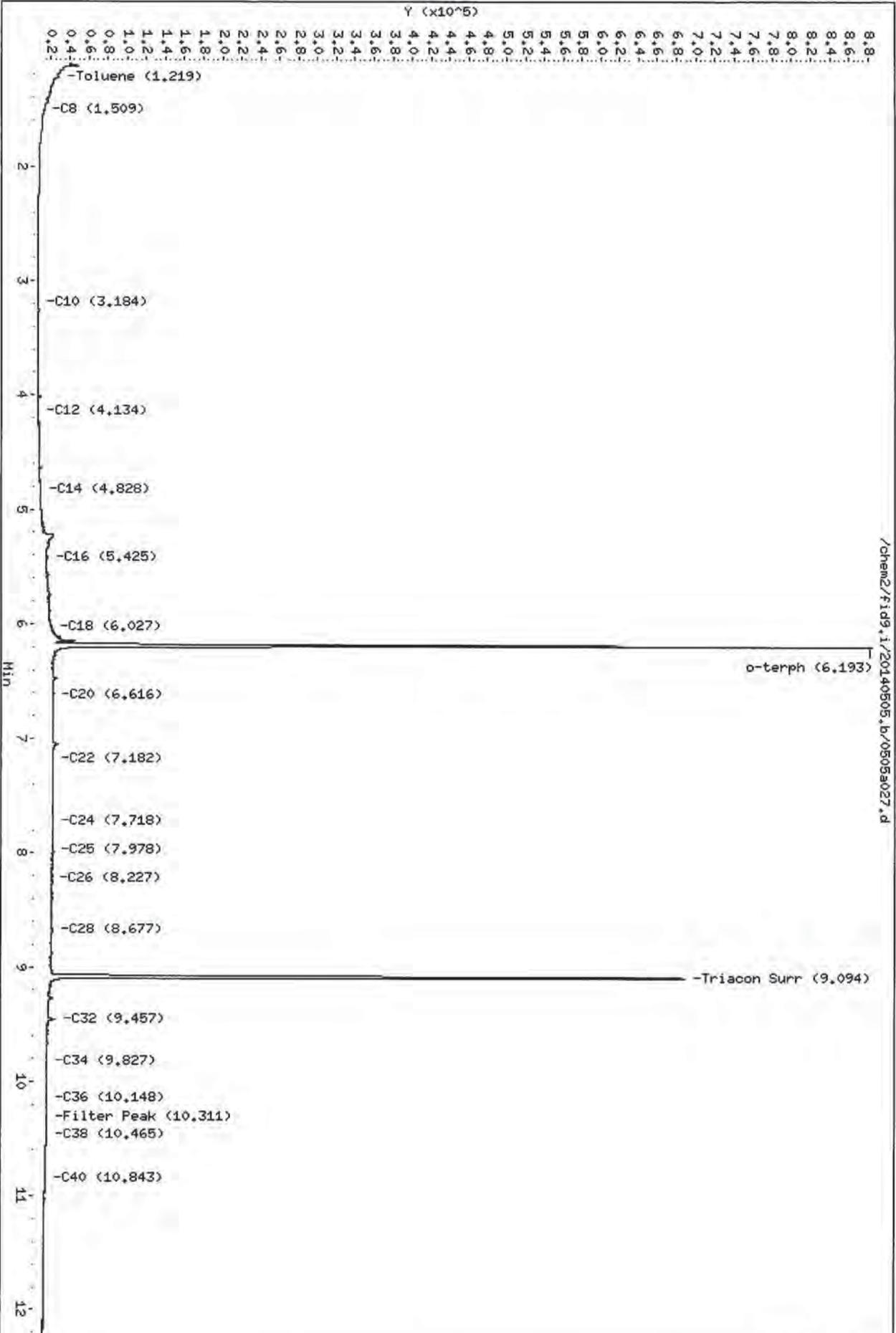
Analyst: JW

Date: 5/6/14

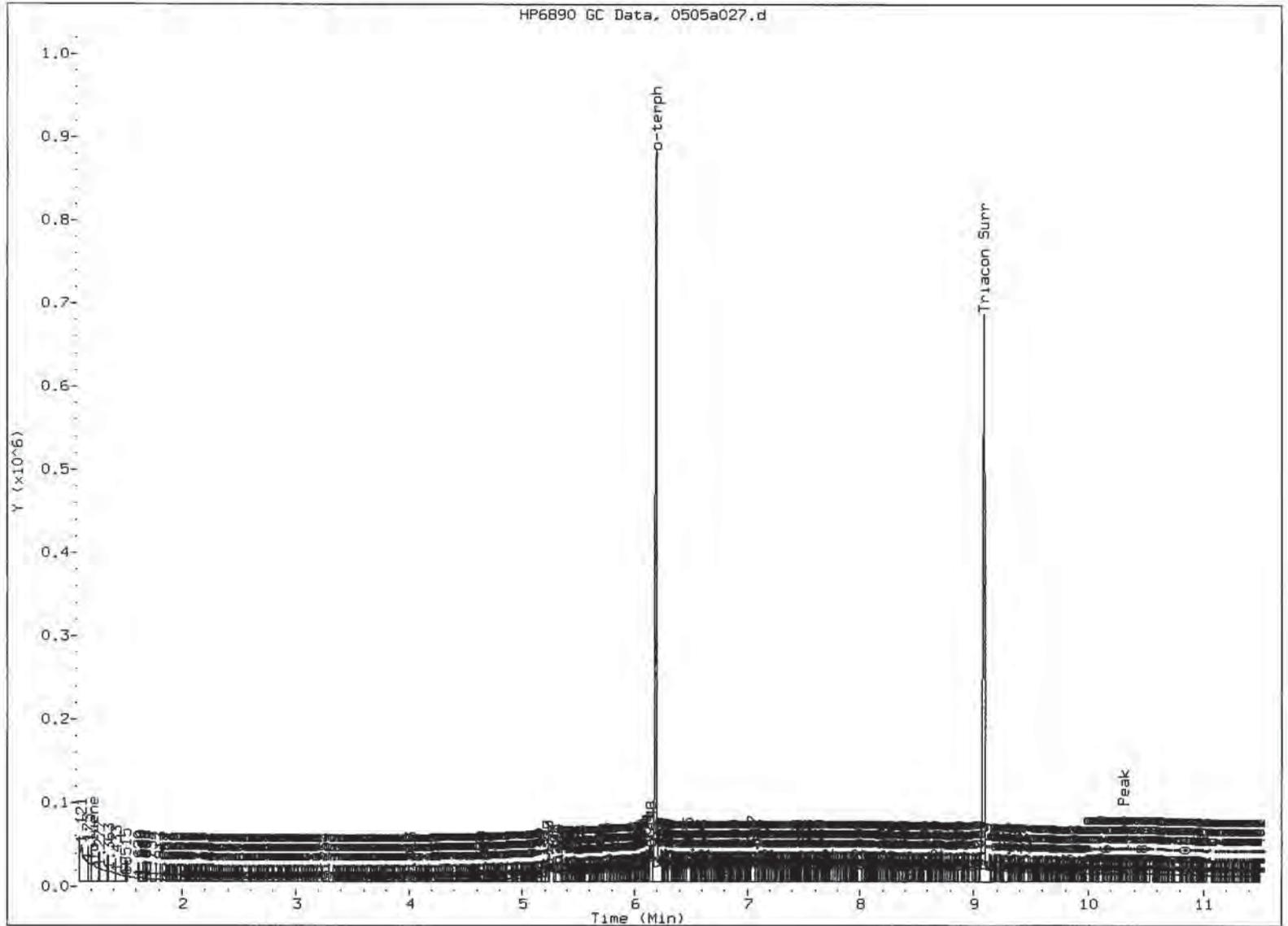
Data File: /chem2/fid9.1/20140505.b/0505a027.d
Date: 05-MAY-2014 21:07
Client ID: MW-2
Sample Info: Y178E

Column phase: RTX-1

Instrument: fid9.1
Operator: JM
Column diameter: 0.25



Y178E-000000

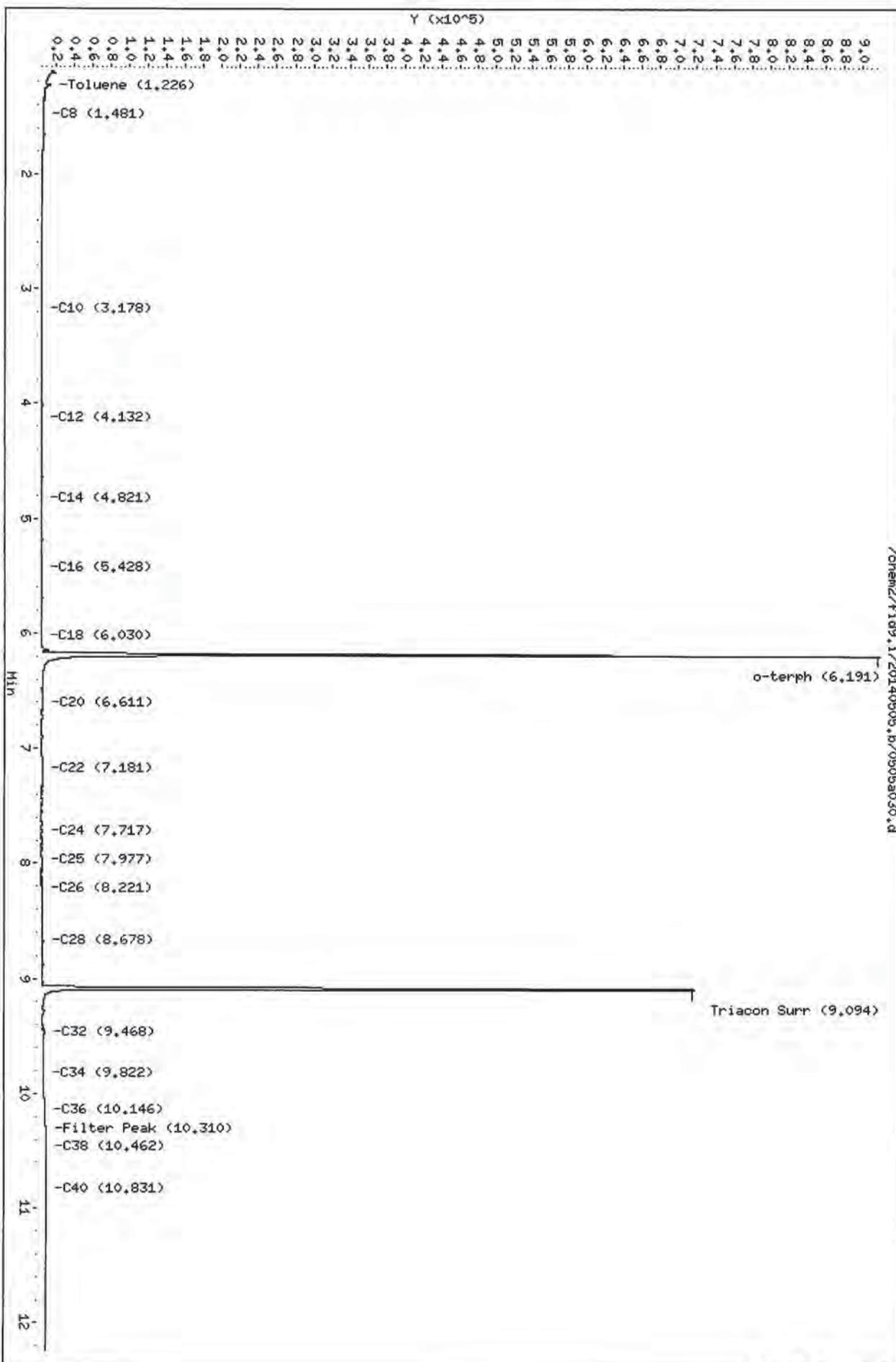


MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skimmed

Analyst: SW

Date: 5/6/14



Y178H-0000

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B



Data Release Authorized: 
Reported: 05/02/14
Date Received: 05/01/14
Page 1 of 1

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW-8 YI78D 14-8408	05/01/14	Water	05/01/14 050114#1	0.010	0.023
MW-2 YI78E 14-8409	05/01/14	Water	05/01/14 050114#1	0.010	< 0.010 U
MW-5 YI78F 14-8410	05/01/14	Water	05/01/14 050114#1	1.00	80.0
MW-10 YI78G 14-8411	05/01/14	Water	05/01/14 050114#1	1.00	84.5
MW-4 YI78H 14-8412	05/01/14	Water	05/01/14 050114#1	0.010	0.013

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized
Reported: 05/02/14

A handwritten signature in black ink, appearing to be a stylized 'J' or similar character.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	05/01/14 18:00	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	05/01/14 18:00	mg/L	0.621	0.630	98.6%

REPLICATE RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YI78D Client ID: MW-8					
Hexavalent Chromium	05/01/14	mg/L	0.023	0.024	4.3%

MS/MSD RESULTS-CONVENTIONALS
YI78-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 05/02/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YI78D Client ID: MW-8						
Hexavalent Chromium	05/01/14	mg/L	0.023	0.024	0.063	1.6%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-6
SAMPLE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14



QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.08	
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.031	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-6
DUPLICATE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

EF

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.08	0.08	0.0%	+/- 0.05	L
Chromium	6010C	0.031	0.030	3.3%	+/- 20%	
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-6

MATRIX SPIKE

Lab Sample ID: YI78A
LIMS ID: 14-8405
Matrix: Water
Data Release Authorized:
Reported: 05/08/14



QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.08	2.28	2.00	110%	
Chromium	6010C	0.031	0.566	0.500	107%	
Lead	6010C	0.02 U	1.97	2.00	98.5%	
Selenium	6010C	0.05 U	2.18	2.00	109%	

Reported in mg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-7
SAMPLE

Lab Sample ID: YI78B
LIMS ID: 14-8406
Matrix: Water
Data Release Authorized: *BJ*
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	U
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-3
SAMPLE

Lab Sample ID: YI78C
LIMS ID: 14-8407
Matrix: Water
Data Release Authorized: *EJ*
Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 04/30/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	U
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-8
SAMPLE

Lab Sample ID: YI78D

LIMS ID: 14-8408

Matrix: Water

Data Release Authorized: *EJ*

Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 05/01/14

Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.011	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-2
SAMPLE

Lab Sample ID: YI78E
LIMS ID: 14-8409
Matrix: Water
Data Release Authorized:
Reported: 05/08/14



QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.007	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-5
SAMPLE

Lab Sample ID: YI78F
LIMS ID: 14-8410
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

Handwritten signature

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	75.1	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-10
SAMPLE

Lab Sample ID: YI78G
LIMS ID: 14-8411
Matrix: Water
Data Release Authorized:
Reported: 05/08/14

EF

QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	80.5	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW-4
SAMPLE

Lab Sample ID: YI78H
LIMS ID: 14-8412
Matrix: Water
Data Release Authorized:
Reported: 05/08/14



QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 05/01/14
Date Received: 05/01/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YI78MB

LIMS ID: 14-8406

Matrix: Water

Data Release Authorized: *EJ*

Reported: 05/08/14

QC Report No: YI78-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	05/05/14	6010C	05/07/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	05/05/14	6010C	05/07/14	7440-47-3	Chromium	0.005	0.005	U
3010A	05/05/14	6010C	05/07/14	7439-92-1	Lead	0.02	0.02	U
3010A	05/05/14	6010C	05/07/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YI78LCS
LIMS ID: 14-8406
Matrix: Water
Data Release Authorized:
Reported: 05/08/14



QC Report No: YI78-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

BLANK SPIKE/BLANK SPIKE DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Dup Found	Spike Added	Spike Recovery	Spike Dup Recovery	RPD	Q
Arsenic	6010C	2.09	2.08	2.00	104%	104%	0.5%	
Chromium	6010C	0.542	0.541	0.500	108%	108%	0.2%	
Lead	6010C	2.07	2.06	2.00	104%	103%	0.5%	
Selenium	6010C	2.05	2.04	2.00	102%	102%	0.5%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

20 August 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering, 1396024*00
ARI Job Nos.: YV50, YV51

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received five water samples and seven soil samples on August 7, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the 8/12/14 VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The percent recoveries for carbon disulfide and 1,1-dichloroethane were high following the analyses of the LCS/LCSD associated with the VOC analyses of the soil samples. Since carbon disulfide is known to recover poorly and 1,1-dichloroethane was not detected in any sample associated with these LCS/LCSD, no corrective actions were taken.

A small amount of hexachlorobutadiene was detected in the method blank associated with the OVC analyses of the water samples. Since this compound was not detected in any sample associated with this blank, no corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.


Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFiles: YV50, YV51

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: NAISO Turn-around Requested: Page: 2 of 2

ARI Client Company: Kennedy/Janke Phone: 253 835 6400 Date: 8/17 Ice Present?

Client Contact: Jessie/LT No. of Coolers: 0 Cooler Temps: _____

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



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested			Notes/Comments
					VRs	TRID ^x	TOT Metals ²⁺	
SB4	8/17	1620	GW	5	X		X	
SB14	↙	1415	↘	7	X		X	
SB11		0940		7	X		X	
SB12	↘	1055	↘	2	X		X	
SB13		1230		2	X		X	
Comments/Special Instructions Relinquished by: <u>[Signature]</u> Received by: <u>[Signature]</u> Printed Name: <u>Joseph Sank</u> Printed Name: <u>A. Volgarisen</u> Company: <u>Kennedy/Janke</u> Company: <u>ARI</u> Date & Time: <u>8/17 170500</u> Date & Time: <u>8/17 1705</u>								

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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



Cooler Receipt Form

ARI Client: Kennedy Jenks
 COC No(s): _____ (NA)
 Assigned ARI Job No: YV50

Project Name: Precision Engineering
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
 Time: 1705 124 24.4
 If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877988

Cooler Accepted by: AV Date: 8/7/14 Time: 1705

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

Samples Logged by: TS Date: 8-7-14 Time: 837

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

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

Additional Notes, Discrepancies, & Resolutions:

SB 4 3 Lg Diesel bottle given for
SB 14 3 Lg SB 12

By: TS Date: 8-8-14

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

PRESERVATION VERIFICATION 08/08/14

Page 1 of 1



ARI Job No: YV50

PC: Mark
VTSR: 08/07/14

Inquiry Number: NONE
Analysis Requested: 08/08/14
Contact: Faragalli, Jessica
Client: Kennedy Jenks Consultants, Inc.

Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #:
Project: Precision Engineering
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET DOC FLT	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-16219 YV50A	SB4						TOT Fail													
14-16220 YV50B	SB14						TOT Pass													
14-16221 YV50C	SB11						TOT Pass													
14-16222 YV50D	SB12						TOT Pass													
14-16223 YV50E	SB13						TOT Pass													

YV50: 00004

Checked By TS Date 8-8-14

Sample ID Cross Reference Report



ARI Job No: YV50
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: Precision Engineering

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. SB4	YV50A	14-16219	Water	08/07/14 16:20	08/07/14 17:25
2. SB14	YV50B	14-16220	Water	08/07/14 14:15	08/07/14 17:25
3. SB11	YV50C	14-16221	Water	08/07/14 09:40	08/07/14 17:25
4. SB12	YV50D	14-16222	Water	08/07/14 10:55	08/07/14 17:25
5. SB13	YV50E	14-16223	Water	08/07/14 12:30	08/07/14 17:25



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



**Analytical Resources,
Incorporated**
Analytical Chemists and
Consultants

- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: MB-081414A

METHOD BLANK

Lab Sample ID: MB-081414A

LIMS ID: 14-16219

Matrix: Water

Data Release Authorized: *MW*

Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT3/LH

Date Analyzed: 08/14/14 18:14

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 2 of 2Sample ID: MB-081414A
METHOD BLANKLab Sample ID: MB-081414A
LIMS ID: 14-16219
Matrix: Water
Date Analyzed: 08/14/14 18:14QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	0.66	
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	100%
Bromofluorobenzene	96.7%
d4-1,2-Dichlorobenzene	98.4%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB4

Page 1 of 2

SAMPLE

Lab Sample ID: YV50A

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

LIMS ID: 14-16219

Matrix: Water

Data Release Authorized: *TRW*

Date Sampled: 08/07/14

Reported: 08/15/14

Date Received: 08/07/14

Instrument/Analyst: NT3/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 20:11

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: SB4
 SAMPLE



Lab Sample ID: YV50A
 LIMS ID: 14-16219
 Matrix: Water
 Date Analyzed: 08/14/14 20:11

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	3.1	
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.7%
d8-Toluene	95.5%
Bromofluorobenzene	98.4%
d4-1,2-Dichlorobenzene	99.0%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB14

Page 1 of 2

SAMPLE

Lab Sample ID: YV50B

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

LIMS ID: 14-16220

Matrix: Water

Data Release Authorized: *MW*

Date Sampled: 08/07/14

Reported: 08/15/14

Date Received: 08/07/14

Instrument/Analyst: NT3/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 20:41

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	2.2	
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	16	
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	26	
95-47-6	o-Xylene	1.0	5.0	
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: SB14
 SAMPLE



Lab Sample ID: YV50B

LIMS ID: 14-16220

Matrix: Water

Date Analyzed: 08/14/14 20:41

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	6.6	
95-63-6	1,2,4-Trimethylbenzene	1.0	13	
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	2.3	
103-65-1	n-Propylbenzene	1.0	5.0	
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	6.2	
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.1%
d8-Toluene	102%
Bromofluorobenzene	97.2%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB11

Page 1 of 2

SAMPLE

Lab Sample ID: YV50C

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

LIMS ID: 14-16221

Matrix: Water

Data Release Authorized: *mmw*

Date Sampled: 08/07/14

Reported: 08/15/14

Date Received: 08/07/14

Instrument/Analyst: NT3/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 21:11

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB11

Page 2 of 2

SAMPLE

Lab Sample ID: YV50C

QC Report No: YV50-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16221

Project: Precision Engineering

Matrix: Water

Date Analyzed: 08/14/14 21:11

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.1%
Bromofluorobenzene	95.6%
d4-1,2-Dichlorobenzene	104%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: LCS-081414A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A

LIMS ID: 14-16219

Matrix: Water

Data Release Authorized: *mm*

Reported: 08/15/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: NT3/LH

LCSD: NT3/LH

Date Analyzed LCS: 08/14/14 17:18

LCSD: 08/14/14 17:46

Sample Amount LCS: 10.0 mL

LCSD: 10.0 mL

Purge Volume LCS: 10.0 mL

LCSD: 10.0 mL

Analyte	Spike			LCS			RPD
	LCS	Added-LCS	Recovery	LCS	Added-LCSD	Recovery	
Chloromethane	10.0	10.0	100%	9.90	10.0	99.0%	1.0%
Bromomethane	9.65	10.0	96.5%	9.95	10.0	99.5%	3.1%
Vinyl Chloride	10.0	10.0	100%	9.54	10.0	95.4%	4.7%
Chloroethane	9.06	10.0	90.6%	8.35	10.0	83.5%	8.2%
Methylene Chloride	9.39	10.0	93.9%	9.64	10.0	96.4%	2.6%
Acetone	45.0	50.0	90.0%	45.2	50.0	90.4%	0.4%
Carbon Disulfide	9.66	10.0	96.6%	9.71	10.0	97.1%	0.5%
1,1-Dichloroethene	9.55	10.0	95.5%	7.84	10.0	78.4%	19.7%
1,1-Dichloroethane	9.79	10.0	97.9%	9.40	10.0	94.0%	4.1%
trans-1,2-Dichloroethene	9.22	10.0	92.2%	9.72	10.0	97.2%	5.3%
cis-1,2-Dichloroethene	9.20	10.0	92.0%	8.76	10.0	87.6%	4.9%
Chloroform	9.67	10.0	96.7%	9.50	10.0	95.0%	1.8%
1,2-Dichloroethane	9.50	10.0	95.0%	9.51	10.0	95.1%	0.1%
2-Butanone	47.1	50.0	94.2%	47.4	50.0	94.8%	0.6%
1,1,1-Trichloroethane	9.84	10.0	98.4%	9.79	10.0	97.9%	0.5%
Carbon Tetrachloride	9.58	10.0	95.8%	9.38	10.0	93.8%	2.1%
Vinyl Acetate	9.32	10.0	93.2%	9.55	10.0	95.5%	2.4%
Bromodichloromethane	9.60	10.0	96.0%	9.71	10.0	97.1%	1.1%
1,2-Dichloropropane	9.40	10.0	94.0%	9.18	10.0	91.8%	2.4%
cis-1,3-Dichloropropene	9.80	10.0	98.0%	9.61	10.0	96.1%	2.0%
Trichloroethene	9.25	10.0	92.5%	8.92	10.0	89.2%	3.6%
Dibromochloromethane	9.31	10.0	93.1%	9.45	10.0	94.5%	1.5%
1,1,2-Trichloroethane	9.52	10.0	95.2%	9.25	10.0	92.5%	2.9%
Benzene	9.88	10.0	98.8%	9.89	10.0	98.9%	0.1%
trans-1,3-Dichloropropene	9.11	10.0	91.1%	9.20	10.0	92.0%	1.0%
2-Chloroethylvinylether	10.5	10.0	105%	9.92	10.0	99.2%	5.7%
Bromoform	9.93	10.0	99.3%	10.0	10.0	100%	0.7%
4-Methyl-2-Pentanone (MIBK)	49.5	50.0	99.0%	50.3	50.0	101%	1.6%
2-Hexanone	50.7	50.0	101%	50.4	50.0	101%	0.6%
Tetrachloroethene	9.64	10.0	96.4%	9.29	10.0	92.9%	3.7%
1,1,2,2-Tetrachloroethane	9.27	10.0	92.7%	9.39	10.0	93.9%	1.3%
Toluene	9.41	10.0	94.1%	9.28	10.0	92.8%	1.4%
Chlorobenzene	9.62	10.0	96.2%	9.76	10.0	97.6%	1.4%
Ethylbenzene	9.55	10.0	95.5%	9.60	10.0	96.0%	0.5%
Styrene	9.72	10.0	97.2%	9.84	10.0	98.4%	1.2%
Trichlorofluoromethane	9.41	10.0	94.1%	7.64	10.0	76.4%	20.8%
1,1,2-Trichloro-1,2,2-trifluoroethane	9.48	10.0	94.8%	10.8	10.0	108%	13.0%
m,p-Xylene	19.9	20.0	99.5%	19.5	20.0	97.5%	2.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081414A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A

QC Report No: YV50-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16219

Project: Precision Engineering

Matrix: Water

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.82	10.0	98.2%	9.73	10.0	97.3%	0.9%
1,2-Dichlorobenzene	9.61	10.0	96.1%	9.72	10.0	97.2%	1.1%
1,3-Dichlorobenzene	9.57	10.0	95.7%	9.44	10.0	94.4%	1.4%
1,4-Dichlorobenzene	9.07	10.0	90.7%	9.27	10.0	92.7%	2.2%
Acrolein	44.9	50.0	89.8%	46.5	50.0	93.0%	3.5%
Iodomethane	10.1	10.0	101%	9.34	10.0	93.4%	7.8%
Bromoethane	10.1	10.0	101%	9.19	10.0	91.9%	9.4%
Acrylonitrile	9.77	10.0	97.7%	9.98	10.0	99.8%	2.1%
1,1-Dichloropropene	9.58	10.0	95.8%	9.58	10.0	95.8%	0.0%
Dibromomethane	9.82	10.0	98.2%	9.94	10.0	99.4%	1.2%
1,1,1,2-Tetrachloroethane	9.98	10.0	99.8%	9.97	10.0	99.7%	0.1%
1,2-Dibromo-3-chloropropane	8.70	10.0	87.0%	9.46	10.0	94.6%	8.4%
1,2,3-Trichloropropane	9.77	10.0	97.7%	9.37	10.0	93.7%	4.2%
trans-1,4-Dichloro-2-butene	8.50	10.0	85.0%	9.33	10.0	93.3%	9.3%
1,3,5-Trimethylbenzene	9.54	10.0	95.4%	9.71	10.0	97.1%	1.8%
1,2,4-Trimethylbenzene	9.86	10.0	98.6%	10.0	10.0	100%	1.4%
Hexachlorobutadiene	10.5 B	10.0	105%	10.6 B	10.0	106%	0.9%
1,2-Dibromoethane	9.77	10.0	97.7%	9.17	10.0	91.7%	6.3%
Bromochloromethane	9.67	10.0	96.7%	9.55	10.0	95.5%	1.2%
2,2-Dichloropropane	9.48	10.0	94.8%	9.37	10.0	93.7%	1.2%
1,3-Dichloropropane	9.95	10.0	99.5%	9.73	10.0	97.3%	2.2%
Isopropylbenzene	9.67	10.0	96.7%	9.72	10.0	97.2%	0.5%
n-Propylbenzene	9.64	10.0	96.4%	9.70	10.0	97.0%	0.6%
Bromobenzene	9.80	10.0	98.0%	9.75	10.0	97.5%	0.5%
2-Chlorotoluene	9.79	10.0	97.9%	9.62	10.0	96.2%	1.8%
4-Chlorotoluene	9.45	10.0	94.5%	9.52	10.0	95.2%	0.7%
tert-Butylbenzene	9.72	10.0	97.2%	9.52	10.0	95.2%	2.1%
sec-Butylbenzene	9.47	10.0	94.7%	9.53	10.0	95.3%	0.6%
4-Isopropyltoluene	9.70	10.0	97.0%	9.88	10.0	98.8%	1.8%
n-Butylbenzene	9.46	10.0	94.6%	9.34	10.0	93.4%	1.3%
1,2,4-Trichlorobenzene	9.53	10.0	95.3%	8.87	10.0	88.7%	7.2%
Naphthalene	10.4	10.0	104%	9.24	10.0	92.4%	11.8%
1,2,3-Trichlorobenzene	9.87	10.0	98.7%	9.14	10.0	91.4%	7.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.4%	95.4%
d8-Toluene	99.6%	99.4%
Bromofluorobenzene	101%	98.7%
d4-1,2-Dichlorobenzene	100%	101%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-081414A	Method Blank	10	101%	100%	96.7%	98.4%	0
LCS-081414A	Lab Control	10	97.4%	99.6%	101%	100%	0
LCSD-081414A	Lab Control Dup	10	95.4%	99.4%	98.7%	101%	0
YV50A	SB4	10	99.7%	95.5%	98.4%	99.0%	0
YV50B	SB14	10	99.1%	102%	97.2%	102%	0
YV50C	SB11	10	101%	99.1%	95.6%	104%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane	(80-120)	(80-130)
(TOL) = d8-Toluene	(80-120)	(80-120)
(BFB) = Bromofluorobenzene	(80-120)	(80-120)
(DCB) = d4-1,2-Dichlorobenzene	(80-120)	(80-120)

Prep Method: SW5030B
Log Number Range: 14-16219 to 14-16221

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YV50-Kennedy Jenks Consultants,
Project: Precision Engineering

Matrix: Water

Date Received: 08/07/14

Data Release Authorized: *[Signature]*
Reported: 08/19/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-081414 14-16220	Method Blank HC ID: ---	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 105%
YV50B 14-16220	SB14 HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.38 0.46 66.0%
YV50C 14-16221	SB11 HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.44 0.49 70.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RR0 indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-081414

LCS/LCSD

Lab Sample ID: LCS-081414

LIMS ID: 14-16220

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 08/14/14

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 08/16/14 15:48

Final Extract Volume LCS: 1.0 mL

LCSD: 08/16/14 16:14

LCSD: 1.0 mL

Instrument/Analyst LCS: FID3B/VTS

Dilution Factor LCS: 1.00

LCSD: FID3B/VTS

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.63	3.00	87.7%	2.66	3.00	88.7%	1.1%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	93.5%	91.5%

Results reported in mg/L

RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/07/14

ARI Job: YV50
Project: Precision Engineering

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-16220-081414MB1	Method Blank	500 mL	1.00 mL	08/14/14
14-16220-081414LCS1	Lab Control	500 mL	1.00 mL	08/14/14
14-16220-081414LCSD1	Lab Control Dup	500 mL	1.00 mL	08/14/14
14-16220-YV50B	SB14	500 mL	1.00 mL	08/14/14
14-16221-YV50C	SB11	500 mL	1.00 mL	08/14/14

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-081414	105%	0
LCS-081414	93.5%	0
LCSD-081414	91.5%	0
SB14	66.0%	0
SB11	70.0%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

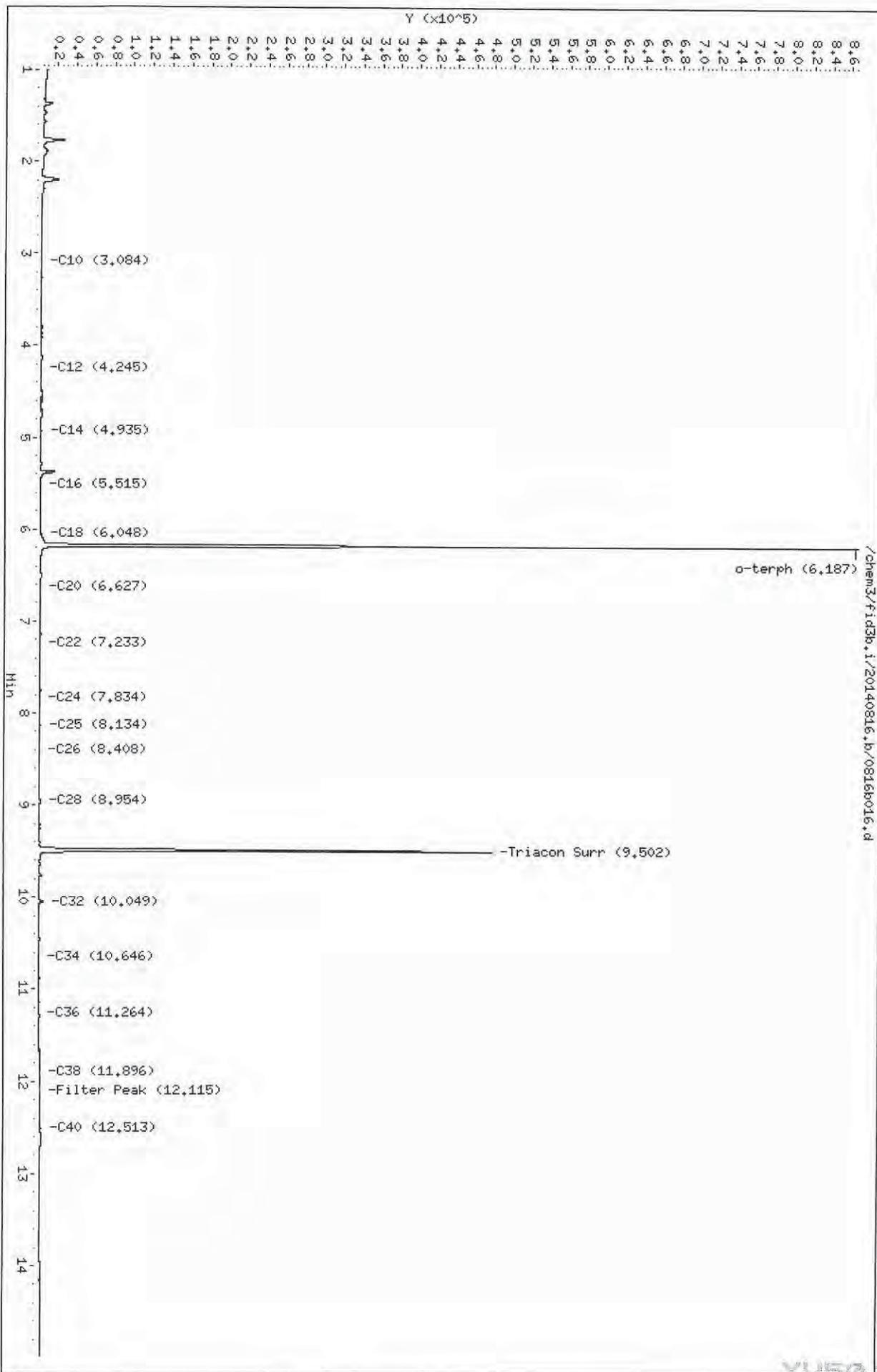
Prep Method: SW3510C

Log Number Range: 14-16220 to 14-16221

Data File: /chem3/fid3b,1/20140816,b/0816b016,d
Date: 16-AUG-2014 15:22
Client ID: YV50HBW1
Sample Info: YV50HBW1

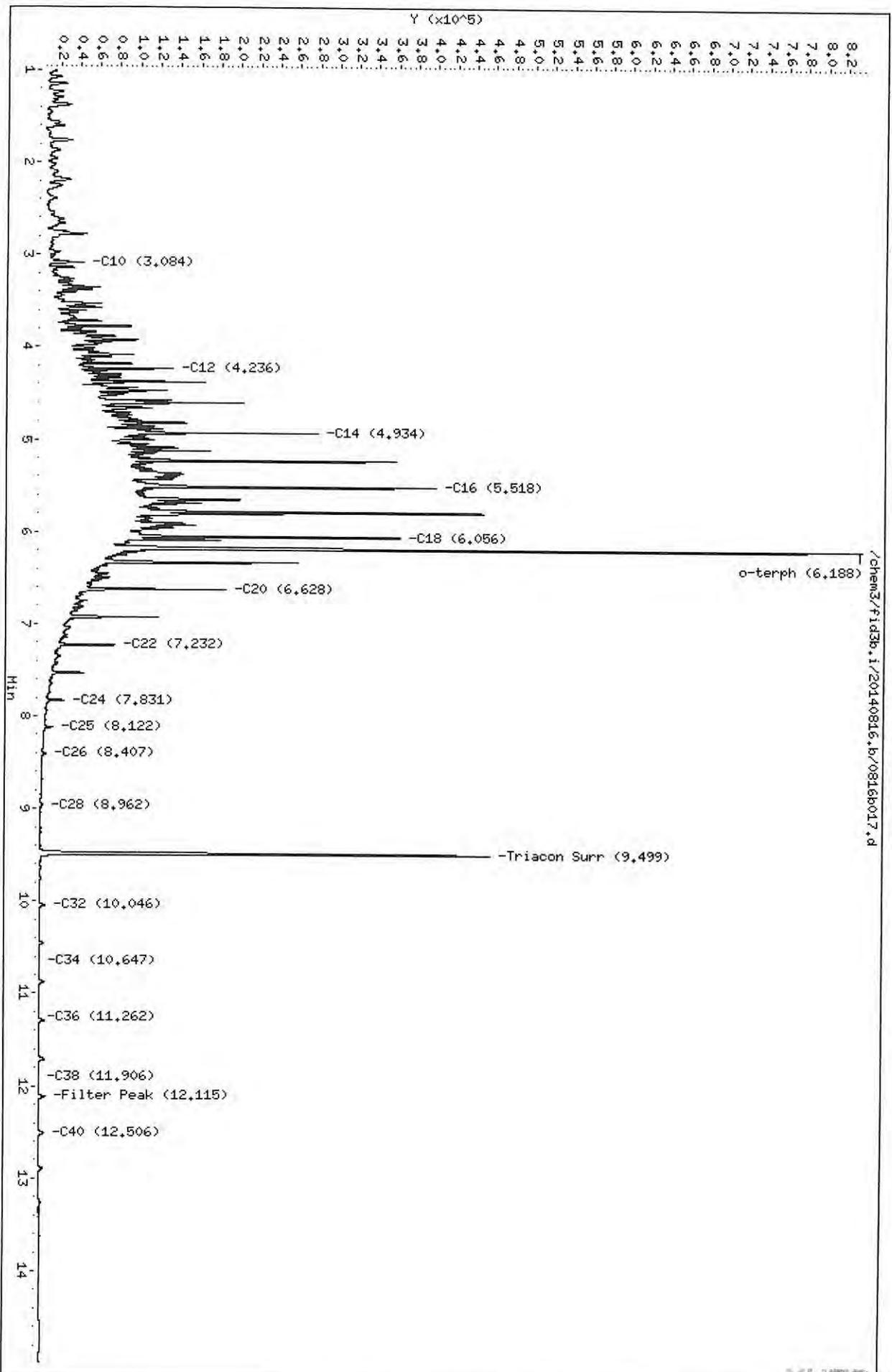
Column phase: RTX-1

Instrument: fid3b,1
Operator: VTS
Column diameter: 0.25

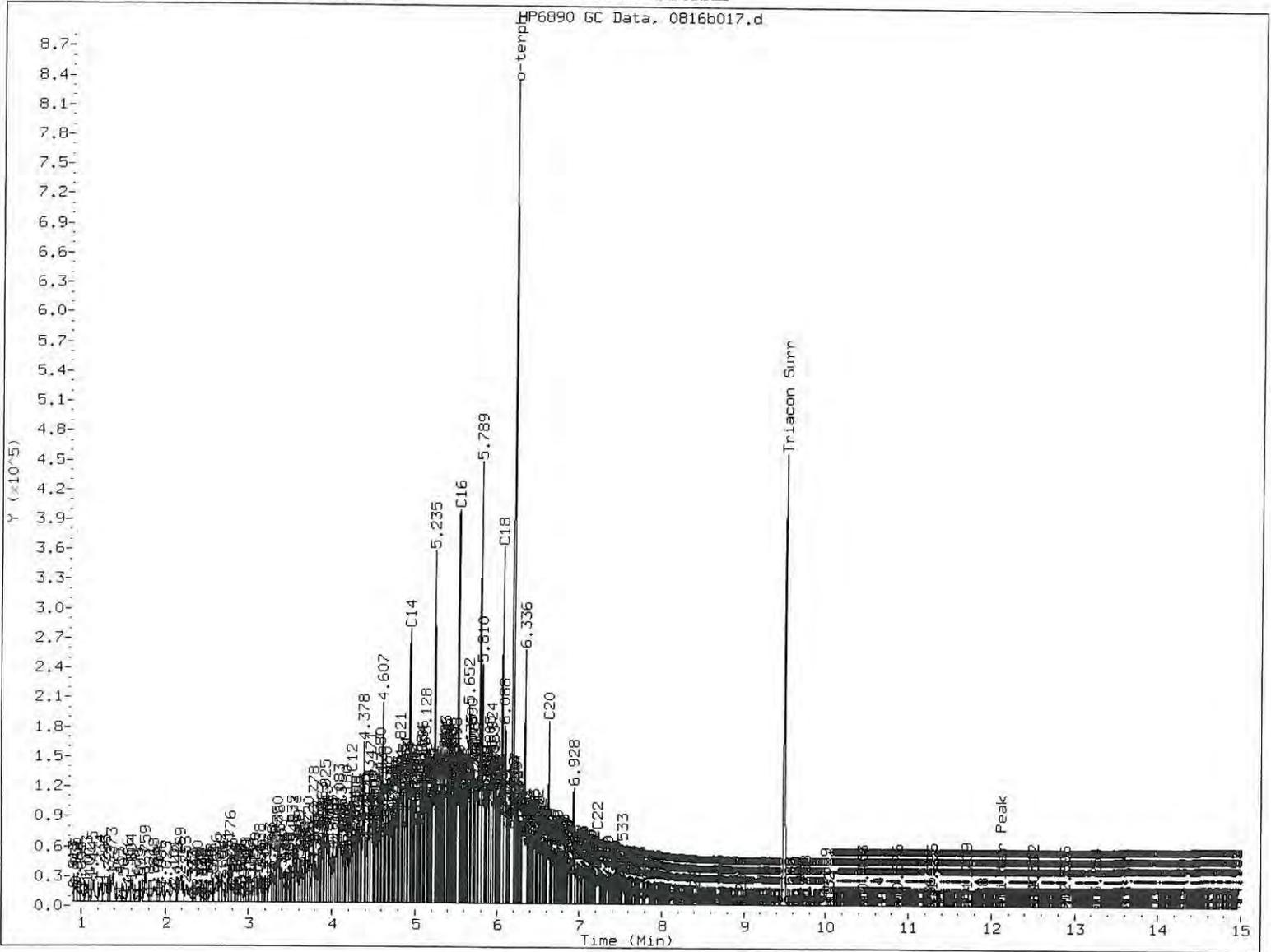


Data File: /chem3/fid3b.i/20140816.b/0816b017.d
Date: 16-AUG-2014 15:48
Client ID: YV50LCSM4
Sample Info: YV50LCSM4
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



Handwritten signature
8.19.14



MANUAL INTEGRATION

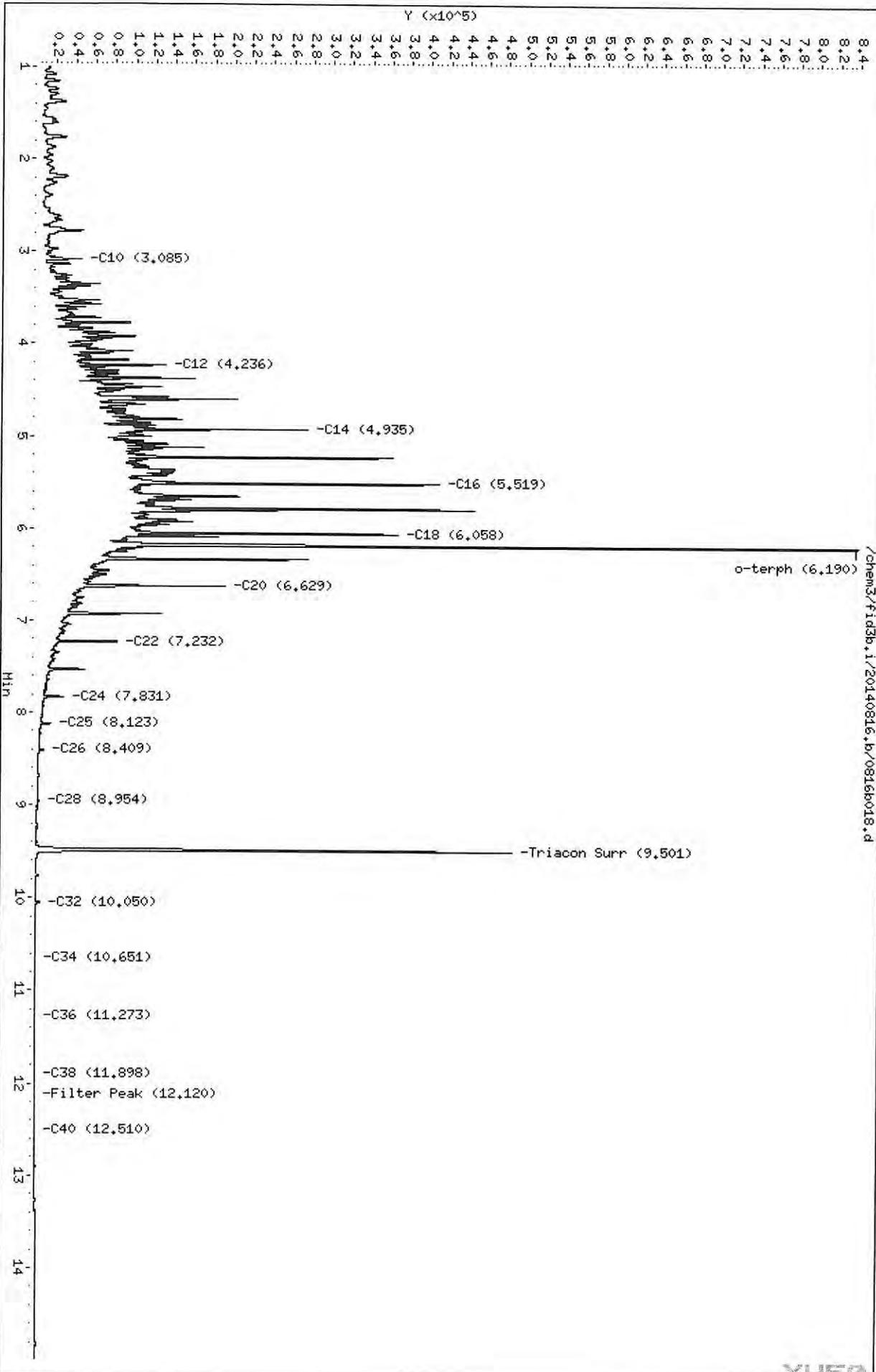
- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: ly

Date: 8-19-24

Data File: /chem3/fid3b.i/20140816.b/0816b018.d
Date: 16-AUG-2014 16:14
Client ID: YV50LCSDM4
Sample Info: YV50LCSDM4
Column phase: RTX-1

Instrument: fid3b.1
Operator: VTS
Column diameter: 0.25



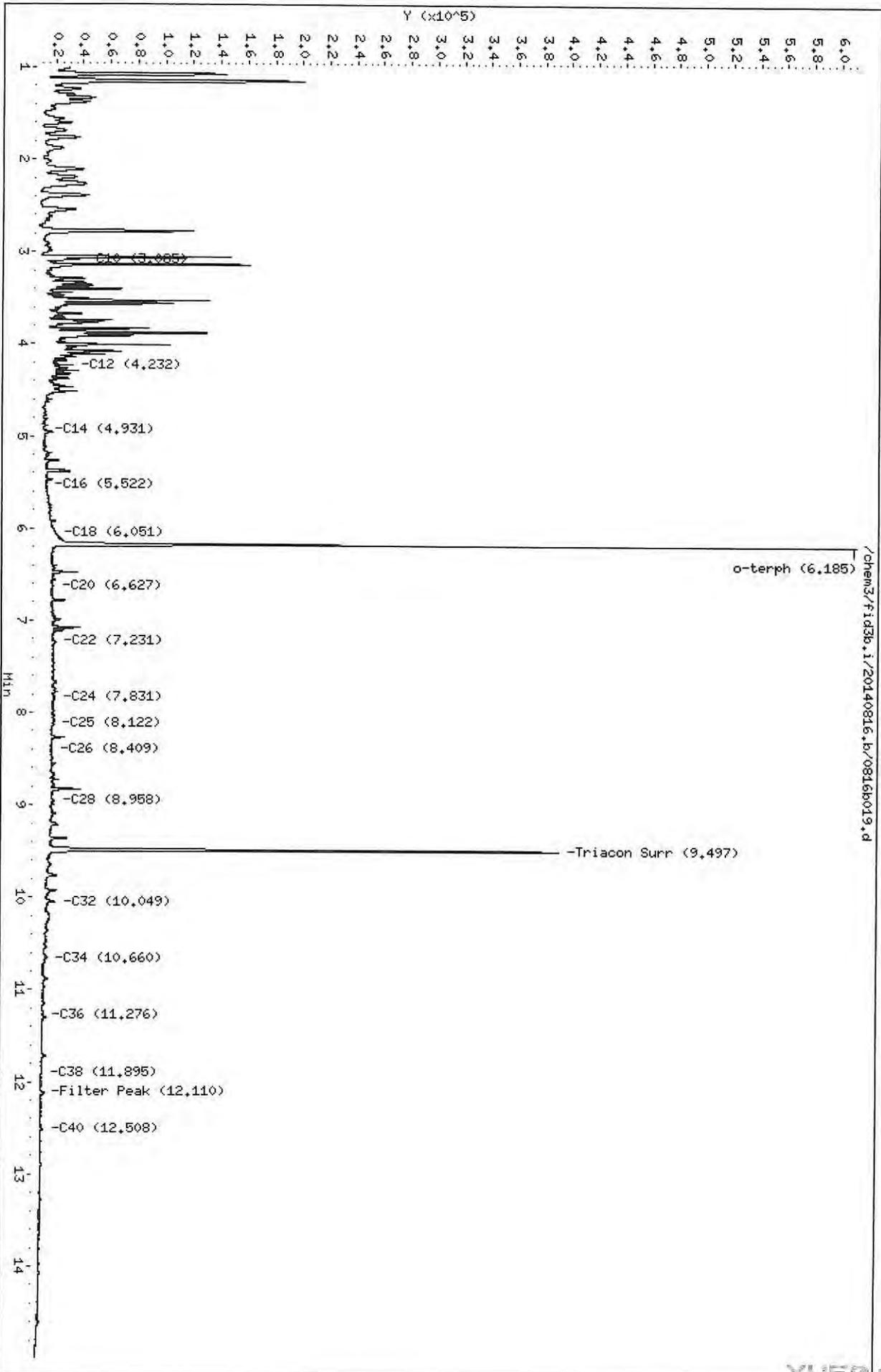
Handwritten signature and date: 8.17.14

Data File: /chem3/fid3b.i/20140816.b/0816b019.d
Date: 16-AUG-2014 16:41
Client ID: SB14
Sample Info: YV50B

Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

S
9.19.14

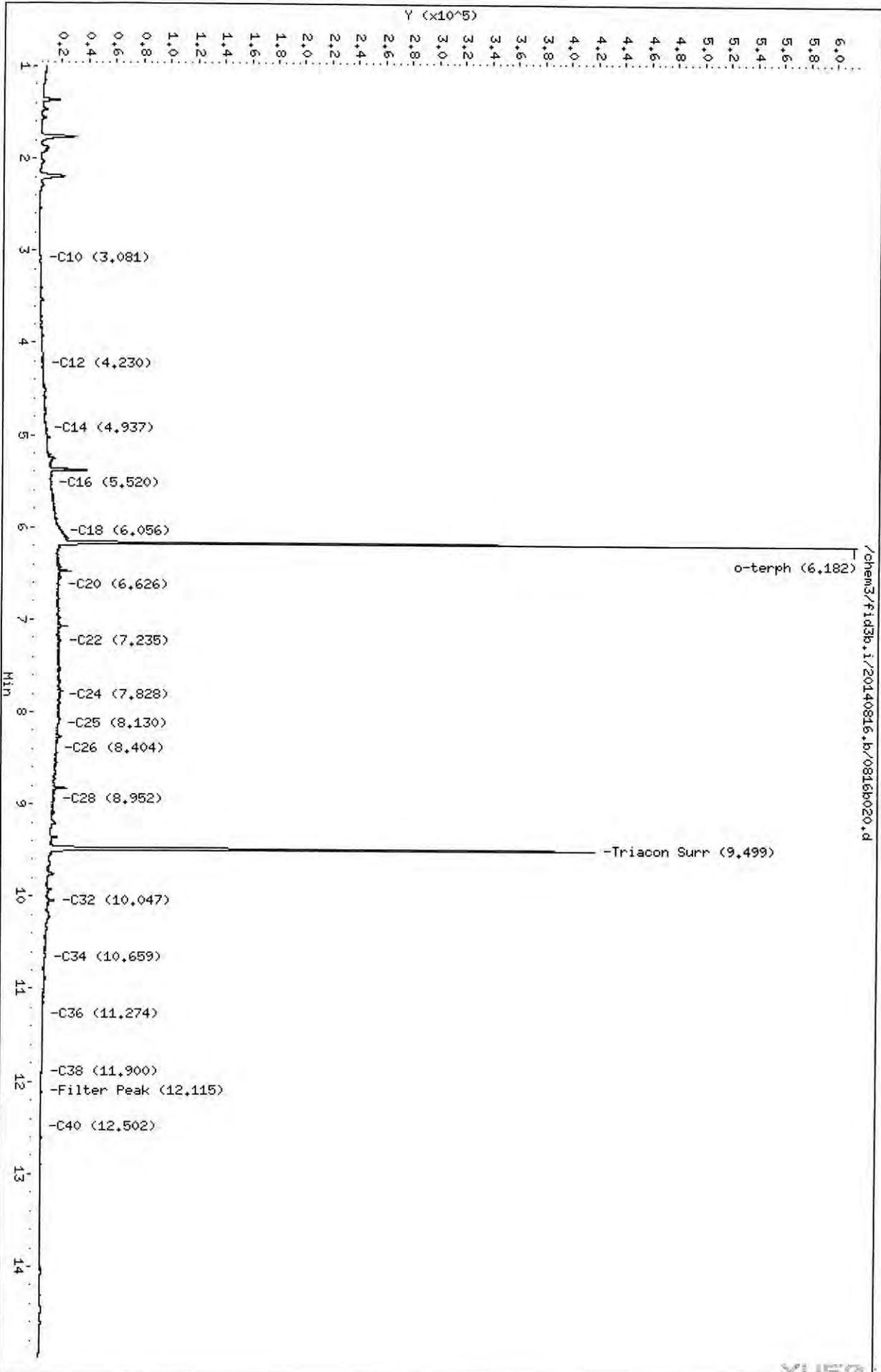


Data File: /chem3/fid3b.i/20140816.b/0816b020.d
Date: 16-AUG-2014 17:07
Client ID: SR11
Sample Info: YV50C

Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

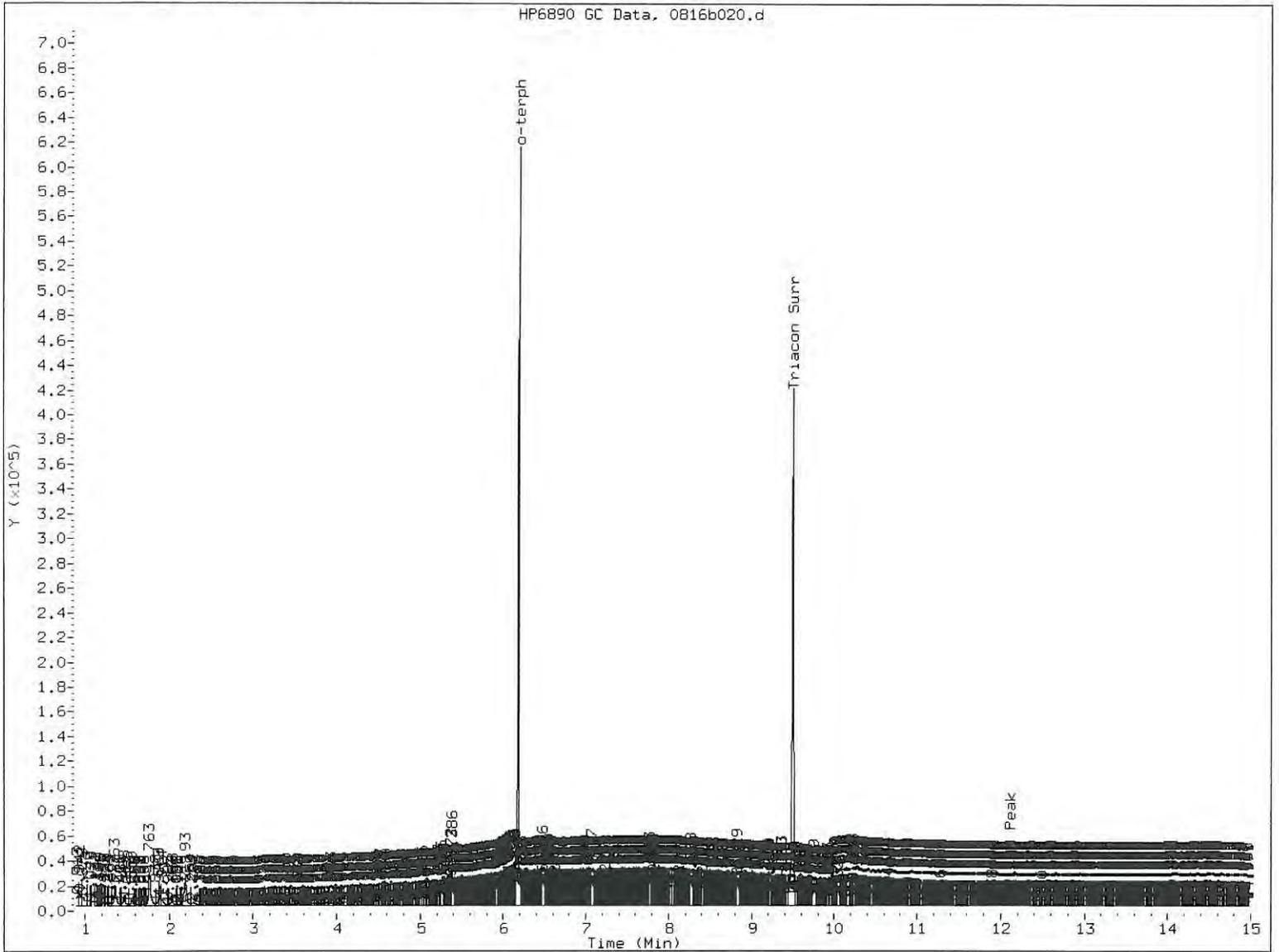
S.D. 16.11



FID:3B-2C/RTX-1 YV50C

FID:3B SIGNAL

HP6890 GC Data, 0816b020.d



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skipped surrogate

Analyst: ES

Date: 8.19.04

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B



Data Release Authorized: *JC*
Reported: 08/12/14
Date Received: 08/07/14
Page 1 of 1

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
SB4 YV50A 14-16219	08/07/14	Water	08/07/14 080714#1	0.010	< 0.010 U
SB14 YV50B 14-16220	08/07/14	Water	08/07/14 080714#1	0.010	< 0.010 U
SB11 YV50C 14-16221	08/07/14	Water	08/07/14 080714#1	0.010	< 0.010 U
SB12 YV50D 14-16222	08/07/14	Water	08/07/14 080714#1	0.010	0.014
SB13 YV50E 14-16223	08/07/14	Water	08/07/14 080714#1	0.010	0.012

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: *JJC*
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	08/07/14 17:57	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	08/07/14 17:57	mg/L	0.646	0.630	102.5%

REPLICATE RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.

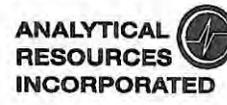


Matrix: Water
Data Release Authorized: 
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YV50A Client ID: SB4					
Hexavalent Chromium	08/07/14	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
YV50-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 08/12/14

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
---------	------	-------	--------	-------	-------------	----------

ARI ID: YV50A Client ID: SB4

Hexavalent Chromium	08/07/14	mg/L	< 0.010	< 0.010 U	0.063	NA
---------------------	----------	------	---------	-----------	-------	----

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB4
SAMPLE

Lab Sample ID: YV50A

LIMS ID: 14-16219

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.08	
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.063	
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.04	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SB4
DUPLICATE

Lab Sample ID: YV50A
LIMS ID: 14-16219
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.08	0.07	13.3%	+/- 0.05	L
Chromium	6010C	0.063	0.057	10.0%	+/- 20%	
Lead	6010C	0.04	0.04	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB4

MATRIX SPIKE

Lab Sample ID: YV50A

LIMS ID: 14-16219

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.08	2.29	2.00	110%	
Chromium	6010C	0.063	0.574	0.500	102%	
Lead	6010C	0.04	2.06	2.00	101%	
Selenium	6010C	0.05 U	2.22	2.00	111%	

Reported in mg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB14
SAMPLE

Lab Sample ID: YV50B

LIMS ID: 14-16220

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.047	
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.07	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB11
SAMPLE

Lab Sample ID: YV50C

LIMS ID: 14-16221

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.06	
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.010	
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.04	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB12
SAMPLE

Lab Sample ID: YV50D

LIMS ID: 14-16222

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.06	
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.076	
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.06	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB13
SAMPLE

Lab Sample ID: YV50E

LIMS ID: 14-16223

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.031	
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YV50MB
LIMS ID: 14-16223
Matrix: Water
Data Release Authorized:
Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/12/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/12/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/12/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/12/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YV50LCS

LIMS ID: 14-16223

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV50-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.10	2.00	105%	
Chromium	6010C	0.533	0.500	107%	
Lead	6010C	2.10	2.00	105%	
Selenium	6010C	2.08	2.00	104%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%

Chain of Custody Record & Laboratory Analysis Request

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



Page: 1 of 2
 Date: 8/17
 No. of Coolers: 0
 Ice Present?
 Cooler Temps: 104, 24.4

Turn-around Requested:
 ARI Assigned Number: 1451
 ARI Client Company: Kennedy Tanks
 Phone: 253 835 6400
 Client Contact: Jessica / Ty
 Client Project Name: Revision Engineering
 Client Project #: Sampling Site

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
					VOCs	TPH-D	Metals	Leach	
SB4-5	8/17	1600	Soil	8	X	X	X		
SB4-20		1645	Soil						
SB14-6		1430							
SB11-10		0910							
SB11-20		0915							
SB12-12		1020							
SB13-9		1215							
Comments/Special Instructions	Relinquished by: <i>[Signature]</i> Printed Name: Joseph Smidy Company: Kennedy/Tanks Date & Time: 8/17 1705				Relinquished by: <i>[Signature]</i> Printed Name: A. Volgardsen Company: ARI Date & Time: 8/17/14 1725				Received by: <i>[Signature]</i> Printed Name: Company: Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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

Cooler Receipt Form

ARI Client: Kennedy Jenks
 COC No(s): _____ (NA)
 Assigned ARI Job No: YV51

Project Name: Precision Eng
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO
 Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
 Time: 1705 124 24.4

If cooler temperature is out of compliance fill out form 00070F
 Cooler Accepted by: AV Date: 8/7/14 Time: 1705 Temp Gun ID#: 90877983

Complete custody forms and attach all shipping documents

Log-In Phase:

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

Samples Logged by: YS Date: 8-7-14 Time: 800

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

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

Additional Notes, Discrepancies, & Resolutions: SBI-30 No Vol or Diesel Containers given.

By: _____ Date: _____

<p>Small Air Bubbles - 2mm</p>	<p>Peabubbles 2-4 mm</p>	<p>LARGE Air Bubbles > 4 mm</p>	Small → "sm" (< 2 mm) Peabubbles → "pb" (2 to < 4 mm) Large → "lg" (4 to < 6 mm) Headspace → "hs" (> 6 mm)
------------------------------------	------------------------------	--	---

Sample ID Cross Reference Report



ARI Job No: YV51
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: Precision Engineering

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. SB4-5	YV51A	14-16224	Soil	08/07/14 16:00	08/07/14 17:25
2. SB4-20	YV51B	14-16225	Soil	08/07/14 16:45	08/07/14 17:25
3. SB14-6	YV51C	14-16226	Soil	08/07/14 14:20	08/07/14 17:25
4. SB11-10	YV51D	14-16227	Soil	08/07/14 09:10	08/07/14 17:25
5. SB11-30	YV51E	14-16228	Soil	08/07/14 09:15	08/07/14 17:25
6. SB12-12	YV51F	14-16229	Soil	08/07/14 10:20	08/07/14 17:25
7. SB13-9	YV51G	14-16230	Soil	08/07/14 12:15	08/07/14 17:25

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB4-5

Page 1 of 2

SAMPLE

Lab Sample ID: YV51A

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16224

Project: Precision Engineering

Matrix: Soil

Data Release Authorized: 

Date Sampled: 08/07/14

Reported: 08/14/14

Date Received: 08/07/14

Instrument/Analyst: NT5/PAB

Sample Amount: 2.85 g-dry-wt

Date Analyzed: 08/12/14 14:58

Purge Volume: 5.0 mL

Moisture: 25.4%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.8	< 1.8	U
74-83-9	Bromomethane	1.8	< 1.8	U
75-01-4	Vinyl Chloride	1.8	< 1.8	U
75-00-3	Chloroethane	1.8	< 1.8	U
75-09-2	Methylene Chloride	3.5	3.9	
67-64-1	Acetone	8.8	32	Q
75-15-0	Carbon Disulfide	1.8	4.5	Q
75-35-4	1,1-Dichloroethane	1.8	< 1.8	U
75-34-3	1,1-Dichloroethane	1.8	< 1.8	U
156-60-5	trans-1,2-Dichloroethene	1.8	< 1.8	U
156-59-2	cis-1,2-Dichloroethene	1.8	< 1.8	U
67-66-3	Chloroform	1.8	< 1.8	U
107-06-2	1,2-Dichloroethane	1.8	< 1.8	U
78-93-3	2-Butanone	8.8	< 8.8	U
71-55-6	1,1,1-Trichloroethane	1.8	< 1.8	U
56-23-5	Carbon Tetrachloride	1.8	< 1.8	U
108-05-4	Vinyl Acetate	8.8	< 8.8	U
75-27-4	Bromodichloromethane	1.8	< 1.8	U
78-87-5	1,2-Dichloropropane	1.8	< 1.8	U
10061-01-5	cis-1,3-Dichloropropene	1.8	< 1.8	U
79-01-6	Trichloroethene	1.8	< 1.8	U
124-48-1	Dibromochloromethane	1.8	< 1.8	U
79-00-5	1,1,2-Trichloroethane	1.8	< 1.8	U
71-43-2	Benzene	1.8	< 1.8	U
10061-02-6	trans-1,3-Dichloropropene	1.8	< 1.8	U
110-75-8	2-Chloroethylvinylether	8.8	< 8.8	U
75-25-2	Bromoform	1.8	< 1.8	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	8.8	< 8.8	U
591-78-6	2-Hexanone	8.8	< 8.8	U
127-18-4	Tetrachloroethene	1.8	< 1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	1.8	< 1.8	U
108-88-3	Toluene	1.8	< 1.8	U
108-90-7	Chlorobenzene	1.8	< 1.8	U
100-41-4	Ethylbenzene	1.8	< 1.8	U
100-42-5	Styrene	1.8	< 1.8	U
75-69-4	Trichlorofluoromethane	1.8	< 1.8	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.5	< 3.5	U
179601-23-1	m,p-Xylene	1.8	< 1.8	U
95-47-6	o-Xylene	1.8	< 1.8	U
95-50-1	1,2-Dichlorobenzene	1.8	< 1.8	U
541-73-1	1,3-Dichlorobenzene	1.8	< 1.8	U
106-46-7	1,4-Dichlorobenzene	1.8	< 1.8	U
107-02-8	Acrolein	88	< 88	U
74-88-4	Iodomethane	1.8	< 1.8	U
74-96-4	Bromoethane	3.5	< 3.5	U
107-13-1	Acrylonitrile	8.8	< 8.8	U
563-58-6	1,1-Dichloropropene	1.8	< 1.8	U
74-95-3	Dibromomethane	1.8	< 1.8	U
630-20-6	1,1,1,2-Tetrachloroethane	1.8	< 1.8	U
96-12-8	1,2-Dibromo-3-chloropropane	8.8	< 8.8	U
96-18-4	1,2,3-Trichloropropane	3.5	< 3.5	U
110-57-6	trans-1,4-Dichloro-2-butene	8.8	< 8.8	U
108-67-8	1,3,5-Trimethylbenzene	1.8	< 1.8	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB4-5

SAMPLE



Lab Sample ID: YV51A

LIMS ID: 14-16224

Matrix: Soil

Date Analyzed: 08/12/14 14:58

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.8	< 1.8	U
87-68-3	Hexachlorobutadiene	8.8	< 8.8	U
106-93-4	1,2-Dibromoethane	1.8	< 1.8	U
74-97-5	Bromochloromethane	1.8	< 1.8	U
594-20-7	2,2-Dichloropropane	1.8	< 1.8	U
142-28-9	1,3-Dichloropropane	1.8	< 1.8	U
98-82-8	Isopropylbenzene	1.8	< 1.8	U
103-65-1	n-Propylbenzene	1.8	< 1.8	U
108-86-1	Bromobenzene	1.8	< 1.8	U
95-49-8	2-Chlorotoluene	1.8	< 1.8	U
106-43-4	4-Chlorotoluene	1.8	< 1.8	U
98-06-6	tert-Butylbenzene	1.8	< 1.8	U
135-98-8	sec-Butylbenzene	1.8	< 1.8	U
99-87-6	4-Isopropyltoluene	1.8	< 1.8	U
104-51-8	n-Butylbenzene	1.8	< 1.8	U
120-82-1	1,2,4-Trichlorobenzene	8.8	< 8.8	U
91-20-3	Naphthalene	8.8	< 8.8	U
87-61-6	1,2,3-Trichlorobenzene	8.8	< 8.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	100%
Bromofluorobenzene	94.9%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB4-20

Page 1 of 2

SAMPLE

Lab Sample ID: YV51B

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16225

Project: Precision Engineering

Matrix: Soil

Data Release Authorized:

Date Sampled: 08/07/14

Reported: 08/14/14

Date Received: 08/07/14

Instrument/Analyst: NT5/PAB

Sample Amount: 4.57 g-dry-wt

Date Analyzed: 08/12/14 15:23

Purge Volume: 5.0 mL

Moisture: 19.3%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	Methylene Chloride	2.2	2.8	
67-64-1	Acetone	5.5	36	Q
75-15-0	Carbon Disulfide	1.1	6.3	Q
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.5	< 5.5	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.5	< 5.5	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.5	< 5.5	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.5	< 5.5	U
591-78-6	2-Hexanone	5.5	< 5.5	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.2	< 2.2	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	55	< 55	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.2	< 2.2	U
107-13-1	Acrylonitrile	5.5	< 5.5	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.5	< 5.5	U
96-18-4	1,2,3-Trichloropropane	2.2	< 2.2	U
110-57-6	trans-1,4-Dichloro-2-butene	5.5	< 5.5	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: SB4-20
 SAMPLE



Lab Sample ID: YV51B
 LIMS ID: 14-16225
 Matrix: Soil
 Date Analyzed: 08/12/14 15:23

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.5	< 5.5	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.5	< 5.5	U
91-20-3	Naphthalene	5.5	< 5.5	U
87-61-6	1,2,3-Trichlorobenzene	5.5	< 5.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	127%
d8-Toluene	101%
Bromofluorobenzene	99.8%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: SB14-6

SAMPLE



Lab Sample ID: YV51C

LIMS ID: 14-16226

Matrix: Soil

Data Release Authorized:

Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Instrument/Analyst: NT5/PAB

Date Analyzed: 08/12/14 15:48

Sample Amount: 2.42 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 10.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	2.1	< 2.1	U
74-83-9	Bromomethane	2.1	< 2.1	U
75-01-4	Vinyl Chloride	2.1	< 2.1	U
75-00-3	Chloroethane	2.1	< 2.1	U
75-09-2	Methylene Chloride	4.1	< 4.1	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	2.1	6.7	Q
75-35-4	1,1-Dichloroethene	2.1	< 2.1	U
75-34-3	1,1-Dichloroethane	2.1	< 2.1	U
156-60-5	trans-1,2-Dichloroethene	2.1	< 2.1	U
156-59-2	cis-1,2-Dichloroethene	2.1	< 2.1	U
67-66-3	Chloroform	2.1	< 2.1	U
107-06-2	1,2-Dichloroethane	2.1	< 2.1	U
78-93-3	2-Butanone	10	< 10	U
71-55-6	1,1,1-Trichloroethane	2.1	< 2.1	U
56-23-5	Carbon Tetrachloride	2.1	< 2.1	U
108-05-4	Vinyl Acetate	10	< 10	U
75-27-4	Bromodichloromethane	2.1	< 2.1	U
78-87-5	1,2-Dichloropropane	2.1	< 2.1	U
10061-01-5	cis-1,3-Dichloropropene	2.1	< 2.1	U
79-01-6	Trichloroethene	2.1	< 2.1	U
124-48-1	Dibromochloromethane	2.1	< 2.1	U
79-00-5	1,1,2-Trichloroethane	2.1	< 2.1	U
71-43-2	Benzene	2.1	2.1	
10061-02-6	trans-1,3-Dichloropropene	2.1	< 2.1	U
110-75-8	2-Chloroethylvinylether	10	< 10	U
75-25-2	Bromoform	2.1	< 2.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10	< 10	U
591-78-6	2-Hexanone	10	< 10	U
127-18-4	Tetrachloroethene	2.1	< 2.1	U
79-34-5	1,1,2,2-Tetrachloroethane	2.1	< 2.1	U
108-88-3	Toluene	2.1	7.1	
108-90-7	Chlorobenzene	2.1	< 2.1	U
100-41-4	Ethylbenzene	2.1	56	
100-42-5	Styrene	2.1	< 2.1	U
75-69-4	Trichlorofluoromethane	2.1	< 2.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	4.1	< 4.1	U
179601-23-1	m,p-Xylene	2.1	29	
95-47-6	o-Xylene	2.1	< 2.1	U
95-50-1	1,2-Dichlorobenzene	2.1	< 2.1	U
541-73-1	1,3-Dichlorobenzene	2.1	< 2.1	U
106-46-7	1,4-Dichlorobenzene	2.1	< 2.1	U
107-02-8	Acrolein	100	< 100	U
74-88-4	Iodomethane	2.1	< 2.1	U
74-96-4	Bromoethane	4.1	< 4.1	U
107-13-1	Acrylonitrile	10	< 10	U
563-58-6	1,1-Dichloropropene	2.1	< 2.1	U
74-95-3	Dibromomethane	2.1	< 2.1	U
630-20-6	1,1,1,2-Tetrachloroethane	2.1	< 2.1	U
96-12-8	1,2-Dibromo-3-chloropropane	10	< 10	U
96-18-4	1,2,3-Trichloropropane	4.1	< 4.1	U
110-57-6	trans-1,4-Dichloro-2-butene	10	< 10	U
108-67-8	1,3,5-Trimethylbenzene	2.1	16	

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB14-6

Page 2 of 2

SAMPLE

Lab Sample ID: YV51C

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16226

Project: Precision Engineering

Matrix: Soil

Date Analyzed: 08/12/14 15:48

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	2.1	8.0	
87-68-3	Hexachlorobutadiene	10	< 10	U
106-93-4	1,2-Dibromoethane	2.1	< 2.1	U
74-97-5	Bromochloromethane	2.1	< 2.1	U
594-20-7	2,2-Dichloropropane	2.1	< 2.1	U
142-28-9	1,3-Dichloropropane	2.1	< 2.1	U
98-82-8	Isopropylbenzene	2.1	15	
103-65-1	n-Propylbenzene	2.1	46	
108-86-1	Bromobenzene	2.1	< 2.1	U
95-49-8	2-Chlorotoluene	2.1	< 2.1	U
106-43-4	4-Chlorotoluene	2.1	< 2.1	U
98-06-6	tert-Butylbenzene	2.1	< 2.1	U
135-98-8	sec-Butylbenzene	2.1	3.6	
99-87-6	4-Isopropyltoluene	2.1	4.0	
104-51-8	n-Butylbenzene	2.1	11	Q
120-82-1	1,2,4-Trichlorobenzene	10	< 10	U
91-20-3	Naphthalene	10	28	
87-61-6	1,2,3-Trichlorobenzene	10	< 10	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	133%
d8-Toluene	104%
Bromofluorobenzene	95.7%
d4-1,2-Dichlorobenzene	99.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB11-10

Page 1 of 2

SAMPLE

Lab Sample ID: YV51D

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16227

Project: Precision Engineering

Matrix: Soil

Data Release Authorized:

Date Sampled: 08/07/14

Reported: 08/14/14

Date Received: 08/07/14

Instrument/Analyst: NT5/PAB

Sample Amount: 3.92 g-dry-wt

Date Analyzed: 08/12/14 16:13

Purge Volume: 5.0 mL

Moisture: 19.1%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.3	< 1.3	U
74-83-9	Bromomethane	1.3	< 1.3	U
75-01-4	Vinyl Chloride	1.3	< 1.3	U
75-00-3	Chloroethane	1.3	< 1.3	U
75-09-2	Methylene Chloride	2.5	8.3	
67-64-1	Acetone	6.4	35	Q
75-15-0	Carbon Disulfide	1.3	4.8	Q
75-35-4	1,1-Dichloroethene	1.3	< 1.3	U
75-34-3	1,1-Dichloroethane	1.3	< 1.3	U
156-60-5	trans-1,2-Dichloroethene	1.3	< 1.3	U
156-59-2	cis-1,2-Dichloroethene	1.3	< 1.3	U
67-66-3	Chloroform	1.3	< 1.3	U
107-06-2	1,2-Dichloroethane	1.3	< 1.3	U
78-93-3	2-Butanone	6.4	< 6.4	U
71-55-6	1,1,1-Trichloroethane	1.3	< 1.3	U
56-23-5	Carbon Tetrachloride	1.3	< 1.3	U
108-05-4	Vinyl Acetate	6.4	< 6.4	U
75-27-4	Bromodichloromethane	1.3	< 1.3	U
78-87-5	1,2-Dichloropropane	1.3	< 1.3	U
10061-01-5	cis-1,3-Dichloropropene	1.3	< 1.3	U
79-01-6	Trichloroethene	1.3	< 1.3	U
124-48-1	Dibromochloromethane	1.3	< 1.3	U
79-00-5	1,1,2-Trichloroethane	1.3	< 1.3	U
71-43-2	Benzene	1.3	< 1.3	U
10061-02-6	trans-1,3-Dichloropropene	1.3	< 1.3	U
110-75-8	2-Chloroethylvinylether	6.4	< 6.4	U
75-25-2	Bromoform	1.3	< 1.3	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.4	< 6.4	U
591-78-6	2-Hexanone	6.4	< 6.4	U
127-18-4	Tetrachloroethene	1.3	< 1.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1.3	< 1.3	U
108-88-3	Toluene	1.3	< 1.3	U
108-90-7	Chlorobenzene	1.3	< 1.3	U
100-41-4	Ethylbenzene	1.3	< 1.3	U
100-42-5	Styrene	1.3	< 1.3	U
75-69-4	Trichlorofluoromethane	1.3	< 1.3	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.5	< 2.5	U
179601-23-1	m,p-Xylene	1.3	< 1.3	U
95-47-6	o-Xylene	1.3	< 1.3	U
95-50-1	1,2-Dichlorobenzene	1.3	< 1.3	U
541-73-1	1,3-Dichlorobenzene	1.3	< 1.3	U
106-46-7	1,4-Dichlorobenzene	1.3	< 1.3	U
107-02-8	Acrolein	64	< 64	U
74-88-4	Iodomethane	1.3	< 1.3	U
74-96-4	Bromoethane	2.5	< 2.5	U
107-13-1	Acrylonitrile	6.4	< 6.4	U
563-58-6	1,1-Dichloropropene	1.3	< 1.3	U
74-95-3	Dibromomethane	1.3	< 1.3	U
630-20-6	1,1,1,2-Tetrachloroethane	1.3	< 1.3	U
96-12-8	1,2-Dibromo-3-chloropropane	6.4	< 6.4	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	6.4	< 6.4	U
108-67-8	1,3,5-Trimethylbenzene	1.3	< 1.3	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB11-10

Page 2 of 2

SAMPLE

Lab Sample ID: YV51D

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16227

Project: Precision Engineering

Matrix: Soil

Date Analyzed: 08/12/14 16:13

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.3	< 1.3	U
87-68-3	Hexachlorobutadiene	6.4	< 6.4	U
106-93-4	1,2-Dibromoethane	1.3	< 1.3	U
74-97-5	Bromochloromethane	1.3	< 1.3	U
594-20-7	2,2-Dichloropropane	1.3	< 1.3	U
142-28-9	1,3-Dichloropropane	1.3	< 1.3	U
98-82-8	Isopropylbenzene	1.3	< 1.3	U
103-65-1	n-Propylbenzene	1.3	< 1.3	U
108-86-1	Bromobenzene	1.3	< 1.3	U
95-49-8	2-Chlorotoluene	1.3	< 1.3	U
106-43-4	4-Chlorotoluene	1.3	< 1.3	U
98-06-6	tert-Butylbenzene	1.3	< 1.3	U
135-98-8	sec-Butylbenzene	1.3	< 1.3	U
99-87-6	4-Isopropyltoluene	1.3	< 1.3	U
104-51-8	n-Butylbenzene	1.3	< 1.3	U
120-82-1	1,2,4-Trichlorobenzene	6.4	< 6.4	U
91-20-3	Naphthalene	6.4	< 6.4	U
87-61-6	1,2,3-Trichlorobenzene	6.4	< 6.4	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	127%
d8-Toluene	103%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: SB12-12

SAMPLE



Lab Sample ID: YV51F

LIMS ID: 14-16229

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Instrument/Analyst: NT5/PAB

Date Analyzed: 08/12/14 16:38

Sample Amount: 4.16 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 23.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.2	< 1.2	U
74-83-9	Bromomethane	1.2	< 1.2	U
75-01-4	Vinyl Chloride	1.2	< 1.2	U
75-00-3	Chloroethane	1.2	< 1.2	U
75-09-2	Methylene Chloride	2.4	< 2.4	U
67-64-1	Acetone	6.0	55	Q
75-15-0	Carbon Disulfide	1.2	21	Q
75-35-4	1,1-Dichloroethane	1.2	< 1.2	U
75-34-3	1,1-Dichloroethane	1.2	< 1.2	U
156-60-5	trans-1,2-Dichloroethene	1.2	< 1.2	U
156-59-2	cis-1,2-Dichloroethene	1.2	< 1.2	U
67-66-3	Chloroform	1.2	< 1.2	U
107-06-2	1,2-Dichloroethane	1.2	< 1.2	U
78-93-3	2-Butanone	6.0	< 6.0	U
71-55-6	1,1,1-Trichloroethane	1.2	< 1.2	U
56-23-5	Carbon Tetrachloride	1.2	< 1.2	U
108-05-4	Vinyl Acetate	6.0	< 6.0	U
75-27-4	Bromodichloromethane	1.2	< 1.2	U
78-87-5	1,2-Dichloropropane	1.2	< 1.2	U
10061-01-5	cis-1,3-Dichloropropene	1.2	< 1.2	U
79-01-6	Trichloroethene	1.2	< 1.2	U
124-48-1	Dibromochloromethane	1.2	< 1.2	U
79-00-5	1,1,2-Trichloroethane	1.2	< 1.2	U
71-43-2	Benzene	1.2	< 1.2	U
10061-02-6	trans-1,3-Dichloropropene	1.2	< 1.2	U
110-75-8	2-Chloroethylvinylether	6.0	< 6.0	U
75-25-2	Bromoform	1.2	< 1.2	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.0	< 6.0	U
591-78-6	2-Hexanone	6.0	< 6.0	U
127-18-4	Tetrachloroethene	1.2	< 1.2	U
79-34-5	1,1,2,2-Tetrachloroethane	1.2	< 1.2	U
108-88-3	Toluene	1.2	< 1.2	U
108-90-7	Chlorobenzene	1.2	< 1.2	U
100-41-4	Ethylbenzene	1.2	< 1.2	U
100-42-5	Styrene	1.2	< 1.2	U
75-69-4	Trichlorofluoromethane	1.2	< 1.2	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.4	< 2.4	U
179601-23-1	m,p-Xylene	1.2	< 1.2	U
95-47-6	o-Xylene	1.2	< 1.2	U
95-50-1	1,2-Dichlorobenzene	1.2	< 1.2	U
541-73-1	1,3-Dichlorobenzene	1.2	< 1.2	U
106-46-7	1,4-Dichlorobenzene	1.2	< 1.2	U
107-02-8	Acrolein	60	< 60	U
74-88-4	Iodomethane	1.2	< 1.2	U
74-96-4	Bromoethane	2.4	< 2.4	U
107-13-1	Acrylonitrile	6.0	< 6.0	U
563-58-6	1,1-Dichloropropene	1.2	< 1.2	U
74-95-3	Dibromomethane	1.2	< 1.2	U
630-20-6	1,1,1,2-Tetrachloroethane	1.2	< 1.2	U
96-12-8	1,2-Dibromo-3-chloropropane	6.0	< 6.0	U
96-18-4	1,2,3-Trichloropropane	2.4	< 2.4	U
110-57-6	trans-1,4-Dichloro-2-butene	6.0	< 6.0	U
108-67-8	1,3,5-Trimethylbenzene	1.2	< 1.2	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB12-12

SAMPLE



Lab Sample ID: YV51F

LIMS ID: 14-16229

Matrix: Soil

Date Analyzed: 08/12/14 16:38

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.2	< 1.2	U
87-68-3	Hexachlorobutadiene	6.0	< 6.0	U
106-93-4	1,2-Dibromoethane	1.2	< 1.2	U
74-97-5	Bromochloromethane	1.2	< 1.2	U
594-20-7	2,2-Dichloropropane	1.2	< 1.2	U
142-28-9	1,3-Dichloropropane	1.2	< 1.2	U
98-82-8	Isopropylbenzene	1.2	< 1.2	U
103-65-1	n-Propylbenzene	1.2	< 1.2	U
108-86-1	Bromobenzene	1.2	< 1.2	U
95-49-8	2-Chlorotoluene	1.2	< 1.2	U
106-43-4	4-Chlorotoluene	1.2	< 1.2	U
98-06-6	tert-Butylbenzene	1.2	< 1.2	U
135-98-8	sec-Butylbenzene	1.2	< 1.2	U
99-87-6	4-Isopropyltoluene	1.2	< 1.2	U
104-51-8	n-Butylbenzene	1.2	< 1.2	U
120-82-1	1,2,4-Trichlorobenzene	6.0	< 6.0	U
91-20-3	Naphthalene	6.0	< 6.0	U
87-61-6	1,2,3-Trichlorobenzene	6.0	< 6.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	102%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: SB13-9

SAMPLE



Lab Sample ID: YV51G

LIMS ID: 14-16230

Matrix: Soil

Data Release Authorized:

Reported: 08/14/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Instrument/Analyst: NT5/PAB

Date Analyzed: 08/12/14 17:03

Sample Amount: 3.46 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 26.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	Methylene Chloride	2.9	3.5	
67-64-1	Acetone	7.2	37	Q
75-15-0	Carbon Disulfide	1.4	3.0	Q
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	7.2	< 7.2	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	7.2	< 7.2	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	7.2	< 7.2	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.2	< 7.2	U
591-78-6	2-Hexanone	7.2	< 7.2	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.9	< 2.9	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	7.2	< 7.2	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.9	< 2.9	U
107-13-1	Acrylonitrile	7.2	< 7.2	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	7.2	< 7.2	U
96-18-4	1,2,3-Trichloropropane	2.9	< 2.9	U
110-57-6	trans-1,4-Dichloro-2-butene	7.2	< 7.2	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB13-9

Page 2 of 2

SAMPLE

Lab Sample ID: YV51G

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16230

Project: Precision Engineering

Matrix: Soil

Date Analyzed: 08/12/14 17:03

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	7.2	< 7.2	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	8.1	
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	4.5	Q
120-82-1	1,2,4-Trichlorobenzene	7.2	< 7.2	U
91-20-3	Naphthalene	7.2	< 7.2	U
87-61-6	1,2,3-Trichlorobenzene	7.2	< 7.2	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	118%
d8-Toluene	102%
Bromofluorobenzene	96.3%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-081214A

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-081214A

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16224

Project: Precision Engineering

Matrix: Soil

Data Release Authorized:

Date Sampled: NA

Reported: 08/14/14

Date Received: NA

Instrument/Analyst: NT5/PAB

Sample Amount: 5.00 g-dry-wt

Date Analyzed: 08/12/14 13:56

Purge Volume: 5.0 mL

Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 2 of 2

Sample ID: MB-081214A
METHOD BLANK

Lab Sample ID: MB-081214A
LIMS ID: 14-16224
Matrix: Soil
Date Analyzed: 08/12/14 13:56

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081214A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16224

Project: Precision Engineering

Matrix: Soil

Data Release Authorized: 

Date Sampled: NA

Reported: 08/14/14

Date Received: NA

Instrument/Analyst LCS: NT5/PAB

Sample Amount LCS: 5.00 g-dry-wt

LCS D: NT5/PAB

LCS D: 5.00 g-dry-wt

Date Analyzed LCS: 08/12/14 13:07

Purge Volume LCS: 5.0 mL

LCS D: 08/12/14 13:32

LCS D: 5.0 mL

Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCS D	Spike Added-LCS D	LCS D Recovery	RPD
Chloromethane	43.6	50.0	87.2%	41.8	50.0	83.6%	4.2%
Bromomethane	76.0 Q	50.0	152%	72.8 Q	50.0	146%	4.3%
Vinyl Chloride	47.7	50.0	95.4%	47.0	50.0	94.0%	1.5%
Chloroethane	53.8	50.0	108%	49.8	50.0	99.6%	7.7%
Methylene Chloride	49.5	50.0	99.0%	47.4	50.0	94.8%	4.3%
Acetone	320 Q	250	128%	318 Q	250	127%	0.6%
Carbon Disulfide	98.5 Q	50.0	197%	85.9 Q	50.0	172%	13.7%
1,1-Dichloroethene	87.2 Q	50.0	174%	76.9 Q	50.0	154%	12.6%
1,1-Dichloroethane	52.6	50.0	105%	51.8	50.0	104%	1.5%
trans-1,2-Dichloroethene	53.4	50.0	107%	51.8	50.0	104%	3.0%
cis-1,2-Dichloroethene	52.0	50.0	104%	51.2	50.0	102%	1.6%
Chloroform	53.1	50.0	106%	52.4	50.0	105%	1.3%
1,2-Dichloroethane	49.6	50.0	99.2%	50.3	50.0	101%	1.4%
2-Butanone	256	250	102%	261	250	104%	1.9%
1,1,1-Trichloroethane	54.4	50.0	109%	52.9	50.0	106%	2.8%
Carbon Tetrachloride	52.4	50.0	105%	51.1	50.0	102%	2.5%
Vinyl Acetate	51.4	50.0	103%	52.4	50.0	105%	1.9%
Bromodichloromethane	49.6	50.0	99.2%	49.7	50.0	99.4%	0.2%
1,2-Dichloropropane	48.2	50.0	96.4%	48.1	50.0	96.2%	0.2%
cis-1,3-Dichloropropene	50.6	50.0	101%	50.6	50.0	101%	0.0%
Trichloroethene	50.8	50.0	102%	50.1	50.0	100%	1.4%
Dibromochloromethane	48.9	50.0	97.8%	49.3	50.0	98.6%	0.8%
1,1,2-Trichloroethane	48.0	50.0	96.0%	48.4	50.0	96.8%	0.8%
Benzene	50.2	50.0	100%	49.7	50.0	99.4%	1.0%
trans-1,3-Dichloropropene	50.5	50.0	101%	51.1	50.0	102%	1.2%
2-Chloroethylvinylether	49.9	50.0	99.8%	51.3	50.0	103%	2.8%
Bromoform	47.9	50.0	95.8%	48.0	50.0	96.0%	0.2%
4-Methyl-2-Pentanone (MIBK)	250	250	100%	259	250	104%	3.5%
2-Hexanone	249	250	99.6%	254	250	102%	2.0%
Tetrachloroethene	51.9	50.0	104%	49.8	50.0	99.6%	4.1%
1,1,2,2-Tetrachloroethane	46.6	50.0	93.2%	46.3	50.0	92.6%	0.6%
Toluene	49.2	50.0	98.4%	50.2	50.0	100%	2.0%
Chlorobenzene	49.8	50.0	99.6%	48.6	50.0	97.2%	2.4%
Ethylbenzene	51.5	50.0	103%	50.1	50.0	100%	2.8%
Styrene	52.5	50.0	105%	51.6	50.0	103%	1.7%
Trichlorofluoromethane	51.0 Q	50.0	102%	49.2 Q	50.0	98.4%	3.6%
1,1,2-Trichloro-1,2,2-trifluoroethane	58.0	50.0	116%	55.2	50.0	110%	4.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081214A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16224

Project: Precision Engineering

Matrix: Soil

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	RPD		
m,p-Xylene	105	100	105%	103	100	103%	1.9%		
o-Xylene	52.8	50.0	106%	51.7	50.0	103%	2.1%		
1,2-Dichlorobenzene	49.4	50.0	98.8%	48.6	50.0	97.2%	1.6%		
1,3-Dichlorobenzene	52.0	50.0	104%	50.1	50.0	100%	3.7%		
1,4-Dichlorobenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%		
Acrolein	280	250	112%	283	250	113%	1.1%		
Iodomethane	62.4	50.0	125%	53.9	50.0	108%	14.6%		
Bromoethane	56.0	50.0	112%	53.6	50.0	107%	4.4%		
Acrylonitrile	50.0	50.0	100%	51.7	50.0	103%	3.3%		
1,1-Dichloropropene	51.0	50.0	102%	49.9	50.0	99.8%	2.2%		
Dibromomethane	48.5	50.0	97.0%	49.6	50.0	99.2%	2.2%		
1,1,1,2-Tetrachloroethane	48.7	50.0	97.4%	48.2	50.0	96.4%	1.0%		
1,2-Dibromo-3-chloropropane	47.7	50.0	95.4%	48.6	50.0	97.2%	1.9%		
1,2,3-Trichloropropane	46.0	50.0	92.0%	46.4	50.0	92.8%	0.9%		
trans-1,4-Dichloro-2-butene	49.2	50.0	98.4%	48.5	50.0	97.0%	1.4%		
1,3,5-Trimethylbenzene	53.0	50.0	106%	50.9	50.0	102%	4.0%		
1,2,4-Trimethylbenzene	53.8	50.0	108%	51.8	50.0	104%	3.8%		
Hexachlorobutadiene	52.0	50.0	104%	47.8	50.0	95.6%	8.4%		
1,2-Dibromoethane	47.6	50.0	95.2%	48.4	50.0	96.8%	1.7%		
Bromochloromethane	51.6	50.0	103%	52.2	50.0	104%	1.2%		
2,2-Dichloropropane	56.0	50.0	112%	54.3	50.0	109%	3.1%		
1,3-Dichloropropane	47.4	50.0	94.8%	47.4	50.0	94.8%	0.0%		
Isopropylbenzene	53.1	50.0	106%	50.5	50.0	101%	5.0%		
n-Propylbenzene	52.9	50.0	106%	50.2	50.0	100%	5.2%		
Bromobenzene	49.0	50.0	98.0%	47.9	50.0	95.8%	2.3%		
2-Chlorotoluene	51.4	50.0	103%	49.2	50.0	98.4%	4.4%		
4-Chlorotoluene	53.0	50.0	106%	50.9	50.0	102%	4.0%		
tert-Butylbenzene	52.8	50.0	106%	49.9	50.0	99.8%	5.6%		
sec-Butylbenzene	53.3	50.0	107%	50.2	50.0	100%	6.0%		
4-Isopropyltoluene	54.9	50.0	110%	52.0	50.0	104%	5.4%		
n-Butylbenzene	56.6 Q	50.0	113%	52.7 Q	50.0	105%	7.1%		
1,2,4-Trichlorobenzene	55.3	50.0	111%	54.2	50.0	108%	2.0%		
Naphthalene	49.9	50.0	99.8%	51.2	50.0	102%	2.6%		
1,2,3-Trichlorobenzene	52.0	50.0	104%	51.4	50.0	103%	1.2%		

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	107%	108%
d8-Toluene	101%	101%
Bromofluorobenzene	100%	101%
d4-1,2-Dichlorobenzene	101%	100%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-081214A	Method Blank	Low	112%	103%	98.6%	101%	0
LCS-081214A	Lab Control	Low	107%	101%	100%	101%	0
LCSD-081214A	Lab Control Dup	Low	108%	101%	101%	100%	0
YV51A	SB4-5	Low	111%	100%	94.9%	104%	0
YV51B	SB4-20	Low	127%	101%	99.8%	103%	0
YV51C	SB14-6	Low	133%	104%	95.7%	99.7%	0
YV51D	SB11-10	Low	127%	103%	102%	103%	0
YV51F	SB12-12	Low	122%	102%	98.2%	103%	0
YV51G	SB13-9	Low	118%	102%	96.3%	103%	0

LCS/MB LIMITS

QC LIMITS

SW8260C	LCS/MB LIMITS		QC LIMITS	
	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16224 to 14-16230

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
 Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
 Lab Sample ID: CC0812 Quant Type: ISTD
 Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Dichlorodifluoromethane	40.86589	50.00000	0.34187	0.100	-18.26821	20.00000	Linear
2 Chloromethane	0.74269	0.68606	0.68606	0.100	-7.62513	20.00000	Averaged
3 Vinyl Chloride	0.59799	0.71589	0.71589	0.100	19.71596	20.00000	Averaged
4 Bromomethane	0.22310	0.34665	0.34665	0.100	55.38144	20.00000	Averaged
5 Chloroethane	0.40499	0.40548	0.40548	0.100	0.12169	20.00000	Averaged
6 Trichlorofluoromethane	0.67057	0.85593	0.85593	0.100	27.64239	20.00000	Averaged
7 1,1-Dichloroethene	63.01086	50.00000	0.37662	0.100	26.02172	20.00000	Linear
8 Carbon Disulfide	67.27443	50.00000	1.29018	0.010	34.54885	20.00000	Linear
9 1,1,1-Trichloroethane	0.48163	0.42336	0.42336	0.010	-12.09892	20.00000	Averaged
10 Iodomethane	0.47596	0.52759	0.52759	0.010	10.84631	20.00000	Averaged
11 Bromoethane	0.33782	0.38727	0.38727	0.010	14.63622	20.00000	Averaged
12 Acrolein	0.11092	0.11888	0.11888	0.000	7.17350	20.00000	Averaged
13 Methylene Chloride	0.55786	0.53760	0.53760	0.010	-3.63159	20.00000	Averaged
14 Acetone	342	250	0.20793	0.001	36.66993	20.00000	Quadratic
15 Trans-1,2-Dichloroethene	0.54823	0.60320	0.60320	0.010	10.02678	20.00000	Averaged
16 Methyl tert butyl ether	1.67439	1.65492	1.65492	0.100	-1.16264	20.00000	Averaged
17 1,1-Dichloroethane	1.06875	1.13318	1.13318	0.100	6.02874	20.00000	Averaged
18 Acrylonitrile	0.24758	0.23799	0.23799	0.001	-3.87703	20.00000	Averaged
19 Vinyl Acetate	1.11971	1.12445	1.12445	0.010	0.42359	20.00000	Averaged
20 Cis-1,2-Dichloroethene	0.57605	0.60398	0.60398	0.010	4.84893	20.00000	Averaged
22 2,2-Dichloropropane	0.82164	0.94514	0.94514	0.010	15.03088	20.00000	Averaged
23 Bromochloromethane	0.24044	0.24921	0.24921	0.050	3.64724	20.00000	Averaged
24 Chloroform	0.90267	0.96533	0.96533	0.100	6.94076	20.00000	Averaged
25 Carbon Tetrachloride	0.33335	0.36205	0.36205	0.100	8.61094	20.00000	Averaged
27 Dibromofluoromethane	0.59797	0.67717	0.67717	0.100	13.24435	20.00000	Averaged
26 1,1,1-Trichloroethane	0.81037	0.96796	0.96796	0.100	19.44653	20.00000	Averaged
28 1,1-Dichloropropene	0.36962	0.38991	0.38991	0.010	5.48981	20.00000	Averaged
29 2-Butanone	0.07802	0.07905	0.07905	0.001	1.32826	20.00000	Averaged
30 Benzene	1.11376	1.13108	1.13108	0.100	1.55523	20.00000	Averaged
32 d4-1,2-Dichloroethane	0.65895	0.70581	0.70581	0.010	7.11136	20.00000	Averaged
33 1,2-Dichloroethane	0.34797	0.34938	0.34938	0.100	0.40620	20.00000	Averaged
34 Trichloroethene	0.26404	0.27853	0.27853	0.100	5.49067	20.00000	Averaged
37 Dibromomethane	0.14631	0.14169	0.14169	0.010	-3.15609	20.00000	Averaged
38 1,2-Dichloropropane	0.28565	0.27298	0.27298	0.100	-4.43471	20.00000	Averaged
39 Bromodichloromethane	0.34613	0.34339	0.34339	0.100	-0.79224	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
 Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
 Lab Sample ID: CC0812 Quant Type: ISTD
 Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 2-Chloroethyl Vinyl Ether	0.18305	0.17955	0.17955	0.000	-1.90716	20.00000	Averaged
41 Cis 1,3-dichloropropene	0.42292	0.42914	0.42914	0.100	1.47219	20.00000	Averaged
\$ 42 d8-Toluene	1.17018	1.17571	1.17571	0.010	0.47227	20.00000	Averaged
43 Toluene	0.70517	0.73280	0.73280	0.100	3.91890	20.00000	Averaged
44 Tetrachloroethene	0.29752	0.32412	0.32412	0.100	8.93850	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.12415	0.12052	0.12052	0.000	-2.92062	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.38489	0.38590	0.38590	0.010	0.26343	20.00000	Averaged
47 1,1,2-Trichloroethane	0.22454	0.21111	0.21111	0.100	-5.98280	20.00000	Averaged
48 Chlorodibromomethane	0.25116	0.24855	0.24855	0.100	-1.04031	20.00000	Averaged
49 1,3-Dichloropropane	0.39901	0.38230	0.38230	0.100	-4.18607	20.00000	Averaged
50 1,2-Dibromoethane	0.23462	0.22116	0.22116	0.010	-5.73913	20.00000	Averaged
51 2-Hexanone	0.20599	0.20615	0.20615	0.010	0.07484	20.00000	Averaged
53 Chlorobenzene	0.74274	0.75654	0.75654	0.300	1.85755	20.00000	Averaged
54 Ethyl Benzene	1.27616	1.36697	1.36697	0.100	7.11611	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.26117	0.26000	0.26000	0.010	-0.44958	20.00000	Averaged
56 m,p-xylene	0.49383	0.53595	0.53595	0.100	8.52837	20.00000	Averaged
57 o-Xylene	0.47591	0.50914	0.50914	0.100	6.98218	20.00000	Averaged
58 Styrene	0.80967	0.86507	0.86507	0.100	6.84167	20.00000	Averaged
59 Bromoform	0.34609	0.33634	0.33634	0.100	-2.81770	20.00000	Averaged
60 Isopropyl Benzene	2.33130	2.56302	2.56302	0.010	9.93961	20.00000	Averaged
\$ 62 4-Bromofluorobenzene	0.50584	0.49659	0.49659	0.200	-1.82737	20.00000	Averaged
63 Bromobenzene	0.59257	0.59938	0.59938	0.010	1.14775	20.00000	Averaged
64 N-Propyl Benzene	2.60365	2.89821	2.89821	0.010	11.31348	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.57244	0.53527	0.53527	0.300	-6.49310	20.00000	Averaged
66 2-Chloro Toluene	1.58776	1.69258	1.69258	0.010	6.60153	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	1.95196	2.16882	2.16882	0.010	11.10978	20.00000	Averaged
68 1,2,3-Trichloropropane	0.18665	0.17354	0.17354	0.010	-7.02361	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.18281	0.18532	0.18532	0.001	1.37177	20.00000	Averaged
70 4-Chloro Toluene	1.63531	1.79545	1.79545	0.010	9.79233	20.00000	Averaged
71 T-Butyl Benzene	1.70109	1.85518	1.85518	0.010	9.05824	20.00000	Averaged
72 1,2,4-Trimethylbenzene	1.91165	2.14031	2.14031	0.010	11.96130	20.00000	Averaged
73 S-Butyl Benzene	2.54397	2.83225	2.83225	0.010	11.33187	20.00000	Averaged
74 4-Isopropyl Toluene	2.00426	2.31658	2.31658	0.010	15.58280	20.00000	Averaged
75 1,3-Dichlorobenzene	1.09332	1.18496	1.18496	0.100	8.38208	20.00000	Averaged
77 1,4-Dichlorobenzene	1.12418	1.21197	1.21197	0.100	7.80920	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
Lab Sample ID: CC0812 Quant Type: ISTD
Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	1.78850	2.16106	2.16106	0.010	20.83083	20.00000	Averaged
79 d4-1,2-Dichlorobenzene	0.95613	0.96830	0.96830	0.010	1.27281	20.00000	Averaged
80 1,2-Dichlorobenzene	1.07398	1.11252	1.11252	0.100	3.58874	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.11645	0.11104	0.11104	0.010	-4.64922	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.48166	0.53008	0.53008	0.010	10.05138	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.73617	0.87061	0.87061	0.010	18.26227	20.00000	Averaged
84 Naphthalene	1.94353	1.96105	1.96105	0.010	0.90169	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.73878	0.79367	0.79367	0.010	7.43039	20.00000	Averaged

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Matrix: Soil

Date Received: 08/07/14

Data Release Authorized: *JB*
Reported: 08/18/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
MB-081314 14-16224	Method Blank HC ID: ---	08/13/14	08/14/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.0 10	< 5.0 U < 10 U 66.6%
YV51A 14-16224	SB4-5 HC ID: DIESEL/MOTOR OIL	08/13/14	08/14/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.9 14	65 220 58.2%
YV51B 14-16225	SB4-20 HC ID: ---	08/13/14	08/14/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	< 6.2 U < 12 U 79.8%
YV51C 14-16226	SB14-6 HC ID: DRO/MOTOR OIL	08/13/14	08/15/14 FID3B	5.00 2.0	Diesel Range Motor Oil Range o-Terphenyl	55 110	74 730 80.0%
YV51D 14-16227	SB11-10 HC ID: DIESEL/MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	9.7 30 78.1%
YV51F 14-16229	SB12-12 HC ID: MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.5 13	< 6.5 U 19 74.3%
YV51G 14-16230	SB13-9 HC ID: MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.7 14	< 6.7 U 18 72.8%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-081314

LAB CONTROL

Lab Sample ID: LCS-081314

LIMS ID: 14-16224

Matrix: Soil

Data Release Authorized: *AB*

Reported: 08/18/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: NA

Date Received: NA

Date Extracted: 08/13/14

Date Analyzed: 08/14/14 22:39

Instrument/Analyst: FID3B/VTS

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	111	150	74.0%

TPHD Surrogate Recovery

o-Terphenyl	75.9%
-------------	-------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 08/07/14

ARI Job: YV51
Project: Precision Engineering

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
14-16224-081314MB1	Method Blank	10.0 g	1.00 mL	-	08/13/14
14-16224-081314LCS1	Lab Control	10.0 g	1.00 mL	-	08/13/14
14-16224-YV51A	SB4-5	7.22 g	1.00 mL	D	08/13/14
14-16225-YV51B	SB4-20	8.09 g	1.00 mL	D	08/13/14
14-16226-YV51C	SB14-6	9.07 g	5.00 mL	D	08/13/14
14-16227-YV51D	SB11-10	8.05 g	1.00 mL	D	08/13/14
14-16229-YV51F	SB12-12	7.66 g	1.00 mL	D	08/13/14
14-16230-YV51G	SB13-9	7.43 g	1.00 mL	D	08/13/14

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
081314MBS	66.6%	0
081314LCS	75.9%	0
SB4-5	58.2%	0
SB4-20	79.8%	0
SB14-6	80.0%	0
SB11-10	78.1%	0
SB12-12	74.3%	0
SB13-9	72.8%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

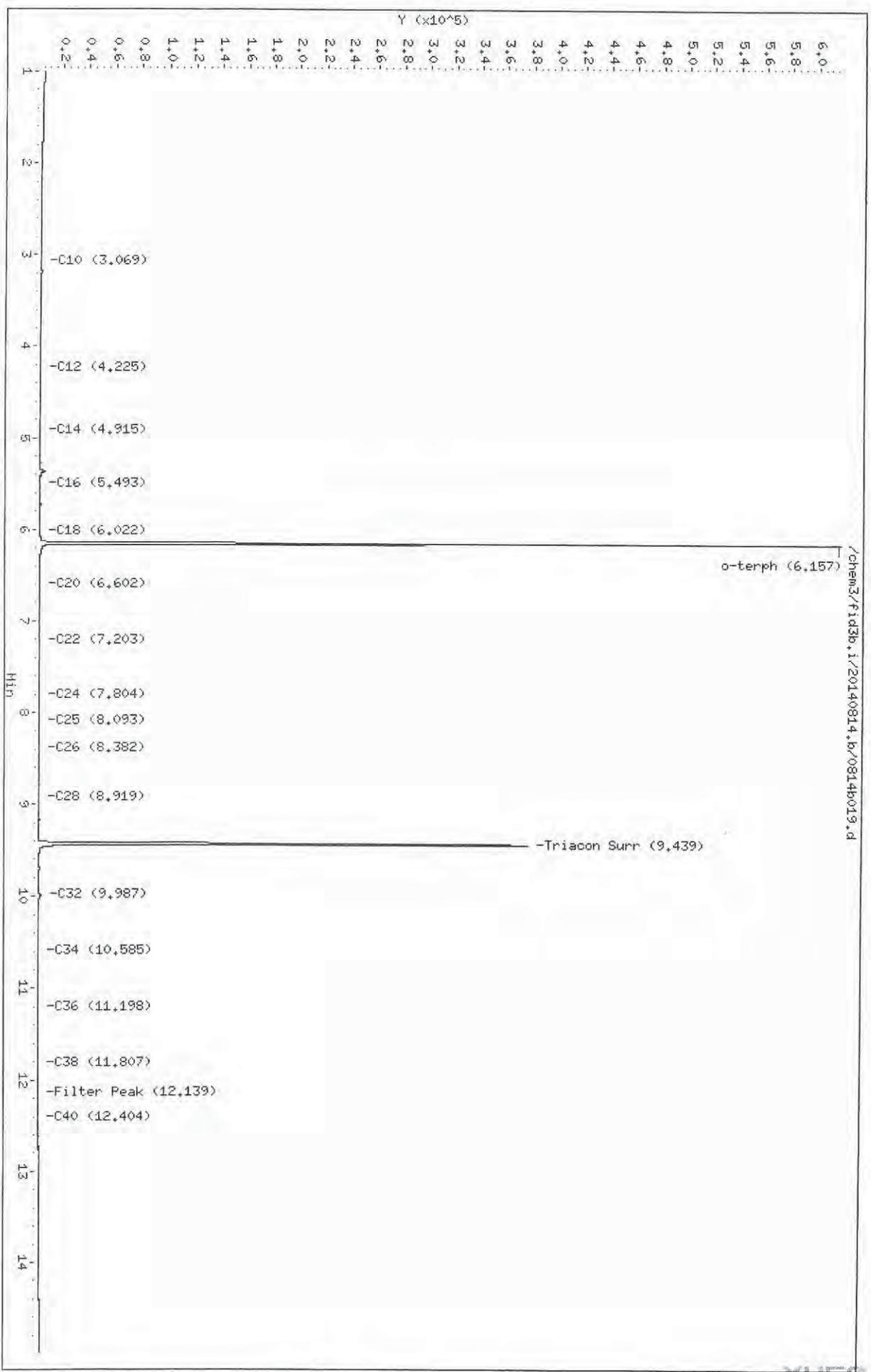
(50-150)

Prep Method: SW3546
Log Number Range: 14-16224 to 14-16230

Data File: /chem3/fid3b,i/20140814,b/0814b019.d
Date: 14-AUG-2014 22:14
Client ID: YV51HBS1
Sample Info: YV51HBS1

Column phase: RTX-1

Instrument: fid3b,i
Operator: VTS
Column diameter: 0.25

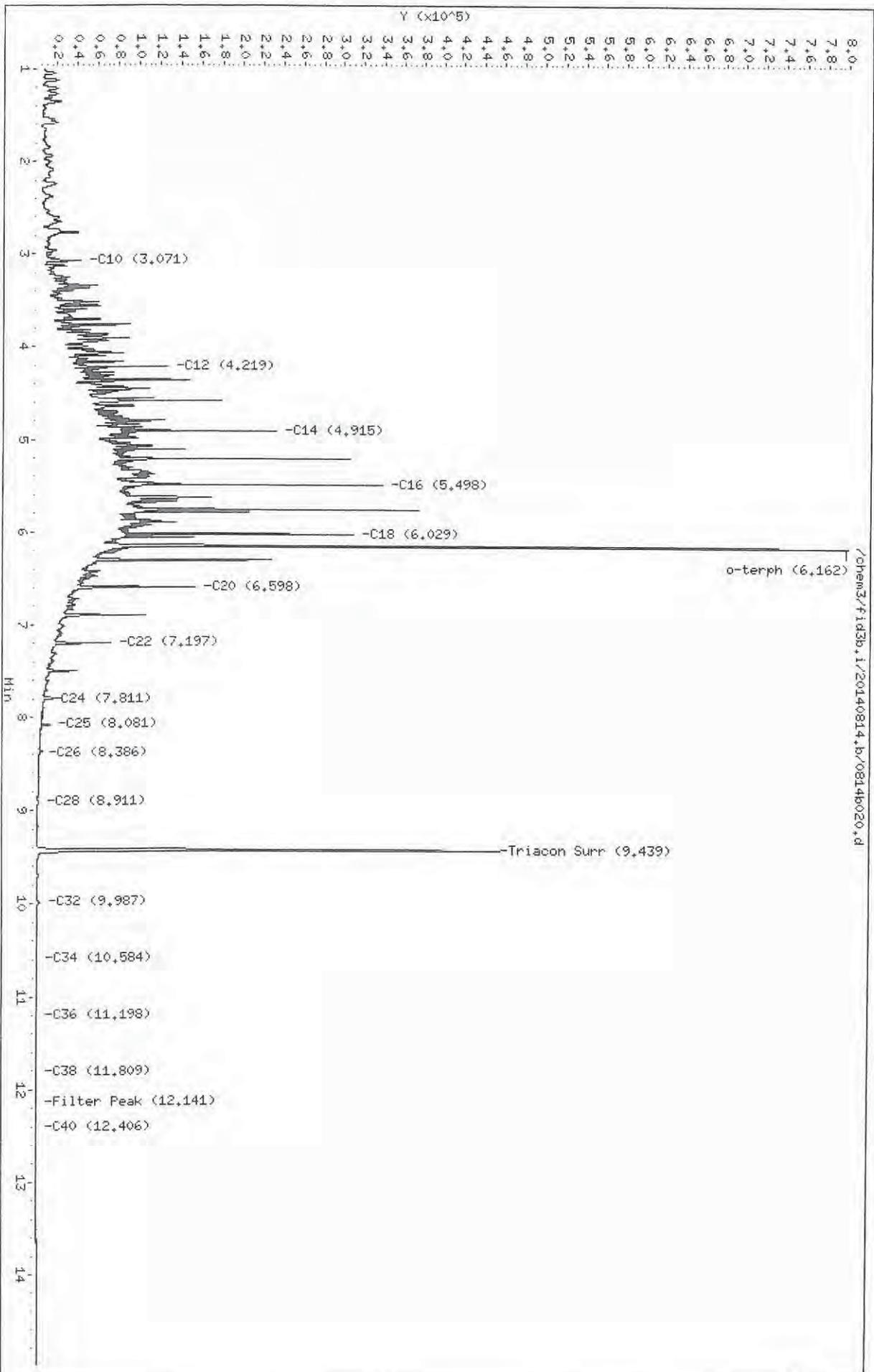


Data File: /chem3/fid3b.i/20140814.b/0814b020.d
Date: 14-AUG-2014 22:39
Client ID: YV51LCSS1
Sample Info: YV51LCSS1

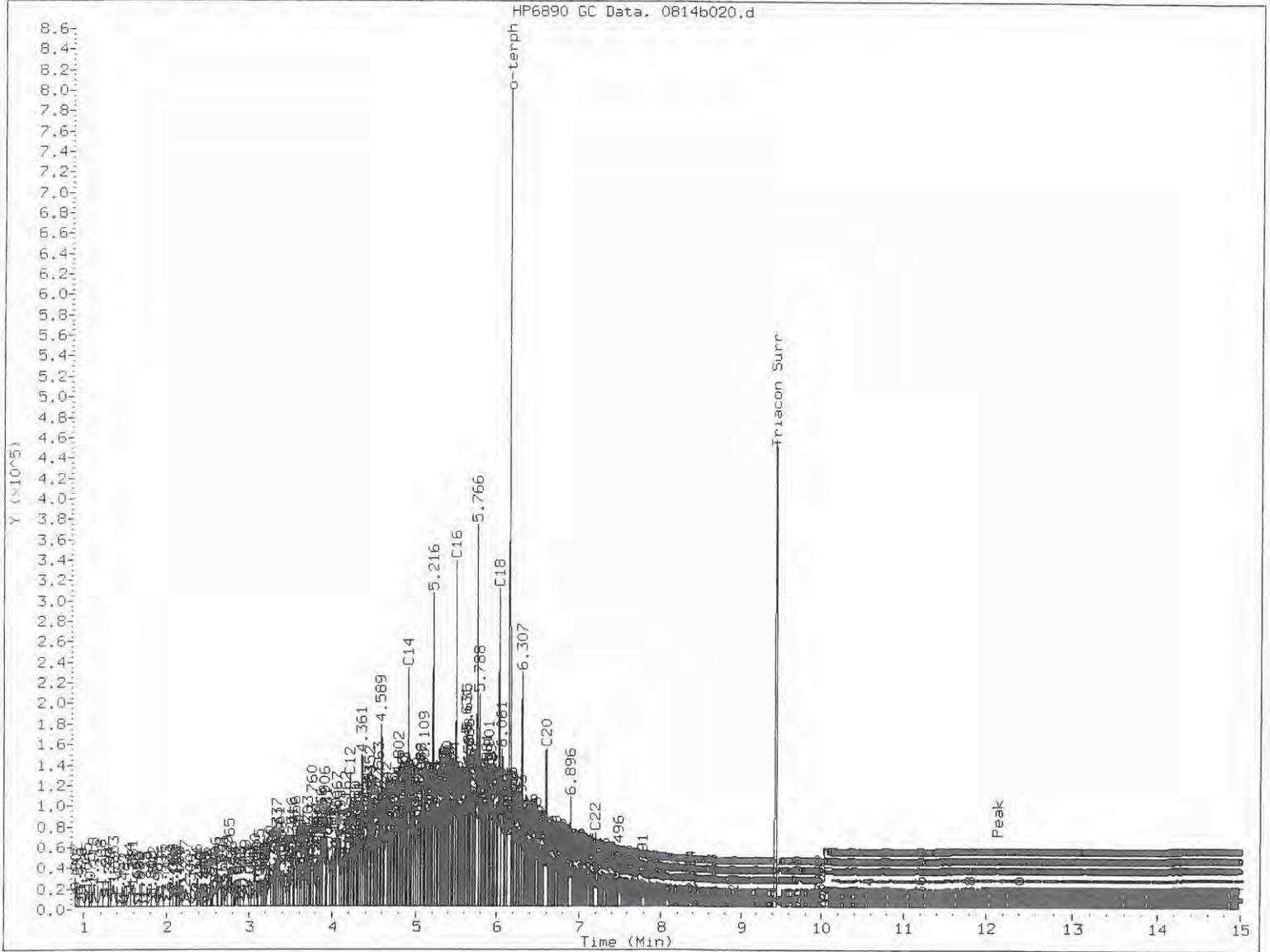
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

Handwritten signature
8/15/14



/chem3/fid3b.i/20140814.b/0814b020.d



MANUAL INTEGRATION

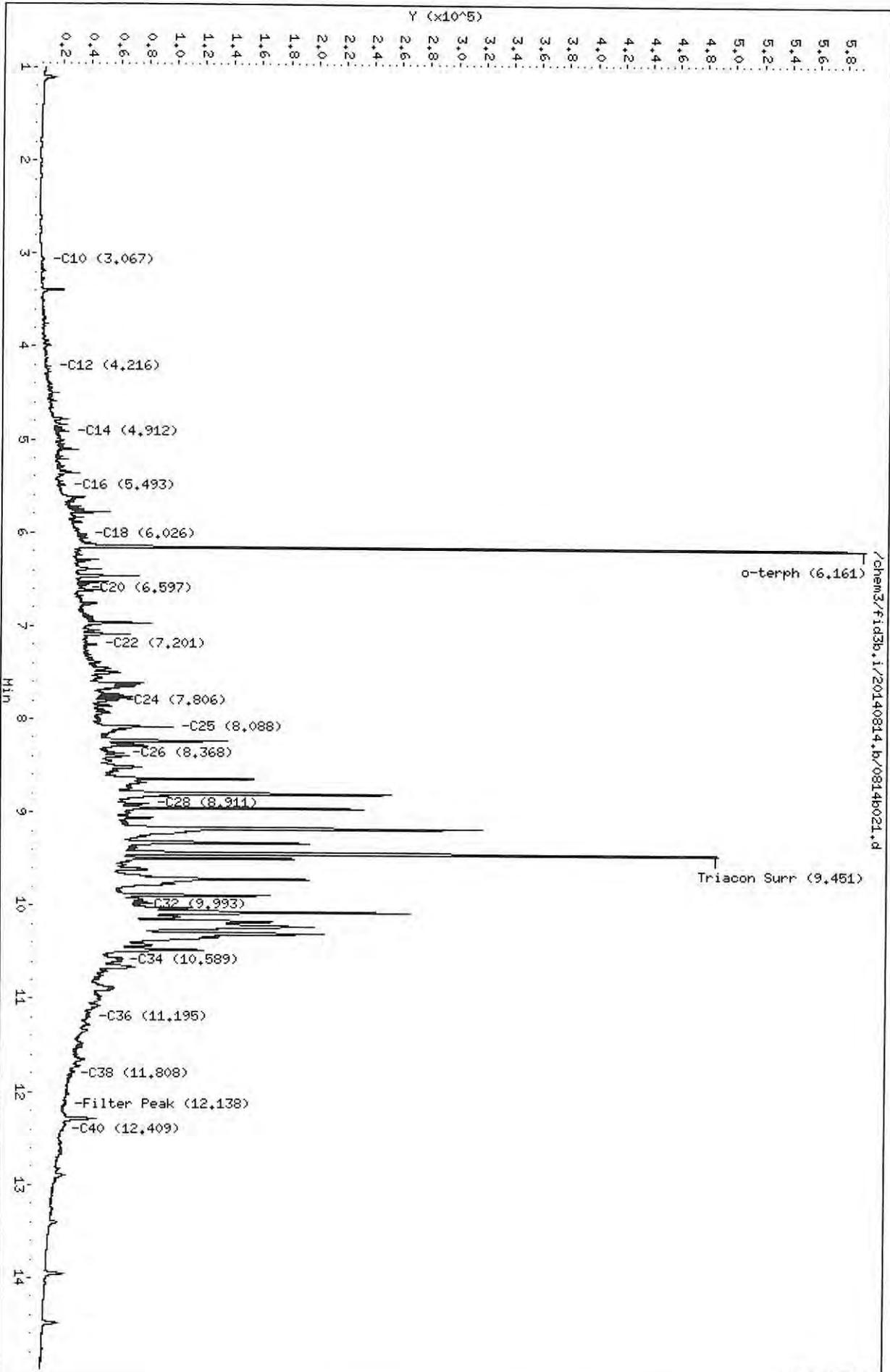
- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: Y

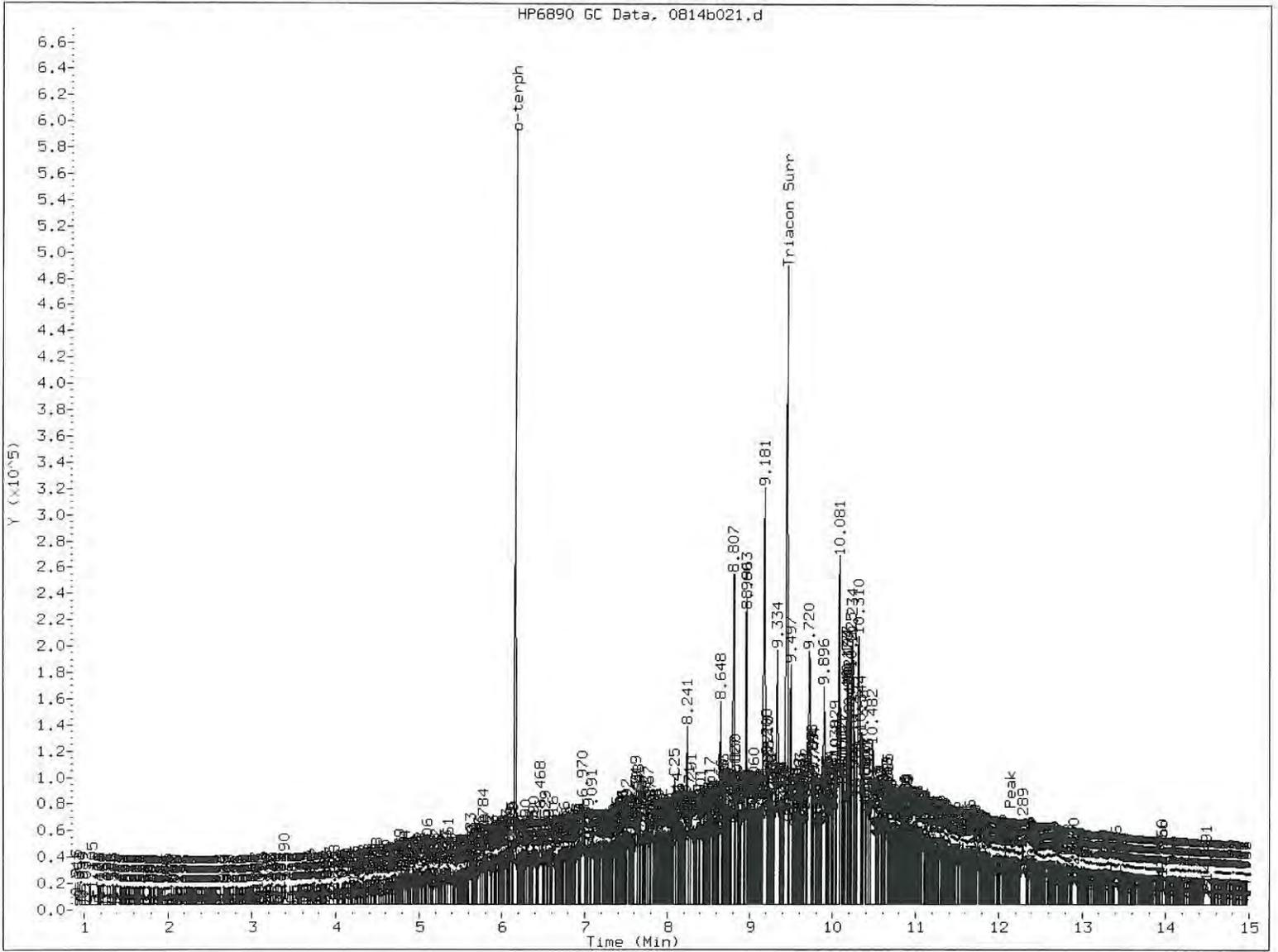
Date: 8-15-14

Data File: /chem3/fid3b,i/20140814,b/0814b021.d
Date: 14-AUG-2014 23:04
Client ID: SB4-5
Sample Info: YV51A
Column phase: RTX-1

Instrument: fid3b,i
Operator: VTS
Column diameter: 0.25



M
8.15.14



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

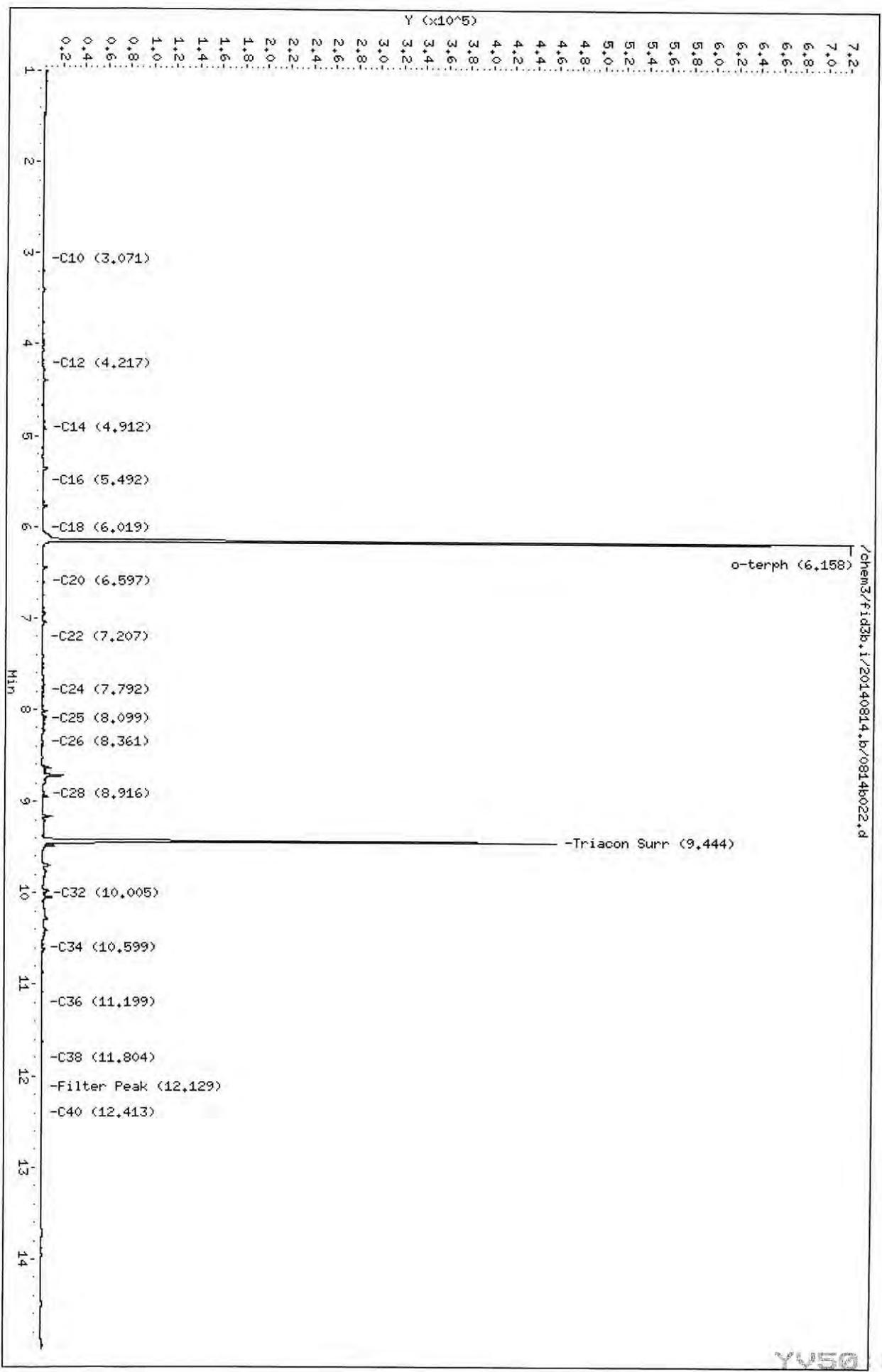
Analyst: W

Date: 8-15-14

Data File: /chem3/fid3b.i/20140814.b/0814b022.d
Date: 14-AUG-2014 23:29
Client ID: SB4-20
Sample Info: YV51B
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

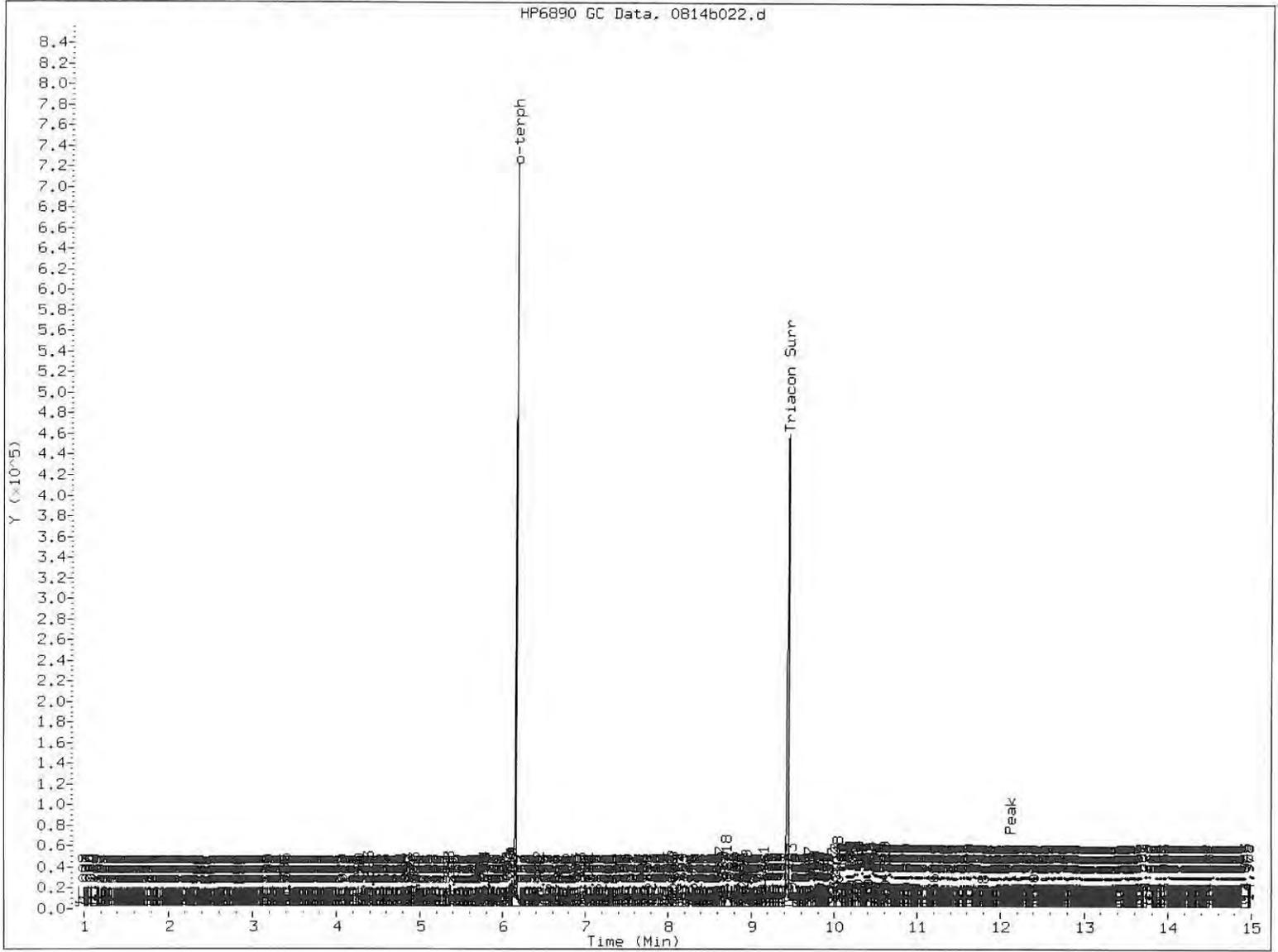
SB4-20



FID:3B-2C/RTX-1 YV51B

FID:3B SIGNAL

HP6890 GC Data, 0814b022.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: Y

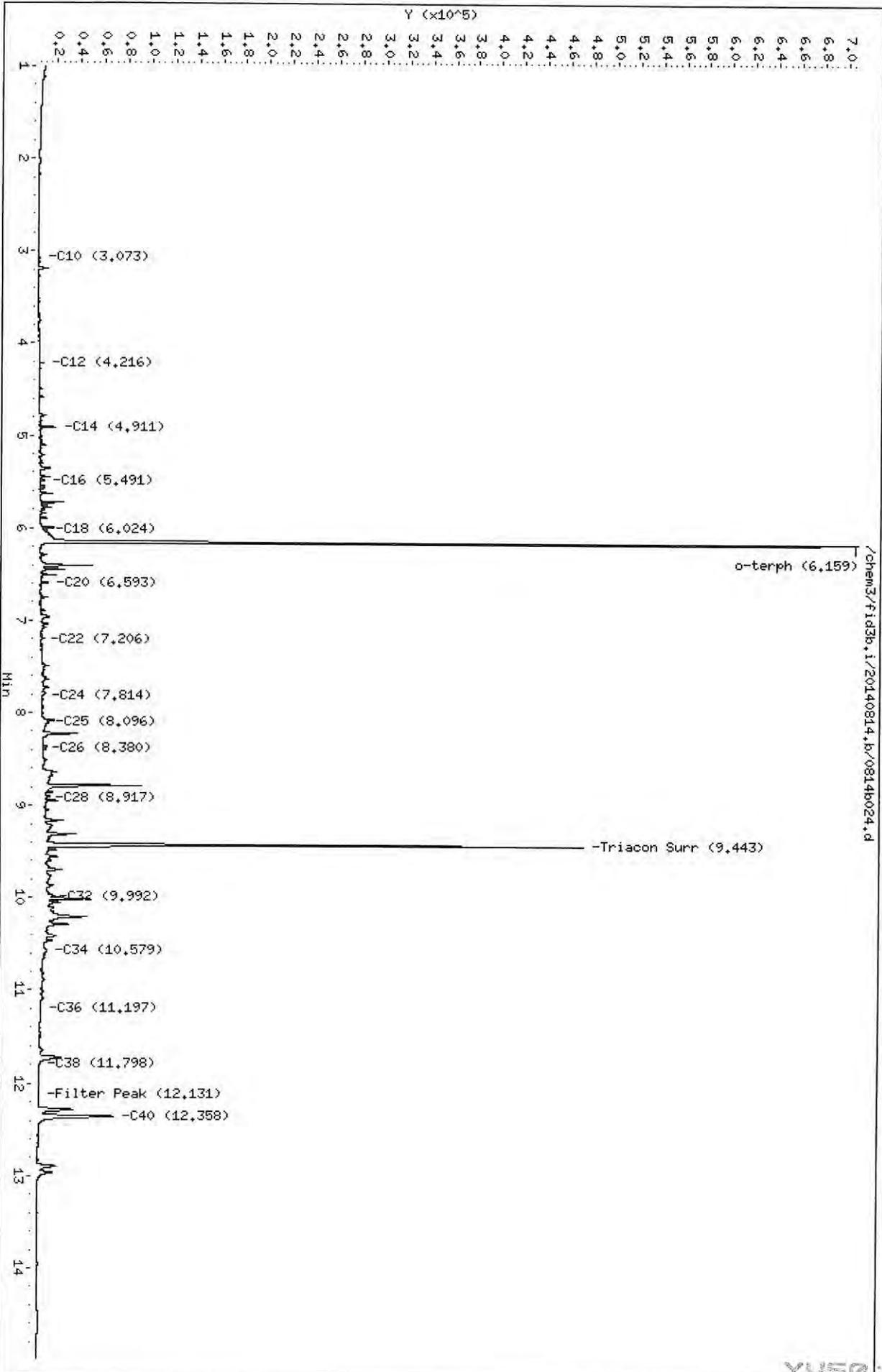
Date: 8-17-11

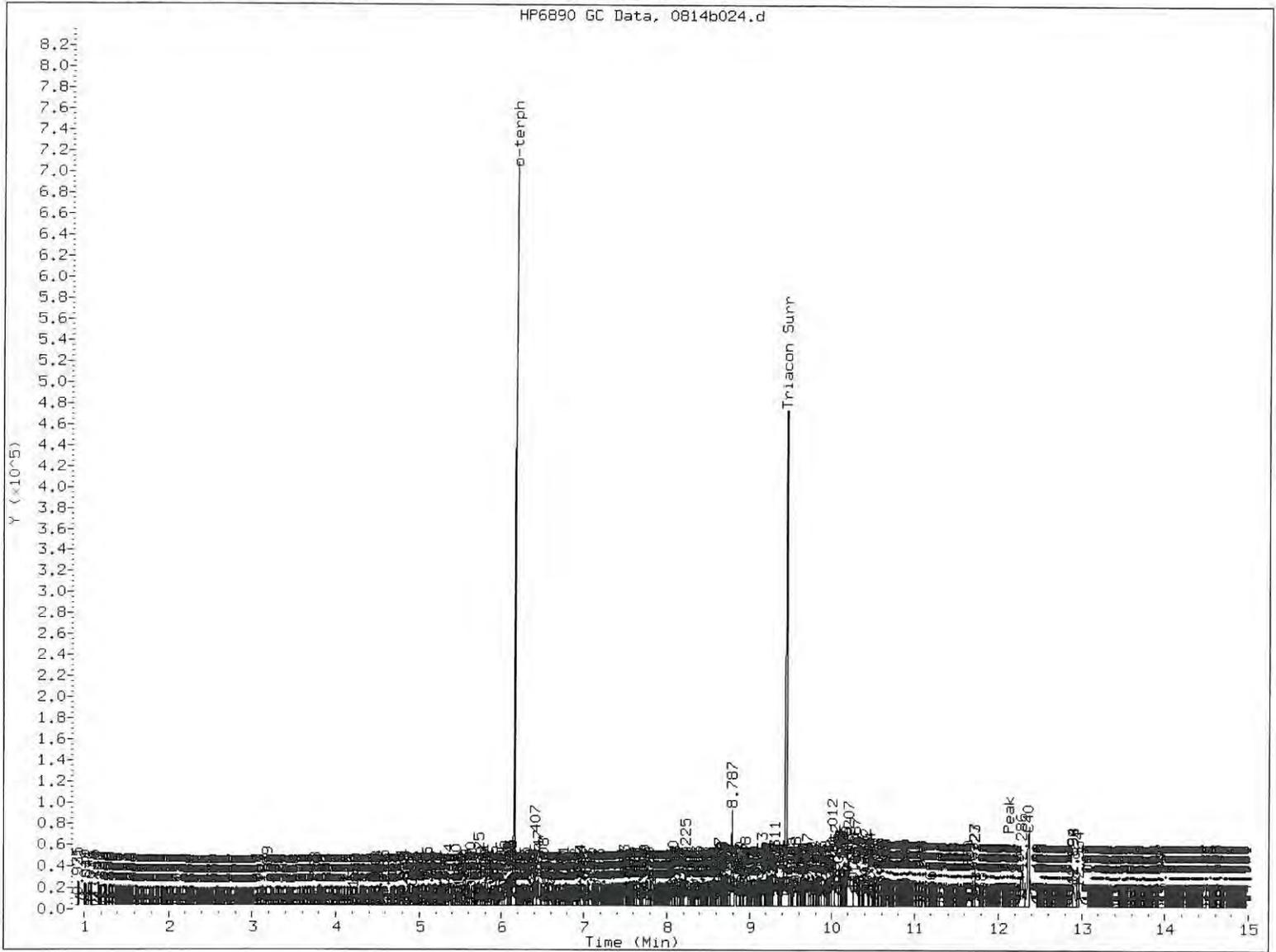
YV50:00079

Data File: /chem3/fid3b.i/20140814.b/0814b024.d
Date: 15-AUG-2014 00:19
Client ID: SB11-10
Sample Info: YV51D
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

S
8.15-12





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

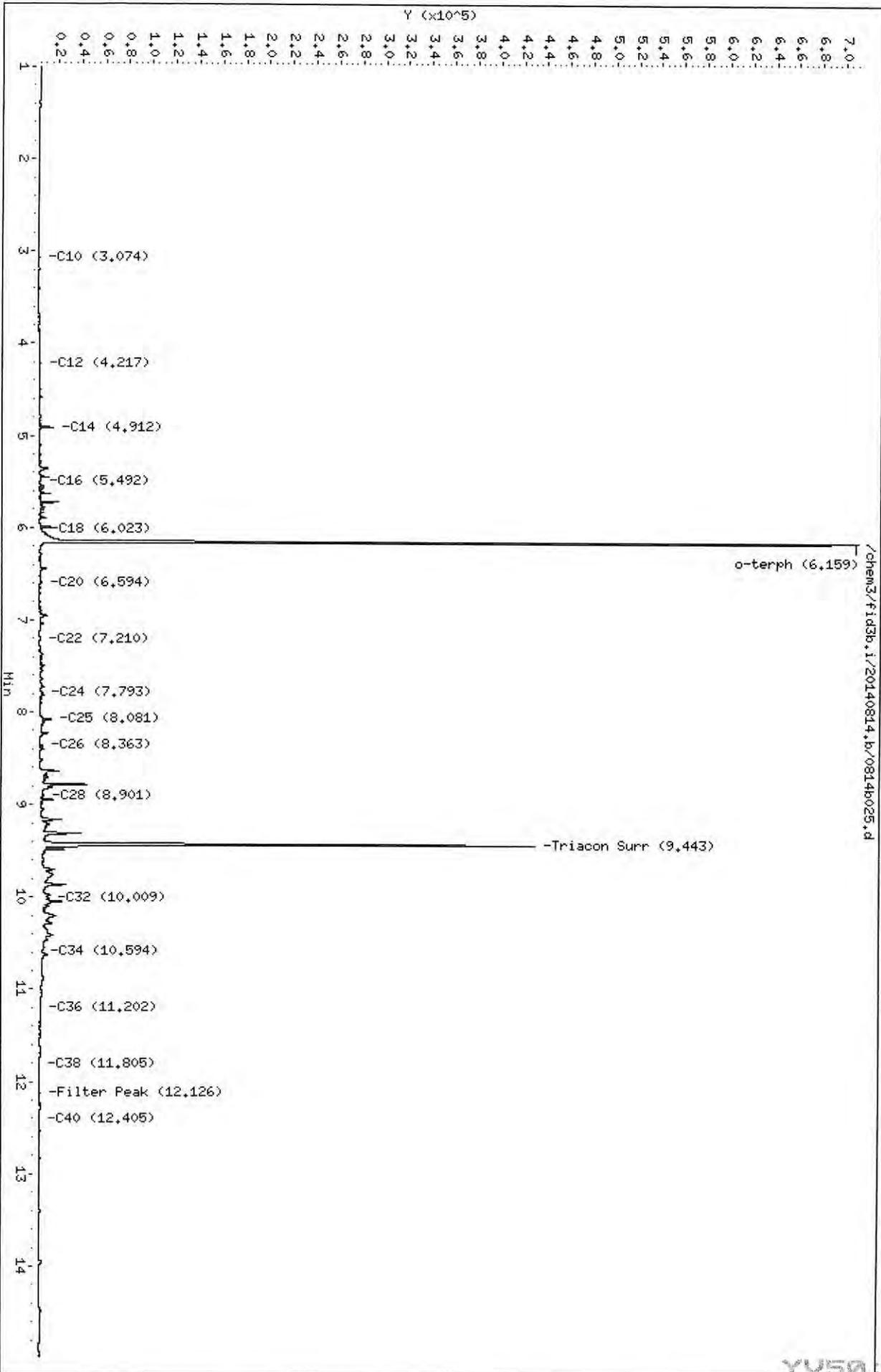
Analyst: W

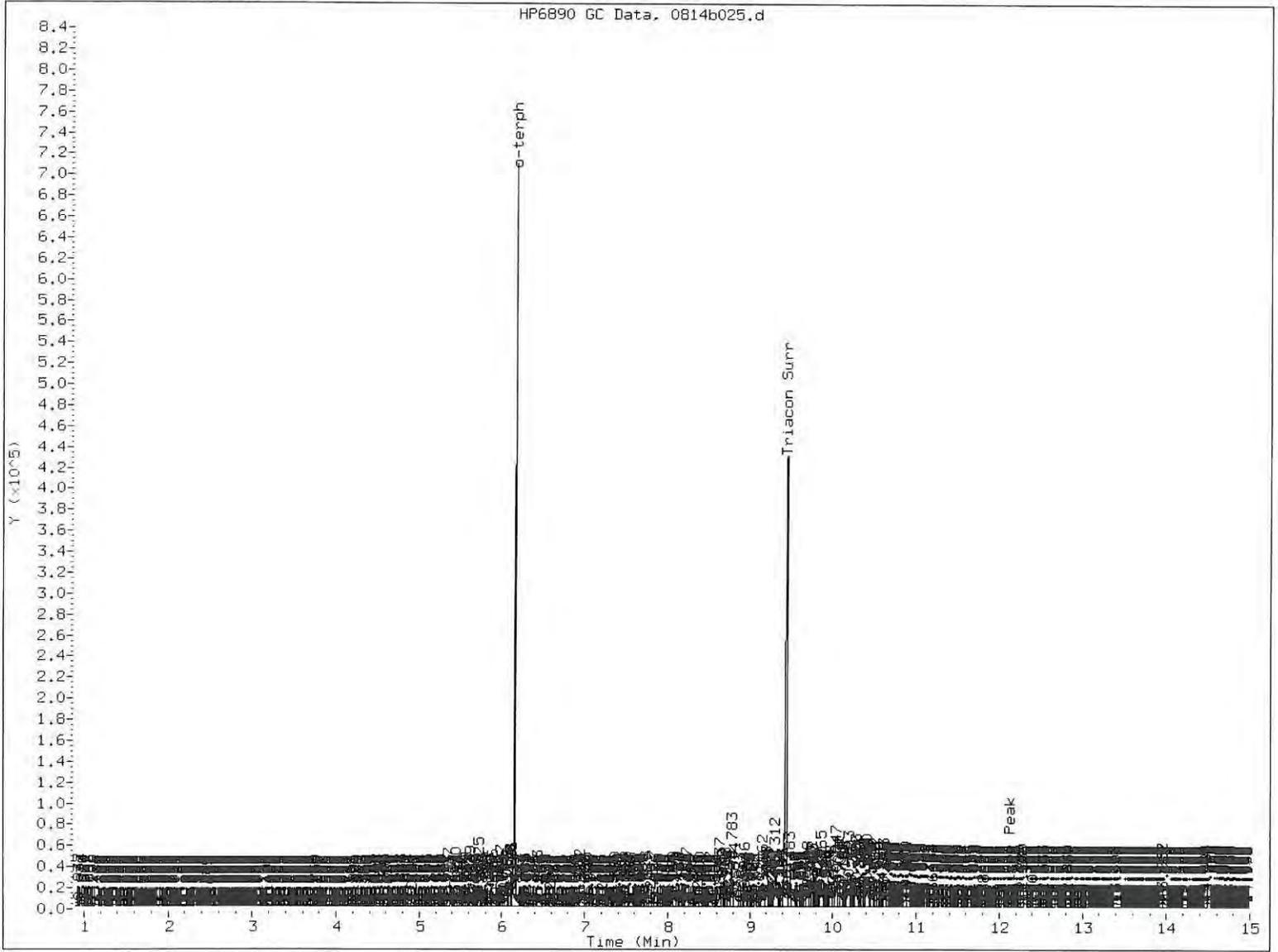
Date: 8-15-14

Data File: /chem3/fid3b.i/20140814.b/0814b025.d
Date: 15-AUG-2014 00:44
Client ID: SB12-12
Sample Info: YV51F
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

W
8-15-14





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: S

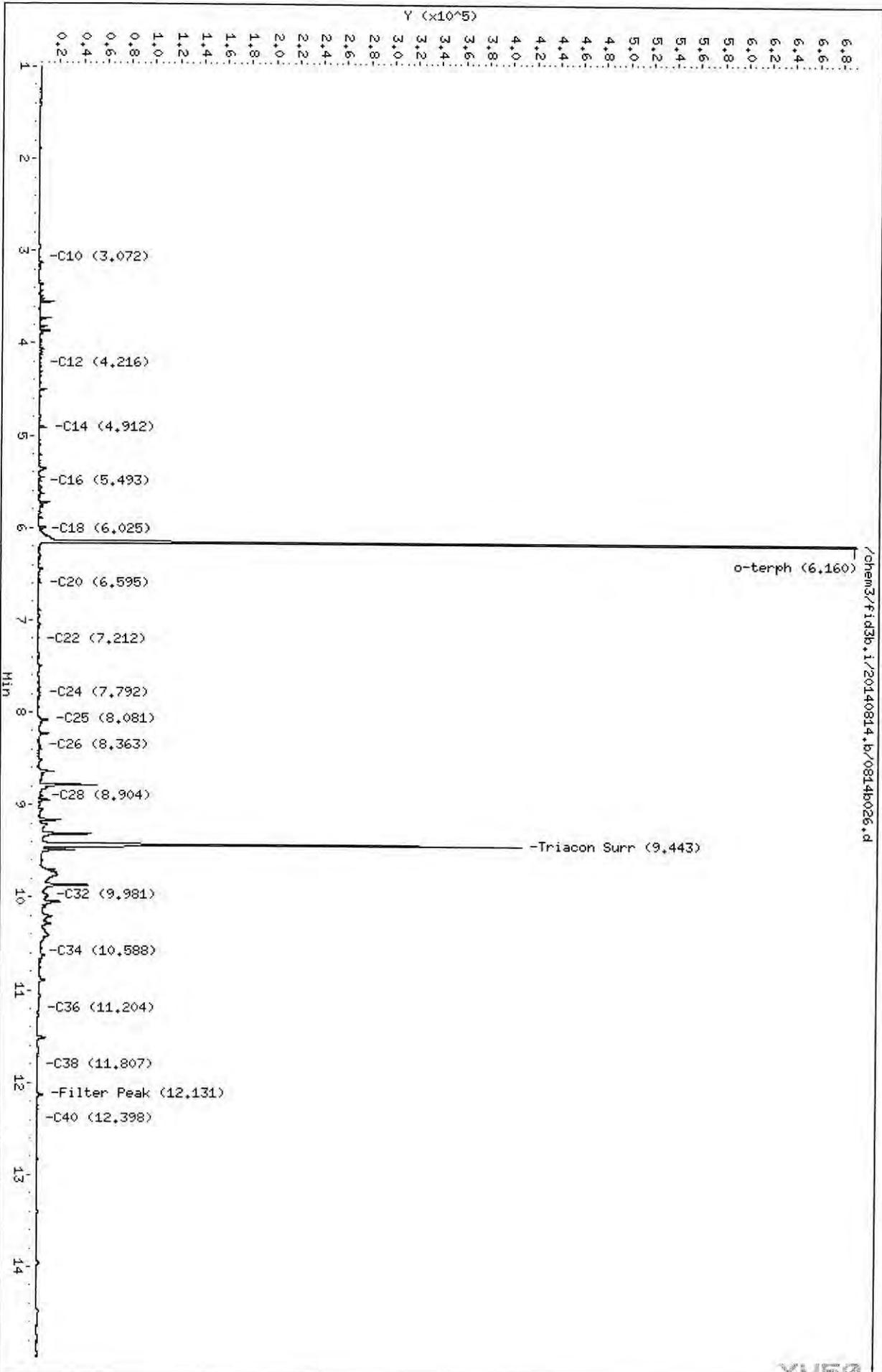
Date: 8-15-24

Data File: /chem3/fid3b.i/20140814.b/0814b026.d
Date: 15-AUG-2014 01:09
Client ID: SB13-9
Sample Info: YV51C

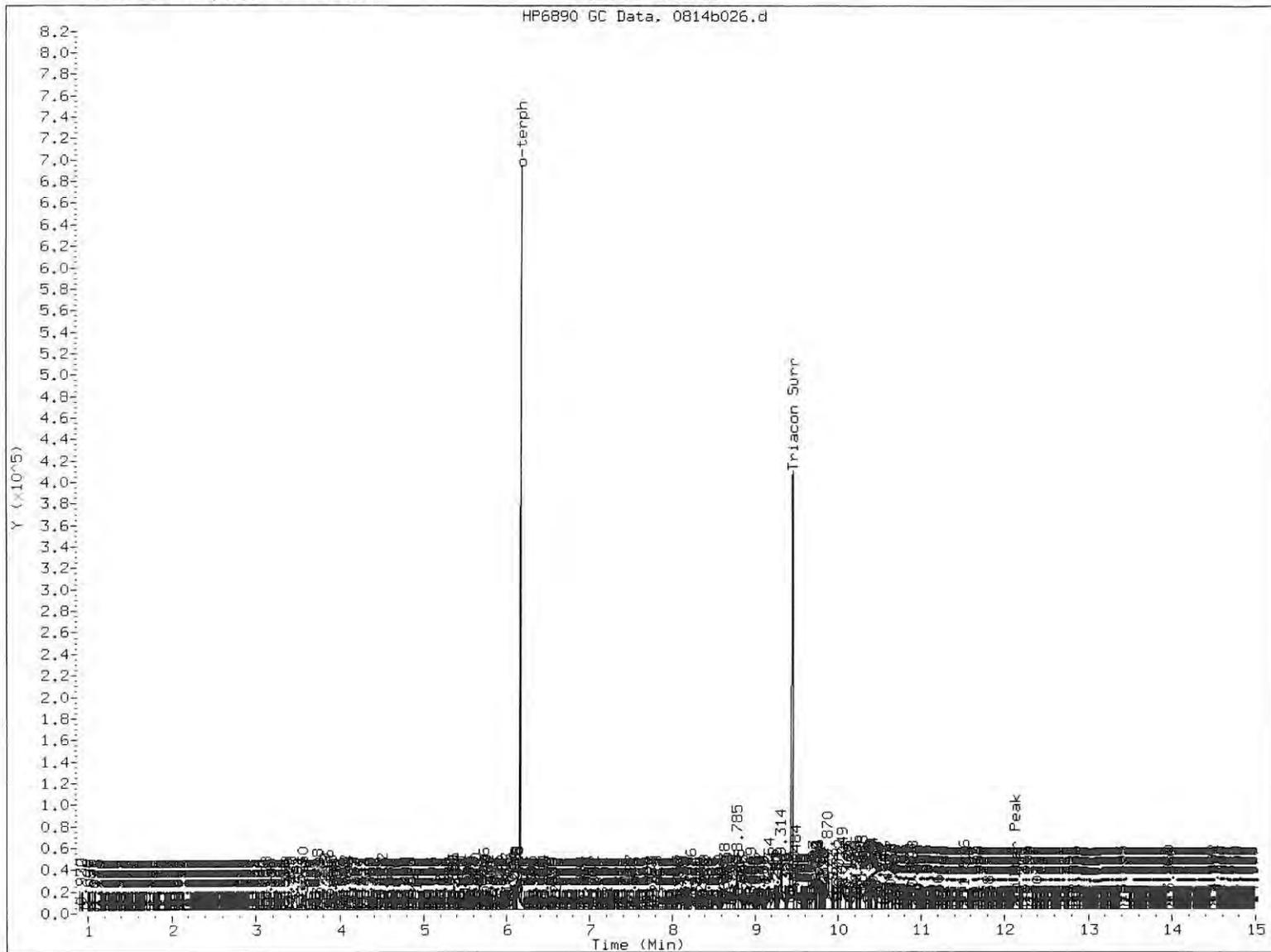
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

Handwritten: SB13-9



/chem3/fid3b.i/20140814.b/0814b026.d



MANUAL INTEGRATION

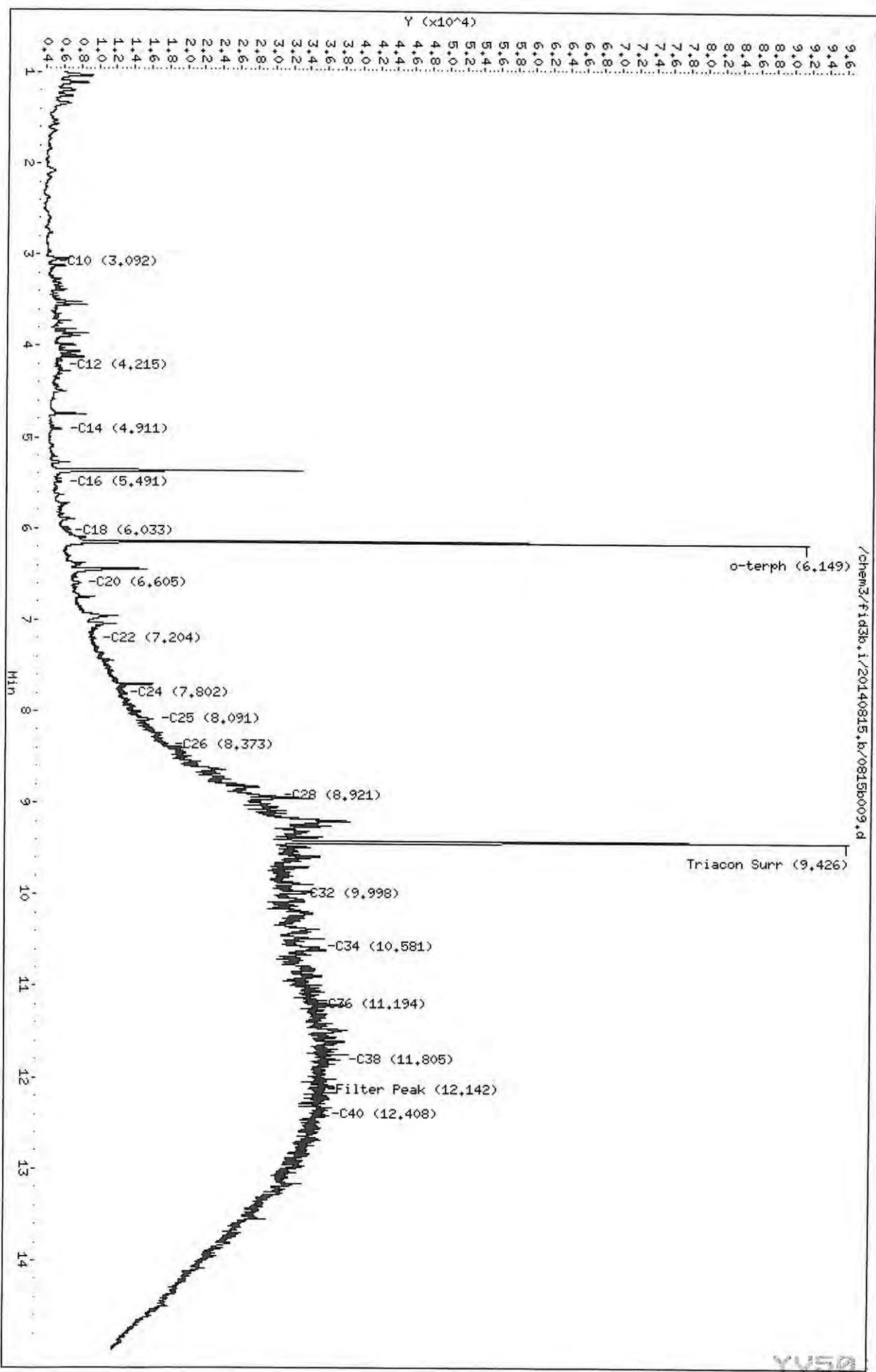
- 1. Baseline correction
- 3. Peak not found
- ⑤ Skipped surrogate

Analyst: U

Date: 8.15.14

Data File: /chem3/fid3b.i/20140815.b/0815b009.d
Date: 15-AUG-2014 14:59
Client ID: SB14-6
Sample Inlet: VV51C,2
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



Handwritten signature
21/10/14

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JG', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB4-5
ARI ID: 14-16224 YV51A

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.572	< 0.572 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	69.98

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JW', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB4-20
ARI ID: 14-16225 YV51B

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.482	< 0.482 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	81.33

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'D. Jenks', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB14-6
ARI ID: 14-16226 YV51C

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.425	< 0.425 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	91.52

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JJ', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB11-10
ARI ID: 14-16227 YV51D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.472	< 0.472 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	83.77

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'BJ', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB11-30
ARI ID: 14-16228 YV51E

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.484	< 0.484 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	80.74

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'J. J.', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB12-12
ARI ID: 14-16229 YV51F

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.516	< 0.516 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	76.26

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'M. J.', located between the matrix information and the project details.

Project: Precision Engineering
Event: NA
Date Sampled: 08/07/14
Date Received: 08/07/14

Client ID: SB13-9
ARI ID: 14-16230 YV51G

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.534	< 0.534 U
Total Solids	08/11/14 081114#1	SM2540G	Percent	0.01	73.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

METHOD BLANK RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JG' or similar initials.

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	08/14/14	mg/kg	< 0.398 U	PREP
Total Solids	08/11/14	Percent	< 0.01 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV51-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'MJ', is written over the 'Data Release Authorized' and 'Reported' text.

Project: Precision Engineering
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	08/14/14	mg/kg	20.0	19.9	100.5%
Insoluble Hexavalent Chromium	08/14/14	mg/kg	663	672	98.7%
Soil Hexavalent Chrome					

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB4-5
SAMPLE

Lab Sample ID: YV51A

LIMS ID: 14-16224

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Percent Total Solids: 76.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	7	
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.6	22.7	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	11	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB4-20

SAMPLE

Lab Sample ID: YV51B

LIMS ID: 14-16225

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Percent Total Solids: 80.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.6	14.9	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB14-6
SAMPLE

Lab Sample ID: YV51C

LIMS ID: 14-16226

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Percent Total Solids: 90.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	27.6	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	56	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation



INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Page 1 of 1

Sample ID: SB11-10
SAMPLE

Lab Sample ID: YV51D

LIMS ID: 14-16227

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14
Date Received: 08/07/14

Percent Total Solids: 84.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.6	11.7	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	6	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB11-30

SAMPLE

Lab Sample ID: YV51E

LIMS ID: 14-16228

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Percent Total Solids: 80.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.6	20.9	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB12-12

SAMPLE

Lab Sample ID: YV51F

LIMS ID: 14-16229

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Percent Total Solids: 75.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.7	17.0	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB13-9
SAMPLE

Lab Sample ID: YV51G

LIMS ID: 14-16230

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

Date Sampled: 08/07/14

Date Received: 08/07/14

Percent Total Solids: 62.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	8	8	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.8	16.8	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	8	8	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

**INORGANICS ANALYSIS DATA SHEET
TOTAL METALS**

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YV51MB

LIMS ID: 14-16230

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	0.5	U
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YV51LCS
LIMS ID: 14-16230
Matrix: Soil
Data Release Authorized: 
Reported: 08/19/14

QC Report No: YV51-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering

Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	213	200	106%	
Chromium	6010C	54.1	50.0	108%	
Lead	6010C	214	200	107%	
Selenium	6010C	211	200	106%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%



20 August 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YV65

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received six water samples, nine soil samples and one trip blank on August 8, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the 8/12/14 VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

The percent recoveries for 1,1,1,2-tetrachloroethane and 1,2-dibromo-3-chloropropane were slightly low following the analyses of the LCS/LCSD associated the VOC analyses of the water samples. No corrective actions were taken.

The percent recoveries for carbon disulfide and 1,1-dichloroethane were high following the analyses of the LCS/LCSD associated with the VOC analyses of the soil samples. Since carbon disulfide is know to recover poorly and 1,1-dichloroethane was not detected in any sample associated with these LCS/LCSD, no corrective actions were taken.

All soil samples were initially analyzed for NWTPH-Dx on 8/14/14. The percent difference (%D) for motor oil was slightly high for the CCAL that bracketed the analyses of these samples. All samples were re-analyzed on 8/15/14. The %D for motor oil was high for the CCAL that bracketed the re-analyses of these samples. The samples were analyzed a third time on 8/18/14. The %D for motor oil was high for the CCAL that bracketed the third analyses of these samples. It was concluded that the sample matrices were the cause of the high %Ds. No further corrective actions were taken. The results for the 8/15/14 analyses only have been submitted.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample SB6. Hexavalent chromium was not detected following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the poor MS recovery. No corrective actions were taken.

Page 2

Faragalli, Kennedy Jenks Consultants
Precision Engineering
YV65
Water/Soil

20 August 2014

An MS was prepared and analyzed for hexavalent chromium in conjunction with sample SB6-16. Hexavalent chromium was not detected following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the poor MS recovery. No corrective actions were taken.

A matrix duplicate (MD) was prepared and analyzed for total metals in conjunction with sample SB6. The RPD for chromium was high following the analysis of the MD. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was concluded that a lack of sample homogeneity was the cause of the high RPD. No corrective actions were taken.

An MD was prepared and analyzed for total metals in conjunction with sample SB7-19. The RPD for chromium was high following the analysis of the MD. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was concluded that a lack of sample homogeneity was the cause of the high RPD. No corrective actions were taken.

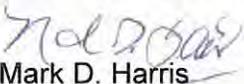
An MS was prepared and analyzed for total metals in conjunction with sample SB7-19. The percent recovery for chromium was low following the analysis of the MS. Since the percent recovery for chromium was within acceptable QC limits for the corresponding LCS, it was concluded that the sample matrix was the cause of the poor MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.


Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YV65

Enclosures

Chain of Custody Record & Laboratory Analysis Request

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



Page: 1 of 2
 Date: 8/8
 Ice Present?
 No. of Coolers: 2
 Cooler Temps: 21.8, 21.1

Turn-around Requested:
 ARI Assigned Number: 5465
 ARI Client Company: Kennedy (Junk)
 Phone: 253 895 6400
 Client Contact: Ty / Section
 Client Project Name: Revision Engineering
 Client Project #: 15 / RL
 Samples: 15 / RL

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments
					Vol's	Surf-D*	C ²	Metals	
SB6-16	8/8	0930	Soil	8	X	X	X	X	
SB6		0955	GW	7	X	X	X	X	
SB7-11		1105	Soil	2	X	X	X	X	
SB7-19		1100	Soil	8	X	X	X	X	
SB7		1115	GW	7	X	X	X	X	
SB3-2		1300	Soil	1	X	X	X	X	
SB3-8		1330	Soil	8	X	X	X	X	
SB3 wa		1310	GW	7	X	X	X	X	
SB3 D		1320	GW	7	X	X	X	X	
SB1-5		1440	Soil	8	X	X	X	X	
Comments/Special Instructions	Relinquished by: [Signature]				Received by: [Signature]				
	Printed Name: Smith, Sundry				Printed Name: A. Nagaardson				
	Company: Kennedy (Junk)				Company: ARI				
	Date & Time: 8/8 1700R				Date & Time: 8/14 1730				

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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



Cooler Receipt Form

ARI Client: KJC

Project Name: _____

COC No(s): _____ NA

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

Assigned ARI Job No: _____

Tracking No: _____ NA

Preliminary Examination Phase:

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

Were custody papers included with the cooler? YES NO

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

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

Time: 1700

218 211

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

Temp Gun ID#: 90877982

Cooler Accepted by: AV Date: 8/8/14 Time: 1720

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

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

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

Were all bottles sealed in individual plastic bags? YES NO

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

Were all bottle labels complete and legible? YES NO

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

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

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

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

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

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

Date VOC Trip Blank was made at ARI: NA YES NO

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

Samples Logged by: CA Date: 8/11/14 Time: 1545

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

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
<u>SB3-16</u>	<u>SB3-8</u>		

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



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

PRESERVATION VERIFICATION 08/11/14

Page 1 of 1

Inquiry Number: NONE
 Analysis Requested: 08/11/14
 Contact: Faragalli, Jessica
 Client: Kennedy Jenks Consultants, Inc.
 Logged by: CA
 Sample Set Used: Yes-481
 Validatable Package: No
 Deliverables:



ARI Job No: YV65

PC: Mark
 VTSR: 08/08/14

Project #:
 Project: PRECISION ENG
 Sample Site:
 SDG No:
 Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET DOC FLT FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-16374 YV65A	SB6						TOT <2 Fail														
14-16375 YV65B	SB7						TOT <2 Fail														
14-16376 YV65C	SB3						TOT <2 Fail														
14-16377 YV65D	SB3D						TOT <2 Fail														
14-16378 YV65E	SB10						TOT <2 Fail														
14-16379 YV65F	SB5						TOT <2 Fail														

YV65: 00006

Checked By CA Date 9/11/14

Sample ID Cross Reference Report



ARI Job No: YV65
Client: Kennedy Jenks Consultants, Inc.
Project Event: N/A
Project Name: PRECISION ENG

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. SB6	YV65A	14-16374	Water	08/08/14 09:55	08/08/14 17:20
2. SB7	YV65B	14-16375	Water	08/08/14 11:15	08/08/14 17:20
3. SB3	YV65C	14-16376	Water	08/08/14 13:10	08/08/14 17:20
4. SB3D	YV65D	14-16377	Water	08/08/14 13:20	08/08/14 17:20
5. SB10	YV65E	14-16378	Water	08/08/14 15:50	08/08/14 17:20
6. SB5	YV65F	14-16379	Water	08/08/14 08:35	08/08/14 17:20
7. Trip Blank	YV65O	14-16380	Water	08/08/14	08/08/14 17:20
8. SB7-19	YV65P	14-16381	Soil	08/08/14 11:00	08/08/14 17:20
9. SB6-16	YV65G	14-16401	Soil	08/08/14 09:30	08/08/14 17:20
10. SB7-11	YV65H	14-16402	Soil	08/08/14 11:05	08/08/14 17:20
11. SB3-2	YV65I	14-16403	Soil	08/08/14 11:00	08/08/14 17:20
12. SB3-8	YV65J	14-16404	Soil	08/08/14 13:30	08/08/14 17:20
13. SB1-5	YV65K	14-16405	Soil	08/08/14 14:40	08/08/14 17:20
14. SB10-7	YV65L	14-16406	Soil	08/08/14 15:40	08/08/14 17:20
15. SB8-16	YV65M	14-16407	Soil	08/08/14 16:45	08/08/14 17:20
16. SB5-11	YV65N	14-16408	Soil	08/08/14 08:10	08/08/14 17:20



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB6

Page 1 of 2

SAMPLE

Lab Sample ID: YV65A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

LIMS ID: 14-16374

Matrix: Water

Data Release Authorized:

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 18:38

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB6

SAMPLE



Lab Sample ID: YV65A

LIMS ID: 14-16374

Matrix: Water

Date Analyzed: 08/14/14 18:38

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.2%
d8-Toluene	97.1%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	101%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB7

Page 1 of 2

SAMPLE

Lab Sample ID: YV65B

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16375

Project: PRECISION ENG

Matrix: Water

Data Release Authorized: *AS*

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 19:07

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB7

Page 2 of 2

SAMPLE

Lab Sample ID: YV65B

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16375

Project: PRECISION ENG

Matrix: Water

Date Analyzed: 08/14/14 19:07

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.7%
d8-Toluene	96.4%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.5%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB3

Page 1 of 2

SAMPLE

Lab Sample ID: YV65C

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16376

Project: PRECICION ENG

Matrix: Water

Data Release Authorized: *10*

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 19:36

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB3

SAMPLE



Lab Sample ID: YV65C

LIMS ID: 14-16376

Matrix: Water

Date Analyzed: 08/14/14 19:36

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	96.9%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB3D

Page 1 of 2

SAMPLE

Lab Sample ID: YV65D

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16377

Project: PRECICION ENG

Matrix: Water

Data Release Authorized:

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 20:05

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB3D
SAMPLE



Lab Sample ID: YV65D

LIMS ID: 14-16377

Matrix: Water

Date Analyzed: 08/14/14 20:05

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	98.7%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	99.9%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB10

Page 1 of 2

SAMPLE

Lab Sample ID: YV65E

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16378

Project: PRECICION ENG

Matrix: Water

Data Release Authorized: 

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 20:34

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB10
SAMPLE



Lab Sample ID: YV65E

LIMS ID: 14-16378

Matrix: Water

Date Analyzed: 08/14/14 20:34

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	98.3%
d4-1,2-Dichlorobenzene	98.1%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB5

Page 1 of 2

SAMPLE

Lab Sample ID: YV65F

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16379

Project: PRECICION ENG

Matrix: Water

Data Release Authorized: *AB*

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/14/14 21:02

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB5

SAMPLE



Lab Sample ID: YV65F

LIMS ID: 14-16379

Matrix: Water

Date Analyzed: 08/14/14 21:02

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECICION ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	96.0%
Bromofluorobenzene	104%
d4-1,2-Dichlorobenzene	98.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: Trip Blank

Page 1 of 2

SAMPLE

Lab Sample ID: YV650

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16380

Project: Precision ENG

Matrix: Water

Data Release Authorized: 

Date Sampled: 08/08/14

Reported: 08/18/14

Date Received: 08/08/14

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/14/14 18:09

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: Trip Blank
 SAMPLE



Lab Sample ID: YV650
 LIMS ID: 14-16380
 Matrix: Water
 Date Analyzed: 08/14/14 18:09

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: Precision ENG

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	97.0%
Bromofluorobenzene	105%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-081414A

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-081414A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16374

Project: PRECICION ENG

Matrix: Water

Data Release Authorized:

Date Sampled: NA

Reported: 08/18/14

Date Received: NA

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/14/14 17:43

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-081414A

Page 2 of 2

METHOD BLANK

Lab Sample ID: MB-081414A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16374

Project: PRECICION ENG

Matrix: Water

Date Analyzed: 08/14/14 17:43

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	98.6%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	99.6%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081414A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

LIMS ID: 14-16374

Matrix: Water

Data Release Authorized: *AB*

Date Sampled: NA

Reported: 08/18/14

Date Received: NA

Instrument/Analyst LCS: NT2/LH

Sample Amount LCS: 10.0 mL

LCSD: NT2/LH

LCSD: 10.0 mL

Date Analyzed LCS: 08/14/14 16:50

Purge Volume LCS: 10.0 mL

LCSD: 08/14/14 17:16

LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	10.7	10.0	107%	9.89	10.0	98.9%	7.9%
Bromomethane	10.7	10.0	107%	9.67	10.0	96.7%	10.1%
Vinyl Chloride	10.8	10.0	108%	10.2	10.0	102%	5.7%
Chloroethane	10.6	10.0	106%	9.71	10.0	97.1%	8.8%
Methylene Chloride	10.6	10.0	106%	9.74	10.0	97.4%	8.5%
Acetone	51.9	50.0	104%	49.6	50.0	99.2%	4.5%
Carbon Disulfide	11.2	10.0	112%	10.2	10.0	102%	9.3%
1,1-Dichloroethene	11.0	10.0	110%	10.3	10.0	103%	6.6%
1,1-Dichloroethane	10.8	10.0	108%	10.6	10.0	106%	1.9%
trans-1,2-Dichloroethene	10.5	10.0	105%	9.97	10.0	99.7%	5.2%
cis-1,2-Dichloroethene	10.7	10.0	107%	10.4	10.0	104%	2.8%
Chloroform	10.5	10.0	105%	10.1	10.0	101%	3.9%
1,2-Dichloroethane	10.3	10.0	103%	10.2	10.0	102%	1.0%
2-Butanone	51.6	50.0	103%	49.6	50.0	99.2%	4.0%
1,1,1-Trichloroethane	11.0	10.0	110%	10.4	10.0	104%	5.6%
Carbon Tetrachloride	10.8	10.0	108%	10.4	10.0	104%	3.8%
Vinyl Acetate	10.7	10.0	107%	11.5	10.0	115%	7.2%
Bromodichloromethane	10.5	10.0	105%	10.4	10.0	104%	1.0%
1,2-Dichloropropane	10.3	10.0	103%	10.2	10.0	102%	1.0%
cis-1,3-Dichloropropene	10.8	10.0	108%	10.5	10.0	105%	2.8%
Trichloroethene	9.93	10.0	99.3%	9.93	10.0	99.3%	0.0%
Dibromochloromethane	10.4	10.0	104%	10.6	10.0	106%	1.9%
1,1,2-Trichloroethane	9.95	10.0	99.5%	9.68	10.0	96.8%	2.8%
Benzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
trans-1,3-Dichloropropene	9.16 Q	10.0	91.6%	8.88 Q	10.0	88.8%	3.1%
2-Chloroethylvinylether	9.77	10.0	97.7%	10.1	10.0	101%	3.3%
Bromoform	7.21 Q	10.0	72.1%	7.47 Q	10.0	74.7%	3.5%
4-Methyl-2-Pentanone (MIBK)	53.3	50.0	107%	51.9	50.0	104%	2.7%
2-Hexanone	52.1	50.0	104%	54.7	50.0	109%	4.9%
Tetrachloroethene	9.97	10.0	99.7%	9.98	10.0	99.8%	0.1%
1,1,2,2-Tetrachloroethane	9.82	10.0	98.2%	10.3	10.0	103%	4.8%
Toluene	10.0	10.0	100%	9.62	10.0	96.2%	3.9%
Chlorobenzene	10.2	10.0	102%	10.0	10.0	100%	2.0%
Ethylbenzene	10.0	10.0	100%	9.99	10.0	99.9%	0.1%
Styrene	10.3	10.0	103%	10.6	10.0	106%	2.9%
Trichlorofluoromethane	11.1	10.0	111%	10.2	10.0	102%	8.5%
1,1,2-Trichloro-1,2,2-trifluoroethane	11.0	10.0	110%	10.1	10.0	101%	8.5%
m,p-Xylene	20.3	20.0	102%	20.3	20.0	102%	0.0%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081414A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081414A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16374

Project: PRECISION ENG

Matrix: Water

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.1	10.0	101%	10.1	10.0	101%	0.0%
1,2-Dichlorobenzene	9.88	10.0	98.8%	10.0	10.0	100%	1.2%
1,3-Dichlorobenzene	9.62	10.0	96.2%	9.89	10.0	98.9%	2.8%
1,4-Dichlorobenzene	9.74	10.0	97.4%	9.63	10.0	96.3%	1.1%
Acrolein	53.3	50.0	107%	51.9	50.0	104%	2.7%
Iodomethane	10.8	10.0	108%	10.0	10.0	100%	7.7%
Bromoethane	10.9	10.0	109%	10.3	10.0	103%	5.7%
Acrylonitrile	10.7	10.0	107%	10.4	10.0	104%	2.8%
1,1-Dichloropropene	10.0	10.0	100%	10.3	10.0	103%	3.0%
Dibromomethane	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,1,1,2-Tetrachloroethane	7.44 Q	10.0	74.4%	7.60 Q	10.0	76.0%	2.1%
1,2-Dibromo-3-chloropropane	7.34 Q	10.0	73.4%	7.63 Q	10.0	76.3%	3.9%
1,2,3-Trichloropropane	9.51	10.0	95.1%	10.1	10.0	101%	6.0%
trans-1,4-Dichloro-2-butene	10.6	10.0	106%	11.2	10.0	112%	5.5%
1,3,5-Trimethylbenzene	10.1	10.0	101%	10.4	10.0	104%	2.9%
1,2,4-Trimethylbenzene	10.2	10.0	102%	10.4	10.0	104%	1.9%
Hexachlorobutadiene	8.14 Q	10.0	81.4%	8.27 Q	10.0	82.7%	1.6%
1,2-Dibromoethane	10.7	10.0	107%	10.4	10.0	104%	2.8%
Bromochloromethane	10.7	10.0	107%	10.3	10.0	103%	3.8%
2,2-Dichloropropane	9.55 Q	10.0	95.5%	9.16 Q	10.0	91.6%	4.2%
1,3-Dichloropropane	10.5	10.0	105%	10.5	10.0	105%	0.0%
Isopropylbenzene	10.0	10.0	100%	10.3	10.0	103%	3.0%
n-Propylbenzene	9.97	10.0	99.7%	10.4	10.0	104%	4.2%
Bromobenzene	9.56	10.0	95.6%	9.71	10.0	97.1%	1.6%
2-Chlorotoluene	9.75	10.0	97.5%	10.1	10.0	101%	3.5%
4-Chlorotoluene	9.74	10.0	97.4%	9.98	10.0	99.8%	2.4%
tert-Butylbenzene	9.95	10.0	99.5%	10.4	10.0	104%	4.4%
sec-Butylbenzene	10.1	10.0	101%	10.3	10.0	103%	2.0%
4-Isopropyltoluene	10.2	10.0	102%	10.5	10.0	105%	2.9%
n-Butylbenzene	10.4	10.0	104%	10.4	10.0	104%	0.0%
1,2,4-Trichlorobenzene	9.70	10.0	97.0%	9.90	10.0	99.0%	2.0%
Naphthalene	9.84	10.0	98.4%	10.2	10.0	102%	3.6%
1,2,3-Trichlorobenzene	9.95	10.0	99.5%	10.1	10.0	101%	1.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	103%	104%
d8-Toluene	101%	99.1%
Bromofluorobenzene	103%	102%
d4-1,2-Dichlorobenzene	99.2%	102%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-081414A	Method Blank	10	101%	98.6%	100%	99.6%	0
LCS-081414A	Lab Control	10	103%	101%	103%	99.2%	0
LCSD-081414A	Lab Control Dup	10	104%	99.1%	102%	102%	0
YV65A	SB6	10	98.2%	97.1%	103%	101%	0
YV65B	SB7	10	97.7%	96.4%	100%	99.5%	0
YV65C	SB3	10	104%	96.9%	106%	102%	0
YV65D	SB3D	10	101%	98.7%	103%	99.9%	0
YV65E	SB10	10	102%	100%	98.3%	98.1%	0
YV65F	SB5	10	100%	96.0%	104%	98.2%	0
YV65O	Trip Blank	10	104%	97.0%	105%	102%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane
(TOL) = d8-Toluene
(BFB) = Bromofluorobenzene
(DCB) = d4-1,2-Dichlorobenzene

(80-120)
(80-120)
(80-120)
(80-120)

(80-130)
(80-120)
(80-120)
(80-120)

Prep Method: SW5030B
Log Number Range: 14-16374 to 14-16380

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 14-AUG-2014 13:44
 Lab File ID: sch0009cal5cc.d Init. Cal. Date(s): 14-AUG-2014 14-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 12:43 16:23
 Lab Sample ID: SCH0009-CAL5 Quant Type: ISTD
 Method: /chem3/nt2.i/20140814.b/82600814L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Dichlorodifluoromethane	0.97465	0.97097	0.97097	0.010	-0.37703	20.00000	Averaged
2 Chloromethane	1.24951	1.13151	1.13151	0.100	-9.44395	20.00000	Averaged
3 Vinyl Chloride	1.24873	1.14468	1.14468	0.100	-8.33186	20.00000	Averaged
4 Bromomethane	0.61793	0.54320	0.54320	0.100	-12.09339	20.00000	Averaged
5 Chloroethane	0.68605	0.61318	0.61318	0.010	-10.62189	20.00000	Averaged
6 Trichlorofluoromethane	1.18117	1.12416	1.12416	0.010	-4.82669	20.00000	Averaged
7 1,1-Dichloroethene	1.44956	1.34882	1.34882	0.100	-6.94970	20.00000	Averaged
8 Carbon Disulfide	3.03534	2.79409	2.79409	0.010	-7.94795	20.00000	Averaged
9 1,1,2-Trichloro-2,2,2-Trifluoroethane	0.90367	0.83681	0.83681	0.010	-7.39862	20.00000	Averaged
10 Iodomethane	1.37491	1.26108	1.26108	0.010	-8.27907	20.00000	Averaged
11 Bromoethane	0.66176	0.60102	0.60102	0.100	-9.17858	20.00000	Averaged
12 Acrolein	0.10023	0.09370	0.09370	0.000	-6.51016	20.00000	Averaged
13 Methylene Chloride	0.92034	0.83101	0.83101	0.010	-9.70618	20.00000	Averaged
14 Acetone	0.15857	0.14465	0.14465	0.001	-8.77493	20.00000	Averaged
15 Trans-1,2-Dichloroethene	0.89381	0.82460	0.82460	0.010	-7.74343	20.00000	Averaged
16 n-hexane	10.15143	10.00000	0.75916	0.100	1.51426	0.000e+00	Linear <-
17 Methyl tert butyl ether	1.93526	1.71456	1.71456	0.100	-11.40414	20.00000	Averaged
18 1,1-Dichloroethane	1.42510	1.37717	1.37717	0.200	-3.36288	20.00000	Averaged
19 Acrylonitrile	0.19854	0.18532	0.18532	0.001	-6.66062	20.00000	Averaged
20 Vinyl Acetate	0.28012	0.24605	0.24605	0.010	-12.16058	20.00000	Averaged
22 Cis-1,2-Dichloroethene	0.84562	0.81178	0.81178	0.010	-4.00159	20.00000	Averaged
23 2,2-Dichloropropane	6.09657	10.00000	0.47227	0.010	-39.03434	15.00000	Linear <-
24 Bromochloromethane	0.34771	0.33627	0.33627	0.050	-3.29026	20.00000	Averaged
25 Chloroform	1.24112	1.18682	1.18682	0.200	-4.37492	20.00000	Averaged
26 Carbon Tetrachloride	0.34494	0.29741	0.29741	0.100	-13.77794	20.00000	Averaged
27 Dibromofluoromethane	0.61491	0.60927	0.60927	0.100	-0.91749	20.00000	Averaged
28 1,1,1-Trichloroethane	1.02754	0.90501	0.90501	0.100	-11.92452	20.00000	Averaged
29 2-Butanone	0.18697	0.18543	0.18543	0.001	-0.82819	20.00000	Averaged
30 1,1-Dichloropropene	0.53409	0.52162	0.52162	0.010	-2.33409	20.00000	Averaged
31 Benzene	1.53245	1.48498	1.48498	0.500	-3.09784	20.00000	Averaged
33 d4-1,2-Dichloroethane	0.68271	0.67740	0.67740	0.010	-0.77778	20.00000	Averaged
34 1,2-Dichloroethane	0.44595	0.44446	0.44446	0.100	-0.33429	20.00000	Averaged
36 Trichloroethene	0.37541	0.36771	0.36771	0.100	-2.05308	20.00000	Averaged
38 Dibromomethane	0.18650	0.18617	0.18617	0.010	-0.17835	20.00000	Averaged
39 1,2-Dichloropropane	0.34697	0.34419	0.34419	0.100	-0.80049	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 14-AUG-2014 13:44
 Lab File ID: sch0009cal5cc.d Init. Cal. Date(s): 14-AUG-2014 14-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 12:43 16:23
 Lab Sample ID: SCH0009-CAL5 Quant Type: ISTD
 Method: /chem3/nt2.i/20140814.b/82600814L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
40 Bromodichloromethane	0.35959	0.34781	0.34781	0.100	-3.27505	20.00000	Averaged
41 2-Chloroethyl Vinyl Ether	0.15345	0.14818	0.14818	0.000	-3.43185	20.00000	Averaged
42 Cis 1,3-dichloropropene	0.38121	0.36323	0.36323	0.200	-4.71677	20.00000	Averaged
43 d8-Toluene	1.25578	1.22774	1.22774	0.010	-2.23318	20.00000	Averaged
44 Toluene	0.91690	0.87658	0.87658	0.400	-4.39655	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.10070	0.10143	0.10143	0.000	0.71990	20.00000	Averaged
46 Tetrachloroethene	0.32183	0.32921	0.32921	0.200	2.29252	20.00000	Averaged
47 Trans 1,3-Dichloropropene	7.25856	10.00000	0.25086	0.010	-27.41445	20.00000	Linear <-
48 1,1,2-Trichloroethane	0.24190	0.23450	0.23450	0.100	-3.05604	20.00000	Averaged
49 Chlorodibromomethane	0.17747	0.17851	0.17851	0.100	0.58891	20.00000	Averaged
50 1,3-Dichloropropane	0.40929	0.44361	0.44361	0.100	8.38410	20.00000	Averaged
51 1,2-Dibromoethane	0.23881	0.23098	0.23098	0.010	-3.27575	20.00000	Averaged
52 2-Hexanone	0.16215	0.17435	0.17435	0.010	7.52049	20.00000	Averaged
54 Chlorobenzene	0.97146	0.97006	0.97006	0.500	-0.14355	20.00000	Averaged
55 Ethyl Benzene	0.55576	0.55356	0.55356	0.100	-0.39544	20.00000	Averaged
56 1,1,1,2-Tetrachloroethane	6.99541	10.00000	0.22121	0.010	-30.04594	20.00000	Linear <-
57 m,p-xylene	0.67016	0.67473	0.67473	0.300	0.68200	20.00000	Averaged
58 o-Xylene	0.72115	0.71693	0.71693	0.300	-0.58560	20.00000	Averaged
59 Styrene	1.11485	1.19210	1.19210	0.300	6.92979	20.00000	Averaged
60 Bromoform	7.28625	10.00000	0.15657	0.010	-27.13754	20.00000	Linear <-
61 Isopropyl Benzene	3.15016	3.22702	3.22702	0.010	2.43998	20.00000	Averaged
62 4-Bromofluorobenzene	0.57117	0.57874	0.57874	0.200	1.32547	20.00000	Averaged
63 Bromobenzene	0.71921	0.72663	0.72663	0.010	1.03135	20.00000	Averaged
64 N-Propyl Benzene	3.62349	3.71021	3.71021	0.010	2.39344	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.56302	0.56621	0.56621	0.100	0.56640	20.00000	Averaged
66 2-Chloro Toluene	2.61417	2.63085	2.63085	0.010	0.63806	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	2.71323	2.79423	2.79423	0.010	2.98531	20.00000	Averaged
68 1,2,3-Trichloropropane	0.17341	0.17792	0.17792	0.010	2.60431	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.12347	0.12353	0.12353	0.001	0.04564	20.00000	Averaged
70 4-Chloro Toluene	2.43201	2.43877	2.43877	0.010	0.27794	20.00000	Averaged
71 T-Butyl Benzene	2.17882	2.25318	2.25318	0.010	3.41279	20.00000	Averaged
72 1,2,4-Trimethylbenzene	2.77179	2.82356	2.82356	0.010	1.86797	20.00000	Averaged
73 S-Butyl Benzene	3.53351	3.59436	3.59436	0.010	1.72230	20.00000	Averaged
74 4-Isopropyl Toluene	2.76815	2.85845	2.85845	0.010	3.26203	20.00000	Averaged
75 1,3-Dichlorobenzene	1.53189	1.49144	1.49144	0.600	-2.64037	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 14-AUG-2014 13:44
 Lab File ID: sch0009cal5cc.d Init. Cal. Date(s): 14-AUG-2014 14-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 12:43 16:23
 Lab Sample ID: SCH0009-CAL5 Quant Type: ISTD
 Method: /chem3/nt2.i/20140814.b/82600814L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
77 1,4-Dichlorobenzene	1.55700	1.50165	1.50165	0.500	-3.55465	20.00000	Averaged
78 N-Butyl Benzene	2.80003	2.78984	2.78984	0.010	-0.36414	20.00000	Averaged
\$ 79 d4-1,2-Dichlorobenzene	0.91998	0.92584	0.92584	0.010	0.63589	20.00000	Averaged
80 1,2-Dichlorobenzene	1.41617	1.37232	1.37232	0.400	-3.09664	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	5.83924	10.00000	0.05157	0.010	-41.60762	20.00000	Linear <-
83 Hexachloro 1,3-Butadiene	0.47195	0.37180	0.37180	0.010	-21.22031	20.00000	Averaged <-
84 1,2,4-Trichlorobenzene	0.86368	0.84878	0.84878	0.010	-1.72436	20.00000	Averaged
85 Naphthalene	1.54140	1.55176	1.55176	0.010	0.67228	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.65978	0.66284	0.66284	0.010	0.46332	20.00000	Averaged

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB7-19

Page 1 of 2

SAMPLE

Lab Sample ID: YV65P

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16381

Project: Precision ENG

Matrix: Soil

Data Release Authorized: *AB*

Date Sampled: 08/08/14

Reported: 08/13/14

Date Received: 08/08/14

Instrument/Analyst: NT5/PAB

Sample Amount: 7.87 g-dry-wt

Date Analyzed: 08/12/14 21:11

Purge Volume: 5.0 mL

Moisture: 11.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.6	< 0.6	U
74-83-9	Bromomethane	0.6	< 0.6	U
75-01-4	Vinyl Chloride	0.6	< 0.6	U
75-00-3	Chloroethane	0.6	< 0.6	U
75-09-2	Methylene Chloride	1.3	2.4	
67-64-1	Acetone	3.2	16	Q
75-15-0	Carbon Disulfide	0.6	4.3	Q
75-35-4	1,1-Dichloroethene	0.6	< 0.6	U
75-34-3	1,1-Dichloroethane	0.6	< 0.6	U
156-60-5	trans-1,2-Dichloroethene	0.6	< 0.6	U
156-59-2	cis-1,2-Dichloroethene	0.6	< 0.6	U
67-66-3	Chloroform	0.6	< 0.6	U
107-06-2	1,2-Dichloroethane	0.6	< 0.6	U
78-93-3	2-Butanone	3.2	< 3.2	U
71-55-6	1,1,1-Trichloroethane	0.6	< 0.6	U
56-23-5	Carbon Tetrachloride	0.6	< 0.6	U
108-05-4	Vinyl Acetate	3.2	< 3.2	U
75-27-4	Bromodichloromethane	0.6	< 0.6	U
78-87-5	1,2-Dichloropropane	0.6	< 0.6	U
10061-01-5	cis-1,3-Dichloropropene	0.6	< 0.6	U
79-01-6	Trichloroethene	0.6	< 0.6	U
124-48-1	Dibromochloromethane	0.6	< 0.6	U
79-00-5	1,1,2-Trichloroethane	0.6	< 0.6	U
71-43-2	Benzene	0.6	< 0.6	U
10061-02-6	trans-1,3-Dichloropropene	0.6	< 0.6	U
110-75-8	2-Chloroethylvinylether	3.2	< 3.2	U
75-25-2	Bromoform	0.6	< 0.6	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.2	< 3.2	U
591-78-6	2-Hexanone	3.2	< 3.2	U
127-18-4	Tetrachloroethene	0.6	< 0.6	U
79-34-5	1,1,2,2-Tetrachloroethane	0.6	< 0.6	U
108-88-3	Toluene	0.6	< 0.6	U
108-90-7	Chlorobenzene	0.6	< 0.6	U
100-41-4	Ethylbenzene	0.6	< 0.6	U
100-42-5	Styrene	0.6	< 0.6	U
75-69-4	Trichlorofluoromethane	0.6	< 0.6	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.3	< 1.3	U
179601-23-1	m,p-Xylene	0.6	< 0.6	U
95-47-6	o-Xylene	0.6	< 0.6	U
95-50-1	1,2-Dichlorobenzene	0.6	< 0.6	U
541-73-1	1,3-Dichlorobenzene	0.6	< 0.6	U
106-46-7	1,4-Dichlorobenzene	0.6	< 0.6	U
107-02-8	Acrolein	32	< 32	U
74-88-4	Iodomethane	0.6	< 0.6	U
74-96-4	Bromoethane	1.3	< 1.3	U
107-13-1	Acrylonitrile	3.2	< 3.2	U
563-58-6	1,1-Dichloropropene	0.6	< 0.6	U
74-95-3	Dibromomethane	0.6	< 0.6	U
630-20-6	1,1,1,2-Tetrachloroethane	0.6	< 0.6	U
96-12-8	1,2-Dibromo-3-chloropropane	3.2	< 3.2	U
96-18-4	1,2,3-Trichloropropane	1.3	< 1.3	U
110-57-6	trans-1,4-Dichloro-2-butene	3.2	< 3.2	U
108-67-8	1,3,5-Trimethylbenzene	0.6	< 0.6	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB7-19

SAMPLE



Lab Sample ID: YV65P

LIMS ID: 14-16381

Matrix: Soil

Date Analyzed: 08/12/14 21:11

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: Precision ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.6	< 0.6	U
87-68-3	Hexachlorobutadiene	3.2	< 3.2	U
106-93-4	1,2-Dibromoethane	0.6	< 0.6	U
74-97-5	Bromochloromethane	0.6	< 0.6	U
594-20-7	2,2-Dichloropropane	0.6	< 0.6	U
142-28-9	1,3-Dichloropropane	0.6	< 0.6	U
98-82-8	Isopropylbenzene	0.6	< 0.6	U
103-65-1	n-Propylbenzene	0.6	< 0.6	U
108-86-1	Bromobenzene	0.6	< 0.6	U
95-49-8	2-Chlorotoluene	0.6	< 0.6	U
106-43-4	4-Chlorotoluene	0.6	< 0.6	U
98-06-6	tert-Butylbenzene	0.6	< 0.6	U
135-98-8	sec-Butylbenzene	0.6	< 0.6	U
99-87-6	4-Isopropyltoluene	0.6	< 0.6	U
104-51-8	n-Butylbenzene	0.6	< 0.6	U
120-82-1	1,2,4-Trichlorobenzene	3.2	< 3.2	U
91-20-3	Naphthalene	3.2	< 3.2	U
87-61-6	1,2,3-Trichlorobenzene	3.2	< 3.2	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	136%
d8-Toluene	104%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	106%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: SB6-16

SAMPLE



Lab Sample ID: YV65G

LIMS ID: 14-16401

Matrix: Soil

Data Release Authorized: 

Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Instrument/Analyst: NT5/PAB

Date Analyzed: 08/12/14 18:17

Sample Amount: 3.55 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 32.4%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	Methylene Chloride	2.8	4.8	
67-64-1	Acetone	7.0	27	Q
75-15-0	Carbon Disulfide	1.4	2.8	Q
75-35-4	1,1-Dichloroethene	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	7.0	< 7.0	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	7.0	< 7.0	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	7.0	< 7.0	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.0	< 7.0	U
591-78-6	2-Hexanone	7.0	< 7.0	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.8	< 2.8	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	7.0	< 7.0	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.8	< 2.8	U
107-13-1	Acrylonitrile	7.0	< 7.0	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	7.0	< 7.0	U
96-18-4	1,2,3-Trichloropropane	2.8	< 2.8	U
110-57-6	trans-1,4-Dichloro-2-butene	7.0	< 7.0	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB6-16

SAMPLE



Lab Sample ID: YV65G

LIMS ID: 14-16401

Matrix: Soil

Date Analyzed: 08/12/14 18:17

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	7.0	< 7.0	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	7.0	< 7.0	U
91-20-3	Naphthalene	7.0	< 7.0	U
87-61-6	1,2,3-Trichlorobenzene	7.0	< 7.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	103%
Bromofluorobenzene	99.4%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB7-11

Page 1 of 2

SAMPLE



Lab Sample ID: YV65H

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16402

Project: PRECISION ENG

Matrix: Soil

Data Release Authorized:

Date Sampled: 08/08/14

Reported: 08/13/14

Date Received: 08/08/14

Instrument/Analyst: NT5/PAB

Sample Amount: 3.24 g-dry-wt

Date Analyzed: 08/12/14 18:42

Purge Volume: 5.0 mL

Moisture: 27.9%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	3.1	9.4	
67-64-1	Acetone	7.7	61	Q
75-15-0	Carbon Disulfide	1.5	9.1	Q
75-35-4	1,1-Dichloroethane	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.7	< 7.7	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.7	< 7.7	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.7	< 7.7	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.7	< 7.7	U
591-78-6	2-Hexanone	7.7	< 7.7	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.1	< 3.1	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	7.7	< 7.7	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.1	< 3.1	U
107-13-1	Acrylonitrile	7.7	< 7.7	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.7	< 7.7	U
96-18-4	1,2,3-Trichloropropane	3.1	< 3.1	U
110-57-6	trans-1,4-Dichloro-2-butene	7.7	< 7.7	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB7-11

SAMPLE



Lab Sample ID: YV65H

LIMS ID: 14-16402

Matrix: Soil

Date Analyzed: 08/12/14 18:42

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.7	< 7.7	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.7	< 7.7	U
91-20-3	Naphthalene	7.7	< 7.7	U
87-61-6	1,2,3-Trichlorobenzene	7.7	< 7.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	126%
d8-Toluene	102%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 1 of 2

Sample ID: SB3-8
 SAMPLE



Lab Sample ID: YV65J
 LIMS ID: 14-16404
 Matrix: Soil
 Data Release Authorized: *B*
 Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECISION ENG

Date Sampled: 08/08/14
 Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
 Date Analyzed: 08/12/14 19:07

Sample Amount: 6.79 g-dry-wt
 Purge Volume: 5.0 mL
 Moisture: 14.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.7	< 0.7	U
74-83-9	Bromomethane	0.7	< 0.7	U
75-01-4	Vinyl Chloride	0.7	< 0.7	U
75-00-3	Chloroethane	0.7	< 0.7	U
75-09-2	Methylene Chloride	1.5	2.4	
67-64-1	Acetone	3.7	25	Q
75-15-0	Carbon Disulfide	0.7	12	Q
75-35-4	1,1-Dichloroethene	0.7	< 0.7	U
75-34-3	1,1-Dichloroethane	0.7	< 0.7	U
156-60-5	trans-1,2-Dichloroethene	0.7	< 0.7	U
156-59-2	cis-1,2-Dichloroethene	0.7	< 0.7	U
67-66-3	Chloroform	0.7	< 0.7	U
107-06-2	1,2-Dichloroethane	0.7	< 0.7	U
78-93-3	2-Butanone	3.7	< 3.7	U
71-55-6	1,1,1-Trichloroethane	0.7	< 0.7	U
56-23-5	Carbon Tetrachloride	0.7	< 0.7	U
108-05-4	Vinyl Acetate	3.7	< 3.7	U
75-27-4	Bromodichloromethane	0.7	< 0.7	U
78-87-5	1,2-Dichloropropane	0.7	< 0.7	U
10061-01-5	cis-1,3-Dichloropropene	0.7	< 0.7	U
79-01-6	Trichloroethene	0.7	< 0.7	U
124-48-1	Dibromochloromethane	0.7	< 0.7	U
79-00-5	1,1,2-Trichloroethane	0.7	< 0.7	U
71-43-2	Benzene	0.7	< 0.7	U
10061-02-6	trans-1,3-Dichloropropene	0.7	< 0.7	U
110-75-8	2-Chloroethylvinylether	3.7	< 3.7	U
75-25-2	Bromoform	0.7	< 0.7	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	3.7	< 3.7	U
591-78-6	2-Hexanone	3.7	< 3.7	U
127-18-4	Tetrachloroethene	0.7	< 0.7	U
79-34-5	1,1,2,2-Tetrachloroethane	0.7	< 0.7	U
108-88-3	Toluene	0.7	< 0.7	U
108-90-7	Chlorobenzene	0.7	< 0.7	U
100-41-4	Ethylbenzene	0.7	< 0.7	U
100-42-5	Styrene	0.7	< 0.7	U
75-69-4	Trichlorofluoromethane	0.7	< 0.7	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.5	< 1.5	U
179601-23-1	m,p-Xylene	0.7	< 0.7	U
95-47-6	o-Xylene	0.7	< 0.7	U
95-50-1	1,2-Dichlorobenzene	0.7	< 0.7	U
541-73-1	1,3-Dichlorobenzene	0.7	< 0.7	U
106-46-7	1,4-Dichlorobenzene	0.7	< 0.7	U
107-02-8	Acrolein	37	< 37	U
74-88-4	Iodomethane	0.7	< 0.7	U
74-96-4	Bromoethane	1.5	< 1.5	U
107-13-1	Acrylonitrile	3.7	< 3.7	U
563-58-6	1,1-Dichloropropene	0.7	< 0.7	U
74-95-3	Dibromomethane	0.7	< 0.7	U
630-20-6	1,1,1,2-Tetrachloroethane	0.7	< 0.7	U
96-12-8	1,2-Dibromo-3-chloropropane	3.7	< 3.7	U
96-18-4	1,2,3-Trichloropropane	1.5	< 1.5	U
110-57-6	trans-1,4-Dichloro-2-butene	3.7	< 3.7	U
108-67-8	1,3,5-Trimethylbenzene	0.7	< 0.7	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: SB3-8
SAMPLE



Lab Sample ID: YV65J

LIMS ID: 14-16404

Matrix: Soil

Date Analyzed: 08/12/14 19:07

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.7	< 0.7	U
87-68-3	Hexachlorobutadiene	3.7	< 3.7	U
106-93-4	1,2-Dibromoethane	0.7	< 0.7	U
74-97-5	Bromochloromethane	0.7	< 0.7	U
594-20-7	2,2-Dichloropropane	0.7	< 0.7	U
142-28-9	1,3-Dichloropropane	0.7	< 0.7	U
98-82-8	Isopropylbenzene	0.7	< 0.7	U
103-65-1	n-Propylbenzene	0.7	< 0.7	U
108-86-1	Bromobenzene	0.7	< 0.7	U
95-49-8	2-Chlorotoluene	0.7	< 0.7	U
106-43-4	4-Chlorotoluene	0.7	< 0.7	U
98-06-6	tert-Butylbenzene	0.7	< 0.7	U
135-98-8	sec-Butylbenzene	0.7	< 0.7	U
99-87-6	4-Isopropyltoluene	0.7	< 0.7	U
104-51-8	n-Butylbenzene	0.7	< 0.7	U
120-82-1	1,2,4-Trichlorobenzene	3.7	< 3.7	U
91-20-3	Naphthalene	3.7	< 3.7	U
87-61-6	1,2,3-Trichlorobenzene	3.7	< 3.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	131%
d8-Toluene	103%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 1 of 2

Sample ID: SB1-5
 SAMPLE



Lab Sample ID: YV65K
 LIMS ID: 14-16405
 Matrix: Soil
 Data Release Authorized:
 Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECISION ENG

Date Sampled: 08/08/14
 Date Received: 08/08/14

Instrument/Analyst: NT5/PAB
 Date Analyzed: 08/12/14 19:32

Sample Amount: 5.11 g-dry-wt
 Purge Volume: 5.0 mL
 Moisture: 10.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	4.9	15	Q
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	4.9	< 4.9	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	4.9	< 4.9	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	4.9	< 4.9	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.9	< 4.9	U
591-78-6	2-Hexanone	4.9	< 4.9	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	49	< 49	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	4.9	< 4.9	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	4.9	< 4.9	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	4.9	< 4.9	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: SB1-5
 SAMPLE



Lab Sample ID: YV65K
 LIMS ID: 14-16405
 Matrix: Soil
 Date Analyzed: 08/12/14 19:32

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	4.9	< 4.9	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	4.9	< 4.9	U
91-20-3	Naphthalene	4.9	< 4.9	U
87-61-6	1,2,3-Trichlorobenzene	4.9	< 4.9	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	125%
d8-Toluene	105%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB10-7

Page 1 of 2

SAMPLE

Lab Sample ID: YV65L

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16406

Project: PRECISION ENG

Matrix: Soil

Data Release Authorized: 

Date Sampled: 08/08/14

Reported: 08/13/14

Date Received: 08/08/14

Instrument/Analyst: NT5/PAB

Sample Amount: 4.53 g-dry-wt

Date Analyzed: 08/12/14 19:57

Purge Volume: 5.0 mL

Moisture: 9.1%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	< 1.1	U
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	Methylene Chloride	2.2	2.6	
67-64-1	Acetone	5.5	17	Q
75-15-0	Carbon Disulfide	1.1	1.7	Q
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.5	< 5.5	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.5	< 5.5	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.5	< 5.5	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.5	< 5.5	U
591-78-6	2-Hexanone	5.5	< 5.5	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.2	< 2.2	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	55	< 55	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.2	< 2.2	U
107-13-1	Acrylonitrile	5.5	< 5.5	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.5	< 5.5	U
96-18-4	1,2,3-Trichloropropane	2.2	< 2.2	U
110-57-6	trans-1,4-Dichloro-2-butene	5.5	< 5.5	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB10-7

Page 2 of 2

SAMPLE

Lab Sample ID: YV65L

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16406

Project: PRECISION ENG

Matrix: Soil

Date Analyzed: 08/12/14 19:57

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.5	< 5.5	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.5	< 5.5	U
91-20-3	Naphthalene	5.5	< 5.5	U
87-61-6	1,2,3-Trichlorobenzene	5.5	< 5.5	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	132%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB8-16

Page 1 of 2

SAMPLE

Lab Sample ID: YV65M

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16407

Project: PRECISION ENG

Matrix: Soil

Data Release Authorized: *AB*

Date Sampled: 08/08/14

Reported: 08/13/14

Date Received: 08/08/14

Instrument/Analyst: NT5/PAB

Sample Amount: 3.28 g-dry-wt

Date Analyzed: 08/12/14 20:22

Purge Volume: 5.0 mL

Moisture: 29.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.5	< 1.5	U
74-83-9	Bromomethane	1.5	< 1.5	U
75-01-4	Vinyl Chloride	1.5	< 1.5	U
75-00-3	Chloroethane	1.5	< 1.5	U
75-09-2	Methylene Chloride	3.0	< 3.0	U
67-64-1	Acetone	7.6	70	Q
75-15-0	Carbon Disulfide	1.5	11	Q
75-35-4	1,1-Dichloroethane	1.5	< 1.5	U
75-34-3	1,1-Dichloroethane	1.5	< 1.5	U
156-60-5	trans-1,2-Dichloroethene	1.5	< 1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	< 1.5	U
67-66-3	Chloroform	1.5	< 1.5	U
107-06-2	1,2-Dichloroethane	1.5	< 1.5	U
78-93-3	2-Butanone	7.6	< 7.6	U
71-55-6	1,1,1-Trichloroethane	1.5	< 1.5	U
56-23-5	Carbon Tetrachloride	1.5	< 1.5	U
108-05-4	Vinyl Acetate	7.6	< 7.6	U
75-27-4	Bromodichloromethane	1.5	< 1.5	U
78-87-5	1,2-Dichloropropane	1.5	< 1.5	U
10061-01-5	cis-1,3-Dichloropropene	1.5	< 1.5	U
79-01-6	Trichloroethene	1.5	< 1.5	U
124-48-1	Dibromochloromethane	1.5	< 1.5	U
79-00-5	1,1,2-Trichloroethane	1.5	< 1.5	U
71-43-2	Benzene	1.5	< 1.5	U
10061-02-6	trans-1,3-Dichloropropene	1.5	< 1.5	U
110-75-8	2-Chloroethylvinylether	7.6	< 7.6	U
75-25-2	Bromoform	1.5	< 1.5	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	7.6	< 7.6	U
591-78-6	2-Hexanone	7.6	< 7.6	U
127-18-4	Tetrachloroethene	1.5	< 1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	1.5	< 1.5	U
108-88-3	Toluene	1.5	< 1.5	U
108-90-7	Chlorobenzene	1.5	< 1.5	U
100-41-4	Ethylbenzene	1.5	< 1.5	U
100-42-5	Styrene	1.5	< 1.5	U
75-69-4	Trichlorofluoromethane	1.5	< 1.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	3.0	< 3.0	U
179601-23-1	m,p-Xylene	1.5	< 1.5	U
95-47-6	o-Xylene	1.5	< 1.5	U
95-50-1	1,2-Dichlorobenzene	1.5	< 1.5	U
541-73-1	1,3-Dichlorobenzene	1.5	< 1.5	U
106-46-7	1,4-Dichlorobenzene	1.5	< 1.5	U
107-02-8	Acrolein	76	< 76	U
74-88-4	Iodomethane	1.5	< 1.5	U
74-96-4	Bromoethane	3.0	< 3.0	U
107-13-1	Acrylonitrile	7.6	< 7.6	U
563-58-6	1,1-Dichloropropene	1.5	< 1.5	U
74-95-3	Dibromomethane	1.5	< 1.5	U
630-20-6	1,1,1,2-Tetrachloroethane	1.5	< 1.5	U
96-12-8	1,2-Dibromo-3-chloropropane	7.6	< 7.6	U
96-18-4	1,2,3-Trichloropropane	3.0	< 3.0	U
110-57-6	trans-1,4-Dichloro-2-butene	7.6	< 7.6	U
108-67-8	1,3,5-Trimethylbenzene	1.5	< 1.5	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: SB8-16

Page 2 of 2

SAMPLE

Lab Sample ID: YV65M

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16407

Project: PRECISION ENG

Matrix: Soil

Date Analyzed: 08/12/14 20:22

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.5	< 1.5	U
87-68-3	Hexachlorobutadiene	7.6	< 7.6	U
106-93-4	1,2-Dibromoethane	1.5	< 1.5	U
74-97-5	Bromochloromethane	1.5	< 1.5	U
594-20-7	2,2-Dichloropropane	1.5	< 1.5	U
142-28-9	1,3-Dichloropropane	1.5	< 1.5	U
98-82-8	Isopropylbenzene	1.5	< 1.5	U
103-65-1	n-Propylbenzene	1.5	< 1.5	U
108-86-1	Bromobenzene	1.5	< 1.5	U
95-49-8	2-Chlorotoluene	1.5	< 1.5	U
106-43-4	4-Chlorotoluene	1.5	< 1.5	U
98-06-6	tert-Butylbenzene	1.5	< 1.5	U
135-98-8	sec-Butylbenzene	1.5	< 1.5	U
99-87-6	4-Isopropyltoluene	1.5	< 1.5	U
104-51-8	n-Butylbenzene	1.5	< 1.5	U
120-82-1	1,2,4-Trichlorobenzene	7.6	< 7.6	U
91-20-3	Naphthalene	7.6	< 7.6	U
87-61-6	1,2,3-Trichlorobenzene	7.6	< 7.6	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	120%
d8-Toluene	102%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	104%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: SB5-11

SAMPLE



Lab Sample ID: YV65N

LIMS ID: 14-16408

Matrix: Soil

Data Release Authorized: 

Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Instrument/Analyst: NT5/PAB

Date Analyzed: 08/12/14 20:47

Sample Amount: 3.65 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 34.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.4	< 1.4	U
74-83-9	Bromomethane	1.4	< 1.4	U
75-01-4	Vinyl Chloride	1.4	< 1.4	U
75-00-3	Chloroethane	1.4	< 1.4	U
75-09-2	Methylene Chloride	2.7	4.8	
67-64-1	Acetone	6.8	58	Q
75-15-0	Carbon Disulfide	1.4	5.6	Q
75-35-4	1,1-Dichloroethane	1.4	< 1.4	U
75-34-3	1,1-Dichloroethane	1.4	< 1.4	U
156-60-5	trans-1,2-Dichloroethene	1.4	< 1.4	U
156-59-2	cis-1,2-Dichloroethene	1.4	< 1.4	U
67-66-3	Chloroform	1.4	< 1.4	U
107-06-2	1,2-Dichloroethane	1.4	< 1.4	U
78-93-3	2-Butanone	6.8	< 6.8	U
71-55-6	1,1,1-Trichloroethane	1.4	< 1.4	U
56-23-5	Carbon Tetrachloride	1.4	< 1.4	U
108-05-4	Vinyl Acetate	6.8	< 6.8	U
75-27-4	Bromodichloromethane	1.4	< 1.4	U
78-87-5	1,2-Dichloropropane	1.4	< 1.4	U
10061-01-5	cis-1,3-Dichloropropene	1.4	< 1.4	U
79-01-6	Trichloroethene	1.4	< 1.4	U
124-48-1	Dibromochloromethane	1.4	< 1.4	U
79-00-5	1,1,2-Trichloroethane	1.4	< 1.4	U
71-43-2	Benzene	1.4	< 1.4	U
10061-02-6	trans-1,3-Dichloropropene	1.4	< 1.4	U
110-75-8	2-Chloroethylvinylether	6.8	< 6.8	U
75-25-2	Bromoform	1.4	< 1.4	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	6.8	< 6.8	U
591-78-6	2-Hexanone	6.8	< 6.8	U
127-18-4	Tetrachloroethene	1.4	< 1.4	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	< 1.4	U
108-88-3	Toluene	1.4	< 1.4	U
108-90-7	Chlorobenzene	1.4	< 1.4	U
100-41-4	Ethylbenzene	1.4	< 1.4	U
100-42-5	Styrene	1.4	< 1.4	U
75-69-4	Trichlorofluoromethane	1.4	< 1.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.7	< 2.7	U
179601-23-1	m,p-Xylene	1.4	< 1.4	U
95-47-6	o-Xylene	1.4	< 1.4	U
95-50-1	1,2-Dichlorobenzene	1.4	< 1.4	U
541-73-1	1,3-Dichlorobenzene	1.4	< 1.4	U
106-46-7	1,4-Dichlorobenzene	1.4	< 1.4	U
107-02-8	Acrolein	68	< 68	U
74-88-4	Iodomethane	1.4	< 1.4	U
74-96-4	Bromoethane	2.7	< 2.7	U
107-13-1	Acrylonitrile	6.8	< 6.8	U
563-58-6	1,1-Dichloropropene	1.4	< 1.4	U
74-95-3	Dibromomethane	1.4	< 1.4	U
630-20-6	1,1,1,2-Tetrachloroethane	1.4	< 1.4	U
96-12-8	1,2-Dibromo-3-chloropropane	6.8	< 6.8	U
96-18-4	1,2,3-Trichloropropane	2.7	< 2.7	U
110-57-6	trans-1,4-Dichloro-2-butene	6.8	< 6.8	U
108-67-8	1,3,5-Trimethylbenzene	1.4	< 1.4	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: SB5-11
 SAMPLE



Lab Sample ID: YV65N
 LIMS ID: 14-16408
 Matrix: Soil
 Date Analyzed: 08/12/14 20:47

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.4	< 1.4	U
87-68-3	Hexachlorobutadiene	6.8	< 6.8	U
106-93-4	1,2-Dibromoethane	1.4	< 1.4	U
74-97-5	Bromochloromethane	1.4	< 1.4	U
594-20-7	2,2-Dichloropropane	1.4	< 1.4	U
142-28-9	1,3-Dichloropropane	1.4	< 1.4	U
98-82-8	Isopropylbenzene	1.4	< 1.4	U
103-65-1	n-Propylbenzene	1.4	< 1.4	U
108-86-1	Bromobenzene	1.4	< 1.4	U
95-49-8	2-Chlorotoluene	1.4	< 1.4	U
106-43-4	4-Chlorotoluene	1.4	< 1.4	U
98-06-6	tert-Butylbenzene	1.4	< 1.4	U
135-98-8	sec-Butylbenzene	1.4	< 1.4	U
99-87-6	4-Isopropyltoluene	1.4	< 1.4	U
104-51-8	n-Butylbenzene	1.4	< 1.4	U
120-82-1	1,2,4-Trichlorobenzene	6.8	< 6.8	U
91-20-3	Naphthalene	6.8	< 6.8	U
87-61-6	1,2,3-Trichlorobenzene	6.8	< 6.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	122%
d8-Toluene	103%
Bromofluorobenzene	97.4%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2



Sample ID: MB-081214A

METHOD BLANK

Lab Sample ID: MB-081214A

LIMS ID: 14-16401

Matrix: Soil

Data Release Authorized: *BS*

Reported: 08/13/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: NA

Date Received: NA

Instrument/Analyst: NT5/PAB

Date Analyzed: 08/12/14 13:56

Sample Amount: 5.00 g-dry-wt

Purge Volume: 5.0 mL

Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: MB-081214A
 METHOD BLANK



Lab Sample ID: MB-081214A
 LIMS ID: 14-16401
 Matrix: Soil
 Date Analyzed: 08/12/14 13:56

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECISION ENG

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	98.6%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081214A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16401

Project: PRECISION ENG

Matrix: Soil

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 08/13/14

Date Received: NA

Instrument/Analyst LCS: NT5/PAB

Sample Amount LCS: 5.00 g-dry-wt

LCSD: NT5/PAB

LCSD: 5.00 g-dry-wt

Date Analyzed LCS: 08/12/14 13:07

Purge Volume LCS: 5.0 mL

LCSD: 08/12/14 13:32

LCSD: 5.0 mL

Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	43.6	50.0	87.2%	41.8	50.0	83.6%	4.2%
Bromomethane	76.0 Q	50.0	152%	72.8 Q	50.0	146%	4.3%
Vinyl Chloride	47.7	50.0	95.4%	47.0	50.0	94.0%	1.5%
Chloroethane	53.8	50.0	108%	49.8	50.0	99.6%	7.7%
Methylene Chloride	49.5	50.0	99.0%	47.4	50.0	94.8%	4.3%
Acetone	320 Q	250	128%	318 Q	250	127%	0.6%
Carbon Disulfide	98.5 Q	50.0	197%	85.9 Q	50.0	172%	13.7%
1,1-Dichloroethene	87.2 Q	50.0	174%	76.9 Q	50.0	154%	12.6%
1,1-Dichloroethane	52.6	50.0	105%	51.8	50.0	104%	1.5%
trans-1,2-Dichloroethene	53.4	50.0	107%	51.8	50.0	104%	3.0%
cis-1,2-Dichloroethene	52.0	50.0	104%	51.2	50.0	102%	1.6%
Chloroform	53.1	50.0	106%	52.4	50.0	105%	1.3%
1,2-Dichloroethane	49.6	50.0	99.2%	50.3	50.0	101%	1.4%
2-Butanone	256	250	102%	261	250	104%	1.9%
1,1,1-Trichloroethane	54.4	50.0	109%	52.9	50.0	106%	2.8%
Carbon Tetrachloride	52.4	50.0	105%	51.1	50.0	102%	2.5%
Vinyl Acetate	51.4	50.0	103%	52.4	50.0	105%	1.9%
Bromodichloromethane	49.6	50.0	99.2%	49.7	50.0	99.4%	0.2%
1,2-Dichloropropane	48.2	50.0	96.4%	48.1	50.0	96.2%	0.2%
cis-1,3-Dichloropropene	50.6	50.0	101%	50.6	50.0	101%	0.0%
Trichloroethene	50.8	50.0	102%	50.1	50.0	100%	1.4%
Dibromochloromethane	48.9	50.0	97.8%	49.3	50.0	98.6%	0.8%
1,1,2-Trichloroethane	48.0	50.0	96.0%	48.4	50.0	96.8%	0.8%
Benzene	50.2	50.0	100%	49.7	50.0	99.4%	1.0%
trans-1,3-Dichloropropene	50.5	50.0	101%	51.1	50.0	102%	1.2%
2-Chloroethylvinylether	49.9	50.0	99.8%	51.3	50.0	103%	2.8%
Bromoform	47.9	50.0	95.8%	48.0	50.0	96.0%	0.2%
4-Methyl-2-Pentanone (MIBK)	250	250	100%	259	250	104%	3.5%
2-Hexanone	249	250	99.6%	254	250	102%	2.0%
Tetrachloroethene	51.9	50.0	104%	49.8	50.0	99.6%	4.1%
1,1,2,2-Tetrachloroethane	46.6	50.0	93.2%	46.3	50.0	92.6%	0.6%
Toluene	49.2	50.0	98.4%	50.2	50.0	100%	2.0%
Chlorobenzene	49.8	50.0	99.6%	48.6	50.0	97.2%	2.4%
Ethylbenzene	51.5	50.0	103%	50.1	50.0	100%	2.8%
Styrene	52.5	50.0	105%	51.6	50.0	103%	1.7%
Trichlorofluoromethane	51.0 Q	50.0	102%	49.2 Q	50.0	98.4%	3.6%
1,1,2-Trichloro-1,2,2-trifluoroethane	58.0	50.0	116%	55.2	50.0	110%	4.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-081214A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-081214A

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16401

Project: PRECISION ENG

Matrix: Soil

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	105	100	105%	103	100	103%	1.9%
o-Xylene	52.8	50.0	106%	51.7	50.0	103%	2.1%
1,2-Dichlorobenzene	49.4	50.0	98.8%	48.6	50.0	97.2%	1.6%
1,3-Dichlorobenzene	52.0	50.0	104%	50.1	50.0	100%	3.7%
1,4-Dichlorobenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%
Acrolein	280	250	112%	283	250	113%	1.1%
Iodomethane	62.4	50.0	125%	53.9	50.0	108%	14.6%
Bromoethane	56.0	50.0	112%	53.6	50.0	107%	4.4%
Acrylonitrile	50.0	50.0	100%	51.7	50.0	103%	3.3%
1,1-Dichloropropene	51.0	50.0	102%	49.9	50.0	99.8%	2.2%
Dibromomethane	48.5	50.0	97.0%	49.6	50.0	99.2%	2.2%
1,1,1,2-Tetrachloroethane	48.7	50.0	97.4%	48.2	50.0	96.4%	1.0%
1,2-Dibromo-3-chloropropane	47.7	50.0	95.4%	48.6	50.0	97.2%	1.9%
1,2,3-Trichloropropane	46.0	50.0	92.0%	46.4	50.0	92.8%	0.9%
trans-1,4-Dichloro-2-butene	49.2	50.0	98.4%	48.5	50.0	97.0%	1.4%
1,3,5-Trimethylbenzene	53.0	50.0	106%	50.9	50.0	102%	4.0%
1,2,4-Trimethylbenzene	53.8	50.0	108%	51.8	50.0	104%	3.8%
Hexachlorobutadiene	52.0	50.0	104%	47.8	50.0	95.6%	8.4%
1,2-Dibromoethane	47.6	50.0	95.2%	48.4	50.0	96.8%	1.7%
Bromochloromethane	51.6	50.0	103%	52.2	50.0	104%	1.2%
2,2-Dichloropropane	56.0	50.0	112%	54.3	50.0	109%	3.1%
1,3-Dichloropropane	47.4	50.0	94.8%	47.4	50.0	94.8%	0.0%
Isopropylbenzene	53.1	50.0	106%	50.5	50.0	101%	5.0%
n-Propylbenzene	52.9	50.0	106%	50.2	50.0	100%	5.2%
Bromobenzene	49.0	50.0	98.0%	47.9	50.0	95.8%	2.3%
2-Chlorotoluene	51.4	50.0	103%	49.2	50.0	98.4%	4.4%
4-Chlorotoluene	53.0	50.0	106%	50.9	50.0	102%	4.0%
tert-Butylbenzene	52.8	50.0	106%	49.9	50.0	99.8%	5.6%
sec-Butylbenzene	53.3	50.0	107%	50.2	50.0	100%	6.0%
4-Isopropyltoluene	54.9	50.0	110%	52.0	50.0	104%	5.4%
n-Butylbenzene	56.6 Q	50.0	113%	52.7 Q	50.0	105%	7.1%
1,2,4-Trichlorobenzene	55.3	50.0	111%	54.2	50.0	108%	2.0%
Naphthalene	49.9	50.0	99.8%	51.2	50.0	102%	2.6%
1,2,3-Trichlorobenzene	52.0	50.0	104%	51.4	50.0	103%	1.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	107%	108%
d8-Toluene	101%	101%
Bromofluorobenzene	100%	101%
d4-1,2-Dichlorobenzene	101%	100%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
YV65P	SB7-19	Low	136%	104%	102%	106%	0
MB-081214A	Method Blank	Low	112%	103%	98.6%	101%	0
LCS-081214A	Lab Control	Low	107%	101%	100%	101%	0
LCSD-081214A	Lab Control Dup	Low	108%	101%	101%	100%	0
YV65G	SB6-16	Low	117%	103%	99.4%	104%	0
YV65H	SB7-11	Low	126%	102%	98.6%	103%	0
YV65J	SB3-8	Low	131%	103%	100%	104%	0
YV65K	SB1-5	Low	125%	105%	103%	103%	0
YV65L	SB10-7	Low	132%	101%	100%	104%	0
YV65M	SB8-16	Low	120%	102%	98.6%	104%	0
YV65N	SB5-11	Low	122%	103%	97.4%	103%	0

LCS/MB LIMITS

QC LIMITS

SW8260C	LCS/MB LIMITS		QC LIMITS	
	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16381 to 14-16408

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
 Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
 Lab Sample ID: CC0812 Quant Type: ISTD
 Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Dichlorodifluoromethane	40.86589	50.00000	0.34187	0.100	-18.26821	20.00000	Linear
2 Chloromethane	0.74269	0.68606	0.68606	0.100	-7.62513	20.00000	Averaged
3 Vinyl Chloride	0.59799	0.71589	0.71589	0.100	19.71596	20.00000	Averaged
4 Bromomethane	0.22310	0.34665	0.34665	0.100	55.38144	20.00000	Averaged
5 Chloroethane	0.40499	0.40548	0.40548	0.100	0.12169	20.00000	Averaged
6 Trichlorofluoromethane	0.67057	0.85593	0.85593	0.100	27.64239	20.00000	Averaged
7 1,1-Dichloroethene	63.01086	50.00000	0.37662	0.100	26.02172	20.00000	Linear
8 Carbon Disulfide	67.27443	50.00000	1.29018	0.010	34.54885	20.00000	Linear
9 1,1,2-Trichloroethane	0.48163	0.42336	0.42336	0.010	-12.09892	20.00000	Averaged
10 Iodomethane	0.47596	0.52759	0.52759	0.010	10.84631	20.00000	Averaged
11 Bromoethane	0.33782	0.38727	0.38727	0.010	14.63622	20.00000	Averaged
12 Acrolein	0.11092	0.11888	0.11888	0.000	7.17350	20.00000	Averaged
13 Methylene Chloride	0.55786	0.53760	0.53760	0.010	-3.63159	20.00000	Averaged
14 Acetone	342	250	0.20793	0.001	36.66993	20.00000	Quadratic
15 Trans-1,2-Dichloroethene	0.54823	0.60320	0.60320	0.010	10.02678	20.00000	Averaged
16 Methyl tert butyl ether	1.67439	1.65492	1.65492	0.100	-1.16264	20.00000	Averaged
17 1,1-Dichloroethane	1.06875	1.13318	1.13318	0.100	6.02874	20.00000	Averaged
18 Acrylonitrile	0.24758	0.23799	0.23799	0.001	-3.87703	20.00000	Averaged
19 Vinyl Acetate	1.11971	1.12445	1.12445	0.010	0.42359	20.00000	Averaged
20 Cis-1,2-Dichloroethene	0.57605	0.60398	0.60398	0.010	4.84893	20.00000	Averaged
22 2,2-Dichloropropane	0.82164	0.94514	0.94514	0.010	15.03088	20.00000	Averaged
23 Bromochloromethane	0.24044	0.24921	0.24921	0.050	3.64724	20.00000	Averaged
24 Chloroform	0.90267	0.96533	0.96533	0.100	6.94076	20.00000	Averaged
25 Carbon Tetrachloride	0.33335	0.36205	0.36205	0.100	8.61094	20.00000	Averaged
27 Dibromofluoromethane	0.59797	0.67717	0.67717	0.100	13.24435	20.00000	Averaged
26 1,1,1-Trichloroethane	0.81037	0.96796	0.96796	0.100	19.44653	20.00000	Averaged
28 1,1-Dichloropropene	0.36962	0.38991	0.38991	0.010	5.48981	20.00000	Averaged
29 2-Butanone	0.07802	0.07905	0.07905	0.001	1.32826	20.00000	Averaged
30 Benzene	1.11376	1.13108	1.13108	0.100	1.55523	20.00000	Averaged
32 1,2-Dichloroethane	0.65895	0.70581	0.70581	0.010	7.11136	20.00000	Averaged
33 1,2-Dichloroethane	0.34797	0.34938	0.34938	0.100	0.40620	20.00000	Averaged
34 Trichloroethene	0.26404	0.27853	0.27853	0.100	5.49067	20.00000	Averaged
37 Dibromomethane	0.14631	0.14169	0.14169	0.010	-3.15609	20.00000	Averaged
38 1,2-Dichloropropane	0.28565	0.27298	0.27298	0.100	-4.43471	20.00000	Averaged
39 Bromodichloromethane	0.34613	0.34339	0.34339	0.100	-0.79224	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i Injection Date: 12-AUG-2014 12:42
 Lab File ID: cc0812a.d Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 15:19 18:13
 Lab Sample ID: CC0812 Quant Type: ISTD
 Method: /chem1/nt5.i/12AUG14.b/VO051314S.m

COMPOUND	RF50		CCAL		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF50	RRF50	RRF	%D	%DRIFT	%D	%DRIFT	
40 2-Chloroethyl Vinyl Ether	0.18305	0.17955	0.17955	0.000	-1.90716	20.00000	Averaged		
41 Cis 1,3-dichloropropene	0.42292	0.42914	0.42914	0.100	1.47219	20.00000	Averaged		
42 d8-Toluene	1.17018	1.17571	1.17571	0.010	0.47227	20.00000	Averaged		
43 Toluene	0.70517	0.73280	0.73280	0.100	3.91890	20.00000	Averaged		
44 Tetrachloroethene	0.29752	0.32412	0.32412	0.100	8.93850	20.00000	Averaged		
45 4-Methyl-2-Pentanone	0.12415	0.12052	0.12052	0.000	-2.92062	20.00000	Averaged		
46 Trans 1,3-Dichloropropene	0.38489	0.38590	0.38590	0.010	0.26343	20.00000	Averaged		
47 1,1,2-Trichloroethane	0.22454	0.21111	0.21111	0.100	-5.98280	20.00000	Averaged		
48 Chlorodibromomethane	0.25116	0.24855	0.24855	0.100	-1.04031	20.00000	Averaged		
49 1,3-Dichloropropane	0.39901	0.38230	0.38230	0.100	-4.18607	20.00000	Averaged		
50 1,2-Dibromoethane	0.23462	0.22116	0.22116	0.010	-5.73913	20.00000	Averaged		
51 2-Hexanone	0.20599	0.20615	0.20615	0.010	0.07484	20.00000	Averaged		
53 Chlorobenzene	0.74274	0.75654	0.75654	0.300	1.85755	20.00000	Averaged		
54 Ethyl Benzene	1.27616	1.36697	1.36697	0.100	7.11611	20.00000	Averaged		
55 1,1,1,2-Tetrachloroethane	0.26117	0.26000	0.26000	0.010	-0.44958	20.00000	Averaged		
56 m,p-xylene	0.49383	0.53595	0.53595	0.100	8.52837	20.00000	Averaged		
57 o-Xylene	0.47591	0.50914	0.50914	0.100	6.98218	20.00000	Averaged		
58 Styrene	0.80967	0.86507	0.86507	0.100	6.84167	20.00000	Averaged		
59 Bromoform	0.34609	0.33634	0.33634	0.100	-2.81770	20.00000	Averaged		
60 Isopropyl Benzene	2.33130	2.56302	2.56302	0.010	9.93961	20.00000	Averaged		
62 4-Bromofluorobenzene	0.50584	0.49659	0.49659	0.200	-1.82737	20.00000	Averaged		
63 Bromobenzene	0.59257	0.59938	0.59938	0.010	1.14775	20.00000	Averaged		
64 N-Propyl Benzene	2.60365	2.89821	2.89821	0.010	11.31348	20.00000	Averaged		
65 1,1,2,2-Tetrachloroethane	0.57244	0.53527	0.53527	0.300	-6.49310	20.00000	Averaged		
66 2-Chloro Toluene	1.58776	1.69258	1.69258	0.010	6.60153	20.00000	Averaged		
67 1,3,5-Trimethyl Benzene	1.95196	2.16882	2.16882	0.010	11.10978	20.00000	Averaged		
68 1,2,3-Trichloropropane	0.18665	0.17354	0.17354	0.010	-7.02361	20.00000	Averaged		
69 Trans-1,4-Dichloro 2-Butene	0.18281	0.18532	0.18532	0.001	1.37177	20.00000	Averaged		
70 4-Chloro Toluene	1.63531	1.79545	1.79545	0.010	9.79233	20.00000	Averaged		
71 T-Butyl Benzene	1.70109	1.85518	1.85518	0.010	9.05824	20.00000	Averaged		
72 1,2,4-Trimethylbenzene	1.91165	2.14031	2.14031	0.010	11.96130	20.00000	Averaged		
73 S-Butyl Benzene	2.54397	2.83225	2.83225	0.010	11.33187	20.00000	Averaged		
74 4-Isopropyl Toluene	2.00426	2.31658	2.31658	0.010	15.58280	20.00000	Averaged		
75 1,3-Dichlorobenzene	1.09332	1.18496	1.18496	0.100	8.38208	20.00000	Averaged		
77 1,4-Dichlorobenzene	1.12418	1.21197	1.21197	0.100	7.80920	20.00000	Averaged		

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt5.i
 Lab File ID: cc0812a.d
 Analysis Type: SOIL
 Lab Sample ID: CC0812
 Method: /chem1/nt5.i/12AUG14.b/V0051314S.m

Injection Date: 12-AUG-2014 12:42
 Init. Cal. Date(s): 07-AUG-2014 07-AUG-2014
 Init. Cal. Times: 15:19 18:13
 Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	1.78850	2.16106	2.16106	0.010	20.83083	20.00000	Averaged
79 d4-1,2-Dichlorobenzene	0.95613	0.96830	0.96830	0.010	1.27281	20.00000	Averaged
80 1,2-Dichlorobenzene	1.07398	1.11252	1.11252	0.100	3.58874	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.11645	0.11104	0.11104	0.010	-4.64922	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.48166	0.53008	0.53008	0.010	10.05138	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.73617	0.87061	0.87061	0.010	18.26227	20.00000	Averaged
84 Naphthalene	1.94353	1.96105	1.96105	0.010	0.90169	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.73878	0.79367	0.79367	0.010	7.43039	20.00000	Averaged

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Matrix: Soil

Date Received: 08/08/14

Data Release Authorized: *mmw*
Reported: 08/20/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
YV65P 14-16381	SB7-19 HC ID: ---	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.9 12	< 5.9 U < 12 U 86.3%
YV65G 14-16401	SB6-16 HC ID: DRO/MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	7.3 14	15 49 61.3%
YV65H 14-16402	SB7-11 HC ID: DRO/MOTOR OIL	08/13/14	08/15/14 FID3B	5.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	36 72	38 440 81.7%
YV65I 14-16403	SB3-2 HC ID: DIESEL/MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 50	Diesel Range Motor Oil Range o-Terphenyl	310 630	10,000 12,000 D
YV65J 14-16404	SB3-8 HC ID: MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.8 12	< 5.8 U 14 73.1%
MB-081314 14-16405	Method Blank HC ID: ---	08/13/14	08/14/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.0 10	< 5.0 U < 10 U 66.6%
YV65K 14-16405	SB1-5 HC ID: DRO/MOTOR OIL	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.6 11	7.5 62 81.6%
YV65L 14-16406	SB10-7 HC ID: ---	08/13/14	08/15/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.6 11	< 5.6 U < 11 U 83.0%
YV65M 14-16407	SB8-16 HC ID: DRO/MOTOR OIL	08/13/14	08/15/14 FID3B	5.00 2.0	Diesel Range Motor Oil Range o-Terphenyl	70 140	74 560 94.9%
YV65N 14-16408	SB5-11 HC ID: DRO/MOTOR OIL	08/13/14	08/15/14 FID3B	5.00 5.0	Diesel Range Motor Oil Range o-Terphenyl	170 350	420 1,900 113%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.

Motor Oil range quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: Precision ENG

Client ID	OTER	TOT OUT
SB7-19	86.3%	0
SB6-16	61.3%	0
SB7-11	81.7%	0
SB3-2	D	0
SB3-8	73.1%	0
081314MBS	66.6%	0
081314LCS	75.9%	0
SB1-5	81.6%	0
SB1-5 MS	71.8%	0
SB1-5 MSD	60.1%	0
SB10-7	83.0%	0
SB8-16	94.9%	0
SB5-11	113%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3546
Log Number Range: 14-16381 to 14-16408

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

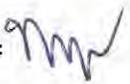
Page 1 of 1

Sample ID: SB1-5
MS/MSD

Lab Sample ID: YV65K

LIMS ID: 14-16405

Matrix: Soil

Data Release Authorized: 

Reported: 08/20/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Date Extracted MS/MSD: 08/13/14

Sample Amount MS: 8.97 g-dry-wt

MSD: 8.98 g-dry-wt

Date Analyzed MS: 08/15/14 04:54

Final Extract Volume MS: 1.0 mL

MSD: 08/15/14 05:19

MSD: 1.0 mL

Instrument/Analyst MS: FID3B/JGR

Dilution Factor MS: 1.00

MSD: FID3B/JGR

MSD: 1.00

Percent Moisture: 10.4%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	7.5	132	167	74.6%	104	167	57.8%	23.7%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	71.8%	60.1%

Results reported in mg/kg

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID
 Page 1 of 1

Sample ID: LCS-081314
 LAB CONTROL

Lab Sample ID: LCS-081314
 LIMS ID: 14-16405
 Matrix: Soil
 Data Release Authorized: *mmw*
 Reported: 08/20/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECISION ENG

Date Sampled: NA
 Date Received: NA

Date Extracted: 08/13/14
 Date Analyzed: 08/14/14 22:39
 Instrument/Analyst: FID3B/VTS

Sample Amount: 10.0 g-dry-wt
 Final Extract Volume: 1.0 mL
 Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	111	150	74.0%

TPHD Surrogate Recovery

o-Terphenyl	75.9%
-------------	-------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

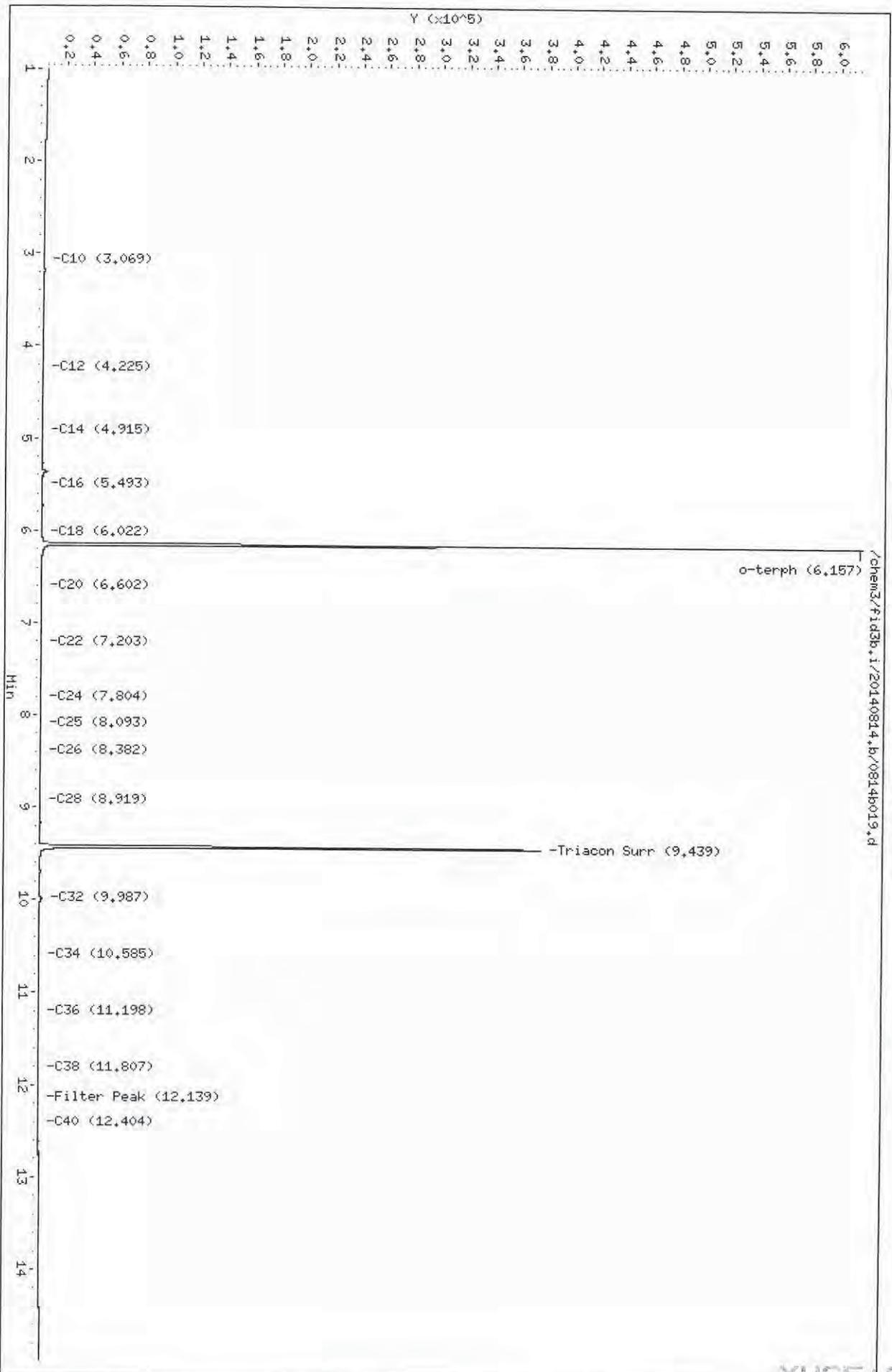
Matrix: Soil
Date Received: 08/08/14

ARI Job: YV65
Project: Precision ENG

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
14-16381-YV65P	SB7-19	8.45 g	1.00 mL	D	08/13/14
14-16401-YV65G	SB6-16	6.88 g	1.00 mL	D	08/13/14
14-16402-YV65H	SB7-11	6.95 g	5.00 mL	D	08/13/14
14-16403-YV65I	SB3-2	7.95 g	1.00 mL	D	08/13/14
14-16404-YV65J	SB3-8	8.65 g	1.00 mL	D	08/13/14
14-16405-081314MB1	Method Blank	10.0 g	1.00 mL	-	08/13/14
14-16405-081314LCS1	Lab Control	10.0 g	1.00 mL	-	08/13/14
14-16405-YV65K	SB1-5	8.97 g	1.00 mL	D	08/13/14
14-16405-YV65KMS	SB1-5	8.97 g	1.00 mL	D	08/13/14
14-16405-YV65KMSD	SB1-5	8.98 g	1.00 mL	D	08/13/14
14-16406-YV65L	SB10-7	8.98 g	1.00 mL	D	08/13/14
14-16407-YV65M	SB8-16	7.14 g	5.00 mL	D	08/13/14
14-16408-YV65N	SB5-11	7.22 g	5.00 mL	D	08/13/14

Data File: /chem3/fid3b,i/20140814,b/0814b019,d
Date: 14-AUG-2014 22:14
Client ID: YV51HBS1
Sample Info: YV51HBS1
Column phase: RTX-1

Instrument: fid3b,i
Operator: VTS
Column diameter: 0.25

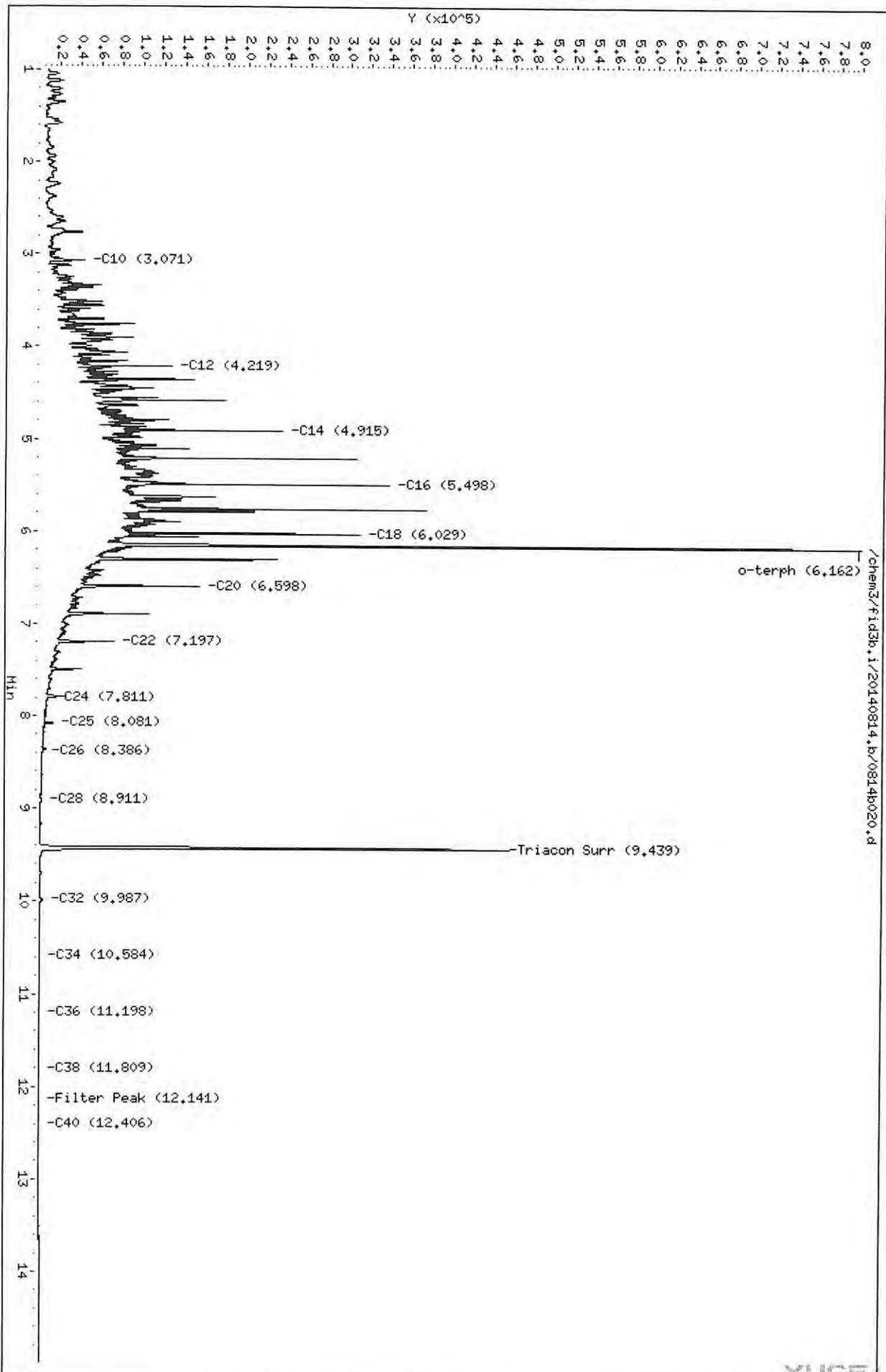


Data File: /chem3/fid3b,i/20140814,b/0814b020.d
Date: 14-AUG-2014 22:39
Client ID: YV51LCSS1
Sample Info: YV51LCSS1

Column phase: RTX-1

Instrument: fid3b,i
Operator: VTS
Column diameter: 0.25

Handwritten: 5
8.15.14

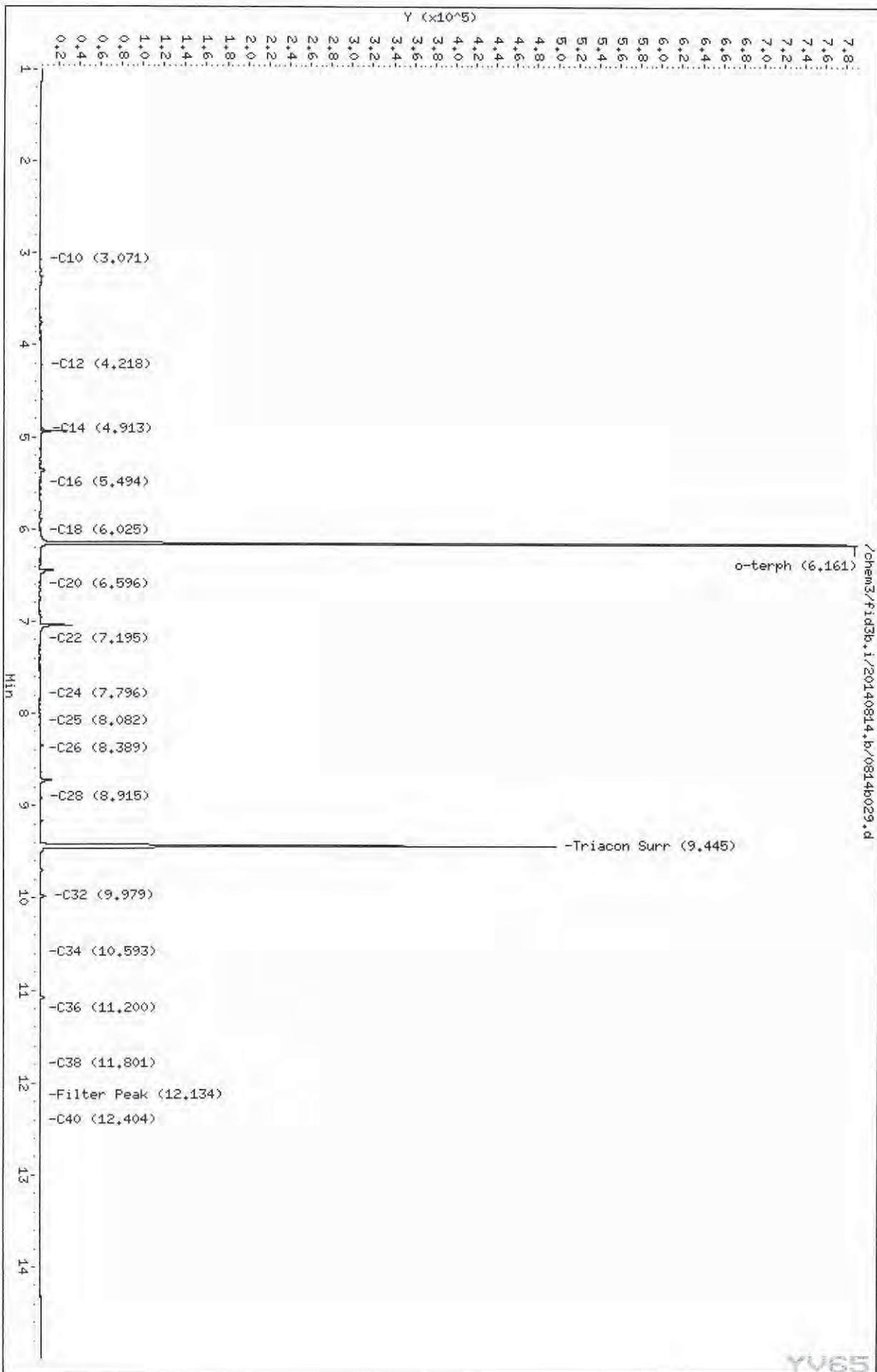


/chem3/fid3b,i/20140814,b/0814b020.d

Data File: /chem3/fid3b.i/20140814.b/0814b029.d
Date: 15-AUG-2014 02:24
Client ID: SB7-19
Sample Info: YV65P

Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



Data File: /chem3/fid3b.i/20140814.b/0814b030.d

Date: 15-AUG-2014 02:49

Client ID: S86-16

Sample Info: YW655

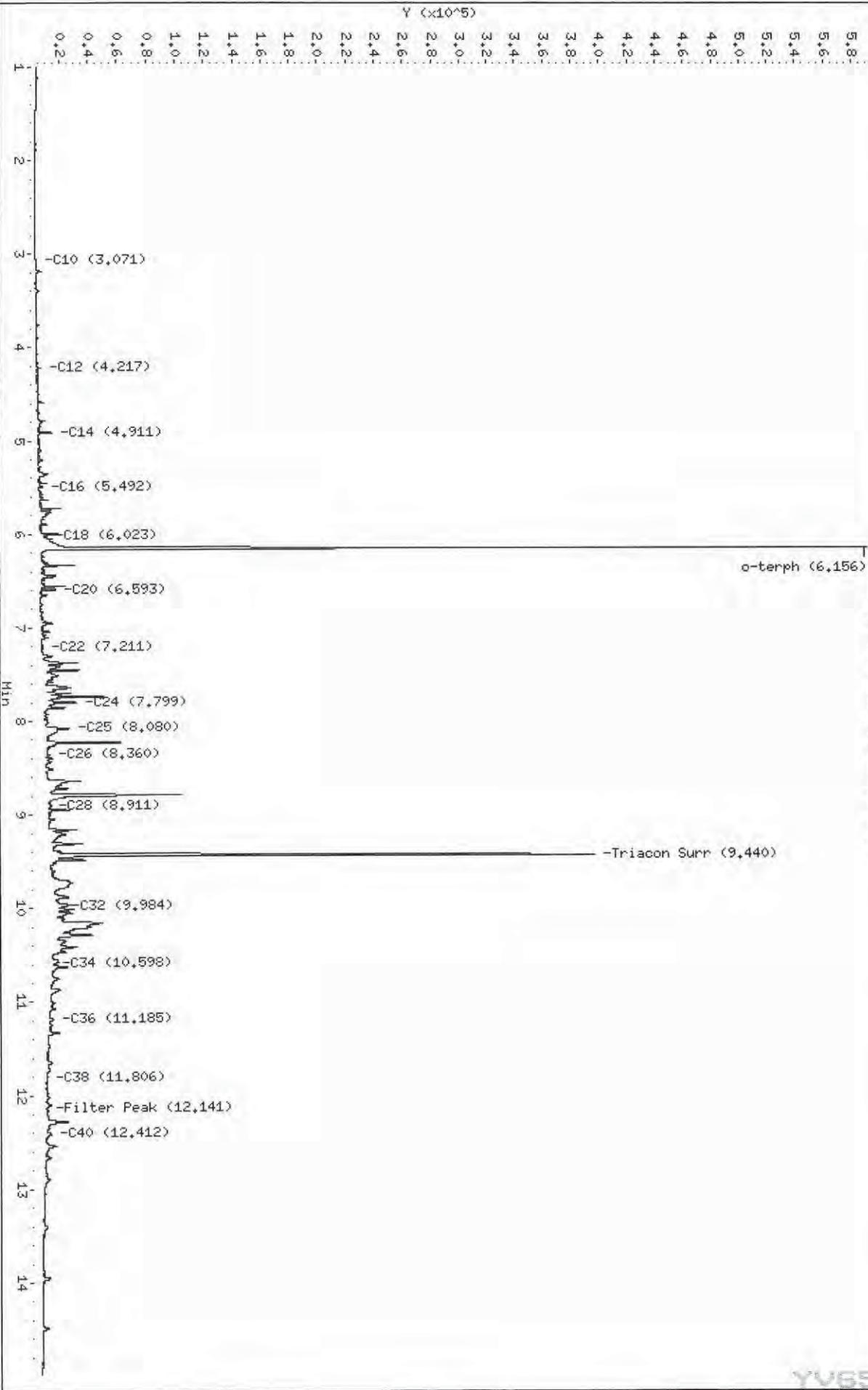
Instrument: fid3b.i

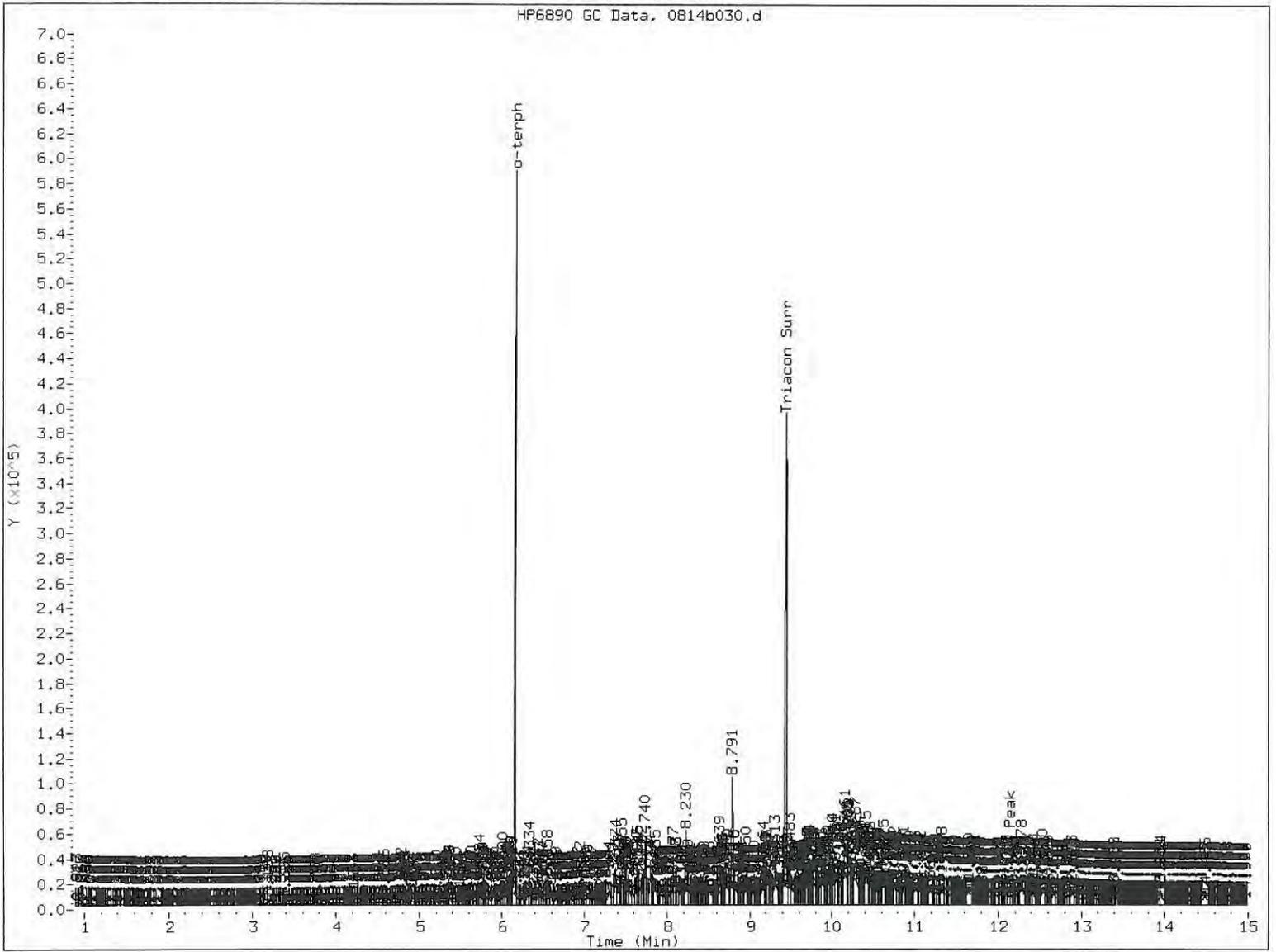
Operator: VTS

Column diameter: 0.25

Column phase: RTX-1

/chem3/fid3b.i/20140814.b/0814b030.d





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

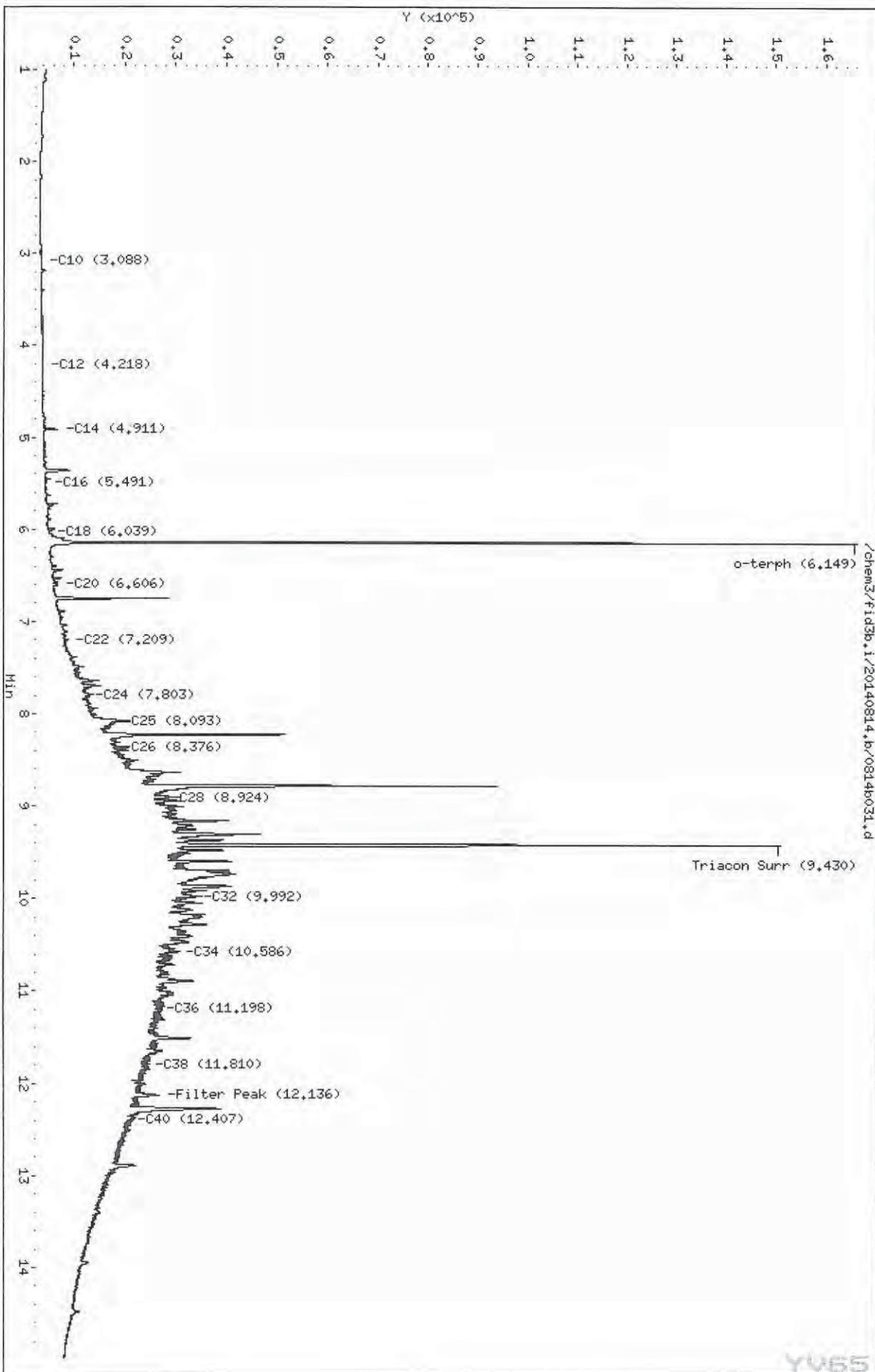
Analyst: JK

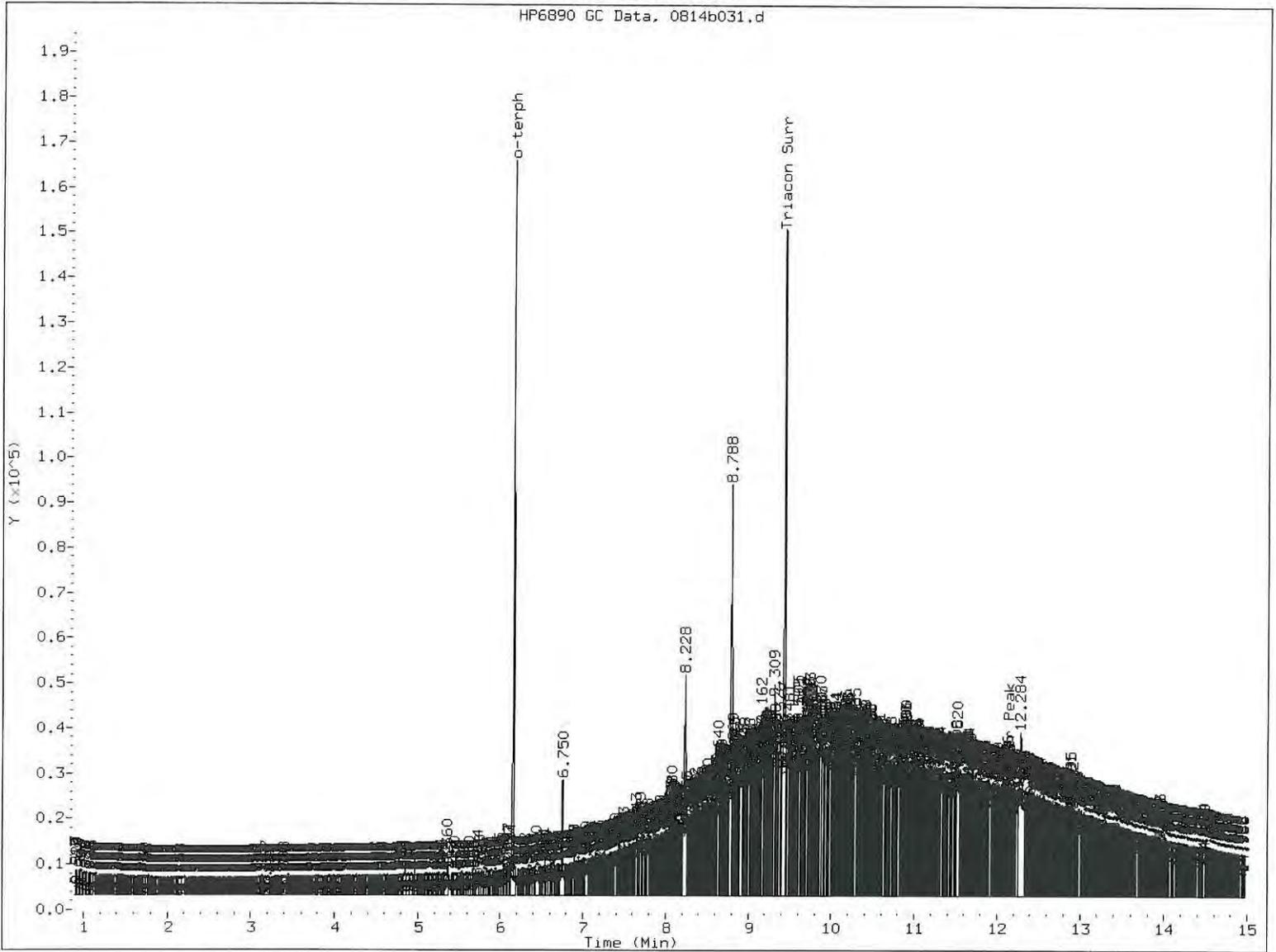
Date: 08/20/14

Data File: /chem3/fid3b.1/20140814.b/0814b031.d
Date : 15-AUG-2014 03:14
Client ID: SB7-11
Sample Info: YV65H

Column phase: RTX-1

Instrument: fid3b.1
Operator: VTS
Column diameter: 0.25





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

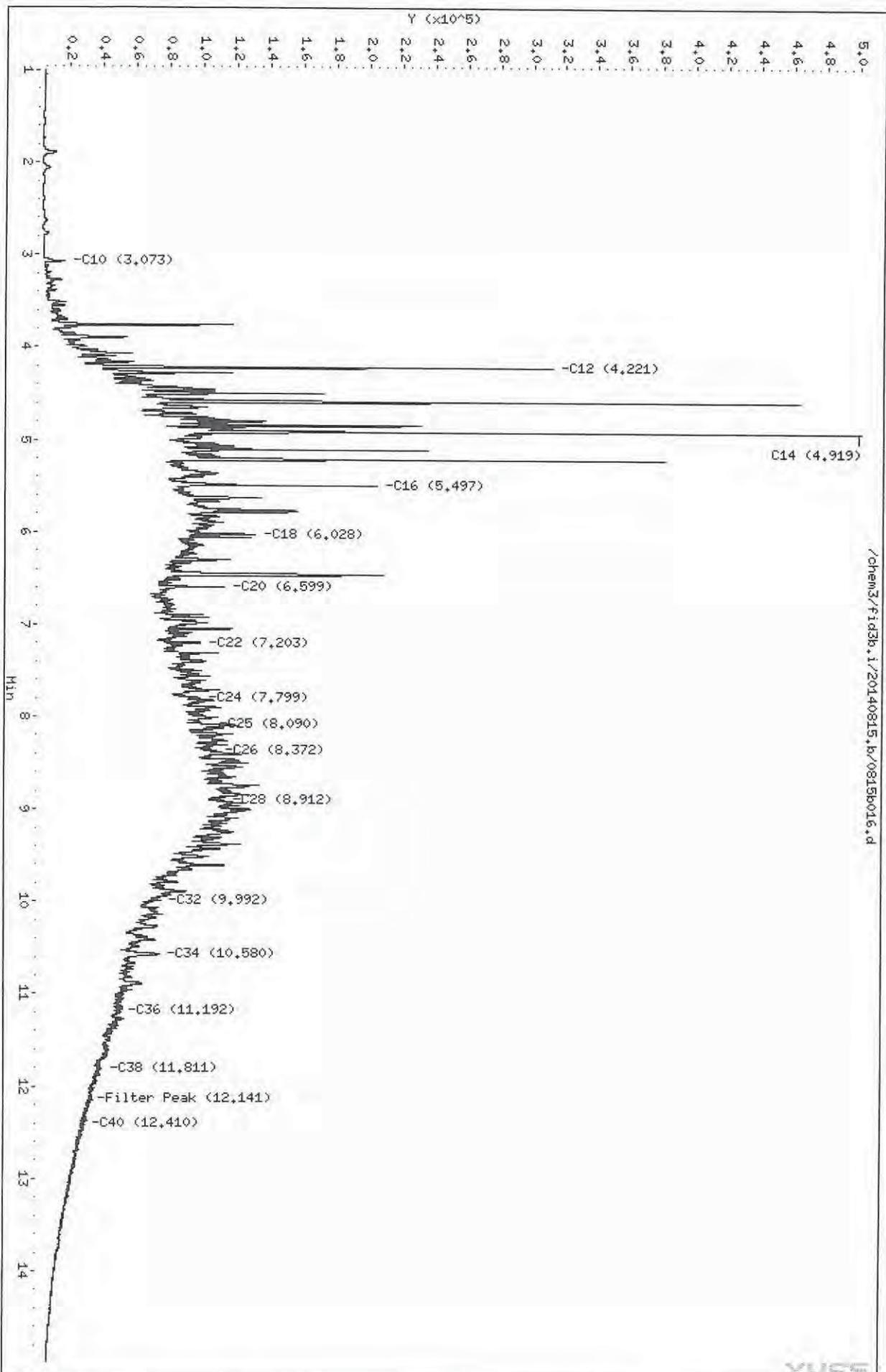
Analyst:

Date: 08/20/14

Data File: /chem3/fid3b.i/20140815.b/0815b016.d
Date: 15-AUG-2014 17:58
Client ID: SB3-2
Sample Info: YV651.50

Column phase: RTX-1

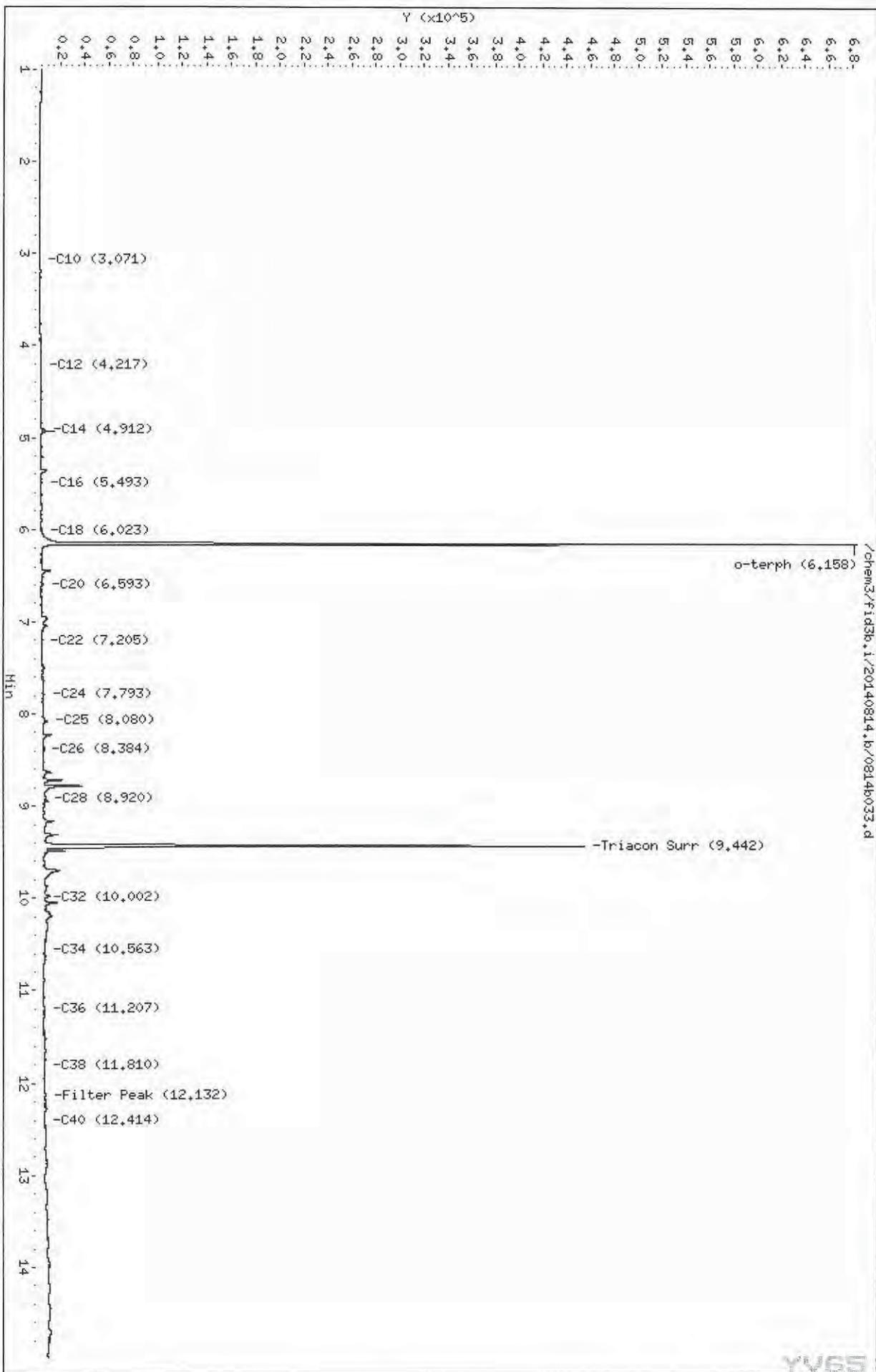
Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



Data File: /chem3/fid3b,1/20140814,b/0814b033.d
Date: 15-AUG-2014 04:04
Client ID: SB3-8
Sample Info: YV65J

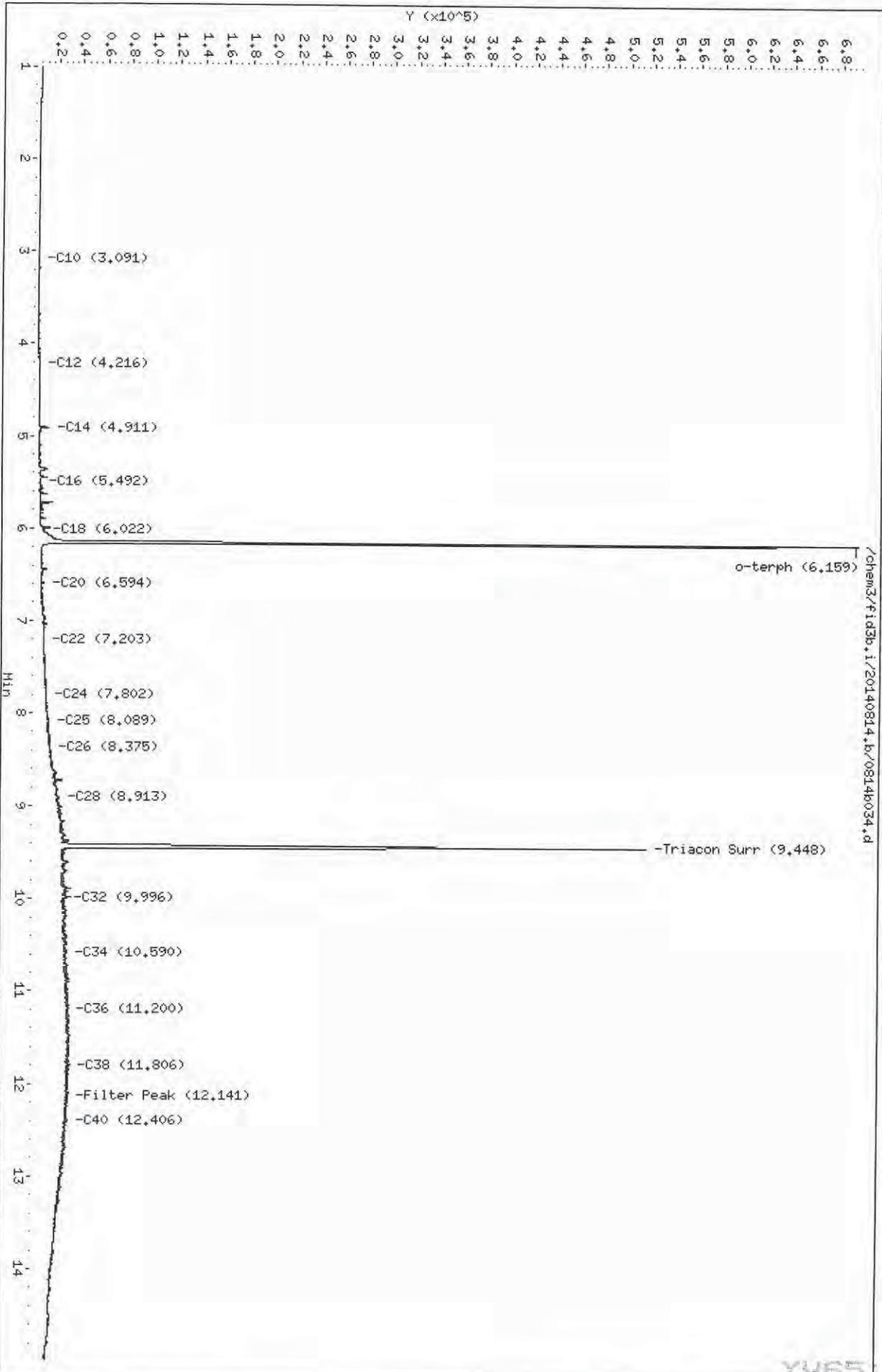
Column phase: RTX-1

Instrument: fid3b,1
Operator: VTS
Column diameter: 0.25



Data File: /chem3/fid3b.i/20140814.b/0814b034.d
Date: 15-AUG-2014 04:29
Client ID: SB1-5
Sample Info: YV65K
Column phase: RTX-1

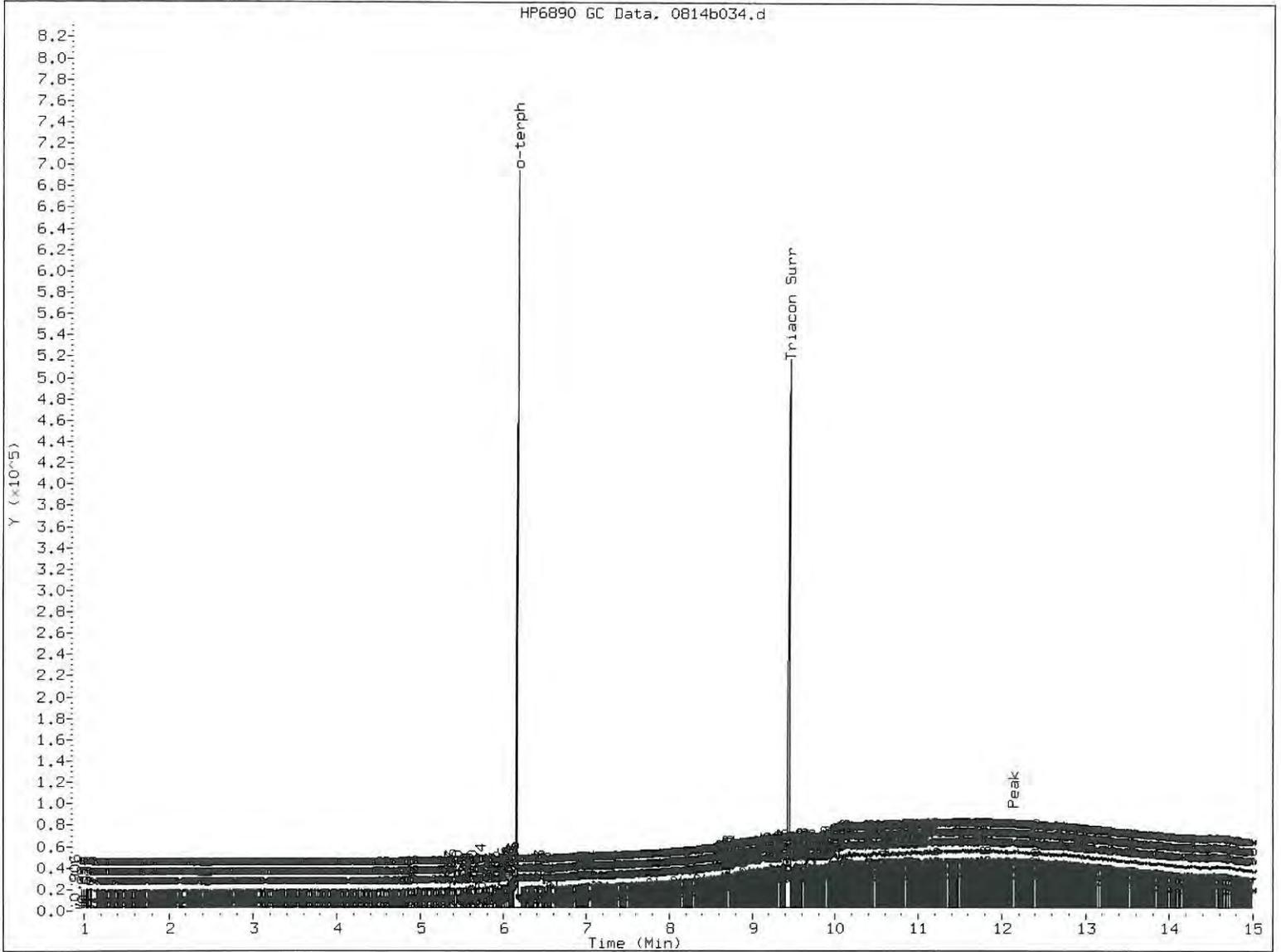
Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



FID:3B-2C/RTX-1 YV65K

FID:3B SIGNAL

HP6890 GC Data, 0814b034.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst:

jc

Date:

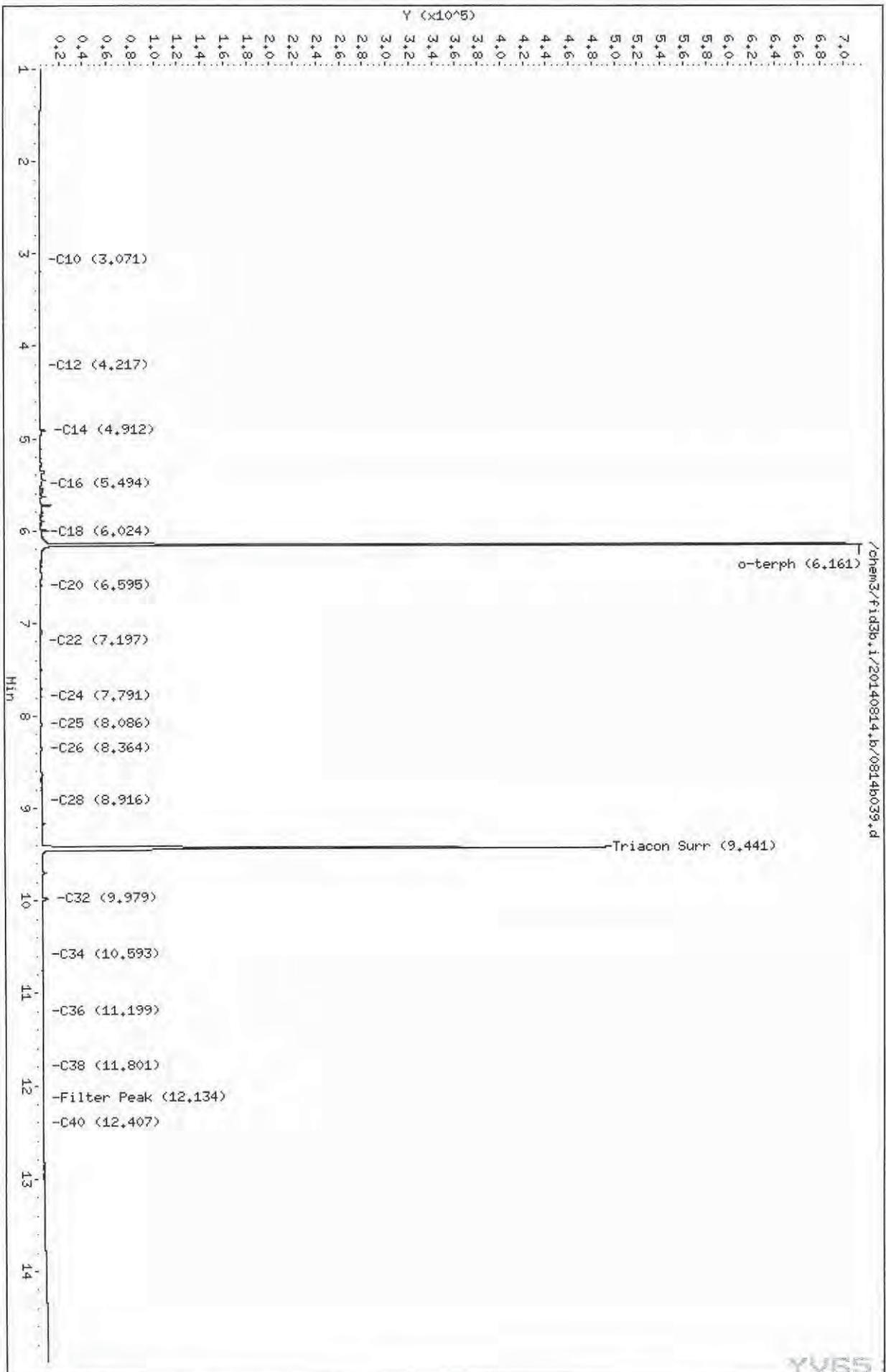
08/20/14

YV65:00073

Data File: /chem3/fid3b.i/20140814.b/0814b039.d
Date: 15-AUG-2014 06:33
Client ID: SB10-7
Sample Info: YV65L

Column phase: RTX-1

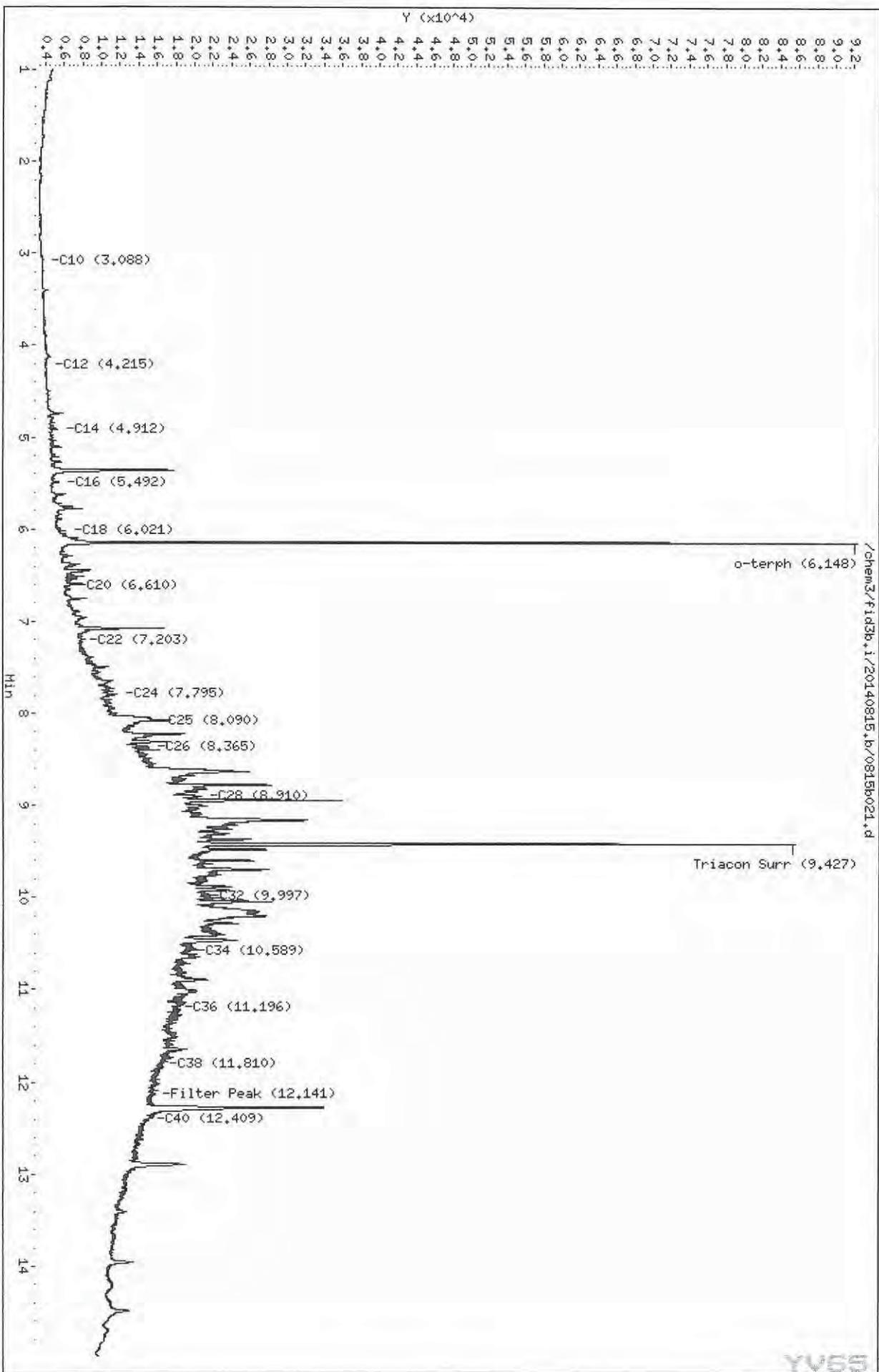
Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

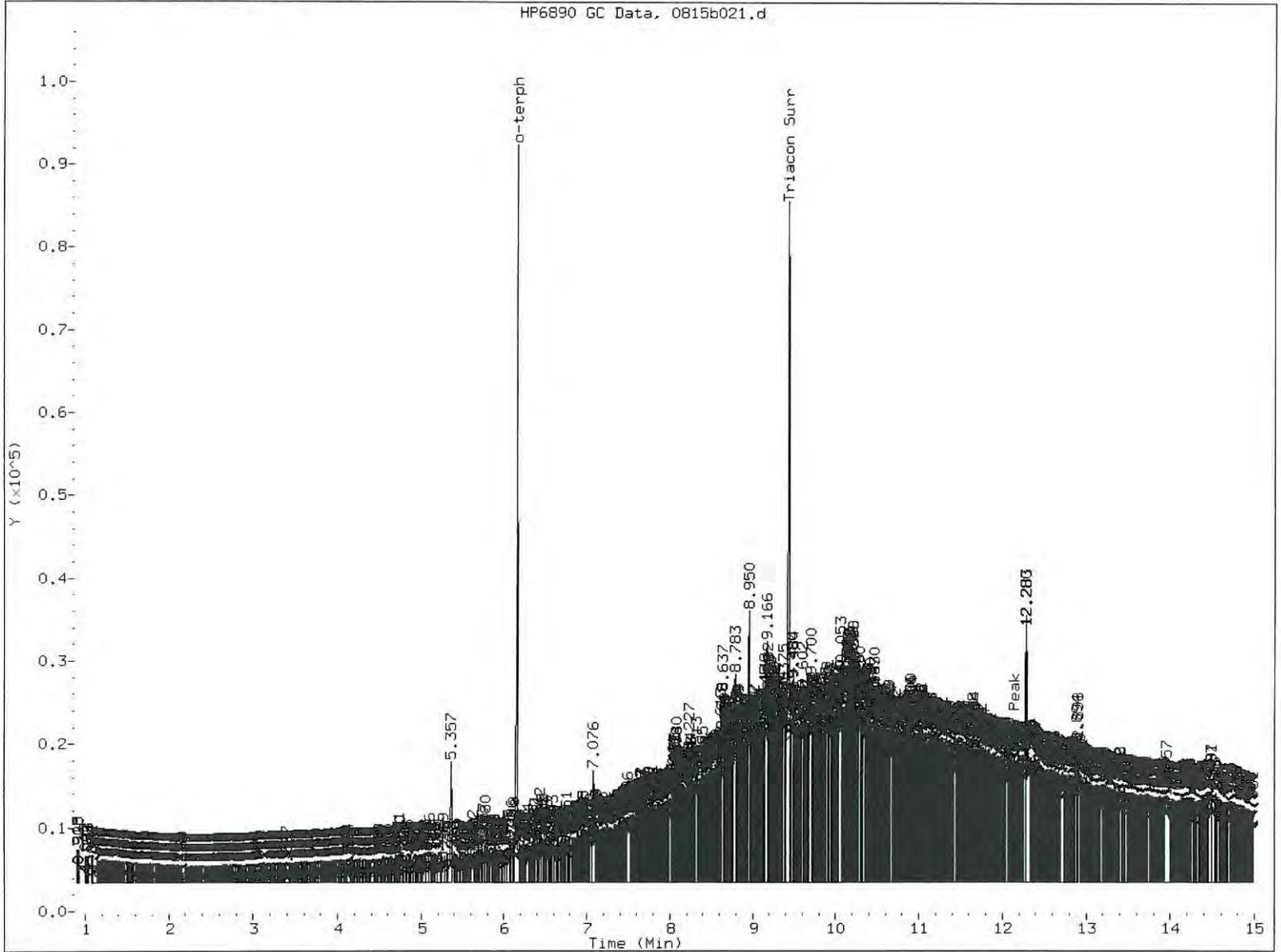


Data File: /chem3/fid3b,i/20140815,b/0815B021,d
Date : 15-AUG-2014 20:05
Client ID: SB8-16
Sample Info: YV65M,2

Column phase: RTX-1

Instrument: fid3b,i
Operator: VTS
Column diameter: 0.25





MANUAL INTEGRATION

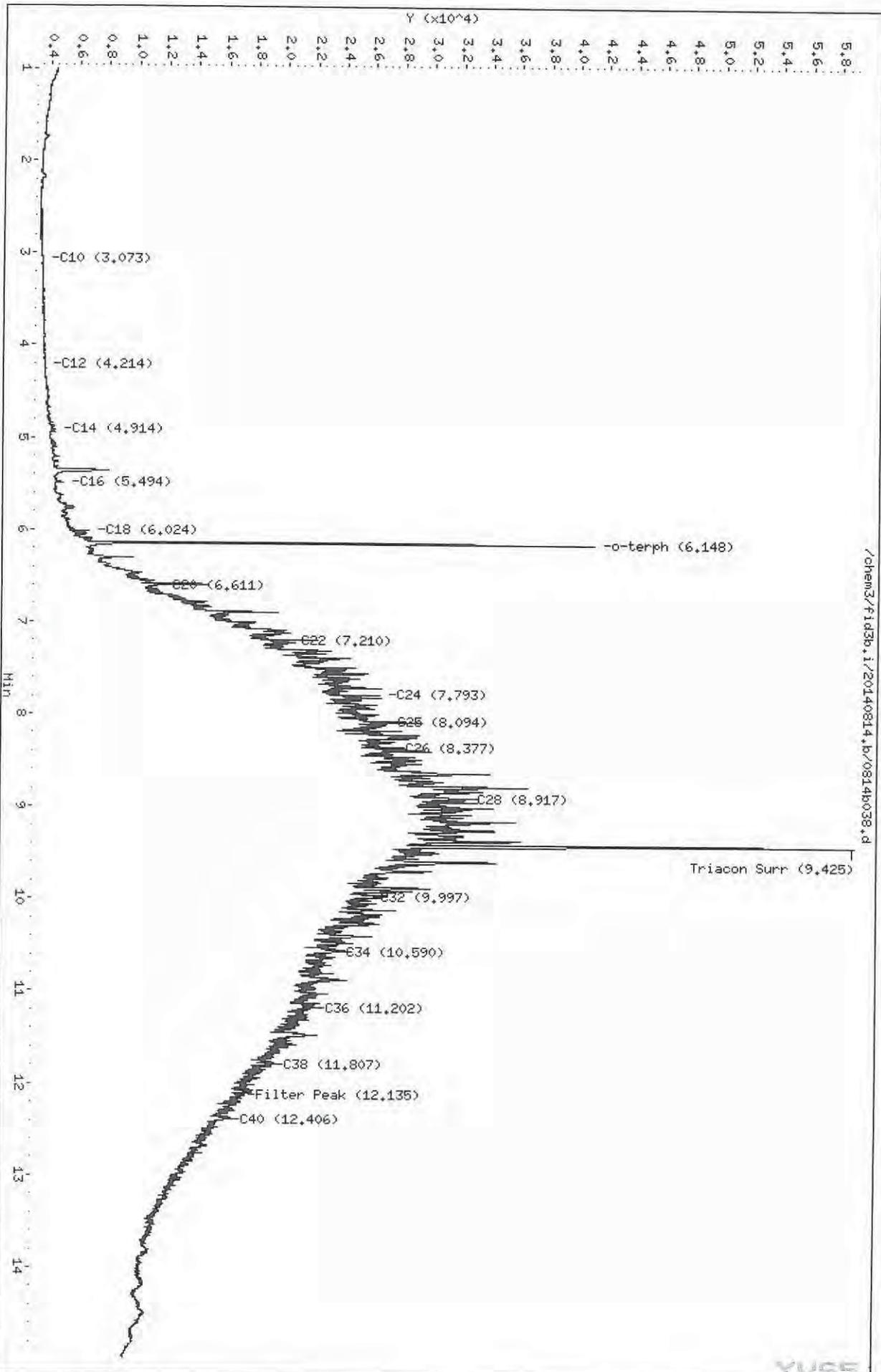
- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

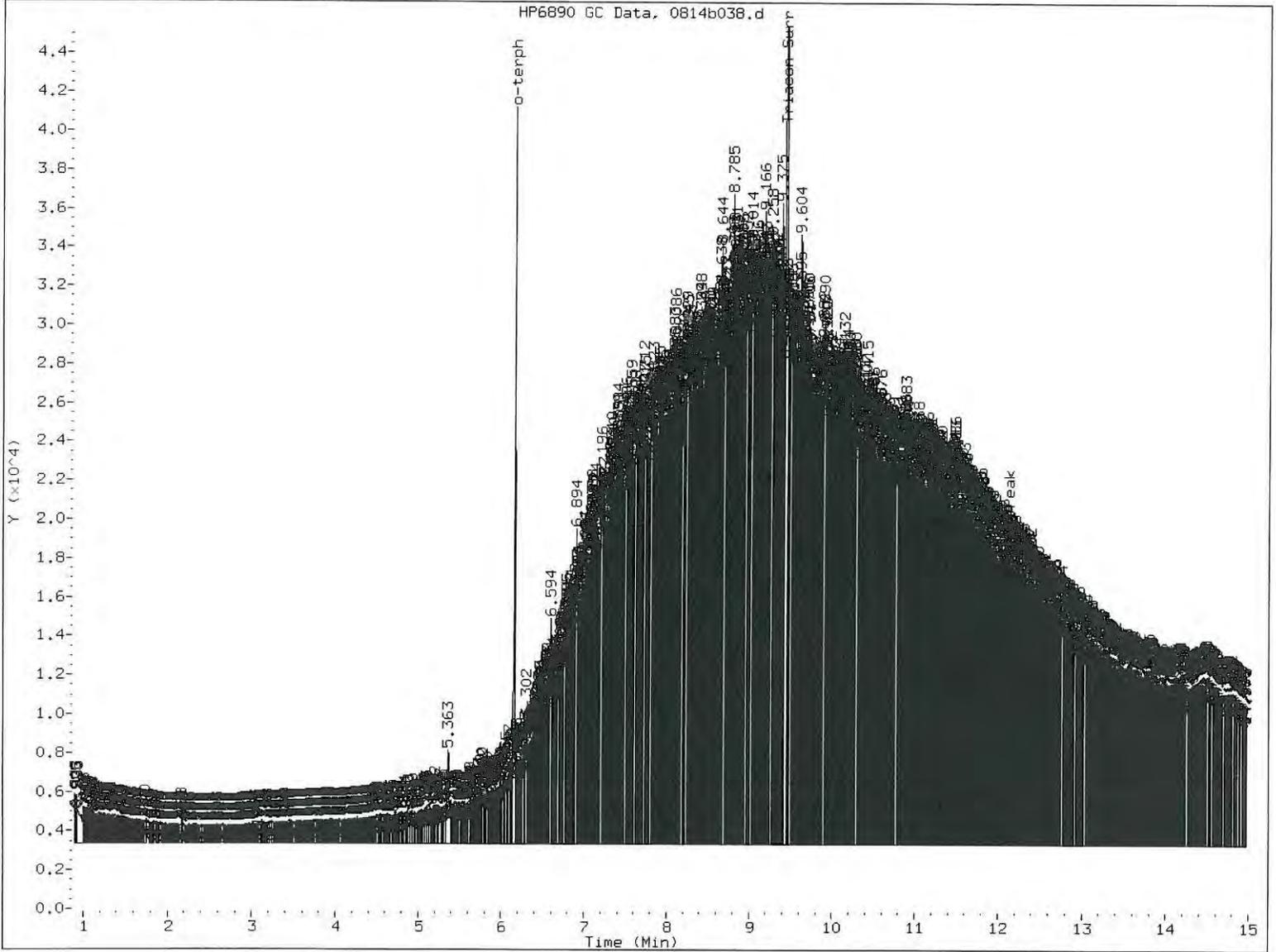
Analyst: jr

Date: 03/20/14

Data File: /chem3/fid3b.i/20140814.b/0814b038.d
Date: 15-AUG-2014 06:09
Client ID: SBS-11
Sample Info: YV65N,5
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25





MANUAL INTEGRATION

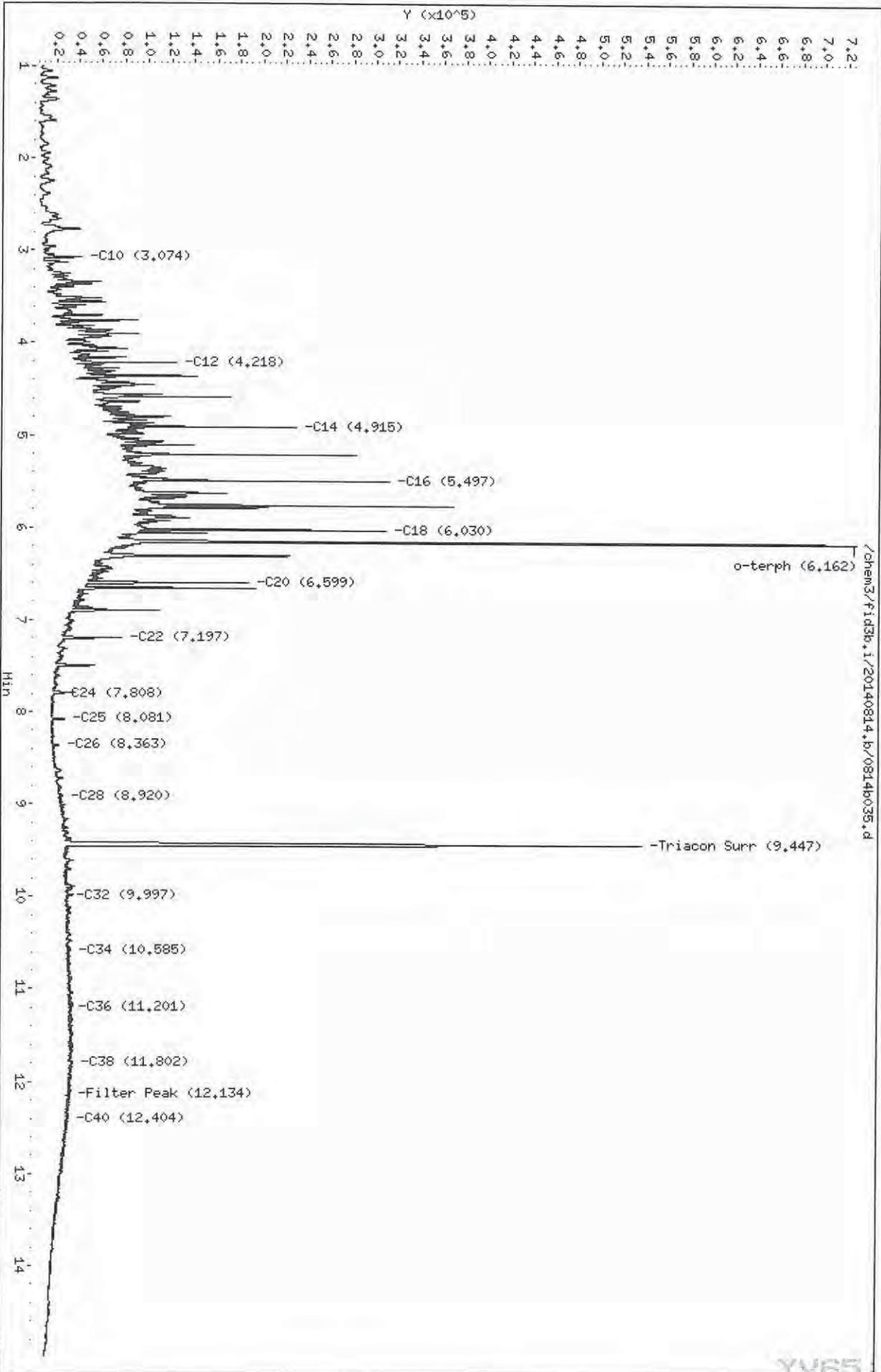
- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: jc

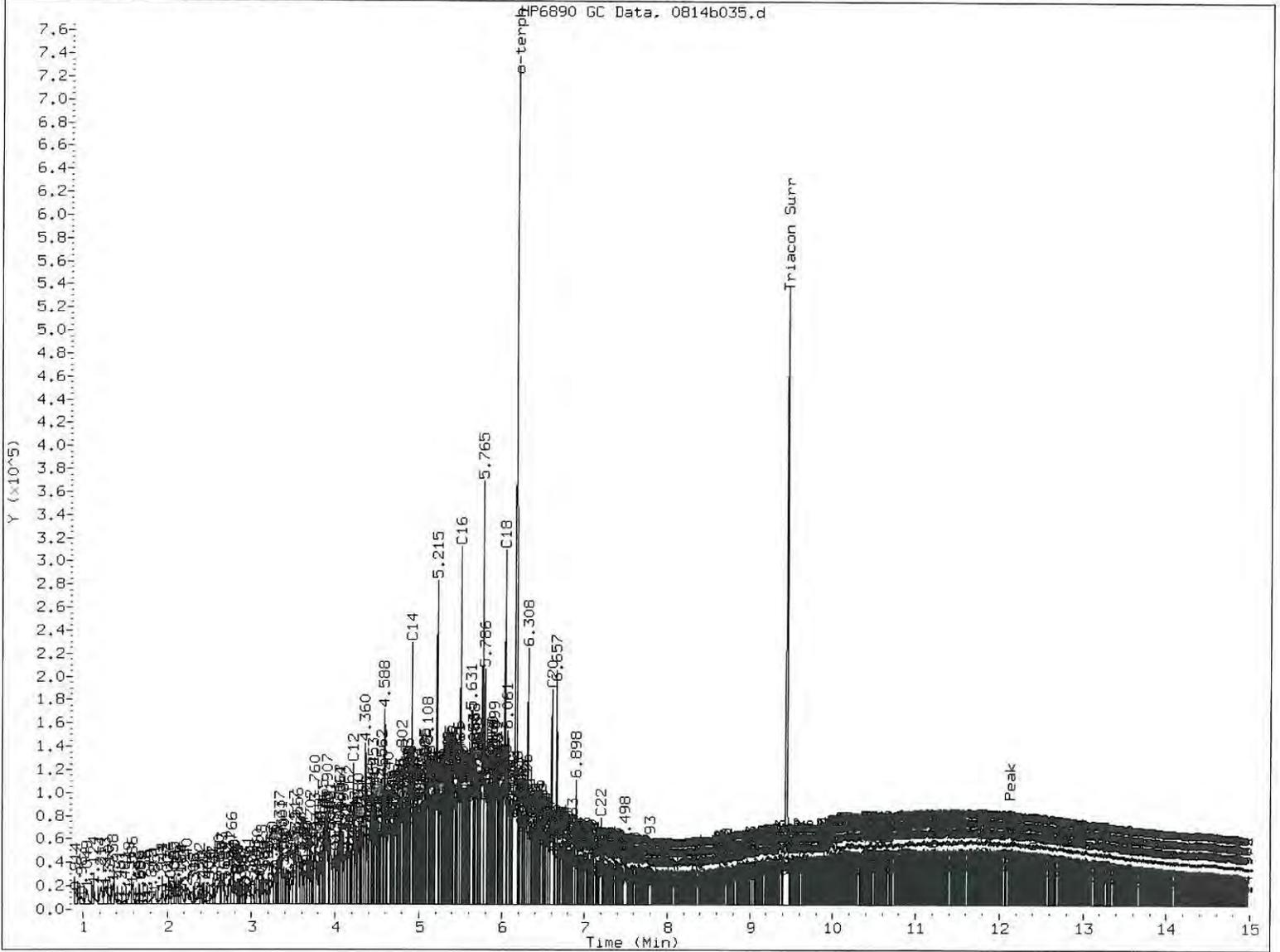
Date: 08/20/14

Data File: /chem3/fid3b.i/20140814.b/0814b035.d
Date: 15-AUG-2014 04:54
Client ID: SBL-6 HS
Sample Info: YV65KHS
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



/chem3/fid3b.i/20140814.b/0814b035.d



MANUAL INTEGRATION

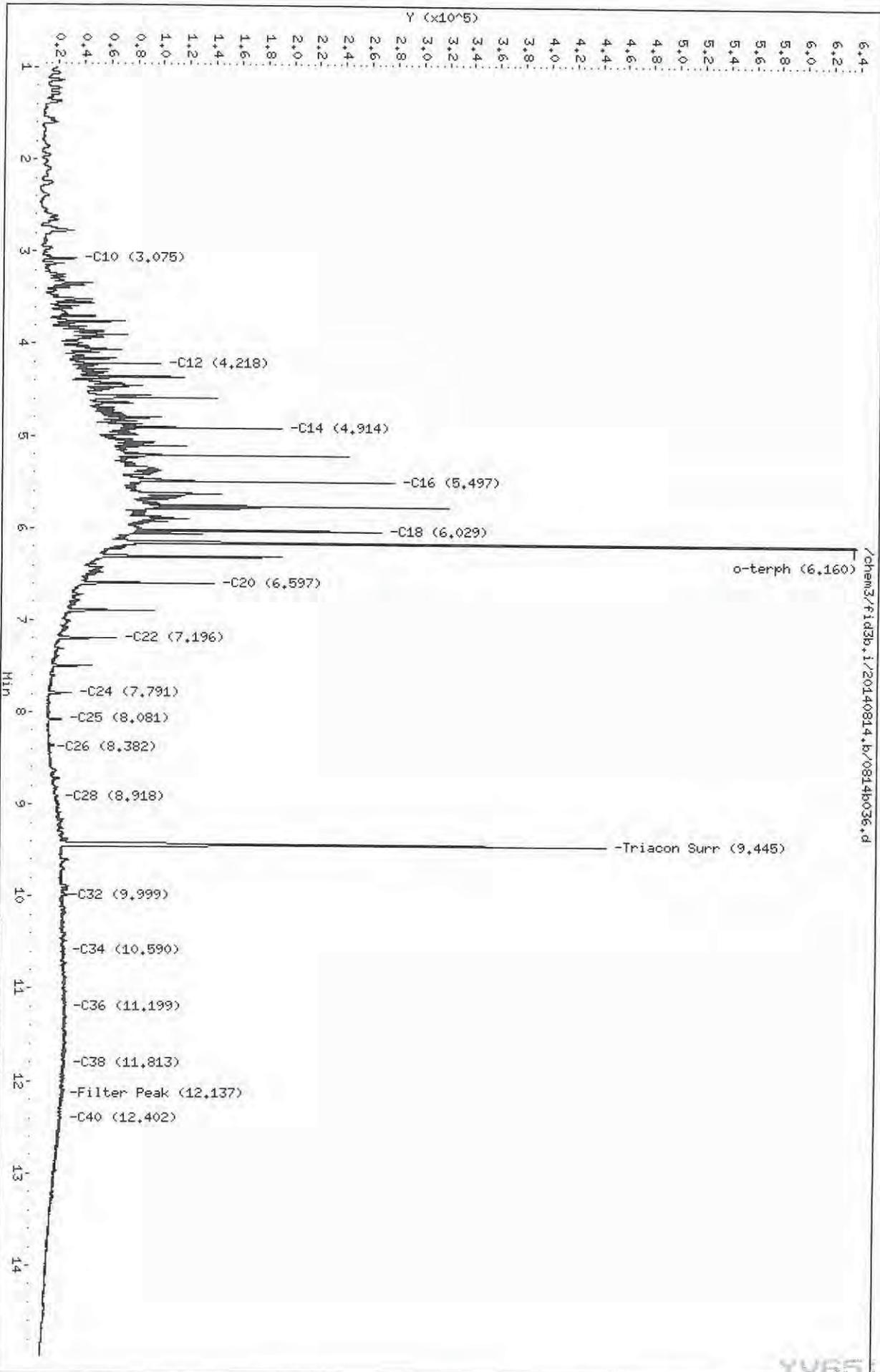
- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: JK

Date: 08/20/14

Data File: /chem3/fid3b.i/20140814.b/0814b036.d
Date: 15-AUG-2014 05:19
Client ID: SB1-5 HSD
Sample Info: YV65KMSD
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
 NWTPHD by GC/FID
 Extraction Method: SW3510C
 Page 1 of 1

QC Report No: YV65-Kennedy Jenks Consultants,
 Project: PRECISION ENG

Matrix: Water

Date Received: 08/08/14

Data Release Authorized: 
 Reported: 08/19/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-081414 14-16374	Method Blank HC ID: ---	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range MOTOR OIL Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 105%
YV65A 14-16374	SB6 HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range MOTOR OIL Range o-Terphenyl	0.10 0.20	0.38 0.29 59.0%
YV65B 14-16375	SB7 HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.20 0.22 56.4%
YV65C 14-16376	SB3 HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range MOTOR OIL Range o-Terphenyl	0.10 0.20	0.45 0.30 51.6%
YV65D 14-16377	SB3D HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.54 0.32 78.8%
YV65E 14-16378	SB10 HC ID: ---	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 95.9%
YV65F 14-16379	SB5 HC ID: DIESEL/MOTOR OIL	08/14/14	08/16/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.50 0.53 45.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
 DL-Dilution of extract prior to analysis.
 RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
 Motor Oil range quantitation on total peaks in the range from C24 to C38.
 HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.



ORGANICS ANALYSIS DATA SHEET
 NWTPHD by GC/FID
 Page 1 of 1

Sample ID: LCS-081414
 LCS/LCSD

Lab Sample ID: LCS-081414
 LIMS ID: 14-16374
 Matrix: Water
 Data Release Authorized: *AB*
 Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
 Project: PRECICION ENG
 Date Sampled: NA
 Date Received: NA

Date Extracted LCS/LCSD: 08/14/14
 Date Analyzed LCS: 08/16/14 15:48
 LCSD: 08/16/14 16:14
 Instrument/Analyst LCS: FID3B/VTS
 LCSD: FID3B/VTS

Sample Amount LCS: 500 mL
 LCSD: 500 mL
 Final Extract Volume LCS: 1.0 mL
 LCSD: 1.0 mL
 Dilution Factor LCS: 1.00
 LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.63	3.00	87.7%	2.66	3.00	88.7%	1.1%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	93.5%	91.5%

Results reported in mg/L
 RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/08/14

ARI Job: YV65
Project: PRECISION ENG

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-16374-081414MB1	Method Blank	500 mL	1.00 mL	08/14/14
14-16374-081414LCS1	Lab Control	500 mL	1.00 mL	08/14/14
14-16374-081414LCSD1	Lab Control Dup	500 mL	1.00 mL	08/14/14
14-16374-YV65A	SB6	500 mL	1.00 mL	08/14/14
14-16375-YV65B	SB7	500 mL	1.00 mL	08/14/14
14-16376-YV65C	SB3	500 mL	1.00 mL	08/14/14
14-16377-YV65D	SB3D	500 mL	1.00 mL	08/14/14
14-16378-YV65E	SB10	500 mL	1.00 mL	08/14/14
14-16379-YV65F	SB5	500 mL	1.00 mL	08/14/14

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-081414	105%	0
LCS-081414	93.5%	0
LCSD-081414	91.5%	0
SB6	59.0%	0
SB7	56.4%	0
SB3	51.6%	0
SB3D	78.8%	0
SB10	95.9%	0
SB5	45.0%*	1

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

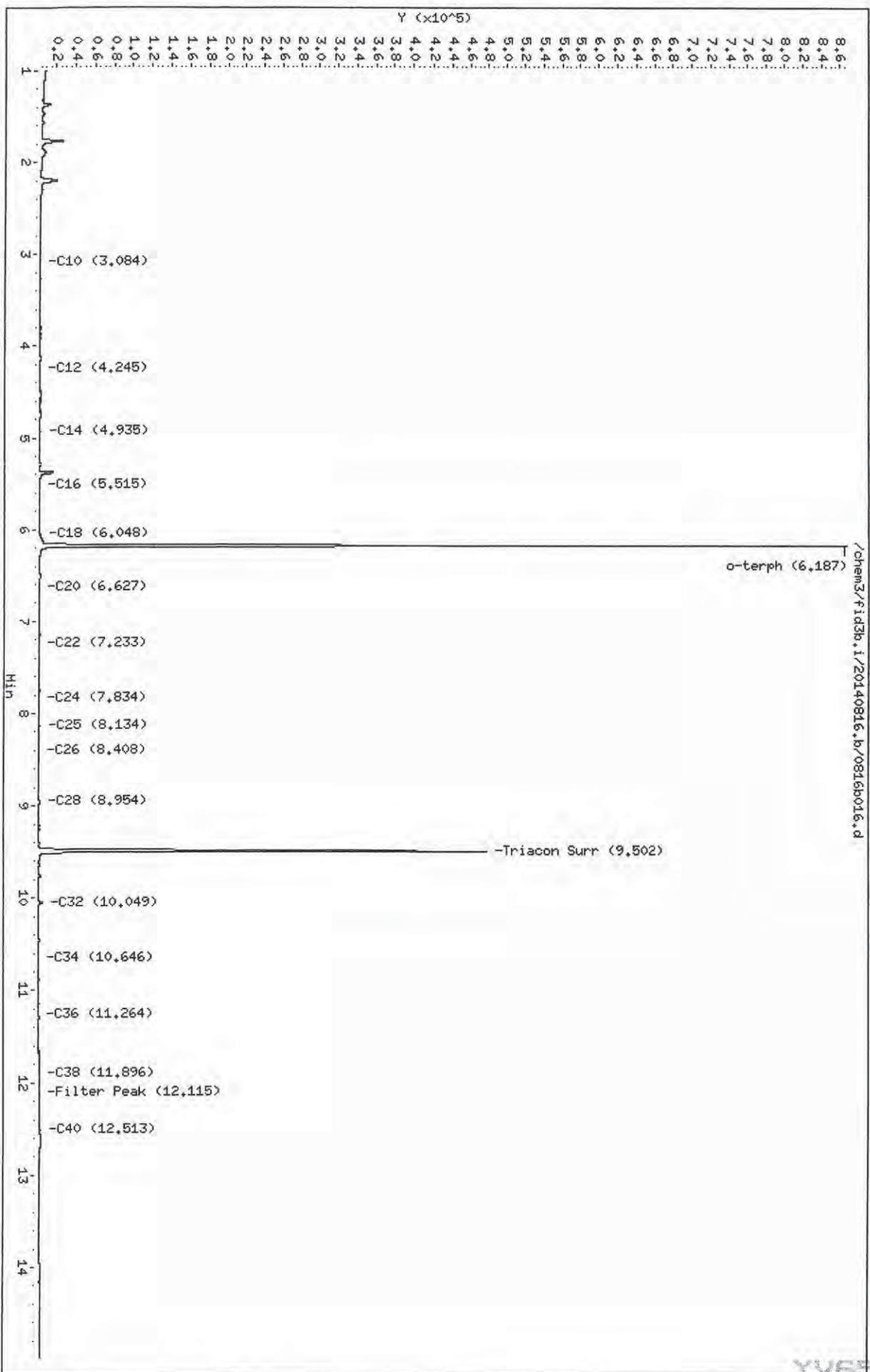
(50-150)

Prep Method: SW3510C
Log Number Range: 14-16374 to 14-16379

Data File: /chem3/fid3b.i/20140816.b/0816b016.d
Date: 16-AUG-2014 15:22
Client ID: YV50HBM1
Sample Info: YV50HBM1

Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

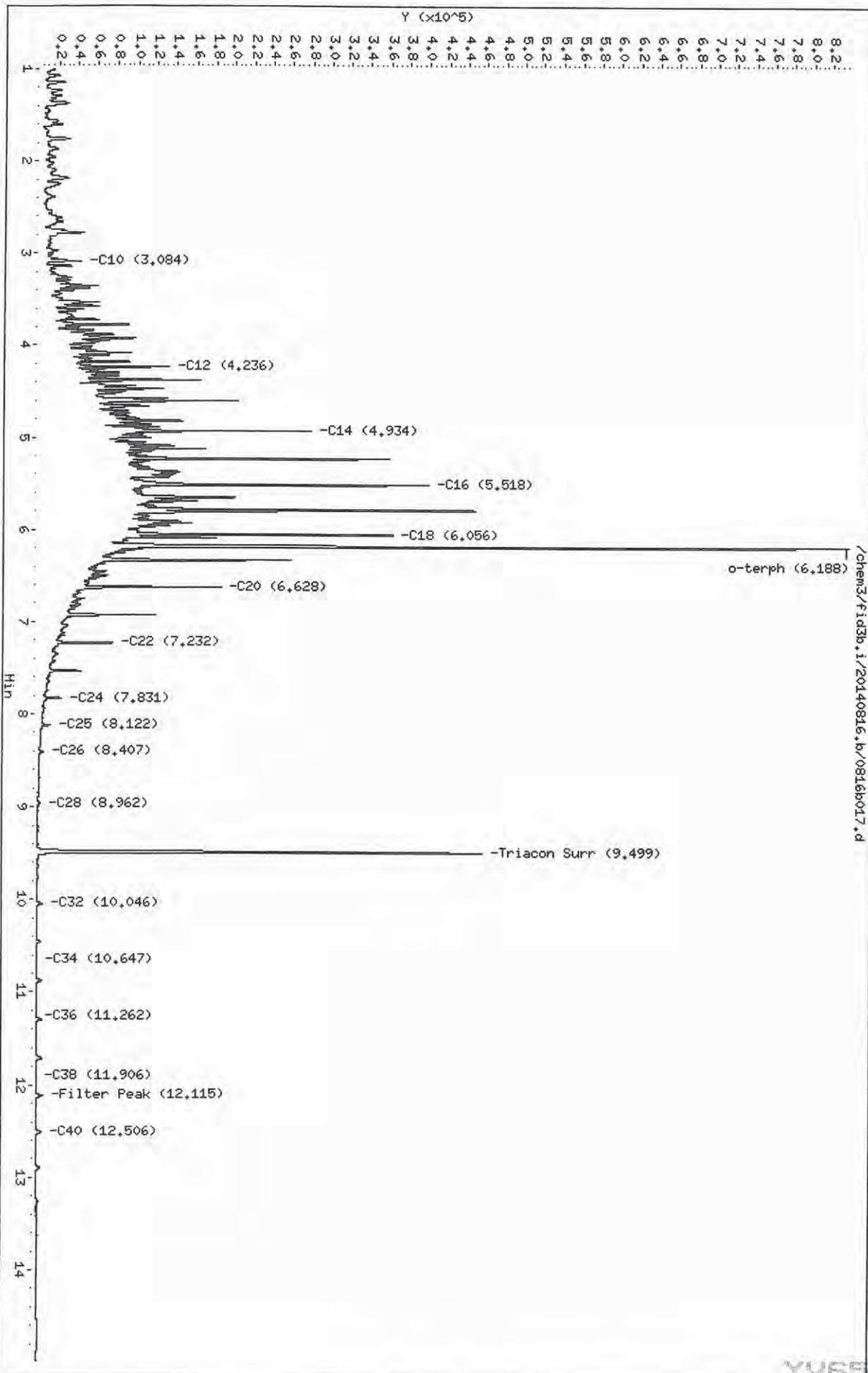


Data File: /chem3/fid3b.i/20140816.b/0816b017.d
Date: 16-AUG-2014 15:48
Client ID: YV50LCSM1
Sample Info: YV50LCSM1

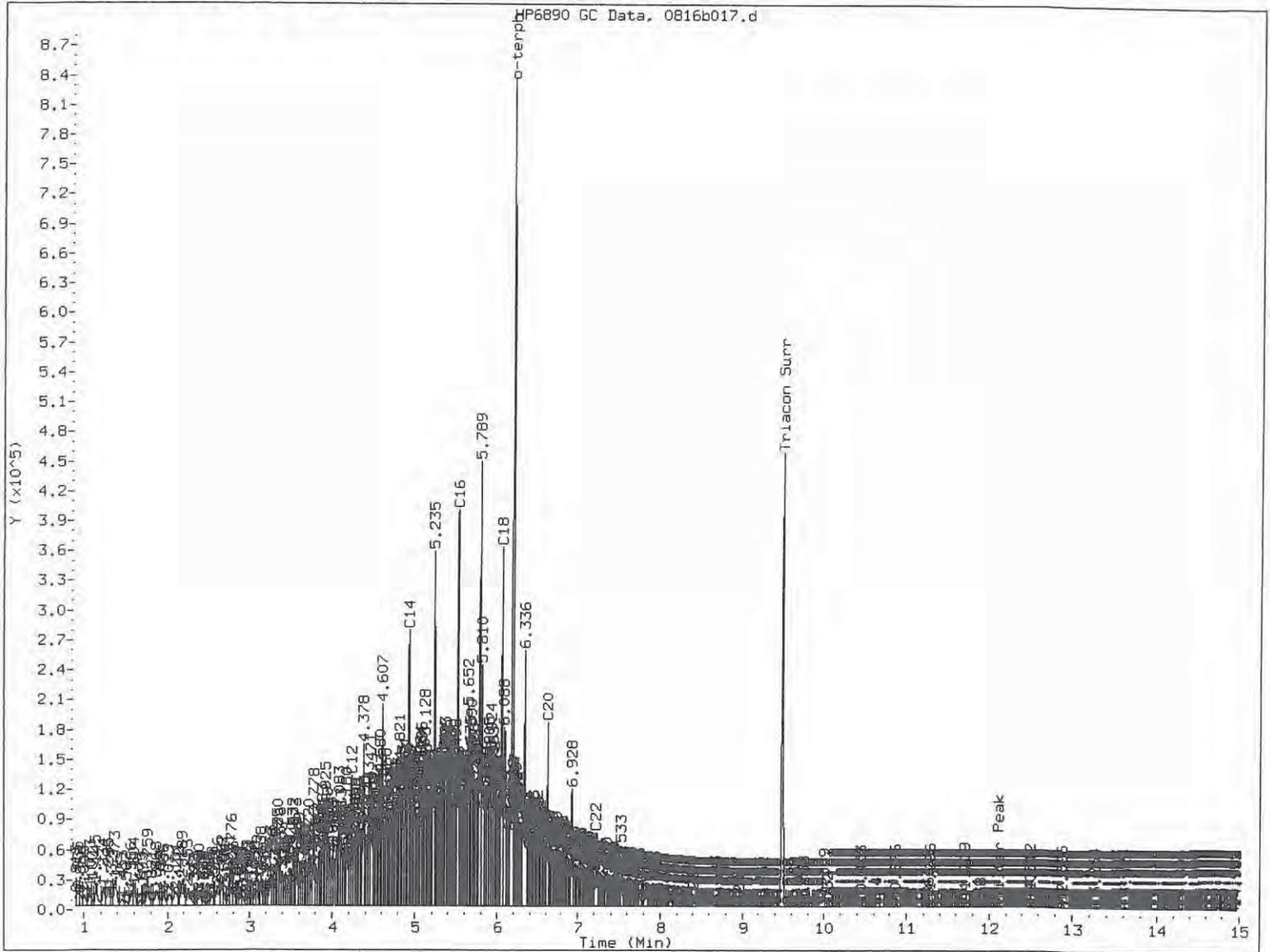
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

Page 1



YV50 : 00087



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

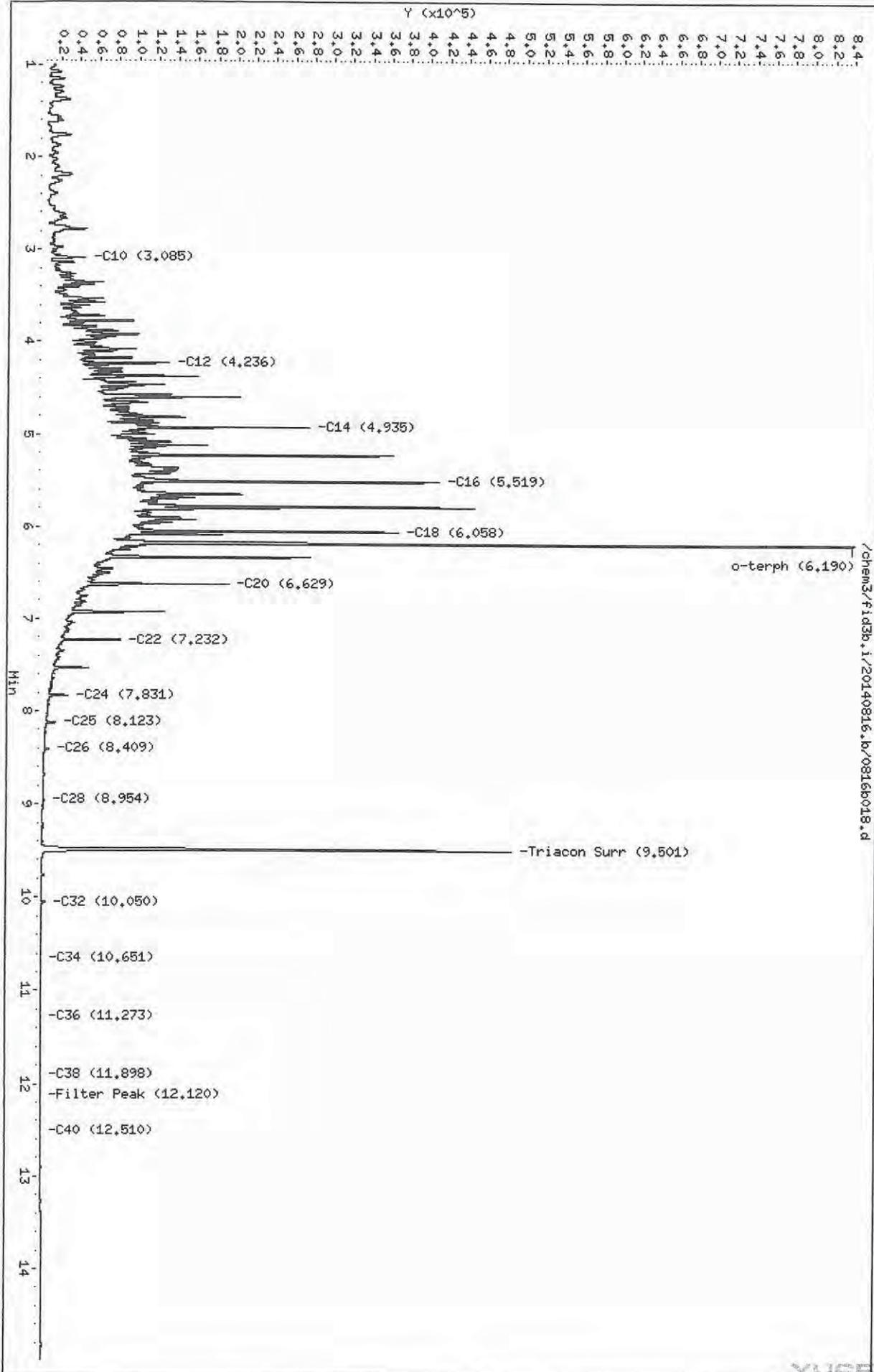
Analyst: y

Date: 8-17-27

Data File: /chem3/fid3b.i/20140816.b/0816p018.d
Date: 16-AUG-2014 16:14
Client ID: YV50LCSDM1
Sample Info: YV50LCSDM1

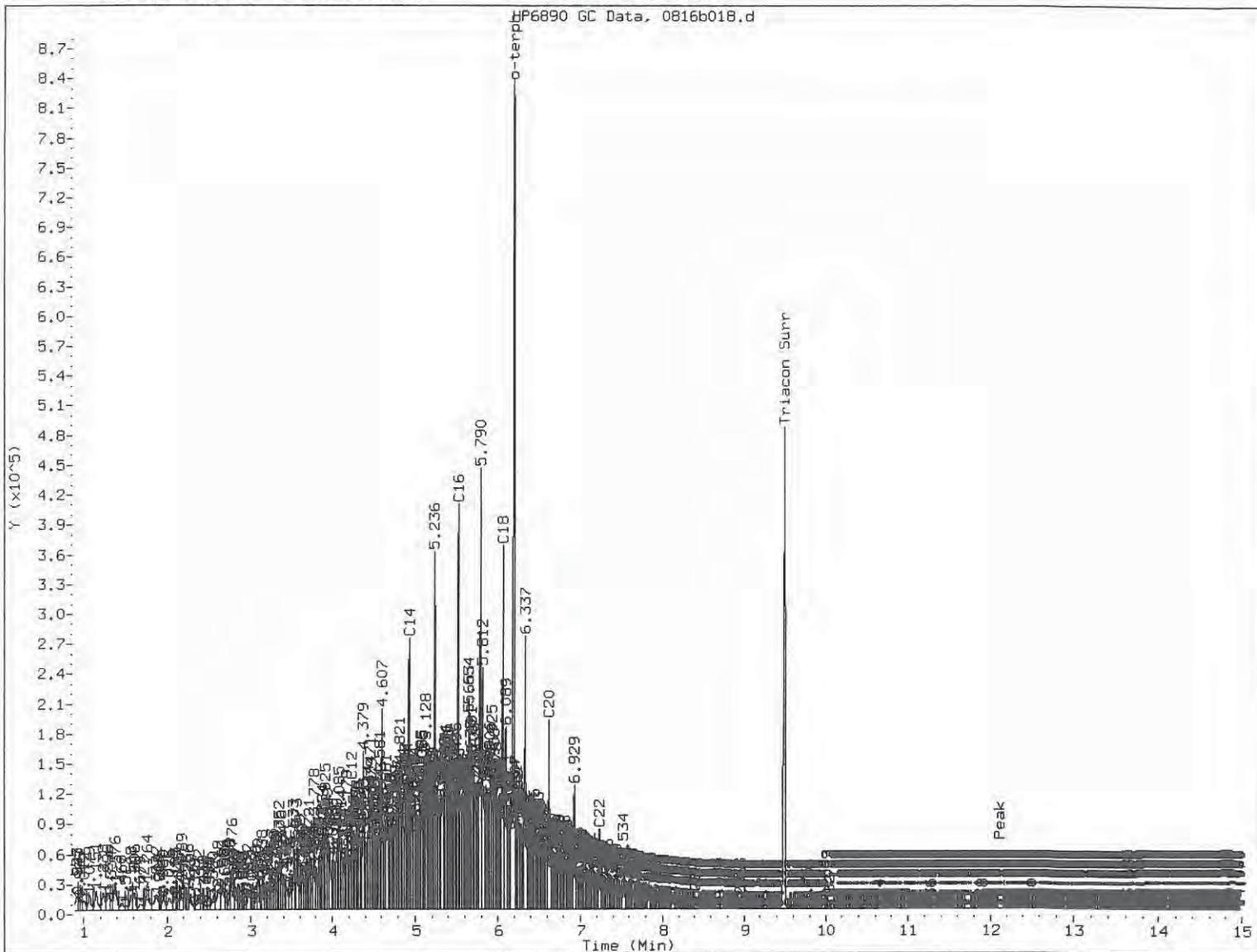
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



/chem3/fid3b.i/20140816.b/0816p018.d

Handwritten signature and date:
8.17.14



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

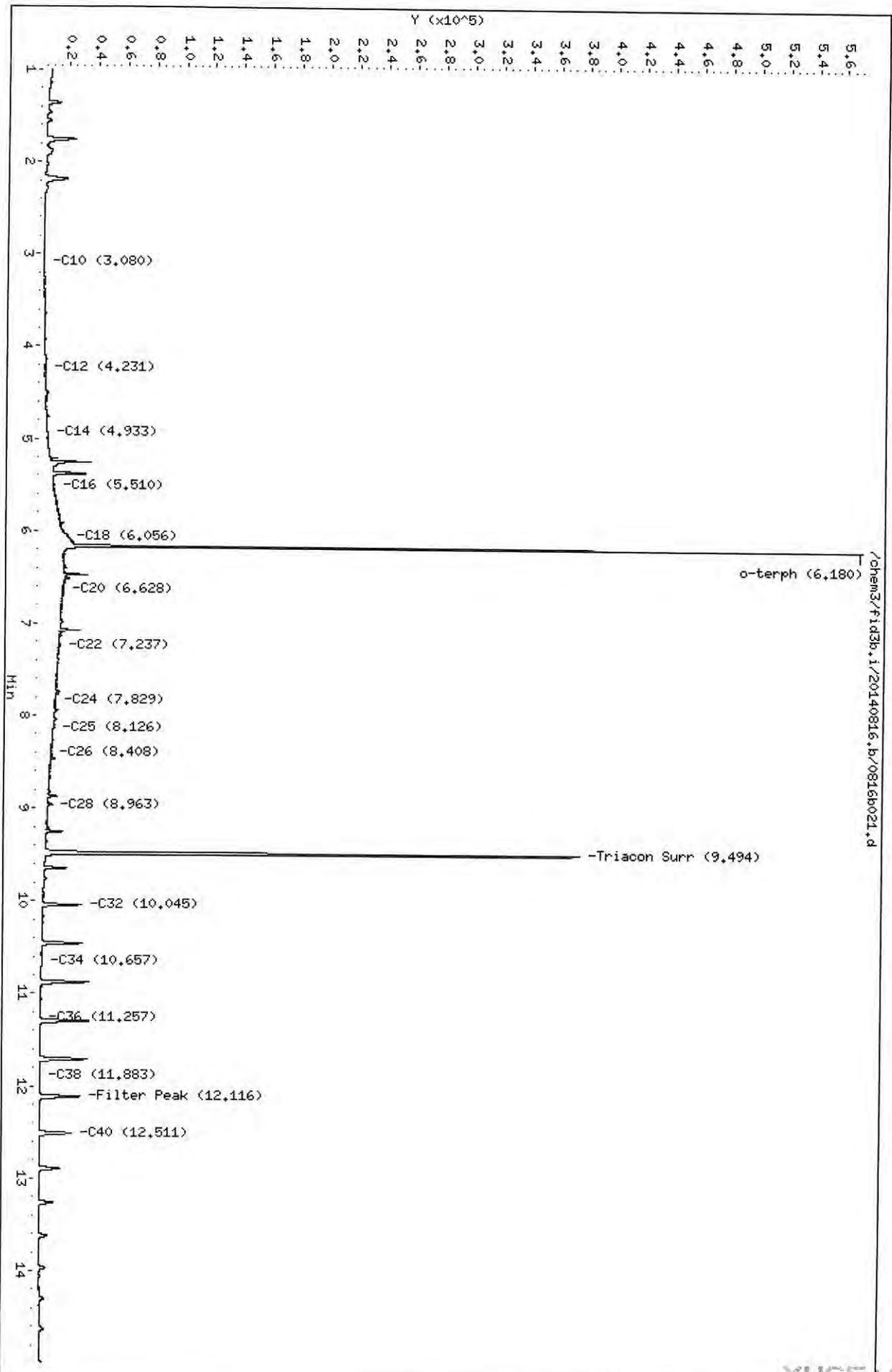
Analyst: J

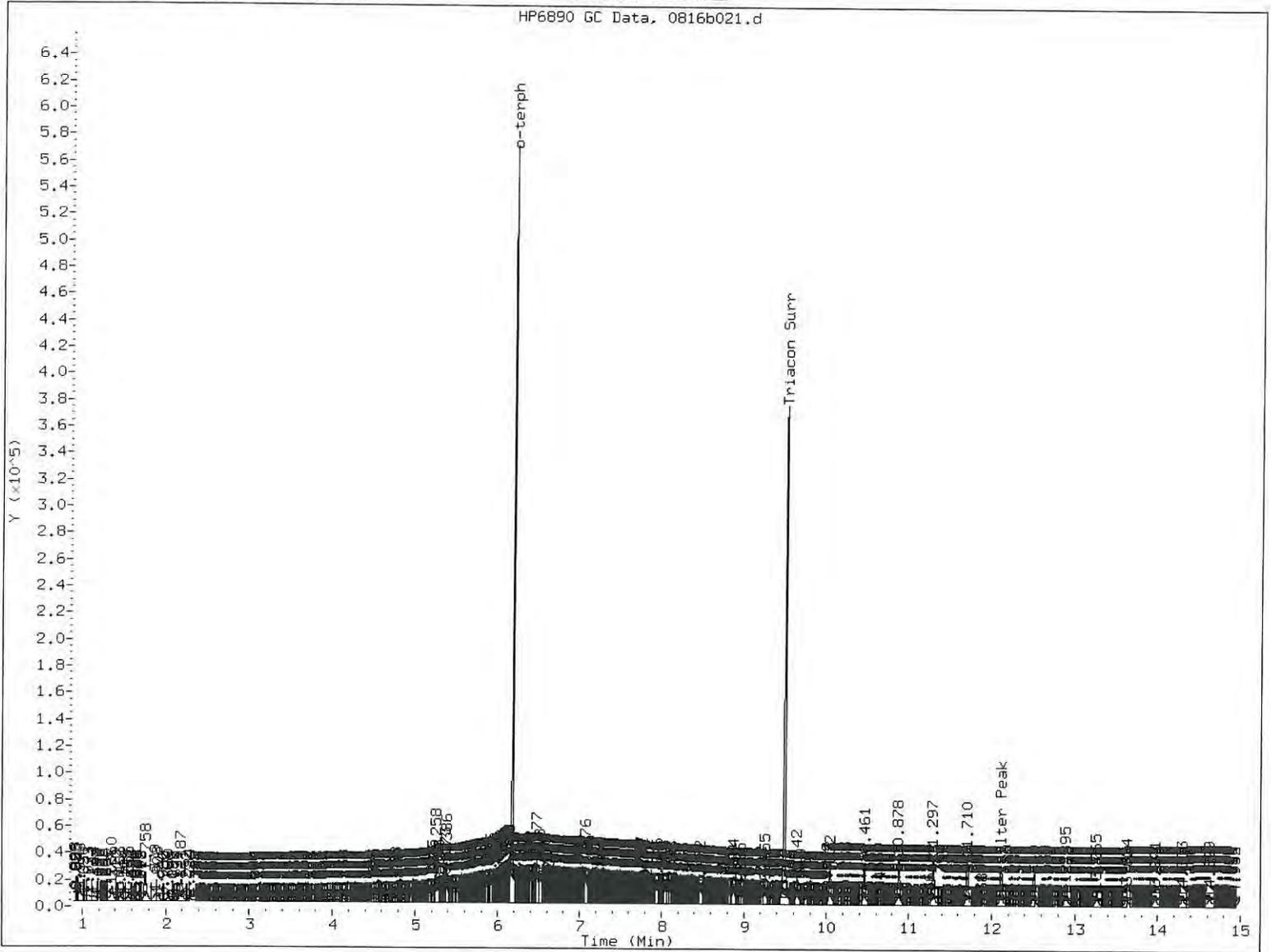
Date: 8-19-27

Data File: /chem3/fid3b.i/20140816.b/0816021.d
Date: 16-AUG-2014 17:33
Client ID: SB6
Sample Info: YV656
Column Phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

Handwritten: 2-19-14





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

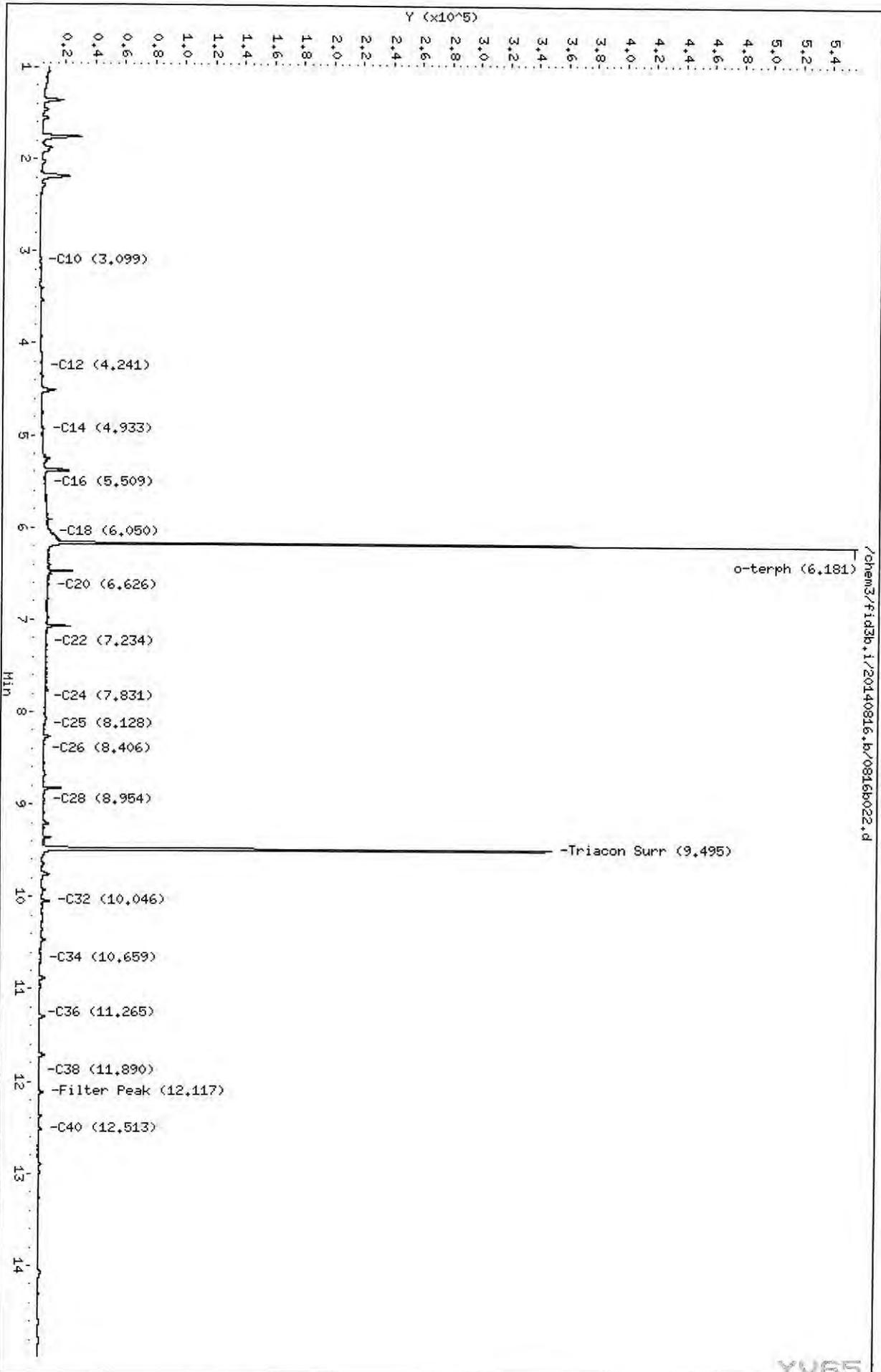
Analyst: 5

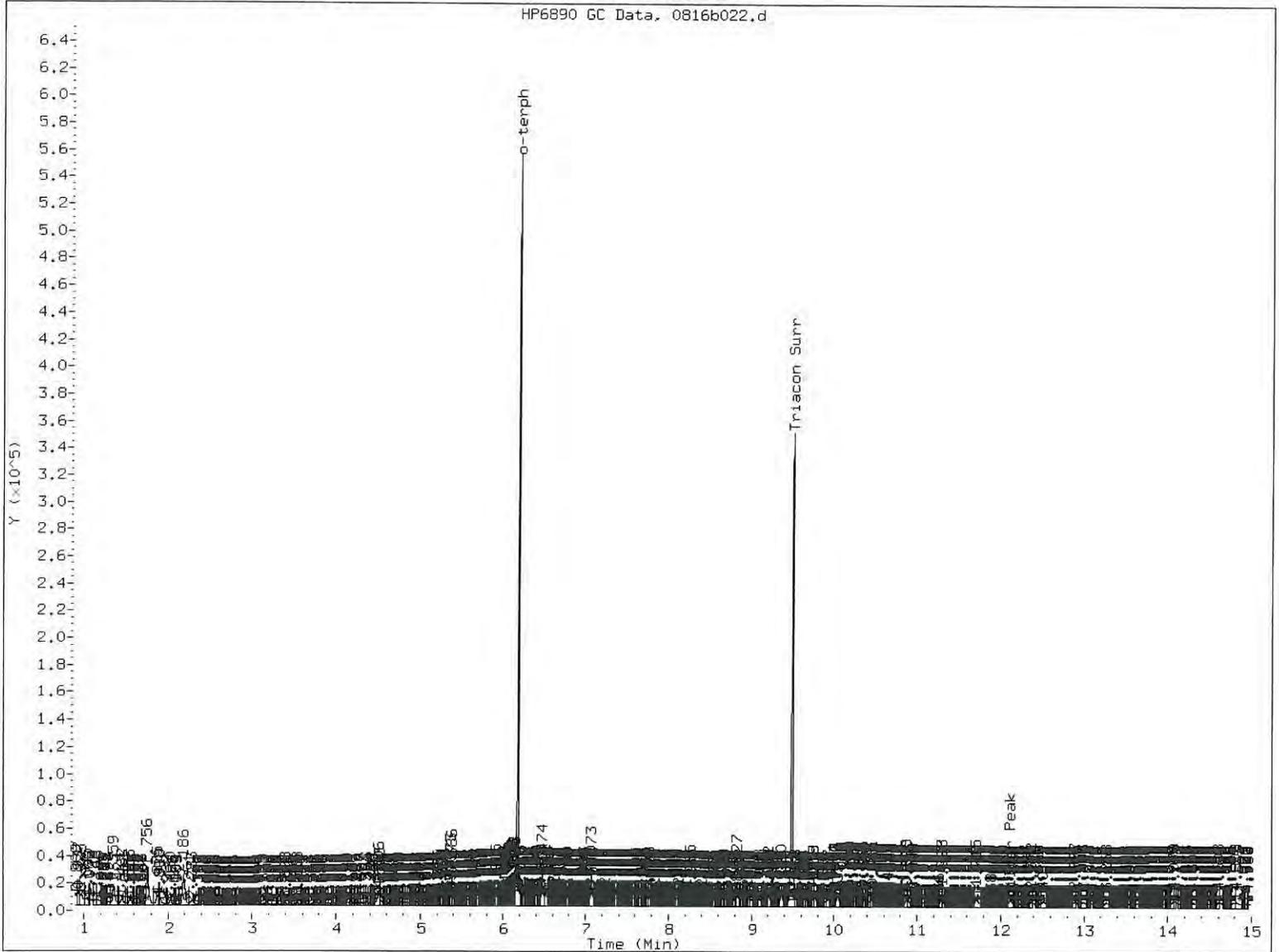
Date: 8-19-21

Data File: /chem3/fid3b.i/20140816.b/0816b022.d
Date: 16-AUG-2014 17:59
Client ID: SB7
Sample Info: YV65B
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

S
8.17.11





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

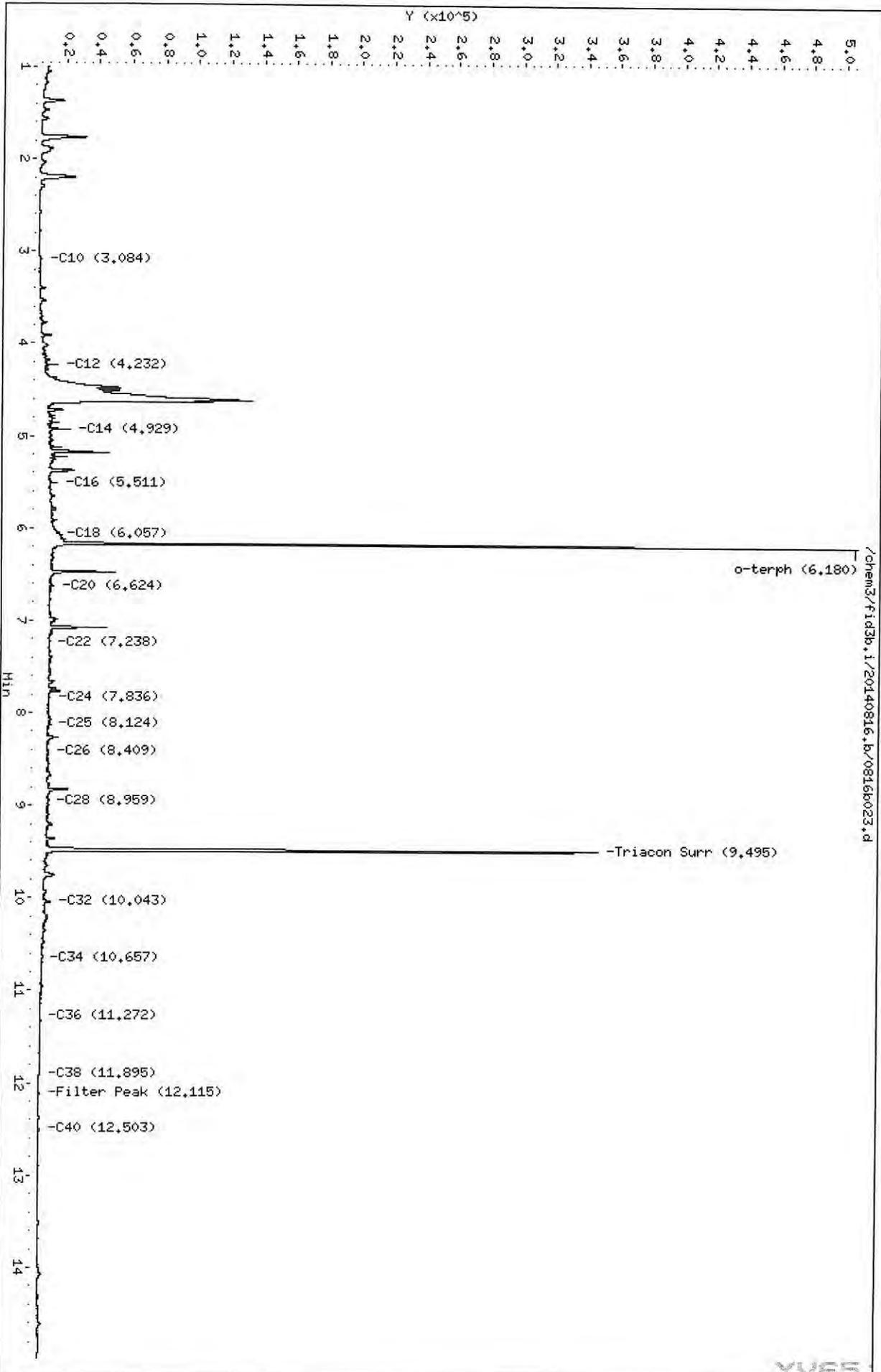
Analyst: G

Date: 8-17-77

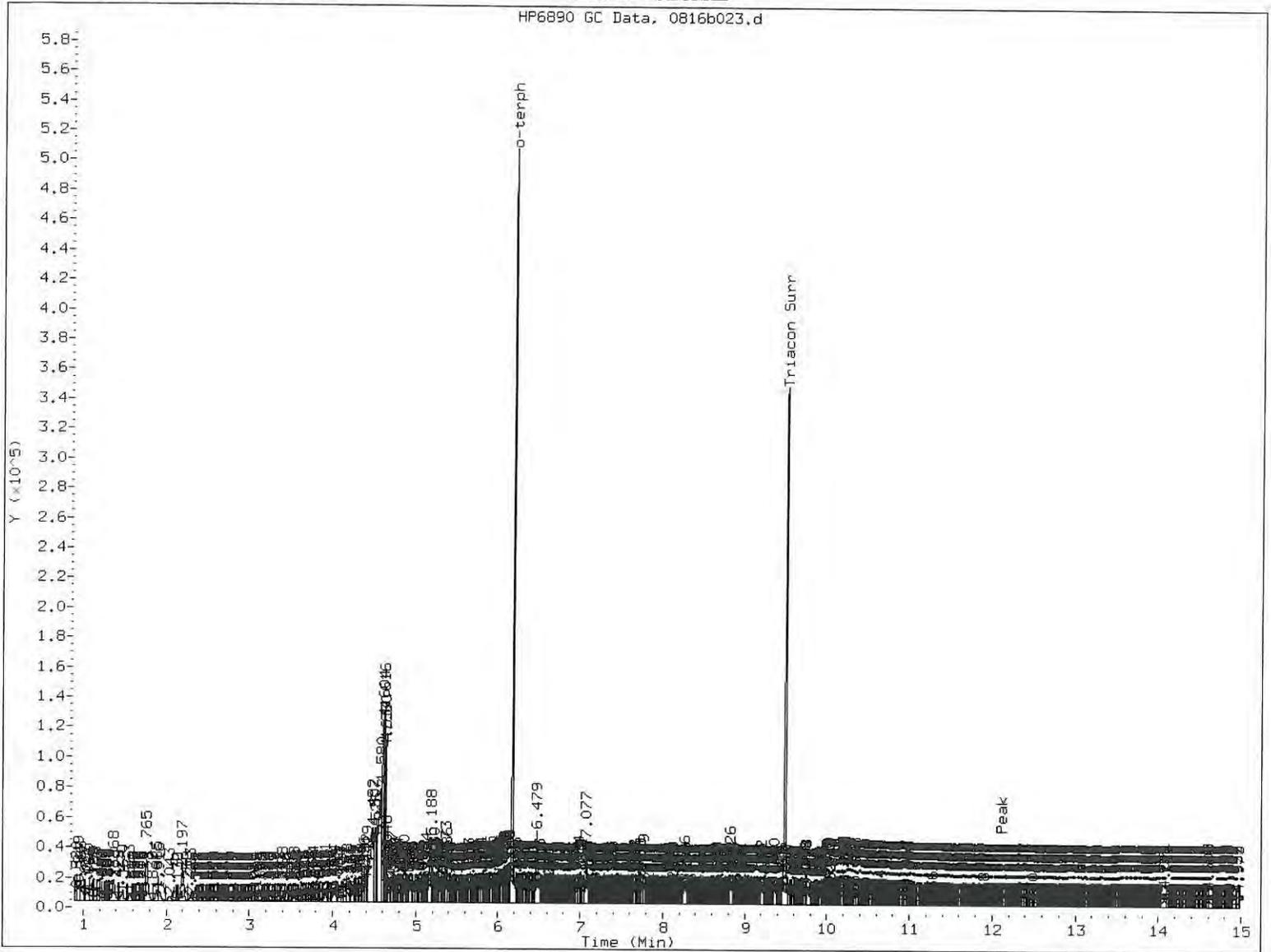
Data File: /chem3/fid3b.i/20140816.b/0816b023.d
Date: 16-AUG-2014 18:25
Client ID: SB3
Sample Info: YV65C
Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25

*SB3
8-16-14*



/chem3/fid3b.i/20140816.b/0816b023.d



Data File: /chem3/fid3b.i/20140816.b/0816b024.d

Date : 16-AUG-2014 18:51

Client ID: SB3D

Sample Info: YV65D

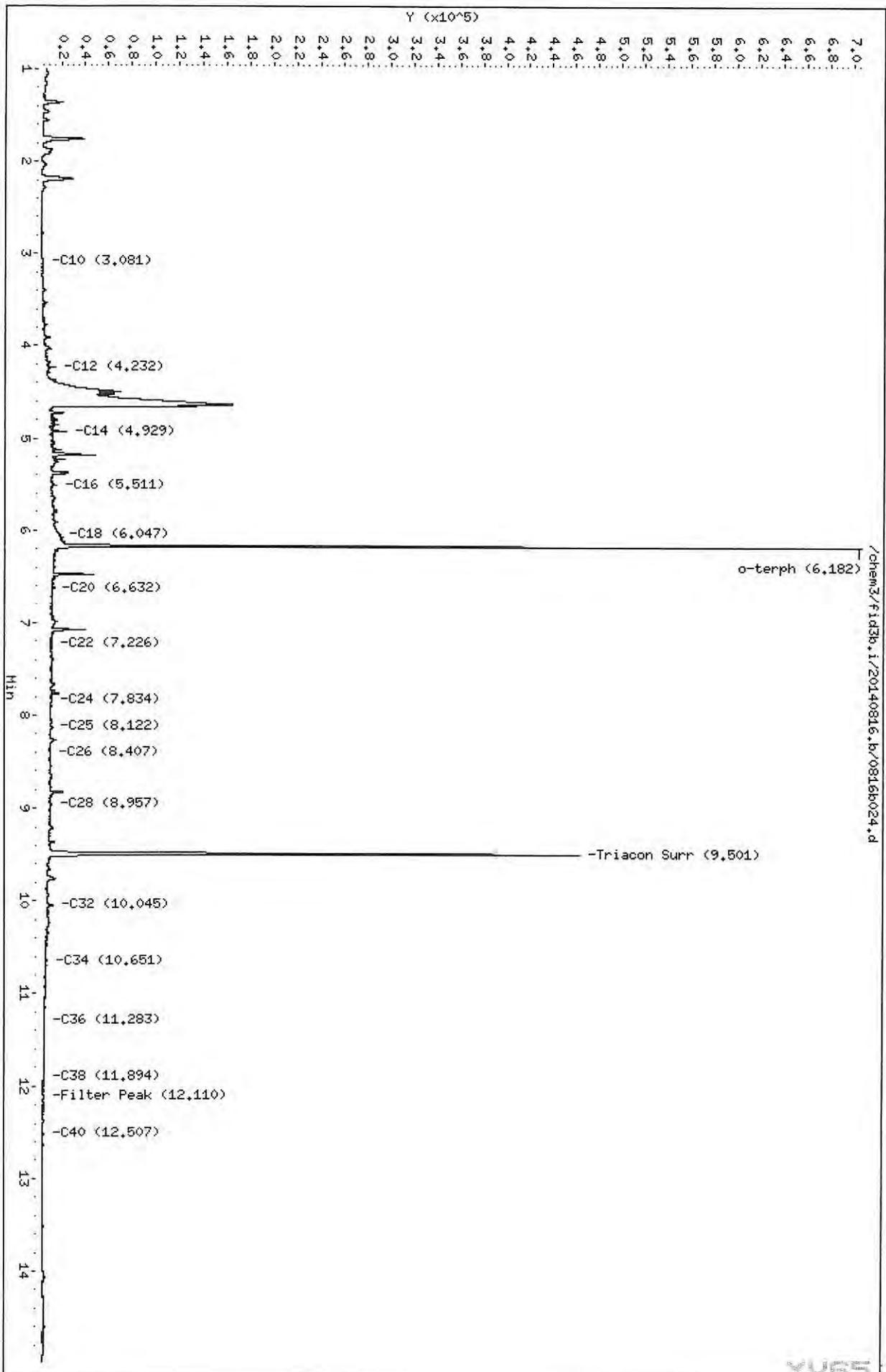
Column phase: RTX-1

Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

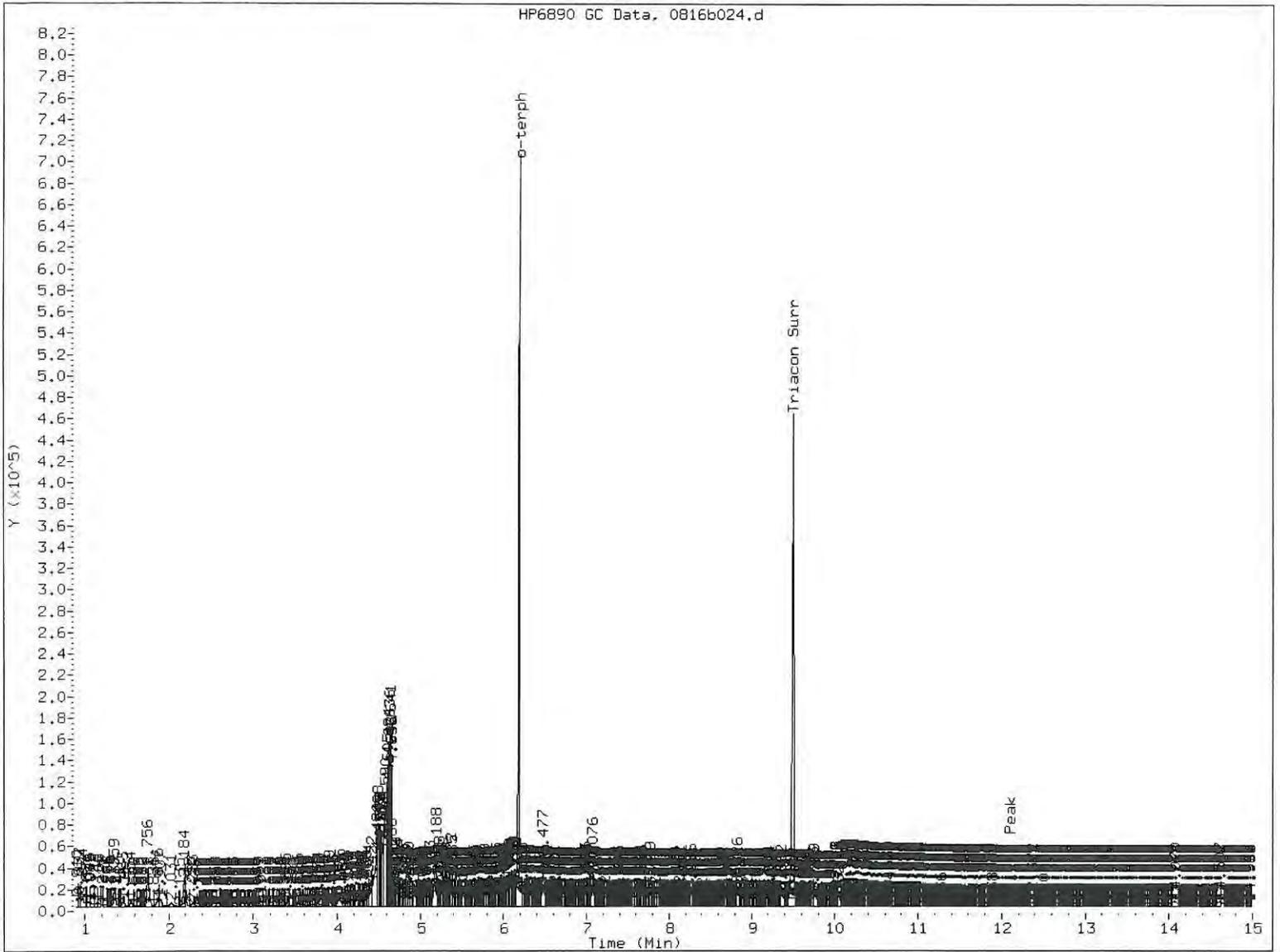
5
8.19.14



FID:3B-2C/RTX-1 YV65D

FID:3B SIGNAL

HP6890 GC Data, 0816b024.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

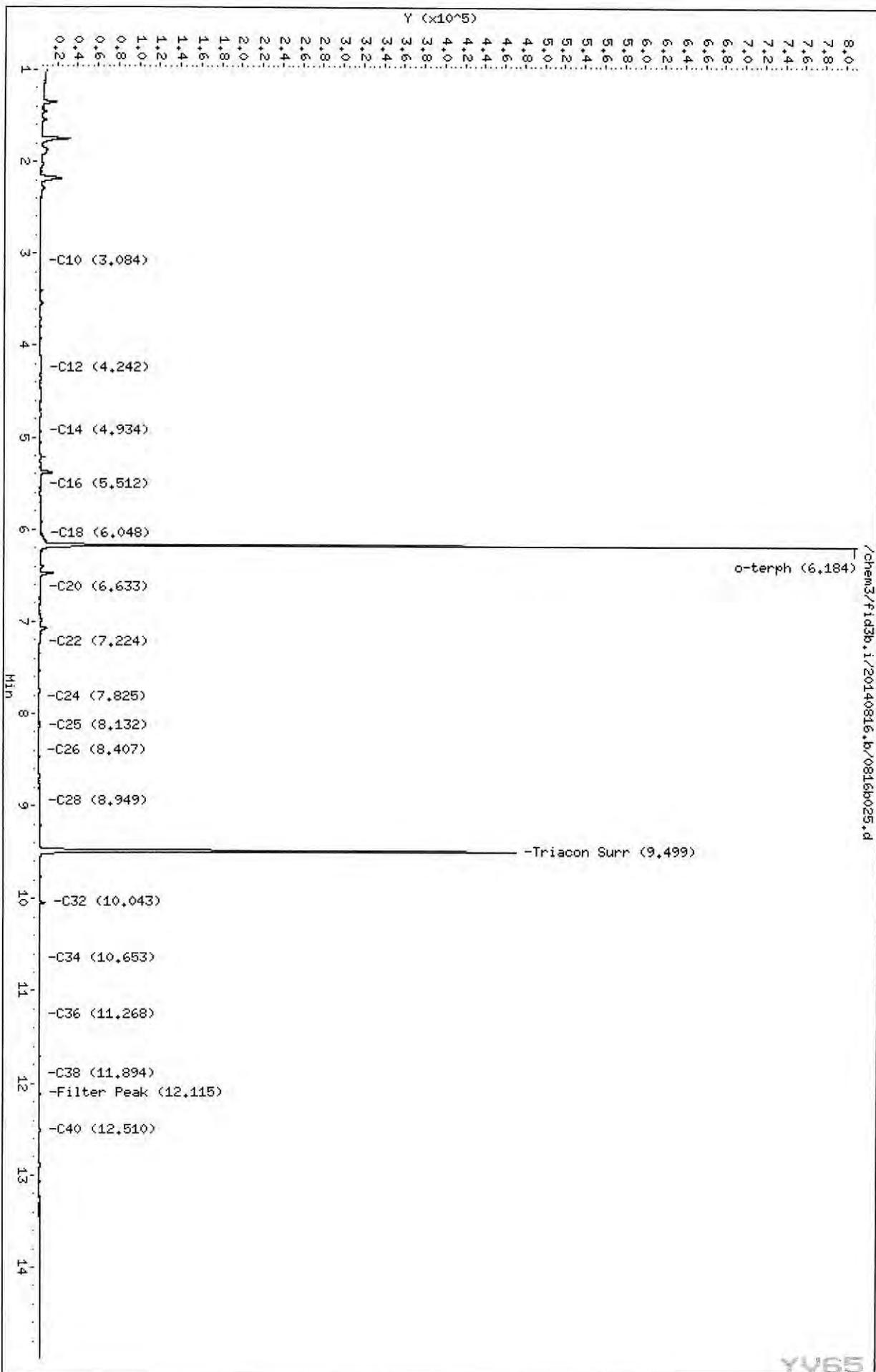
Analyst: h

Date: 8-19-07

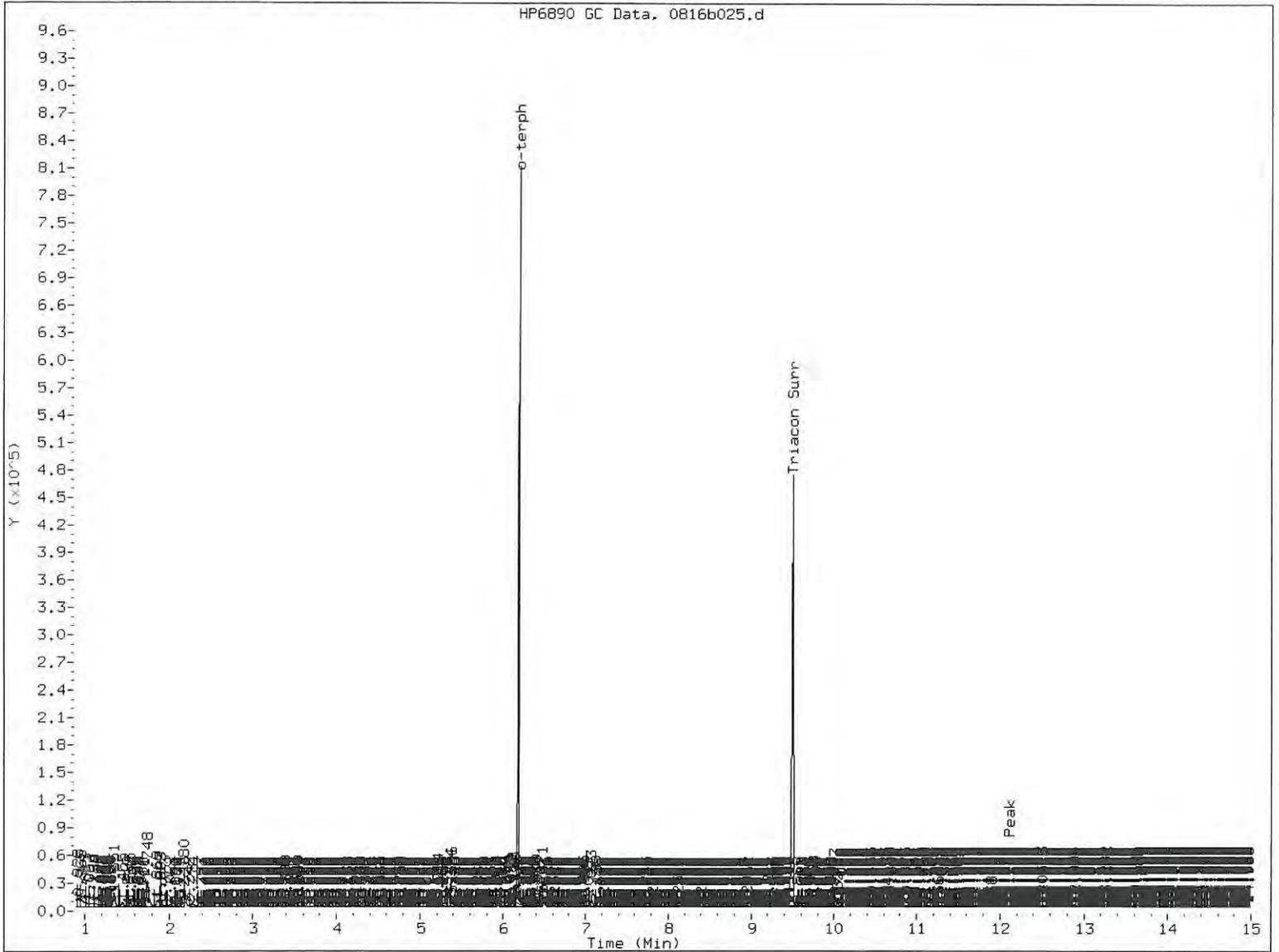
Data File: /chem3/fid3b.i/20140816.b/0816b025.d
Date: 16-AUG-2014 19:16
Client ID: SB10
Sample Info: YV65E

Column phase: RTX-1

Instrument: fid3b.i
Operator: VTS
Column diameter: 0.25



Handwritten signature and date: 8-15-14



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: Y

Date: 8-19-4

Data File: /chem3/fid3b.i/20140816.b/08160026.d

Date : 16-AUG-2014 19:42

Client ID: SBS

Sample Infort: YV65F

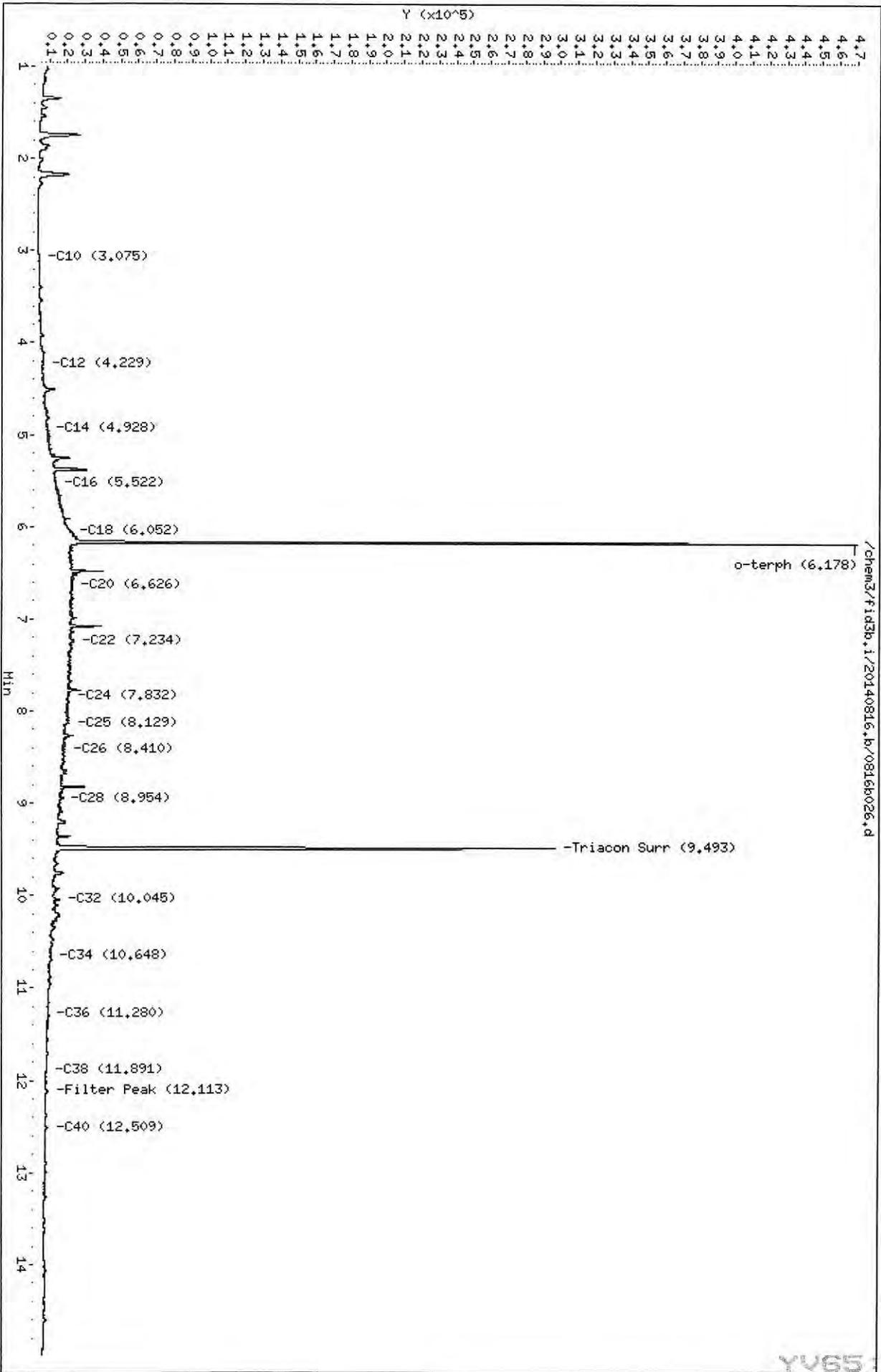
Column phase: RTX-1

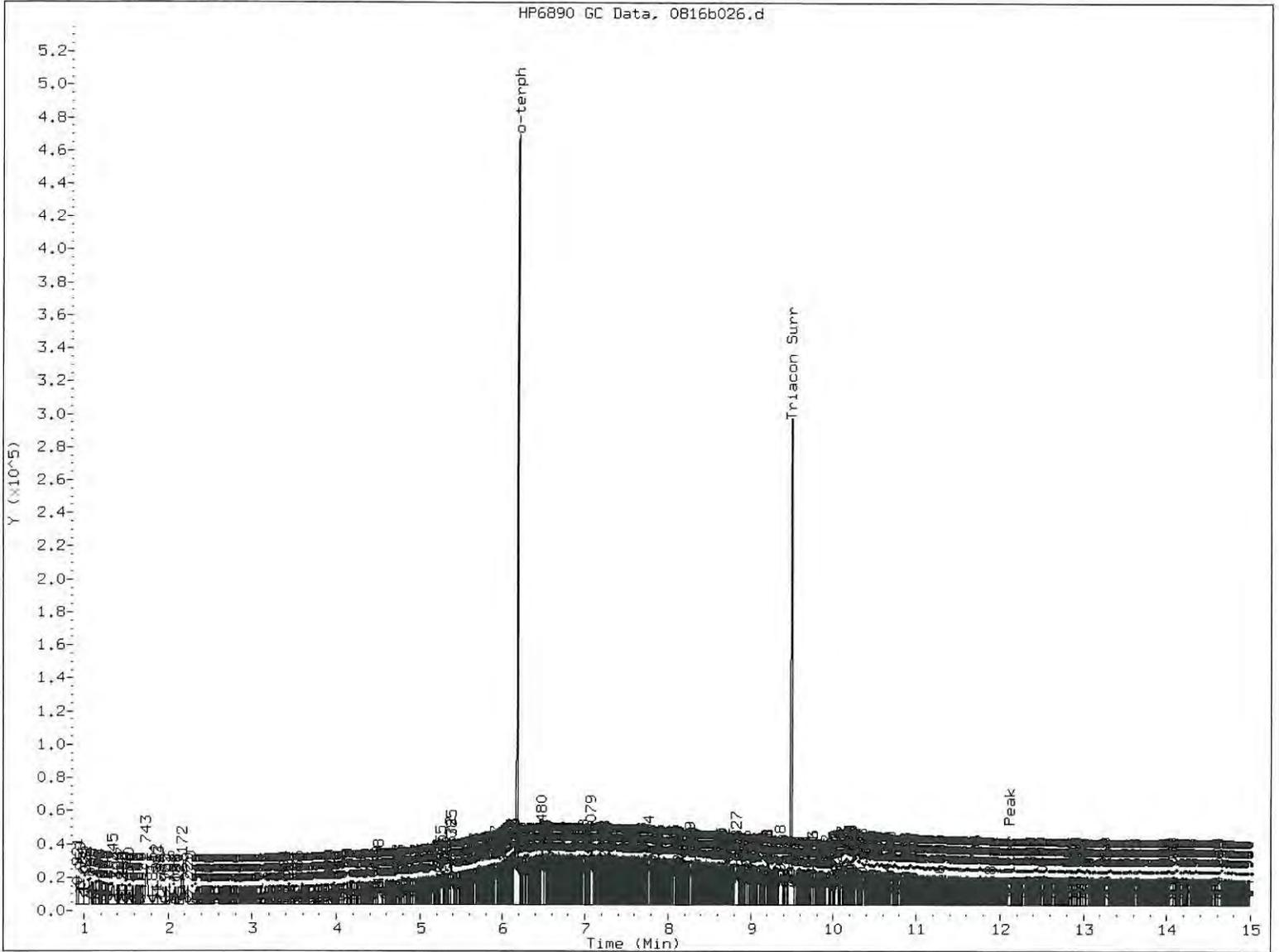
Instrument: fid3b.i

Operator: VTS

Column diameter: 0.25

Handwritten signature and date: 2.19.14





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: Y

Date: 8.19.04

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JW', is written over the 'Data Release Authorized:' text.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB6
ARI ID: 14-16374 YV65A

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JW', is written over the 'Data Release Authorized' line.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB7
ARI ID: 14-16375 YV65B

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'J. J.', is written over the 'Data Release Authorized' text.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB3
ARI ID: 14-16376 YV65C

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JG' or similar initials, written over the 'Data Release Authorized' text.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB3D
ARI ID: 14-16377 YV65D

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JJK' or similar, written over the 'Data Release Authorized' text.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB10
ARI ID: 14-16378 YV65E

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 08/20/14

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB5
ARI ID: 14-16379 YV65F

Analyte	Date Batch	Method	Units	RL	Sample
Hexavalent Chromium	08/08/14 080814#1	SM3500Cr-B	mg/L	0.010	< 0.010 U

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JK' or similar, written over the 'Data Release Authorized' line.

Project: PRECISION ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Hexavalent Chromium	SM3500Cr-B	08/08/14	mg/L	< 0.010 U	

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 08/20/14

Project: PRECISION ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	SM3500Cr-B	08/08/14	mg/L	0.640	0.630	101.6%

REPLICATE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'J. Jenks', is written over the 'Data Release Authorized' text.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YV65A Client ID: SB6						
Hexavalent Chromium	SM3500Cr-B	08/08/14	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JG', is written over the 'Data Release Authorized' text.

Project: PRECISION ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
---------	--------	------	-------	--------	-------	-------------	----------

ARI ID: YV65A Client ID: SB6

Hexavalent Chromium	SM3500Cr-B	08/08/14	mg/L	< 0.010	< 0.010 U	0.063	0.0%
---------------------	------------	----------	------	---------	-----------	-------	------

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JJC', is written over the 'Data Release Authorized:' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB7-19
ARI ID: 14-16381 YV65P

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.462	< 0.462 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	85.53

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'J. J.', is written over the 'Data Release Authorized' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB6-16
ARI ID: 14-16401 YV65G

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.571	< 0.571 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	70.04

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JL' or similar, written over the 'Data Release Authorized' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB7-11
ARI ID: 14-16402 YV65H

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.554	< 0.554 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	70.26

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JL' or similar initials, written over the 'Data Release Authorized' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB3-8
ARI ID: 14-16404 YV65J

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.452	< 0.452 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	87.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'KJ' or similar, written over the 'Data Release Authorized' line.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB1-5
ARI ID: 14-16405 YV65K

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.440	< 0.440 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	89.92

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JK' or similar initials, written over the 'Data Release Authorized' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB10-7
ARI ID: 14-16406 YV65L

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.445	< 0.445 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	88.57

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JJK' or similar, written over the 'Data Release Authorized' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB8-16
ARI ID: 14-16407 YV65M

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.544	< 0.544 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	72.12

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'JL' or similar, written over the 'Data Release Authorized' text.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Client ID: SB5-11
ARI ID: 14-16408 YV65N

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/14/14 081414#1	SW7196A	mg/kg	0.552	< 0.552 U
Total Solids	08/12/14 081214#1	SM2540G	Percent	0.01	71.28

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

METHOD BLANK RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized: 
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	08/14/14	mg/kg	< 0.398 U	PREP
Total Solids	08/12/14	Percent	< 0.01 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	08/14/14	mg/kg	20.0	19.9	100.5%
Insoluble Hexavalent Chromium	08/14/14	mg/kg	663	672	98.7%
Soil Hexavalent Chrome					

REPLICATE RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized: *[Signature]*
Reported: 08/20/14

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Date	Units	Sample	Replicate (s)	RPD/RSD
ARI ID: YV65P Client ID: SB7-19					
Total Solids	08/12/14	Percent	85.53	87.87 84.91	1.8%
ARI ID: YV65G Client ID: SB6-16					
Hexavalent Chromium	08/14/14	mg/kg	< 0.571	< 0.569	NA

MS/MSD RESULTS-CONVENTIONALS
YV65-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/20/14

A handwritten signature in blue ink, appearing to be 'MJ', is written over the 'Data Release Authorized' and 'Reported' lines.

Project: Precision ENG
Event: NA
Date Sampled: 08/08/14
Date Received: 08/08/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YV65G Client ID: SB6-16						
Hexavalent Chromium	08/14/14	mg/kg	< 0.571	< 0.567 U	28.3	NA
Hexavalent Chromium	08/14/14	mg/kg	< 0.571	492	1,010	48.5%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB6
SAMPLE

Lab Sample ID: YV65A
LIMS ID: 14-16374
Matrix: Water
Data Release Authorized:
Reported: 08/19/14



QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECICION ENG

Date Sampled: 08/08/14
Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.091	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB6

DUPLICATE

Lab Sample ID: YV65A

LIMS ID: 14-16374

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Chromium	6010C	0.091	0.071	24.7%	+/- 20%	*
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB6

MATRIX SPIKE

Lab Sample ID: YV65A

LIMS ID: 14-16374

Matrix: Water

Data Release Authorized:

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.27	2.00	114%	
Chromium	6010C	0.091	0.577	0.500	97.2%	
Lead	6010C	0.02 U	2.04	2.00	102%	
Selenium	6010C	0.05 U	2.22	2.00	111%	

Reported in mg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB7
SAMPLE

Lab Sample ID: YV65B

LIMS ID: 14-16375

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECICION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.1	0.1	
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.01	0.34	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.04	0.07	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.1	0.1	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB3

SAMPLE

Lab Sample ID: YV65C

LIMS ID: 14-16376

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECICION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.06	
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.418	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.08	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB3D
SAMPLE

Lab Sample ID: YV65D

LIMS ID: 14-16377

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.06	
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.265	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.12	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB10
SAMPLE

Lab Sample ID: YV65E

LIMS ID: 14-16378

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECICION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.331	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB5
SAMPLE

Lab Sample ID: YV65F

LIMS ID: 14-16379

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECICION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.2	0.3	
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.02	0.57	
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.1	0.1	
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.2	0.2	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB7-19

SAMPLE

Lab Sample ID: YV65P

LIMS ID: 14-16381

Matrix: Soil

Data Release Authorized:

Reported: 08/19/14



QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: Precision ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 87.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.6	24.8	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB7-19

DUPLICATE

Lab Sample ID: YV65P

LIMS ID: 14-16381

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: Precision ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	6 U	6 U	0.0%	+/- 6	L
Chromium	6010C	24.8	30.6	20.9%	+/- 20%	*
Lead	6010C	2 U	2 U	0.0%	+/- 2	L
Selenium	6010C	6 U	6 U	0.0%	+/- 6	L

Reported in mg/kg-dry

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB7-19

MATRIX SPIKE

Lab Sample ID: YV65P

LIMS ID: 14-16381

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: Precision ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	6 U	237	225	105%	
Chromium	6010C	24.8	303	56.2	495%	N
Lead	6010C	2 U	238	225	106%	
Selenium	6010C	6 U	233	225	104%	

Reported in mg/kg-dry

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB6-16
SAMPLE

Lab Sample ID: YV65G

LIMS ID: 14-16401

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 72.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.7	10.0	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB7-11
SAMPLE

Lab Sample ID: YV65H

LIMS ID: 14-16402

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 69.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.7	17.7	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	4	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB3-8
SAMPLE

Lab Sample ID: YV65J

LIMS ID: 14-16404

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 85.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	6	6	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.6	67.3	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB1-5
SAMPLE

Lab Sample ID: YV65K

LIMS ID: 14-16405

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 90.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	48.7	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB10-7

SAMPLE

Lab Sample ID: YV65L

LIMS ID: 14-16406

Matrix: Soil

Data Release Authorized:

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.
Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 86.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	30.3	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB8-16

SAMPLE

Lab Sample ID: YV65M

LIMS ID: 14-16407

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 68.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.7	23.7	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	7	
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: SB5-11

SAMPLE

Lab Sample ID: YV65N

LIMS ID: 14-16408

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: 08/08/14

Date Received: 08/08/14

Percent Total Solids: 70.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	7	7	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.7	15.7	
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	3	3	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	7	7	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YV65MB

LIMS ID: 14-16379

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/13/14	6010C	08/15/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/13/14	6010C	08/15/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YV65LCS

LIMS ID: 14-16379

Matrix: Water

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.11	2.00	106%	
Chromium	6010C	0.536	0.500	107%	
Lead	6010C	2.11	2.00	106%	
Selenium	6010C	2.08	2.00	104%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YV65MB

LIMS ID: 14-16408

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/13/14	6010C	08/15/14	7440-38-2	Arsenic	5	5	U
3050B	08/13/14	6010C	08/15/14	7440-47-3	Chromium	0.5	0.5	U
3050B	08/13/14	6010C	08/15/14	7439-92-1	Lead	2	2	U
3050B	08/13/14	6010C	08/15/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YV65LCS

LIMS ID: 14-16408

Matrix: Soil

Data Release Authorized: 

Reported: 08/19/14

QC Report No: YV65-Kennedy Jenks Consultants, Inc.

Project: PRECISION ENG

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	215	200	108%	
Chromium	6010C	55.0	50.0	110%	
Lead	6010C	217	200	108%	
Selenium	6010C	213	200	106%	

Reported in mg/kg-dry

N-Control limit not met

NA-Not Applicable, Analyte Not Spiked

Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

2 September 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YW77

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received five soil samples on August 18, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for several compounds were not within control limits for the CCAL that bracketed the VOC analyses of these samples. All positive results for these compounds have been flagged with a "Q" qualifier to denote the high %Ds.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YW77

Enclosures



Cooler Receipt Form

ARI Client: Kennedy Jenks
 COC No(s): _____ (NA)
 Assigned ARI Job No: YU77

Project Name: Precision Engineering
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Were custody papers included with the cooler? YES NO

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

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry)
 Time: 740 0.9 Temp Gun ID#: 90877952

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

Cooler Accepted by AV Date: 8/18/14 Time: 740
 Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

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

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

Were all bottles sealed in individual plastic bags? YES NO

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

Were all bottle labels complete and legible? YES NO

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

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

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

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

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

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

Date VOC Trip Blank was made at ARI... (NA)

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

Samples Logged by: AV Date: 8/18/14 Time: 850

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

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

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____

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

YY77: 00003

Sample ID Cross Reference Report



ARI Job No: YW77
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. MW9-18-19	YW77A	14-16946	Soil	08/16/14 08:45	08/18/14 07:40
2. MW9-32.5-33.5	YW77B	14-16947	Soil	08/16/14 09:40	08/18/14 07:40
3. MW9-38-39	YW77C	14-16948	Soil	08/16/14 10:20	08/18/14 07:40
4. MW11-18-19	YW77D	14-16949	Soil	08/16/14 15:35	08/18/14 07:40
5. MW100	YW77E	14-16950	Soil	08/16/14 16:00	08/18/14 07:40



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MB-082214A
METHOD BLANK

Lab Sample ID: MB-082214A
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized: *WVW*
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 11:12

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	2.5	
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	50	< 50	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2



Sample ID: MB-082214A
 METHOD BLANK

Lab Sample ID: MB-082214A
 LIMS ID: 14-16946
 Matrix: Soil
 Date Analyzed: 08/22/14 11:12

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.3%
d8-Toluene	100%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	98.2%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW9-18-19

Page 1 of 2

SAMPLE

Lab Sample ID: YW77A

LIMS ID: 14-16946

Matrix: Soil

Data Release Authorized: *YW*

Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/16/14

Date Received: 08/18/14

Instrument/Analyst: NT15/PKC

Date Analyzed: 08/22/14 15:13

Sample Amount: 4.87 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 20.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.1	5.1	B
67-64-1	Acetone	5.1	28	
75-15-0	Carbon Disulfide	1.0	1.8	Q
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.1	< 5.1	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.1	< 5.1	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.1	< 5.1	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.1	< 5.1	U
591-78-6	2-Hexanone	5.1	< 5.1	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.1	< 2.1	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	51	< 51	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.1	< 2.1	U
107-13-1	Acrylonitrile	5.1	< 5.1	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.1	< 5.1	U
96-18-4	1,2,3-Trichloropropane	2.1	< 2.1	U
110-57-6	trans-1,4-Dichloro-2-butene	5.1	< 5.1	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: MW9-18-19
 SAMPLE



Lab Sample ID: YW77A
 LIMS ID: 14-16946
 Matrix: Soil
 Date Analyzed: 08/22/14 15:13

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.1	< 5.1	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.1	< 5.1	U
91-20-3	Naphthalene	5.1	< 5.1	U
87-61-6	1,2,3-Trichlorobenzene	5.1	< 5.1	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 1 of 2

Sample ID: MW9-32.5-33.5
 SAMPLE



Lab Sample ID: YW77B
 LIMS ID: 14-16947
 Matrix: Soil
 Data Release Authorized: *MW*
 Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00
 Date Sampled: 08/16/14
 Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
 Date Analyzed: 08/22/14 15:38

Sample Amount: 5.36 g-dry-wt
 Purge Volume: 5.0 mL
 Moisture: 11.2%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.9	< 0.9	U
74-83-9	Bromomethane	0.9	< 0.9	U
75-01-4	Vinyl Chloride	0.9	< 0.9	U
75-00-3	Chloroethane	0.9	< 0.9	U
75-09-2	Methylene Chloride	1.9	5.5	B
67-64-1	Acetone	4.7	8.6	
75-15-0	Carbon Disulfide	0.9	< 0.9	U
75-35-4	1,1-Dichloroethene	0.9	< 0.9	U
75-34-3	1,1-Dichloroethane	0.9	< 0.9	U
156-60-5	trans-1,2-Dichloroethene	0.9	< 0.9	U
156-59-2	cis-1,2-Dichloroethene	0.9	< 0.9	U
67-66-3	Chloroform	0.9	< 0.9	U
107-06-2	1,2-Dichloroethane	0.9	< 0.9	U
78-93-3	2-Butanone	4.7	< 4.7	U
71-55-6	1,1,1-Trichloroethane	0.9	< 0.9	U
56-23-5	Carbon Tetrachloride	0.9	< 0.9	U
108-05-4	Vinyl Acetate	4.7	< 4.7	U
75-27-4	Bromodichloromethane	0.9	< 0.9	U
78-87-5	1,2-Dichloropropane	0.9	< 0.9	U
10061-01-5	cis-1,3-Dichloropropene	0.9	< 0.9	U
79-01-6	Trichloroethene	0.9	< 0.9	U
124-48-1	Dibromochloromethane	0.9	< 0.9	U
79-00-5	1,1,2-Trichloroethane	0.9	< 0.9	U
71-43-2	Benzene	0.9	< 0.9	U
10061-02-6	trans-1,3-Dichloropropene	0.9	< 0.9	U
110-75-8	2-Chloroethylvinylether	4.7	< 4.7	U
75-25-2	Bromoform	0.9	< 0.9	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.7	< 4.7	U
591-78-6	2-Hexanone	4.7	< 4.7	U
127-18-4	Tetrachloroethene	0.9	< 0.9	U
79-34-5	1,1,2,2-Tetrachloroethane	0.9	< 0.9	U
108-88-3	Toluene	0.9	< 0.9	U
108-90-7	Chlorobenzene	0.9	< 0.9	U
100-41-4	Ethylbenzene	0.9	< 0.9	U
100-42-5	Styrene	0.9	< 0.9	U
75-69-4	Trichlorofluoromethane	0.9	< 0.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	< 1.9	U
179601-23-1	m,p-Xylene	0.9	< 0.9	U
95-47-6	o-Xylene	0.9	< 0.9	U
95-50-1	1,2-Dichlorobenzene	0.9	< 0.9	U
541-73-1	1,3-Dichlorobenzene	0.9	< 0.9	U
106-46-7	1,4-Dichlorobenzene	0.9	< 0.9	U
107-02-8	Acrolein	4.7	< 4.7	U
74-88-4	Iodomethane	0.9	< 0.9	U
74-96-4	Bromoethane	1.9	< 1.9	U
107-13-1	Acrylonitrile	4.7	< 4.7	U
563-58-6	1,1-Dichloropropene	0.9	< 0.9	U
74-95-3	Dibromomethane	0.9	< 0.9	U
630-20-6	1,1,1,2-Tetrachloroethane	0.9	< 0.9	U
96-12-8	1,2-Dibromo-3-chloropropane	4.7	< 4.7	U
96-18-4	1,2,3-Trichloropropane	1.9	< 1.9	U
110-57-6	trans-1,4-Dichloro-2-butene	4.7	< 4.7	U
108-67-8	1,3,5-Trimethylbenzene	0.9	< 0.9	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2



Sample ID: MW9-32.5-33.5
 SAMPLE

Lab Sample ID: YW77B
 LIMS ID: 14-16947
 Matrix: Soil
 Date Analyzed: 08/22/14 15:38

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.9	< 0.9	U
87-68-3	Hexachlorobutadiene	4.7	< 4.7	U
106-93-4	1,2-Dibromoethane	0.9	< 0.9	U
74-97-5	Bromochloromethane	0.9	< 0.9	U
594-20-7	2,2-Dichloropropane	0.9	< 0.9	U
142-28-9	1,3-Dichloropropane	0.9	< 0.9	U
98-82-8	Isopropylbenzene	0.9	< 0.9	U
103-65-1	n-Propylbenzene	0.9	< 0.9	U
108-86-1	Bromobenzene	0.9	< 0.9	U
95-49-8	2-Chlorotoluene	0.9	< 0.9	U
106-43-4	4-Chlorotoluene	0.9	< 0.9	U
98-06-6	tert-Butylbenzene	0.9	< 0.9	U
135-98-8	sec-Butylbenzene	0.9	< 0.9	U
99-87-6	4-Isopropyltoluene	0.9	< 0.9	U
104-51-8	n-Butylbenzene	0.9	< 0.9	U
120-82-1	1,2,4-Trichlorobenzene	4.7	< 4.7	U
91-20-3	Naphthalene	4.7	< 4.7	U
87-61-6	1,2,3-Trichlorobenzene	4.7	< 4.7	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	104%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MW9-38-39
SAMPLE



Lab Sample ID: YW77C

LIMS ID: 14-16948

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/16/14

Date Received: 08/18/14

Instrument/Analyst: NT15/PKC

Date Analyzed: 08/22/14 16:04

Sample Amount: 5.20 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 14.8%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.0	1.5	
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	1.9	5.5	B
67-64-1	Acetone	4.8	16	
75-15-0	Carbon Disulfide	1.0	1.6	Q
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	4.8	< 4.8	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	4.8	< 4.8	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	4.8	< 4.8	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.8	< 4.8	U
591-78-6	2-Hexanone	4.8	< 4.8	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.9	< 1.9	U
179601-23-1	m,p-Xylene	1.0	< 1.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U
107-02-8	Acrolein	48	< 48	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	1.9	< 1.9	U
107-13-1	Acrylonitrile	4.8	< 4.8	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	4.8	< 4.8	U
96-18-4	1,2,3-Trichloropropane	1.9	< 1.9	U
110-57-6	trans-1,4-Dichloro-2-butene	4.8	< 4.8	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2



Sample ID: MW9-38-39

SAMPLE

Lab Sample ID: YW77C

LIMS ID: 14-16948

Matrix: Soil

Date Analyzed: 08/22/14 16:04

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	4.8	< 4.8	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	4.8	< 4.8	U
91-20-3	Naphthalene	4.8	< 4.8	U
87-61-6	1,2,3-Trichlorobenzene	4.8	< 4.8	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	119%
d8-Toluene	103%
Bromofluorobenzene	107%
d4-1,2-Dichlorobenzene	103%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 1 of 2

Sample ID: MW11-18-19

SAMPLE



Lab Sample ID: YW77D

LIMS ID: 14-16949

Matrix: Soil

Data Release Authorized: *WVW*

Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/16/14

Date Received: 08/18/14

Instrument/Analyst: NT15/PKC

Date Analyzed: 08/22/14 16:29

Sample Amount: 5.66 g-dry-wt

Purge Volume: 5.0 mL

Moisture: 12.6%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	0.9	< 0.9	U
74-83-9	Bromomethane	0.9	< 0.9	U
75-01-4	Vinyl Chloride	0.9	< 0.9	U
75-00-3	Chloroethane	0.9	< 0.9	U
75-09-2	Methylene Chloride	1.8	5.0	B
67-64-1	Acetone	4.4	13	
75-15-0	Carbon Disulfide	0.9	1.0	Q
75-35-4	1,1-Dichloroethene	0.9	< 0.9	U
75-34-3	1,1-Dichloroethane	0.9	< 0.9	U
156-60-5	trans-1,2-Dichloroethene	0.9	< 0.9	U
156-59-2	cis-1,2-Dichloroethene	0.9	< 0.9	U
67-66-3	Chloroform	0.9	< 0.9	U
107-06-2	1,2-Dichloroethane	0.9	< 0.9	U
78-93-3	2-Butanone	4.4	< 4.4	U
71-55-6	1,1,1-Trichloroethane	0.9	< 0.9	U
56-23-5	Carbon Tetrachloride	0.9	< 0.9	U
108-05-4	Vinyl Acetate	4.4	< 4.4	U
75-27-4	Bromodichloromethane	0.9	< 0.9	U
78-87-5	1,2-Dichloropropane	0.9	< 0.9	U
10061-01-5	cis-1,3-Dichloropropene	0.9	< 0.9	U
79-01-6	Trichloroethene	0.9	< 0.9	U
124-48-1	Dibromochloromethane	0.9	< 0.9	U
79-00-5	1,1,2-Trichloroethane	0.9	< 0.9	U
71-43-2	Benzene	0.9	< 0.9	U
10061-02-6	trans-1,3-Dichloropropene	0.9	< 0.9	U
110-75-8	2-Chloroethylvinylether	4.4	< 4.4	U
75-25-2	Bromoform	0.9	< 0.9	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	4.4	< 4.4	U
591-78-6	2-Hexanone	4.4	< 4.4	U
127-18-4	Tetrachloroethene	0.9	< 0.9	U
79-34-5	1,1,2,2-Tetrachloroethane	0.9	< 0.9	U
108-88-3	Toluene	0.9	< 0.9	U
108-90-7	Chlorobenzene	0.9	< 0.9	U
100-41-4	Ethylbenzene	0.9	< 0.9	U
100-42-5	Styrene	0.9	< 0.9	U
75-69-4	Trichlorofluoromethane	0.9	< 0.9	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.8	< 1.8	U
179601-23-1	m,p-Xylene	0.9	< 0.9	U
95-47-6	o-Xylene	0.9	< 0.9	U
95-50-1	1,2-Dichlorobenzene	0.9	< 0.9	U
541-73-1	1,3-Dichlorobenzene	0.9	< 0.9	U
106-46-7	1,4-Dichlorobenzene	0.9	< 0.9	U
107-02-8	Acrolein	44	< 44	U
74-88-4	Iodomethane	0.9	< 0.9	U
74-96-4	Bromoethane	1.8	< 1.8	U
107-13-1	Acrylonitrile	4.4	< 4.4	U
563-58-6	1,1-Dichloropropene	0.9	< 0.9	U
74-95-3	Dibromomethane	0.9	< 0.9	U
630-20-6	1,1,1,2-Tetrachloroethane	0.9	< 0.9	U
96-12-8	1,2-Dibromo-3-chloropropane	4.4	< 4.4	U
96-18-4	1,2,3-Trichloropropane	1.8	< 1.8	U
110-57-6	trans-1,4-Dichloro-2-butene	4.4	< 4.4	U
108-67-8	1,3,5-Trimethylbenzene	0.9	< 0.9	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW11-18-19

SAMPLE



Lab Sample ID: YW77D

LIMS ID: 14-16949

Matrix: Soil

Date Analyzed: 08/22/14 16:29

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	0.9	< 0.9	U
87-68-3	Hexachlorobutadiene	4.4	< 4.4	U
106-93-4	1,2-Dibromoethane	0.9	< 0.9	U
74-97-5	Bromochloromethane	0.9	< 0.9	U
594-20-7	2,2-Dichloropropane	0.9	< 0.9	U
142-28-9	1,3-Dichloropropane	0.9	< 0.9	U
98-82-8	Isopropylbenzene	0.9	< 0.9	U
103-65-1	n-Propylbenzene	0.9	< 0.9	U
108-86-1	Bromobenzene	0.9	< 0.9	U
95-49-8	2-Chlorotoluene	0.9	< 0.9	U
106-43-4	4-Chlorotoluene	0.9	< 0.9	U
98-06-6	tert-Butylbenzene	0.9	< 0.9	U
135-98-8	sec-Butylbenzene	0.9	< 0.9	U
99-87-6	4-Isopropyltoluene	0.9	< 0.9	U
104-51-8	n-Butylbenzene	0.9	< 0.9	U
120-82-1	1,2,4-Trichlorobenzene	4.4	< 4.4	U
91-20-3	Naphthalene	4.4	< 4.4	U
87-61-6	1,2,3-Trichlorobenzene	4.4	< 4.4	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	119%
d8-Toluene	104%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MW100
SAMPLE



Lab Sample ID: YW77E
LIMS ID: 14-16950
Matrix: Soil
Data Release Authorized: *mm*
Reported: 09/02/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Instrument/Analyst: NT15/PKC
Date Analyzed: 08/22/14 16:54

Sample Amount: 4.69 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 12.0%

CAS Number	Analyte	RL	Result	Q
74-87-3	Chloromethane	1.1	1.8	
74-83-9	Bromomethane	1.1	< 1.1	U
75-01-4	Vinyl Chloride	1.1	< 1.1	U
75-00-3	Chloroethane	1.1	< 1.1	U
75-09-2	Methylene Chloride	2.1	4.1	B
67-64-1	Acetone	5.3	16	
75-15-0	Carbon Disulfide	1.1	< 1.1	U
75-35-4	1,1-Dichloroethene	1.1	< 1.1	U
75-34-3	1,1-Dichloroethane	1.1	< 1.1	U
156-60-5	trans-1,2-Dichloroethene	1.1	< 1.1	U
156-59-2	cis-1,2-Dichloroethene	1.1	< 1.1	U
67-66-3	Chloroform	1.1	< 1.1	U
107-06-2	1,2-Dichloroethane	1.1	< 1.1	U
78-93-3	2-Butanone	5.3	< 5.3	U
71-55-6	1,1,1-Trichloroethane	1.1	< 1.1	U
56-23-5	Carbon Tetrachloride	1.1	< 1.1	U
108-05-4	Vinyl Acetate	5.3	< 5.3	U
75-27-4	Bromodichloromethane	1.1	< 1.1	U
78-87-5	1,2-Dichloropropane	1.1	< 1.1	U
10061-01-5	cis-1,3-Dichloropropene	1.1	< 1.1	U
79-01-6	Trichloroethene	1.1	< 1.1	U
124-48-1	Dibromochloromethane	1.1	< 1.1	U
79-00-5	1,1,2-Trichloroethane	1.1	< 1.1	U
71-43-2	Benzene	1.1	< 1.1	U
10061-02-6	trans-1,3-Dichloropropene	1.1	< 1.1	U
110-75-8	2-Chloroethylvinylether	5.3	< 5.3	U
75-25-2	Bromoform	1.1	< 1.1	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.3	< 5.3	U
591-78-6	2-Hexanone	5.3	< 5.3	U
127-18-4	Tetrachloroethene	1.1	< 1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	1.1	< 1.1	U
108-88-3	Toluene	1.1	< 1.1	U
108-90-7	Chlorobenzene	1.1	< 1.1	U
100-41-4	Ethylbenzene	1.1	< 1.1	U
100-42-5	Styrene	1.1	< 1.1	U
75-69-4	Trichlorofluoromethane	1.1	< 1.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.1	< 2.1	U
179601-23-1	m,p-Xylene	1.1	< 1.1	U
95-47-6	o-Xylene	1.1	< 1.1	U
95-50-1	1,2-Dichlorobenzene	1.1	< 1.1	U
541-73-1	1,3-Dichlorobenzene	1.1	< 1.1	U
106-46-7	1,4-Dichlorobenzene	1.1	< 1.1	U
107-02-8	Acrolein	53	< 53	U
74-88-4	Iodomethane	1.1	< 1.1	U
74-96-4	Bromoethane	2.1	< 2.1	U
107-13-1	Acrylonitrile	5.3	< 5.3	U
563-58-6	1,1-Dichloropropene	1.1	< 1.1	U
74-95-3	Dibromomethane	1.1	< 1.1	U
630-20-6	1,1,1,2-Tetrachloroethane	1.1	< 1.1	U
96-12-8	1,2-Dibromo-3-chloropropane	5.3	< 5.3	U
96-18-4	1,2,3-Trichloropropane	2.1	< 2.1	U
110-57-6	trans-1,4-Dichloro-2-butene	5.3	< 5.3	U
108-67-8	1,3,5-Trimethylbenzene	1.1	< 1.1	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: MW100
 SAMPLE



Lab Sample ID: YW77E
 LIMS ID: 14-16950
 Matrix: Soil
 Date Analyzed: 08/22/14 16:54

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

CAS Number	Analyte	RL	Result	Q
95-63-6	1,2,4-Trimethylbenzene	1.1	< 1.1	U
87-68-3	Hexachlorobutadiene	5.3	< 5.3	U
106-93-4	1,2-Dibromoethane	1.1	< 1.1	U
74-97-5	Bromochloromethane	1.1	< 1.1	U
594-20-7	2,2-Dichloropropane	1.1	< 1.1	U
142-28-9	1,3-Dichloropropane	1.1	< 1.1	U
98-82-8	Isopropylbenzene	1.1	< 1.1	U
103-65-1	n-Propylbenzene	1.1	< 1.1	U
108-86-1	Bromobenzene	1.1	< 1.1	U
95-49-8	2-Chlorotoluene	1.1	< 1.1	U
106-43-4	4-Chlorotoluene	1.1	< 1.1	U
98-06-6	tert-Butylbenzene	1.1	< 1.1	U
135-98-8	sec-Butylbenzene	1.1	< 1.1	U
99-87-6	4-Isopropyltoluene	1.1	< 1.1	U
104-51-8	n-Butylbenzene	1.1	< 1.1	U
120-82-1	1,2,4-Trichlorobenzene	5.3	< 5.3	U
91-20-3	Naphthalene	5.3	< 5.3	U
87-61-6	1,2,3-Trichlorobenzene	5.3	< 5.3	U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	104%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-082214A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082214A

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-16946

Project: Precision Engineering

Matrix: Soil

1396024*00

Data Release Authorized: *[Signature]*

Date Sampled: NA

Reported: 09/02/14

Date Received: NA

Instrument/Analyst LCS: NT15/PKC

Sample Amount LCS: 5.00 g-dry-wt

LCSD: NT15/PKC

LCSD: 5.00 g-dry-wt

Date Analyzed LCS: 08/22/14 10:22

Purge Volume LCS: 5.0 mL

LCSD: 08/22/14 10:47

LCSD: 5.0 mL

Moisture: NA

Analyte	Spike		LCS		Spike		LCSD		RPD
	LCS	Added-LCS	Recovery	LCSD	Added-LCSD	Recovery	LCSD		
Chloromethane	42.4	50.0	84.8%	42.8	50.0	85.6%	0.9%		
Bromomethane	40.3	50.0	80.6%	41.2	50.0	82.4%	2.2%		
Vinyl Chloride	48.7	50.0	97.4%	48.6	50.0	97.2%	0.2%		
Chloroethane	44.8	50.0	89.6%	48.8	50.0	97.6%	8.5%		
Methylene Chloride	47.4 B	50.0	94.8%	48.6 B	50.0	97.2%	2.5%		
Acetone	284	250	114%	268	250	107%	5.8%		
Carbon Disulfide	53.8 Q	50.0	108%	51.9 Q	50.0	104%	3.6%		
1,1-Dichloroethene	50.8 Q	50.0	102%	51.6 Q	50.0	103%	1.6%		
1,1-Dichloroethane	47.5	50.0	95.0%	49.4	50.0	98.8%	3.9%		
trans-1,2-Dichloroethene	48.1	50.0	96.2%	49.2	50.0	98.4%	2.3%		
cis-1,2-Dichloroethene	47.2	50.0	94.4%	49.5	50.0	99.0%	4.8%		
Chloroform	47.0	50.0	94.0%	48.5	50.0	97.0%	3.1%		
1,2-Dichloroethane	47.3	50.0	94.6%	48.9	50.0	97.8%	3.3%		
2-Butanone	302	250	121%	294	250	118%	2.7%		
1,1,1-Trichloroethane	49.0	50.0	98.0%	50.7	50.0	101%	3.4%		
Carbon Tetrachloride	40.3	50.0	80.6%	40.6	50.0	81.2%	0.7%		
Vinyl Acetate	51.3	50.0	103%	56.3	50.0	113%	9.3%		
Bromodichloromethane	50.2	50.0	100%	51.0	50.0	102%	1.6%		
1,2-Dichloropropane	47.3	50.0	94.6%	49.0	50.0	98.0%	3.5%		
cis-1,3-Dichloropropene	49.4	50.0	98.8%	50.8	50.0	102%	2.8%		
Trichloroethene	50.8	50.0	102%	52.2	50.0	104%	2.7%		
Dibromochloromethane	45.5	50.0	91.0%	45.7	50.0	91.4%	0.4%		
1,1,2-Trichloroethane	46.4	50.0	92.8%	48.1	50.0	96.2%	3.6%		
Benzene	47.8	50.0	95.6%	49.2	50.0	98.4%	2.9%		
trans-1,3-Dichloropropene	51.6	50.0	103%	52.5	50.0	105%	1.7%		
2-Chloroethylvinylether	57.6 Q	50.0	115%	59.9 Q	50.0	120%	3.9%		
Bromoform	44.2	50.0	88.4%	42.9	50.0	85.8%	3.0%		
4-Methyl-2-Pentanone (MIBK)	286	250	114%	286	250	114%	0.0%		
2-Hexanone	296	250	118%	288	250	115%	2.7%		
Tetrachloroethene	47.9	50.0	95.8%	48.8	50.0	97.6%	1.9%		
1,1,2,2-Tetrachloroethane	53.5	50.0	107%	53.5	50.0	107%	0.0%		
Toluene	46.8	50.0	93.6%	48.0	50.0	96.0%	2.5%		
Chlorobenzene	47.4	50.0	94.8%	48.4	50.0	96.8%	2.1%		
Ethylbenzene	48.7	50.0	97.4%	49.2	50.0	98.4%	1.0%		
Styrene	49.2	50.0	98.4%	50.1	50.0	100%	1.8%		
Trichlorofluoromethane	43.4	50.0	86.8%	44.2	50.0	88.4%	1.8%		
1,1,2-Trichloro-1,2,2-trifluoroetha	51.9 Q	50.0	104%	52.5 Q	50.0	105%	1.1%		

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 2 of 2

Sample ID: LCS-082214A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082214A
LIMS ID: 14-16946
Matrix: Soil

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	103	100	103%	104	100	104%	1.0%
o-Xylene	47.8	50.0	95.6%	49.0	50.0	98.0%	2.5%
1,2-Dichlorobenzene	47.0	50.0	94.0%	47.6	50.0	95.2%	1.3%
1,3-Dichlorobenzene	46.5	50.0	93.0%	47.0	50.0	94.0%	1.1%
1,4-Dichlorobenzene	46.2	50.0	92.4%	46.7	50.0	93.4%	1.1%
Acrolein	306	250	122%	298	250	119%	2.6%
Iodomethane	51.0 Q	50.0	102%	53.2 Q	50.0	106%	4.2%
Bromoethane	49.9	50.0	99.8%	51.3	50.0	103%	2.8%
Acrylonitrile	59.4	50.0	119%	62.6	50.0	125%	5.2%
1,1-Dichloropropene	46.6	50.0	93.2%	47.4	50.0	94.8%	1.7%
Dibromomethane	50.8	50.0	102%	52.6	50.0	105%	3.5%
1,1,1,2-Tetrachloroethane	50.9	50.0	102%	51.3	50.0	103%	0.8%
1,2-Dibromo-3-chloropropane	63.2	50.0	126%	61.1	50.0	122%	3.4%
1,2,3-Trichloropropane	56.5	50.0	113%	56.1	50.0	112%	0.7%
trans-1,4-Dichloro-2-butene	60.2	50.0	120%	58.6	50.0	117%	2.7%
1,3,5-Trimethylbenzene	51.0	50.0	102%	51.2	50.0	102%	0.4%
1,2,4-Trimethylbenzene	49.1	50.0	98.2%	49.3	50.0	98.6%	0.4%
Hexachlorobutadiene	45.5	50.0	91.0%	46.3	50.0	92.6%	1.7%
1,2-Dibromoethane	49.6	50.0	99.2%	50.6	50.0	101%	2.0%
Bromochloromethane	47.7	50.0	95.4%	50.1	50.0	100%	4.9%
2,2-Dichloropropane	51.4	50.0	103%	52.4	50.0	105%	1.9%
1,3-Dichloropropane	49.3	50.0	98.6%	50.4	50.0	101%	2.2%
Isopropylbenzene	50.8	50.0	102%	51.3	50.0	103%	1.0%
n-Propylbenzene	49.9	50.0	99.8%	49.9	50.0	99.8%	0.0%
Bromobenzene	47.3	50.0	94.6%	48.4	50.0	96.8%	2.3%
2-Chlorotoluene	48.6	50.0	97.2%	49.3	50.0	98.6%	1.4%
4-Chlorotoluene	48.4	50.0	96.8%	48.5	50.0	97.0%	0.2%
tert-Butylbenzene	50.0	50.0	100%	50.5	50.0	101%	1.0%
sec-Butylbenzene	50.2	50.0	100%	50.3	50.0	101%	0.2%
4-Isopropyltoluene	49.9	50.0	99.8%	50.3	50.0	101%	0.8%
n-Butylbenzene	48.0	50.0	96.0%	47.8	50.0	95.6%	0.4%
1,2,4-Trichlorobenzene	44.5	50.0	89.0%	44.5	50.0	89.0%	0.0%
Naphthalene	46.8	50.0	93.6%	46.9	50.0	93.8%	0.2%
1,2,3-Trichlorobenzene	45.9	50.0	91.8%	46.7	50.0	93.4%	1.7%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	96.7%	96.3%
d8-Toluene	100%	98.5%
Bromofluorobenzene	98.0%	98.6%
d4-1,2-Dichlorobenzene	99.6%	100%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Soil

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-082214A	Method Blank	Low	96.3%	100%	103%	98.2%	0
LCS-082214A	Lab Control	Low	96.7%	100%	98.0%	99.6%	0
LCSD-082214A	Lab Control Dup	Low	96.3%	98.5%	98.6%	100%	0
YW77A	MW9-18-19	Low	112%	103%	106%	103%	0
YW77B	MW9-32.5-33.5	Low	117%	104%	106%	103%	0
YW77C	MW9-38-39	Low	119%	103%	107%	103%	0
YW77D	MW11-18-19	Low	119%	104%	109%	102%	0
YW77E	MW100	Low	116%	104%	106%	102%	0

SW8260C	LCS/MB LIMITS		QC LIMITS	
	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 14-16946 to 14-16950

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 22-AUG-2014 09:57
 Lab File ID: cc0822.d Init. Cal. Date(s): 21-AUG-2014 21-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 16:59 19:54
 Lab Sample ID: CC0822 Quant Type: ISTD
 Method: /chem1/nt15.i/20140822.b/VO051314S.m

COMPOUND	RF50		CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF50	RRF50	RRF	%D / %DRIFT	%D / %DRIFT	
1 Dichlorodifluoromethane	0.40295	0.44467	0.44467	0.100	10.35403	20.00000	Averaged
2 Chloromethane	0.70096	0.61596	0.61596	0.100	-12.12590	20.00000	Averaged
3 Vinyl Chloride	0.67265	0.70857	0.70857	0.100	5.34058	20.00000	Averaged
4 Bromomethane	0.42045	0.38282	0.38282	0.100	-8.94944	20.00000	Averaged
5 Chloroethane	0.21092	0.24491	0.24491	0.100	16.11785	20.00000	Averaged
6 Trichlorofluoromethane	55.90559	50.00000	0.30220	0.100	11.81119	20.00000	Linear
7 1,1-Dichloroethene	0.49682	0.62143	0.62143	0.100	25.08104	20.00000	Averaged <-
8 Carbon Disulfide	1.77477	2.27733	2.27733	0.010	28.31635	20.00000	Averaged <-
9 1,1,2-Trichloroethane	0.50963	0.61716	0.61716	0.010	21.10151	20.00000	Averaged <-
10 Iodomethane	0.46021	0.67645	0.67645	0.010	46.98770	20.00000	Averaged <-
11 Bromoethane	0.37024	0.43746	0.43746	0.010	18.15803	20.00000	Averaged
12 Acrolein	0.10195	0.11320	0.11320	0.000	11.03165	20.00000	Averaged
13 Methylene Chloride	52.84382	50.00000	0.66212	0.010	5.68764	20.00000	Linear
14 Acetone	0.16634	0.16771	0.16771	0.001	0.82197	20.00000	Averaged
15 Trans-1,2-Dichloroethene	0.60459	0.66369	0.66369	0.010	9.77644	20.00000	Averaged
16 Methyl tert butyl ether	1.72211	1.84518	1.84518	0.100	7.14666	20.00000	Averaged
17 1,1-Dichloroethane	1.01517	1.08582	1.08582	0.100	6.96012	20.00000	Averaged
18 Acrylonitrile	0.20560	0.22115	0.22115	0.001	7.56396	20.00000	Averaged
19 Vinyl Acetate	0.48471	0.52499	0.52499	0.010	8.30875	20.00000	Averaged
20 Cis-1,2-Dichloroethene	0.59671	0.63430	0.63430	0.010	6.29854	20.00000	Averaged
22 2,2-Dichloropropane	0.74597	0.88561	0.88561	0.010	18.72028	20.00000	Averaged
23 Bromochloromethane	0.24635	0.26080	0.26080	0.050	5.86968	20.00000	Averaged
24 Chloroform	0.92828	0.98070	0.98070	0.100	5.64668	20.00000	Averaged
25 Carbon Tetrachloride	48.06420	50.00000	0.37985	0.100	-3.87160	20.00000	Linear
27 Dibromofluoromethane	0.46457	0.47005	0.47005	0.100	1.18007	20.00000	Averaged
26 1,1,1-Trichloroethane	0.78494	0.87374	0.87374	0.100	11.31301	20.00000	Averaged
28 1,1-Dichloropropene	0.48348	0.53991	0.53991	0.010	11.67144	20.00000	Averaged
29 2-Butanone	0.08448	0.08828	0.08828	0.001	4.49601	20.00000	Averaged
30 Benzene	1.40154	1.46817	1.46817	0.100	4.75351	20.00000	Averaged
32 d4-1,2-Dichloroethane	0.59827	0.59712	0.59712	0.010	-0.19068	20.00000	Averaged
33 1,2-Dichloroethane	0.40077	0.40449	0.40449	0.100	0.92854	20.00000	Averaged
34 Trichloroethene	0.33751	0.37633	0.37633	0.100	11.50061	20.00000	Averaged
37 Dibromomethane	0.17717	0.17153	0.17153	0.010	-3.18019	20.00000	Averaged
38 1,2-Dichloropropane	0.33656	0.34896	0.34896	0.100	3.68590	20.00000	Averaged
39 Bromodichloromethane	0.37227	0.41144	0.41144	0.100	10.52185	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 22-AUG-2014 09:57
 Lab File ID: cc0822.d Init. Cal. Date(s): 21-AUG-2014 21-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 16:59 19:54
 Lab Sample ID: CC0822 Quant Type: ISTD
 Method: /chem1/nt15.i/20140822.b/VO051314S.m

COMPOUND	RRF / AMOUNT		RF50	CCAL	MIN	MAX		CURVE TYPE
	RRF	AMOUNT	RF50	RRF50	RRF	%D / %DRIFT	%D / %DRIFT	
40 2-Chloroethyl Vinyl Ether	0.12209		0.15273	0.15273	0.000	25.10378	20.00000	Averaged <-
41 Cis 1,3-dichloropropene	0.50394		0.55163	0.55163	0.100	9.46247	20.00000	Averaged
\$ 42 d8-Toluene	1.18747		1.19632	1.19632	0.010	0.74560	20.00000	Averaged
43 Toluene	0.90462		0.93526	0.93526	0.100	3.38728	20.00000	Averaged
44 Tetrachloroethene	0.34845		0.37056	0.37056	0.100	6.34436	20.00000	Averaged
45 4-Methyl-2-Pentanone	0.14074		0.14756	0.14756	0.000	4.84054	20.00000	Averaged
46 Trans 1,3-Dichloropropene	0.44349		0.50713	0.50713	0.010	14.35127	20.00000	Averaged
47 1,1,2-Trichloroethane	0.27063		0.29255	0.29255	0.100	8.10228	20.00000	Averaged
48 Chlorodibromomethane	49.00084		50.00000	0.30546	0.100	-1.99833	20.00000	Linear
49 1,3-Dichloropropane	0.54226		0.55909	0.55909	0.100	3.10330	20.00000	Averaged
50 1,2-Dibromoethane	0.25482		0.25883	0.25883	0.010	1.57400	20.00000	Averaged
51 2-Hexanone	0.26447		0.26992	0.26992	0.010	2.06242	20.00000	Averaged
53 Chlorobenzene	1.04099		1.08005	1.08005	0.300	3.75261	20.00000	Averaged
54 Ethyl Benzene	1.87127		1.99974	1.99974	0.100	6.86505	20.00000	Averaged
55 1,1,1,2-Tetrachloroethane	0.29144		0.32973	0.32973	0.010	13.13895	20.00000	Averaged
56 m,p-xylene	0.68546		0.79114	0.79114	0.100	15.41842	20.00000	Averaged
57 o-Xylene	0.67901		0.71914	0.71914	0.100	5.90985	20.00000	Averaged
58 Styrene	1.13823		1.22896	1.22896	0.100	7.97092	20.00000	Averaged
59 Bromoform	45.42035		50.00000	0.39780	0.100	-9.15930	20.00000	Linear
60 Isopropyl Benzene	3.55422		3.94355	3.94355	0.010	10.95411	20.00000	Averaged
\$ 62 4-Bromofluorobenzene	0.50339		0.49644	0.49644	0.200	-1.37988	20.00000	Averaged
63 Bromobenzene	0.78493		0.79630	0.79630	0.010	1.44847	20.00000	Averaged
64 N-Propyl Benzene	4.27052		4.66014	4.66014	0.010	9.12355	20.00000	Averaged
65 1,1,2,2-Tetrachloroethane	0.82358		0.85521	0.85521	0.300	3.84143	20.00000	Averaged
66 2-Chloro Toluene	2.57944		2.75205	2.75205	0.010	6.69193	20.00000	Averaged
67 1,3,5-Trimethyl Benzene	3.00133		3.34188	3.34188	0.010	11.34672	20.00000	Averaged
68 1,2,3-Trichloropropane	0.24527		0.26196	0.26196	0.010	6.80474	20.00000	Averaged
69 Trans-1,4-Dichloro 2-Butene	0.23162		0.27443	0.27443	0.001	18.48179	20.00000	Averaged
70 4-Chloro Toluene	2.70587		2.85868	2.85868	0.010	5.64741	20.00000	Averaged
71 T-Butyl Benzene	2.56236		2.75792	2.75792	0.010	7.63187	20.00000	Averaged
72 1,2,4-Trimethylbenzene	3.00467		3.23191	3.23191	0.010	7.56290	20.00000	Averaged
73 S-Butyl Benzene	3.95999		4.33009	4.33009	0.010	9.34599	20.00000	Averaged
74 4-Isopropyl Toluene	3.18914		3.50865	3.50865	0.010	10.01865	20.00000	Averaged
75 1,3-Dichlorobenzene	1.60296		1.62305	1.62305	0.100	1.25317	20.00000	Averaged
77 1,4-Dichlorobenzene	1.71069		1.71990	1.71990	0.100	0.53849	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 22-AUG-2014 09:57
 Lab File ID: cc0822.d Init. Cal. Date(s): 21-AUG-2014 21-AUG-2014
 Analysis Type: SOIL Init. Cal. Times: 16:59 19:54
 Lab Sample ID: CC0822 Quant Type: ISTD
 Method: /chem1/nt15.i/20140822.b/VO051314S.m

COMPOUND	RF50		CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF50	RRP50	RRF	%D / %DRIFT	%D / %DRIFT	
78 N-Butyl Benzene	3.25530	3.43250	3.43250	0.010	5.44332	20.00000	Averaged
79 d4-1,2-Dichlorobenzene	0.93632	0.93298	0.93298	0.010	-0.35723	20.00000	Averaged
80 1,2-Dichlorobenzene	1.56806	1.58473	1.58473	0.100	1.06333	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.15285	0.16960	0.16960	0.010	10.95963	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.53425	0.49291	0.49291	0.010	-7.73891	20.00000	Averaged
83 1,2,4-Trichlorobenzene	1.11635	1.06732	1.06732	0.010	-4.39191	20.00000	Averaged
84 Naphthalene	3.13004	2.81125	2.81125	0.010	-10.18476	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.98269	0.93384	0.93384	0.010	-4.97103	20.00000	Averaged

**ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS**

NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Matrix: Soil

Date Received: 08/18/14

Data Release Authorized: *RB*
Reported: 08/27/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
MB-082014 14-16946	Method Blank HC ID: ---	08/20/14	08/26/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.0 10	< 5.0 U < 10 U 104%
YW77A 14-16946	MW9-18-19 HC ID: RRO	08/20/14	08/26/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.2 12	< 6.2 U 14 91.6%
YW77B 14-16947	MW9-32.5-33.5 HC ID: ---	08/20/14	08/26/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.7 11	< 5.7 U < 11 U 108%
YW77C 14-16948	MW9-38-39 HC ID: DRO/RRO	08/20/14	08/26/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	6.0 12	9.3 14 105%
YW77D 14-16949	MW11-18-19 HC ID: DRO	08/20/14	08/26/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	5.7 11	6.2 < 11 U 95.3%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1

Sample ID: LCS-082014
LAB CONTROL

Lab Sample ID: LCS-082014

LIMS ID: 14-16946

Matrix: Soil

Data Release Authorized: *B*

Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

Date Extracted: 08/20/14

Date Analyzed: 08/26/14 05:15

Instrument/Analyst: FID3B/JLW

Sample Amount: 10.0 g-dry-wt

Final Extract Volume: 1.0 mL

Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	133	150	88.7%

TPHD Surrogate Recovery

o-Terphenyl	100%
-------------	------

Results reported in mg/kg

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Soil
Date Received: 08/18/14

ARI Job: YW77
Project: Precision Engineering
1396024*00

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
14-16946-082014MB1	Method Blank	10.0 g	1.00 mL	-	08/20/14
14-16946-082014LCS1	Lab Control	10.0 g	1.00 mL	-	08/20/14
14-16946-YW77A	MW9-18-19	8.05 g	1.00 mL	D	08/20/14
14-16947-YW77B	MW9-32.5-33.5	8.80 g	1.00 mL	D	08/20/14
14-16948-YW77C	MW9-38-39	8.36 g	1.00 mL	D	08/20/14
14-16949-YW77D	MW11-18-19	8.78 g	1.00 mL	D	08/20/14

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
082014MBS	104%	0
082014LCS	100%	0
MW9-18-19	91.6%	0
MW9-32.5-33.5	108%	0
MW9-38-39	105%	0
MW11-18-19	95.3%	0

(OTER) = o-Terphenyl

LCS/MB LIMITS	QC LIMITS
(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 14-16946 to 14-16949

Data File: /chem3/fid3b.i/20140825.b/0825b037.d

Date: 26-AUG-2014 04:50

Client ID: YW77HBS1

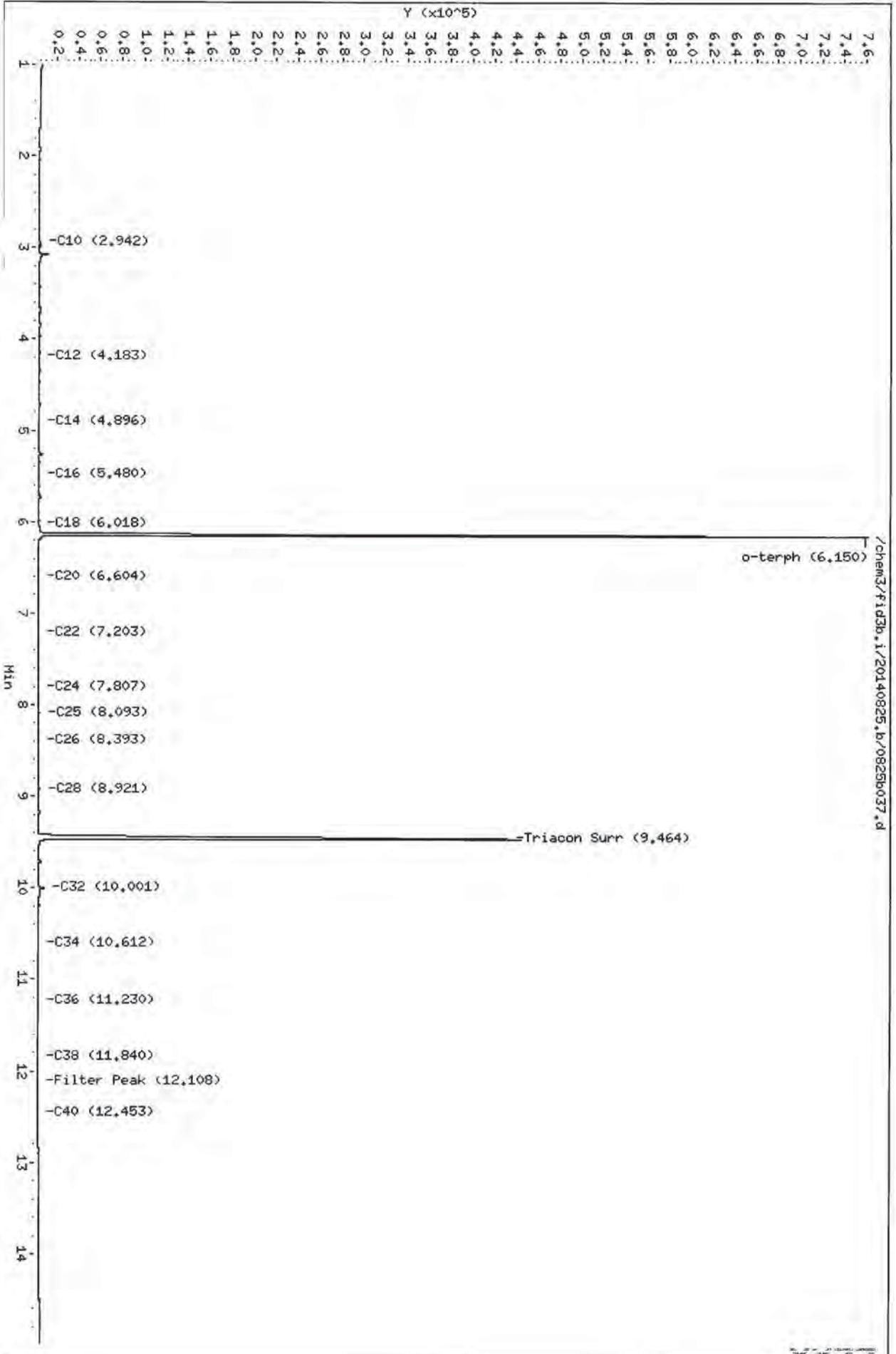
Sample Info: YW77HBS1

Column phase: RTX-1

Instrument: fid3b.i

Operator: JR

Column diameter: 0.25



Y177 00000

Data File: /chem3/fid3b.i/20140825.b/0825b038.d

Date: 26-AUG-2014 05:15

Client ID: YM77LCSS1

Sample Info: YM77LCSS1

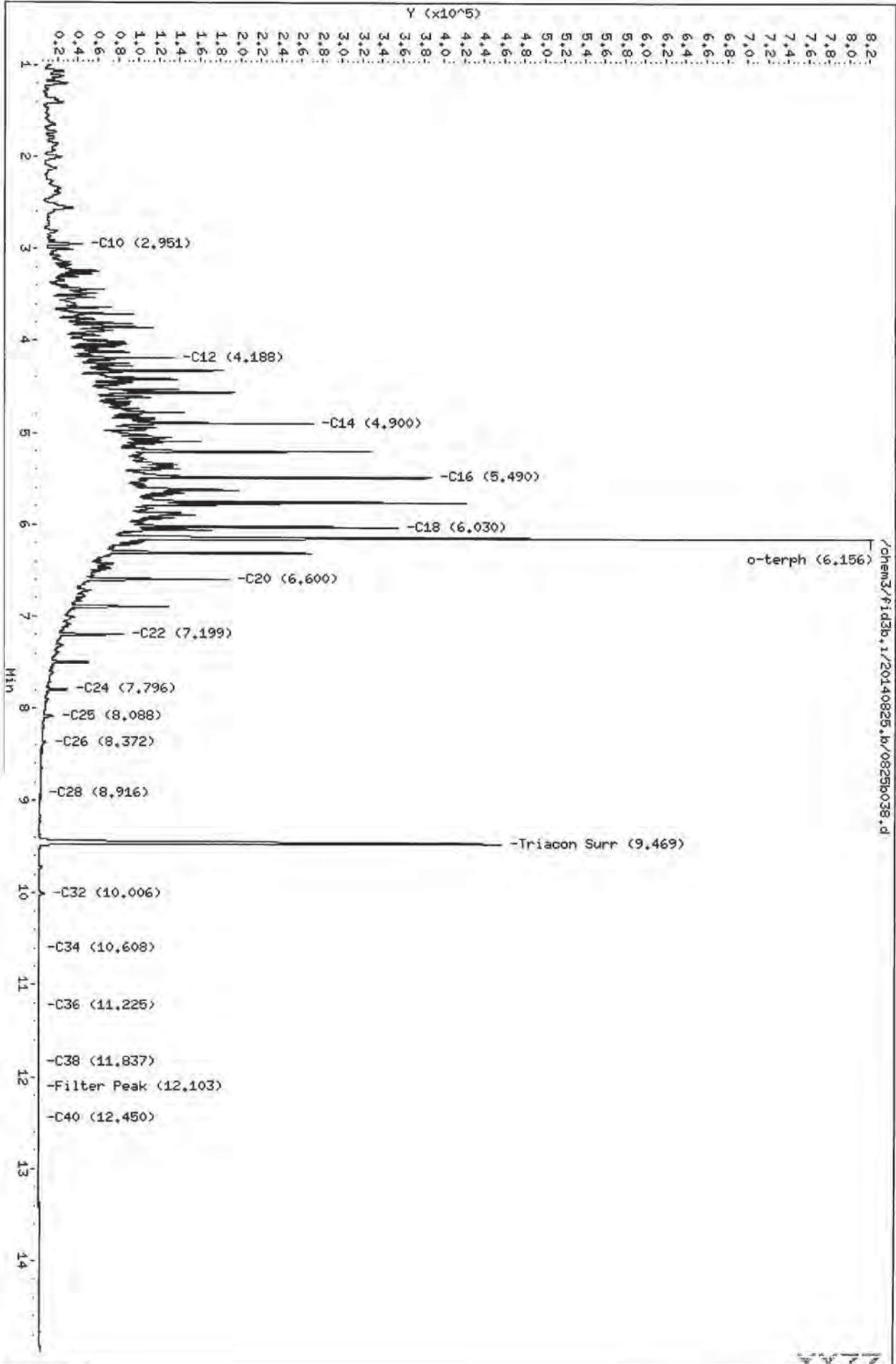
Column phase: RTX-1

Instrument: fid3b.i

Operator: JR

Column diameter: 0.25

Page 1

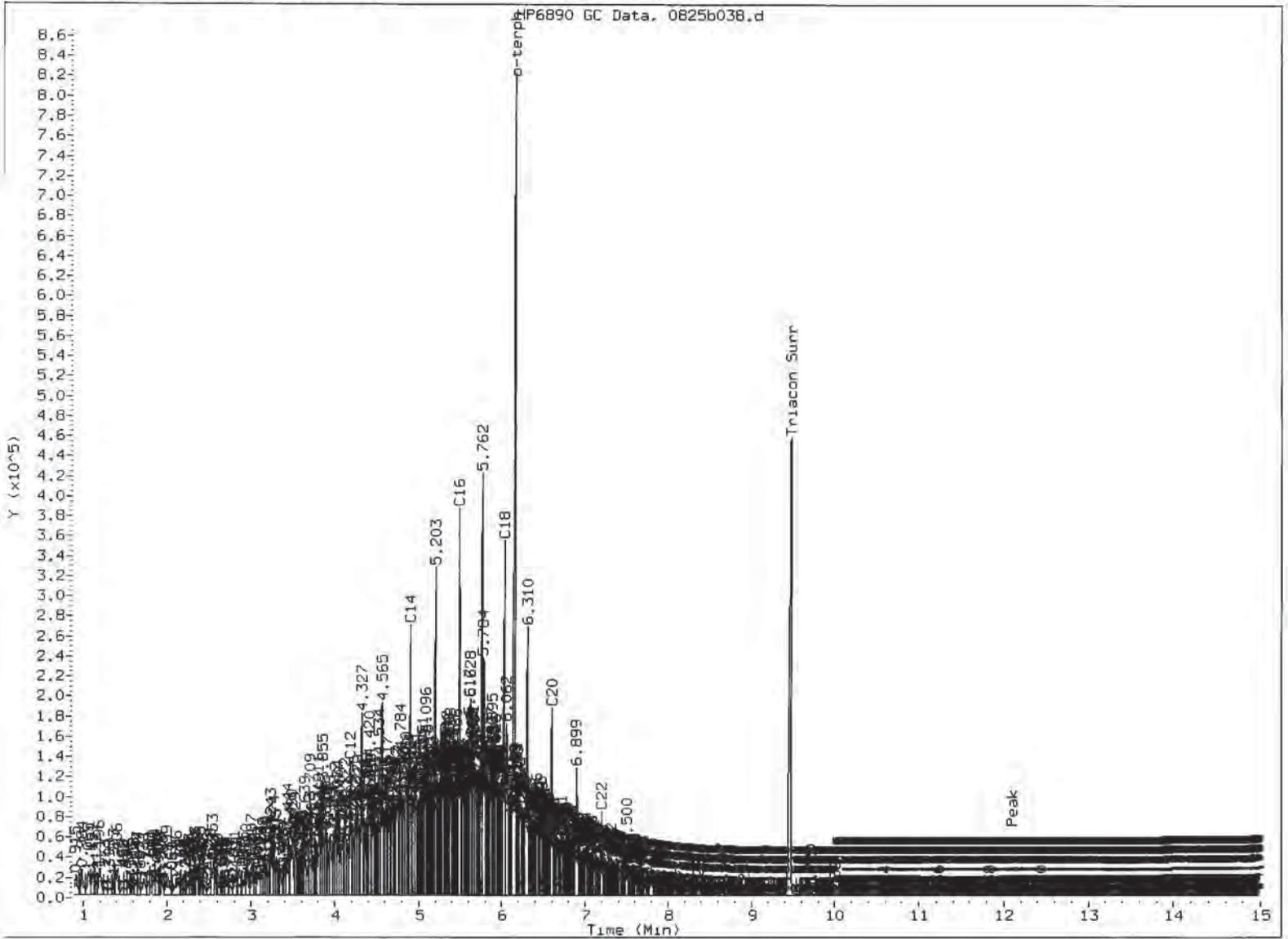


YM77 000000

FID:3B-2C/RTX-1 YW77LCSS1

FID:3B SIGNAL

HP6890 GC Data. 0825b038.d



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: JD

Date: 8/26/14

Data File: /chem3/fid3b.i/20140825.b/0825b039.d

Date: 26-AUG-2014 05:40

Client ID: HM9-18-19

Sample Info: YM77A

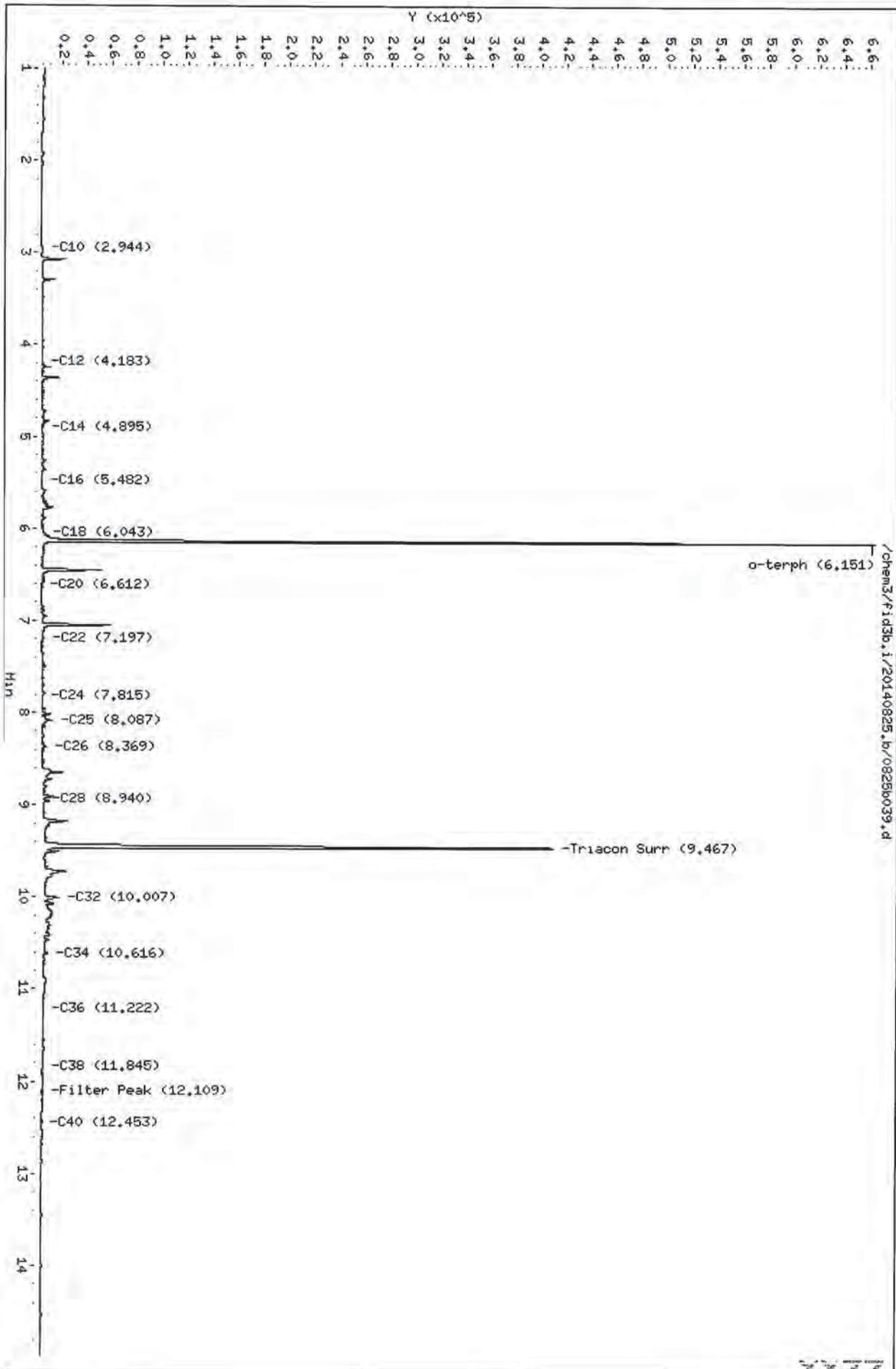
Column phase: RTX-1

Instrument: fid3b.i

Operator: JR

Column diameter: 0.25

Page 1



05 09 09 77

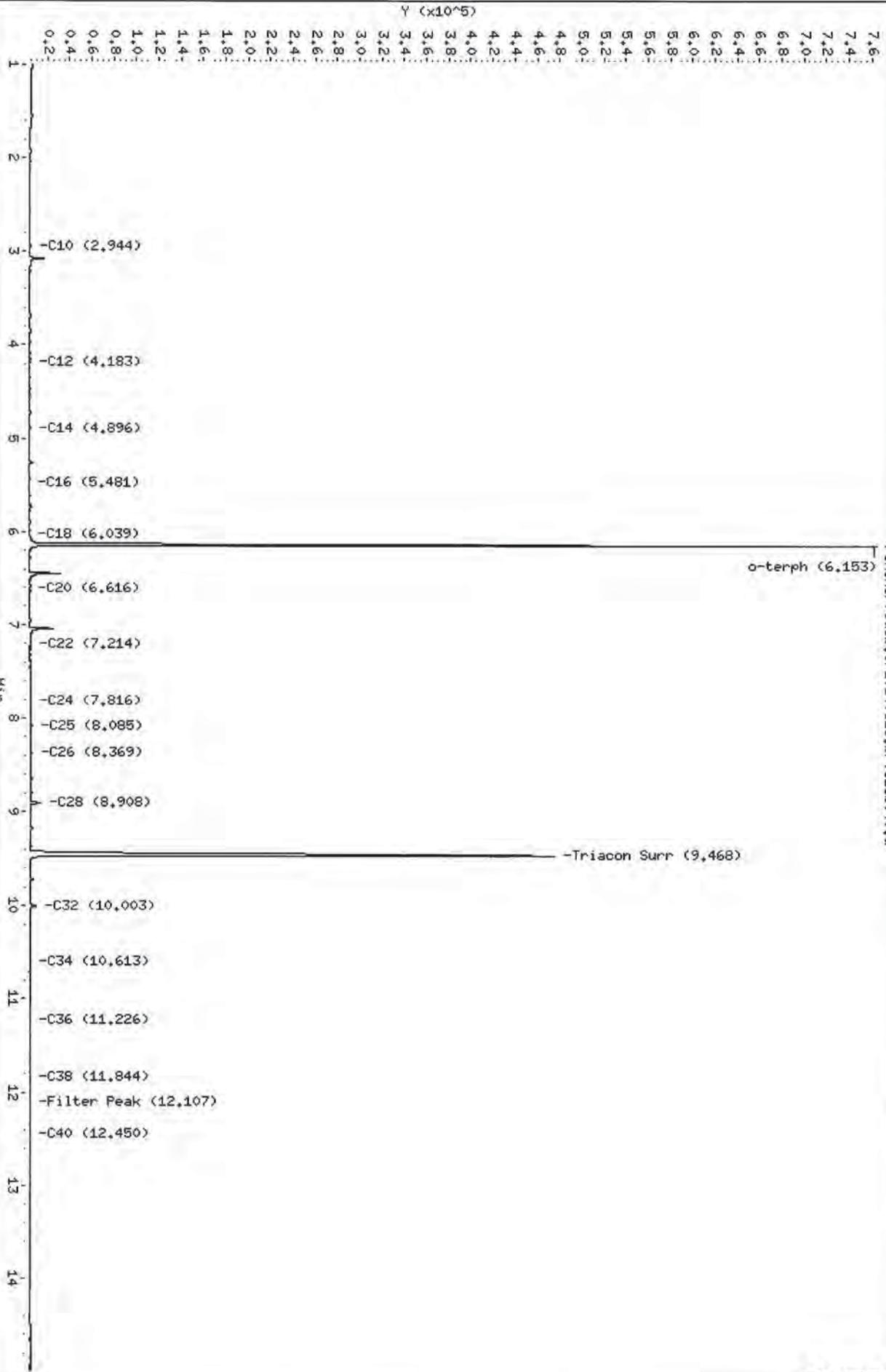
Data File: /chem3/fid3b,1/20140825.b/0825b040.d
Date: 26-AUG-2014 06:05
Client ID: MM9-32,5-33,5
Sample Info: YW77B

Instrument: fid3b,1

Column phase: RTX-1

Operator: JR
Column diameter: 0.25

/chem3/fid3b,1/20140825.b/0825b040.d



YY77B 0825

Data File: /chem3/fid3b.i/20140825.b/0825b043.d

Date: 26-AUG-2014 07:20

Client ID: MW9-38-39

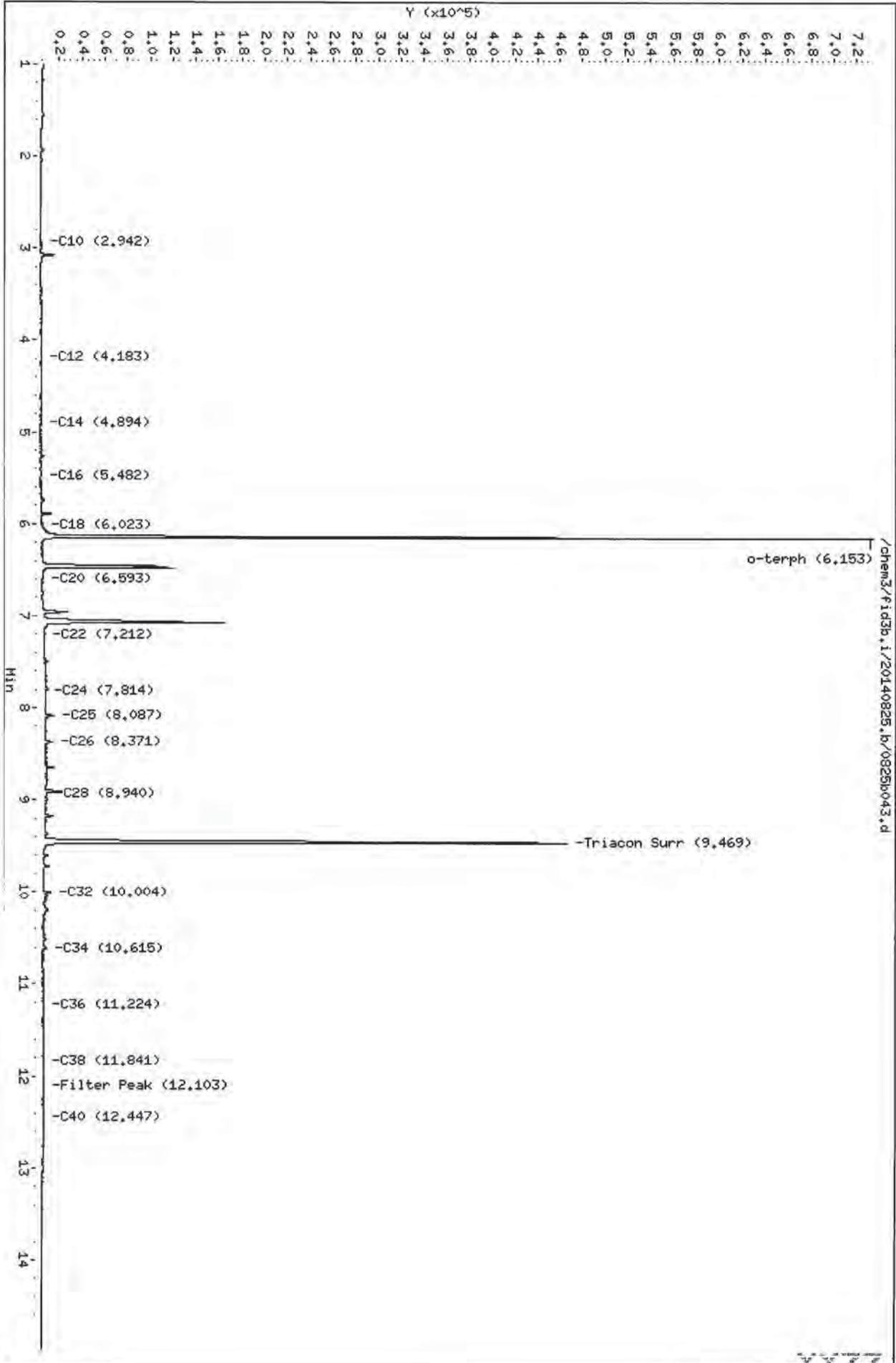
Sample Info: YW77C

Column phase: RTX-1

Instrument: fid3b.1

Operator: JR

Column diameter: 0.25



YY77 0825

Data File: /chem3/fid3b.i/20140825.b/0825b044.d

Date: 26-AUG-2014 07:45

Client ID: MM1-18-19

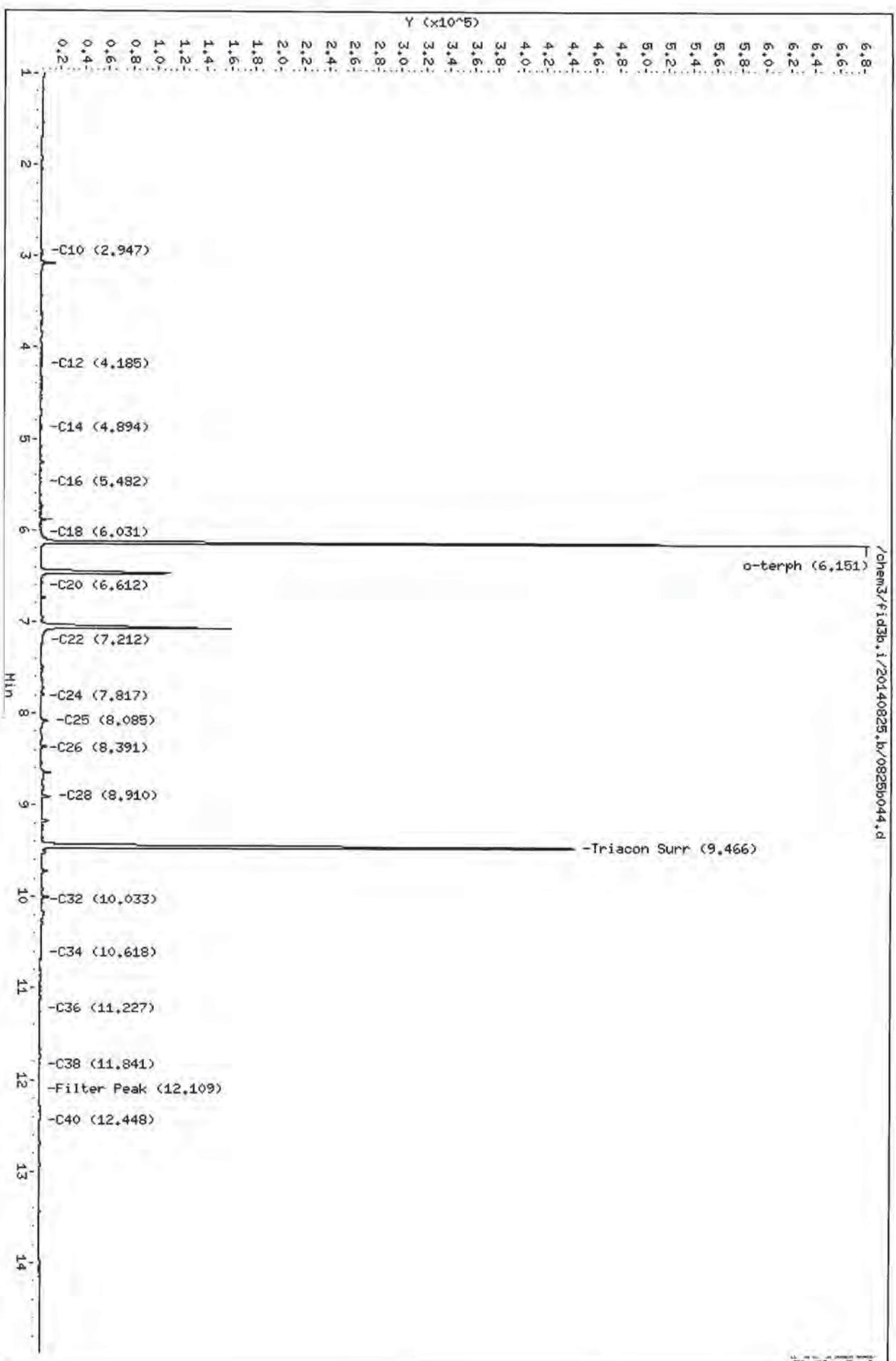
Sample Info: YW77D

Column phaset: RTX-1

Instrument: fid3b.i

Operator: JR

Column diameter: 0.25



YY77 000036

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

A handwritten signature in black ink, appearing to be 'J. Jenks', written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW9-18-19
ARI ID: 14-16946 YW77A

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.492	< 0.492 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	80.59

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized: 
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW9-32.5-33.5
ARI ID: 14-16947 YW77B

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.448	< 0.448 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	87.95

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized: 
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW9-38-39
ARI ID: 14-16948 YW77C

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.471	< 0.471 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	83.34

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

A handwritten signature in black ink, appearing to be 'JK' or similar, written over the 'Data Release Authorized' line.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW11-18-19
ARI ID: 14-16949 YW77D

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.455	< 0.455 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	87.12

RL Analytical reporting limit
U Undetected at reported detection limit
Hexavalent Chrome prepared using Method 3060.

SAMPLE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized
Reported: 08/21/14

A handwritten signature in black ink, appearing to be 'JJA', is written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Client ID: MW100
ARI ID: 14-16950 YW77E

Analyte	Date	Method	Units	RL	Sample
Hexavalent Chromium	08/18/14 081814#1	SW7196A	mg/kg	0.448	< 0.448 U
Total Solids	08/18/14 081814#1	SM2540G	Percent	0.01	86.52

RL Analytical reporting limit
U Undetected at reported detection limit

Hexavalent Chrome prepared using Method 3060.

METHOD BLANK RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized: 
Reported: 08/21/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Hexavalent Chromium	08/18/14	mg/kg	< 0.398 U	PREP
Total Solids	08/18/14	Percent	< 0.01 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

A handwritten signature in black ink, appearing to be a stylized name, located between the matrix information and the project details.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Soluble Hexavalent Chromium	08/18/14	mg/kg	19.4	19.9	97.5%
Insoluble Hexavalent Chromium	08/18/14	mg/kg	431	455	94.7%
Soil Hexavalent Chrome					

REPLICATE RESULTS-CONVENTIONALS
YW77-Kennedy Jenks Consultants, Inc.



Matrix: Soil
Data Release Authorized:
Reported: 08/21/14

A handwritten signature in black ink, appearing to be 'WJ', is written over the 'Data Release Authorized' and 'Reported' lines.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YW77A Client ID: MW9-18-19					
Total Solids	08/18/14	Percent	80.59	80.62	0.0%

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW9-18-19
SAMPLE

Lab Sample ID: YW77A
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized: *EJ*
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 80.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	10	10	
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	1	19	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	6	6	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	10	10	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW9-32.5-33.5

SAMPLE

Lab Sample ID: YW77B

LIMS ID: 14-16947

Matrix: Soil

Data Release Authorized: *[Signature]*

Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/16/14

Date Received: 08/18/14

Percent Total Solids: 88.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	0.5	17.8	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: MW9-38-39
SAMPLE

Lab Sample ID: YW77C
LIMS ID: 14-16948
Matrix: Soil
Data Release Authorized: *EA*
Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 85.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	0.5	32.3	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW11-18-19
SAMPLE

Lab Sample ID: YW77D

LIMS ID: 14-16949

Matrix: Soil

Data Release Authorized: *CF*

Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/16/14

Date Received: 08/18/14

Percent Total Solids: 87.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	6	6	U
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	0.6	38.0	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	6	6	U

U-Analyte undetected at given LOQ

LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW100
SAMPLE

Lab Sample ID: YW77E
LIMS ID: 14-16950
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14



QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/16/14
Date Received: 08/18/14

Percent Total Solids: 88.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	0.5	37.8	
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YW77MB

LIMS ID: 14-16946

Matrix: Soil

Data Release Authorized: *ES*

Reported: 08/27/14

QC Report No: YW77-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/kg-dry	Q
3050B	08/20/14	6010C	08/26/14	7440-38-2	Arsenic	5	5	U
3050B	08/20/14	6010C	08/26/14	7440-47-3	Chromium	0.5	0.5	U
3050B	08/20/14	6010C	08/26/14	7439-92-1	Lead	2	2	U
3050B	08/20/14	6010C	08/26/14	7782-49-2	Selenium	5	5	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YW77LCS
LIMS ID: 14-16946
Matrix: Soil
Data Release Authorized:
Reported: 08/27/14

EJ

QC Report No: YW77-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	210	200	105%	
Chromium	6010C	52.7	50.0	105%	
Lead	6010C	205	200	102%	
Selenium	6010C	208	200	104%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%



Analytical Resources, Incorporated
Analytical Chemists and Consultants

2 September 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YX24

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received six water samples on August 18, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

There were no anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YX24

Enclosures



Cooler Receipt Form

ARI Client: Kennedy/Tenks
 COC No(s): _____ (NA)
 Assigned ARI Job No: YX24

Project Name: Precision Engineering
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No. _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO
 Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
 Time: 1750 5.9
 If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877552

Cooler Accepted by: AT Date: 8/20/14 Time: 1750

Complete custody forms and attach all shipping documents

Log-In Phase:

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

Samples Logged by: AV Date: 8/21/14 Time: 845

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

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

Additional Notes, Discrepancies, & Resolutions:

MW1-1pb MW2=2Lg MW4=2sm MW7=2SM MW8=3pb

By: AV Date: 8/21/14

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

Sample ID Cross Reference Report



ARI Job No: YX24
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. MW1	YX24A	14-17143	Water	08/20/14 15:10	08/20/14 17:50
2. MW2	YX24B	14-17144	Water	08/20/14 17:20	08/20/14 17:50
3. MW4	YX24C	14-17145	Water	08/20/14 13:00	08/20/14 17:50
4. MW4-1	YX24D	14-17146	Water	08/20/14 13:05	08/20/14 17:50
5. MW7	YX24E	14-17147	Water	08/20/14 11:00	08/20/14 17:50
6. MW8	YX24F	14-17148	Water	08/20/14 17:05	08/20/14 17:50



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW1

Page 1 of 2

SAMPLE

Lab Sample ID: YX24A

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17143

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized:

Date Sampled: 08/20/14

Reported: 08/27/14

Date Received: 08/20/14

Instrument/Analyst: NT3/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/23/14 17:04

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	1.5	
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW1

Page 2 of 2

SAMPLE

Lab Sample ID: YX24A

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17143

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 08/23/14 17:04

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	96.2%
Bromofluorobenzene	93.9%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW2

Page 1 of 2

SAMPLE

Lab Sample ID: YX24B

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17144

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: 

Date Sampled: 08/20/14

Reported: 08/27/14

Date Received: 08/20/14

Instrument/Analyst: NT3/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/23/14 17:34

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW2

Page 2 of 2

SAMPLE

Lab Sample ID: YX24B

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17144

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 08/23/14 17:34

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	107%
d8-Toluene	94.4%
Bromofluorobenzene	98.1%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW4

Page 1 of 2

SAMPLE

Lab Sample ID: YX24C

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17145

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized:

Date Sampled: 08/20/14

Reported: 08/27/14

Date Received: 08/20/14

Instrument/Analyst: NT3/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/23/14 18:01

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW4

SAMPLE



Lab Sample ID: YX24C

LIMS ID: 14-17145

Matrix: Water

Date Analyzed: 08/23/14 18:01

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	93.2%
Bromofluorobenzene	90.3%
d4-1,2-Dichlorobenzene	99.7%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW4-1

Page 1 of 2

SAMPLE

Lab Sample ID: YX24D

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17146

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *JB*

Date Sampled: 08/20/14

Reported: 08/27/14

Date Received: 08/20/14

Instrument/Analyst: NT3/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/23/14 18:29

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	1.0	< 1.0	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	2.0	< 2.0	U
67-64-1	Acetone	10	< 10	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	5.0	< 5.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	< 2.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW4-1

Page 2 of 2

SAMPLE

Lab Sample ID: YX24D

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17146

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 08/23/14 18:29

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	10	< 10	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	2.0	< 2.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	5.0	< 5.0	U
96-18-4	1,2,3-Trichloropropane	2.0	< 2.0	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	5.0	< 5.0	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	5.0	< 5.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	< 5.0	U
91-20-3	Naphthalene	5.0	< 5.0	U
87-61-6	1,2,3-Trichlorobenzene	5.0	< 5.0	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	98.5%
Bromofluorobenzene	90.8%
d4-1,2-Dichlorobenzene	99.3%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW7

Page 1 of 2

SAMPLE

Lab Sample ID: YX24E

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17147

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized:

Date Sampled: 08/20/14

Reported: 08/27/14

Date Received: 08/20/14

Instrument/Analyst: NT3/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/23/14 18:59

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW7

Page 2 of 2

SAMPLE

Lab Sample ID: YX24E

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17147

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 08/23/14 18:59

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	92.8%
Bromofluorobenzene	94.7%
d4-1,2-Dichlorobenzene	103%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW8

Page 1 of 2

SAMPLE

Lab Sample ID: YX24F

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17148

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *B*

Date Sampled: 08/20/14

Reported: 08/27/14

Date Received: 08/20/14

Instrument/Analyst: NT3/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/23/14 19:29

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW8

SAMPLE



Lab Sample ID: YX24F

LIMS ID: 14-17148

Matrix: Water

Date Analyzed: 08/23/14 19:29

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	95.8%
Bromofluorobenzene	93.7%
d4-1,2-Dichlorobenzene	102%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-082314A

Page 1 of 2

METHOD BLANK

Lab Sample ID: MB-082314A

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17144

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized:

Date Sampled: NA

Reported: 08/27/14

Date Received: NA

Instrument/Analyst: NT3/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/23/14 11:20

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-082314A

Page 2 of 2

METHOD BLANK

Lab Sample ID: MB-082314A

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17144

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 08/23/14 11:20

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	0.70	
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	96.2%
Bromofluorobenzene	94.4%
d4-1,2-Dichlorobenzene	102%



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LCS-082314A
LAB CONTROL SAMPLE

Lab Sample ID: LCS-082314A
LIMS ID: 14-17144
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 08/27/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT3/LH
LCSD: NT3/LH
Date Analyzed LCS: 08/23/14 10:24
LCSD: 08/23/14 10:52

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	8.15	10.0	81.5%	8.38	10.0	83.8%	2.8%
Bromomethane	8.14	10.0	81.4%	8.72	10.0	87.2%	6.9%
Vinyl Chloride	8.35	10.0	83.5%	8.54	10.0	85.4%	2.2%
Chloroethane	8.54	10.0	85.4%	8.25	10.0	82.5%	3.5%
Methylene Chloride	9.05	10.0	90.5%	9.37	10.0	93.7%	3.5%
Acetone	42.7	50.0	85.4%	43.6	50.0	87.2%	2.1%
Carbon Disulfide	8.69	10.0	86.9%	8.89	10.0	88.9%	2.3%
1,1-Dichloroethene	8.48	10.0	84.8%	8.97	10.0	89.7%	5.6%
1,1-Dichloroethane	8.90	10.0	89.0%	8.83	10.0	88.3%	0.8%
trans-1,2-Dichloroethene	8.75	10.0	87.5%	8.93	10.0	89.3%	2.0%
cis-1,2-Dichloroethene	8.59	10.0	85.9%	8.79	10.0	87.9%	2.3%
Chloroform	9.17	10.0	91.7%	9.25	10.0	92.5%	0.9%
1,2-Dichloroethane	9.36	10.0	93.6%	9.52	10.0	95.2%	1.7%
2-Butanone	43.6	50.0	87.2%	45.2	50.0	90.4%	3.6%
1,1,1-Trichloroethane	9.57	10.0	95.7%	9.63	10.0	96.3%	0.6%
Carbon Tetrachloride	9.81	10.0	98.1%	9.88	10.0	98.8%	0.7%
Vinyl Acetate	8.11	10.0	81.1%	8.43	10.0	84.3%	3.9%
Bromodichloromethane	9.31	10.0	93.1%	9.58	10.0	95.8%	2.9%
1,2-Dichloropropane	8.14	10.0	81.4%	8.43	10.0	84.3%	3.5%
cis-1,3-Dichloropropene	9.07	10.0	90.7%	9.07	10.0	90.7%	0.0%
Trichloroethene	8.61	10.0	86.1%	8.85	10.0	88.5%	2.7%
Dibromochloromethane	9.62	10.0	96.2%	10.0	10.0	100%	3.9%
1,1,2-Trichloroethane	8.58	10.0	85.8%	8.55	10.0	85.5%	0.4%
Benzene	9.03	10.0	90.3%	8.95	10.0	89.5%	0.9%
trans-1,3-Dichloropropene	8.77	10.0	87.7%	9.48	10.0	94.8%	7.8%
2-Chloroethylvinylether	9.01	10.0	90.1%	9.17	10.0	91.7%	1.8%
Bromoform	10.3	10.0	103%	10.4	10.0	104%	1.0%
4-Methyl-2-Pentanone (MIBK)	44.7	50.0	89.4%	45.9	50.0	91.8%	2.6%
2-Hexanone	48.0	50.0	96.0%	48.9	50.0	97.8%	1.9%
Tetrachloroethene	8.58	10.0	85.8%	9.28	10.0	92.8%	7.8%
1,1,2,2-Tetrachloroethane	9.51	10.0	95.1%	9.15	10.0	91.5%	3.9%
Toluene	9.16	10.0	91.6%	9.40	10.0	94.0%	2.6%
Chlorobenzene	9.71	10.0	97.1%	9.87	10.0	98.7%	1.6%
Ethylbenzene	9.82	10.0	98.2%	10.1	10.0	101%	2.8%
Styrene	9.87	10.0	98.7%	10.1	10.0	101%	2.3%
Trichlorofluoromethane	11.1	10.0	111%	9.68	10.0	96.8%	13.7%
1,1,2-Trichloro-1,2,2-trifluoroethane	9.65	10.0	96.5%	9.65	10.0	96.5%	0.0%
m,p-Xylene	19.8	20.0	99.0%	20.5	20.0	102%	3.5%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: LCS-082314A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082314A

LIMS ID: 14-17144

Matrix: Water

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.66	10.0	96.6%	10.0	10.0	100%	3.5%
1,2-Dichlorobenzene	9.33	10.0	93.3%	9.15	10.0	91.5%	1.9%
1,3-Dichlorobenzene	9.20	10.0	92.0%	9.06	10.0	90.6%	1.5%
1,4-Dichlorobenzene	8.96	10.0	89.6%	8.86	10.0	88.6%	1.1%
Acrolein	40.7	50.0	81.4%	44.2	50.0	88.4%	8.2%
Iodomethane	8.76	10.0	87.6%	8.34	10.0	83.4%	4.9%
Bromoethane	8.65	10.0	86.5%	9.03	10.0	90.3%	4.3%
Acrylonitrile	9.13	10.0	91.3%	8.82	10.0	88.2%	3.5%
1,1-Dichloropropene	8.79	10.0	87.9%	9.01	10.0	90.1%	2.5%
Dibromomethane	9.81	10.0	98.1%	9.94	10.0	99.4%	1.3%
1,1,1,2-Tetrachloroethane	9.93	10.0	99.3%	10.7	10.0	107%	7.5%
1,2-Dibromo-3-chloropropane	9.71	10.0	97.1%	10.1	10.0	101%	3.9%
1,2,3-Trichloropropane	9.89	10.0	98.9%	9.35	10.0	93.5%	5.6%
trans-1,4-Dichloro-2-butene	9.08	10.0	90.8%	8.94	10.0	89.4%	1.6%
1,3,5-Trimethylbenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
1,2,4-Trimethylbenzene	10.3	10.0	103%	10.4	10.0	104%	1.0%
Hexachlorobutadiene	10.2 B	10.0	102%	9.79 B	10.0	97.9%	4.1%
1,2-Dibromoethane	8.69	10.0	86.9%	8.43	10.0	84.3%	3.0%
Bromochloromethane	9.38	10.0	93.8%	10.1	10.0	101%	7.4%
2,2-Dichloropropane	9.77	10.0	97.7%	9.91	10.0	99.1%	1.4%
1,3-Dichloropropane	9.39	10.0	93.9%	9.57	10.0	95.7%	1.9%
Isopropylbenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
n-Propylbenzene	10.1	10.0	101%	10.2	10.0	102%	1.0%
Bromobenzene	9.84	10.0	98.4%	9.68	10.0	96.8%	1.6%
2-Chlorotoluene	11.2	10.0	112%	11.1	10.0	111%	0.9%
4-Chlorotoluene	10.2	10.0	102%	10.1	10.0	101%	1.0%
tert-Butylbenzene	9.52	10.0	95.2%	9.53	10.0	95.3%	0.1%
sec-Butylbenzene	10.2	10.0	102%	9.98	10.0	99.8%	2.2%
4-Isopropyltoluene	9.52	10.0	95.2%	9.66	10.0	96.6%	1.5%
n-Butylbenzene	9.76	10.0	97.6%	9.97	10.0	99.7%	2.1%
1,2,4-Trichlorobenzene	8.94	10.0	89.4%	8.37	10.0	83.7%	6.6%
Naphthalene	9.78	10.0	97.8%	8.89	10.0	88.9%	9.5%
1,2,3-Trichlorobenzene	8.79	10.0	87.9%	8.05	10.0	80.5%	8.8%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	105%	103%
d8-Toluene	93.3%	95.0%
Bromofluorobenzene	96.5%	95.1%
d4-1,2-Dichlorobenzene	96.0%	99.9%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
YX24A	MW1	10	108%	96.2%	93.9%	102%	0
MB-082314A	Method Blank	10	110%	96.2%	94.4%	102%	0
LCS-082314A	Lab Control	10	105%	93.3%	96.5%	96.0%	0
LCSD-082314A	Lab Control Dup	10	103%	95.0%	95.1%	99.9%	0
YX24B	MW2	10	107%	94.4%	98.1%	103%	0
YX24C	MW4	10	110%	93.2%	90.3%	99.7%	0
YX24D	MW4-1	10	110%	98.5%	90.8%	99.3%	0
YX24E	MW7	10	109%	92.8%	94.7%	103%	0
YX24F	MW8	10	113%	95.8%	93.7%	102%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane
 (TOL) = d8-Toluene
 (BFB) = Bromofluorobenzene
 (DCB) = d4-1,2-Dichlorobenzene

(80-120)
 (80-120)
 (80-120)
 (80-120)

(80-130)
 (80-120)
 (80-120)
 (80-120)

Prep Method: SW5030B
 Log Number Range: 14-17143 to 14-17148

Matrix: Water

Date Received: 08/20/14

Data Release Authorized: *mw*
 Reported: 09/02/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-082514 14-17143	Method Blank HC ID: ---	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 61.6%
YX24A 14-17143	MW1 HC ID: ---	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 77.7%
YX24B 14-17144	MW2 HC ID: DIESEL/RRO	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.49 0.49 59.7%
YX24C 14-17145	MW4 HC ID: ---	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 75.6%
YX24D 14-17146	MW4-1 HC ID: ---	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 64.8%
YX24E 14-17147	MW7 HC ID: DRO	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.14 < 0.20 U 68.2%
YX24F 14-17148	MW8 HC ID: DRO/RRO	08/25/14	08/29/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.44 0.38 62.6%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
 DL-Dilution of extract prior to analysis.
 RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
 Motor Oil range quantitation on total peaks in the range from C24 to C38.
 HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-082514	61.6%	0
LCS-082514	71.2%	0
LCSD-082514	70.2%	0
MW1	77.7%	0
MW2	59.7%	0
MW4	75.6%	0
MW4-1	64.8%	0
MW7	68.2%	0
MW8	62.6%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3510C
Log Number Range: 14-17143 to 14-17148

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-082514
LCS/LCSD

Lab Sample ID: LCS-082514
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 09/02/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 08/25/14
Date Analyzed LCS: 08/29/14 14:15
LCSD: 08/29/14 14:40
Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.22	3.00	74.0%	2.20	3.00	73.3%	0.9%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	71.2%	70.2%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/20/14

ARI Job: YX24
Project: Precision Engineering
1396024*00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-17143-082514MB1	Method Blank	500 mL	1.00 mL	08/25/14
14-17143-082514LCS1	Lab Control	500 mL	1.00 mL	08/25/14
14-17143-082514LCSD1	Lab Control Dup	500 mL	1.00 mL	08/25/14
14-17143-YX24A	MW1	500 mL	1.00 mL	08/25/14
14-17144-YX24B	MW2	500 mL	1.00 mL	08/25/14
14-17145-YX24C	MW4	500 mL	1.00 mL	08/25/14
14-17146-YX24D	MW4-1	500 mL	1.00 mL	08/25/14
14-17147-YX24E	MW7	500 mL	1.00 mL	08/25/14
14-17148-YX24F	MW8	500 mL	1.00 mL	08/25/14

Data File: /chem3/fid3b.i/20140829.b/08290007.d

Date: 29-AUG-2014 13:50

Client ID: YX24HBM1

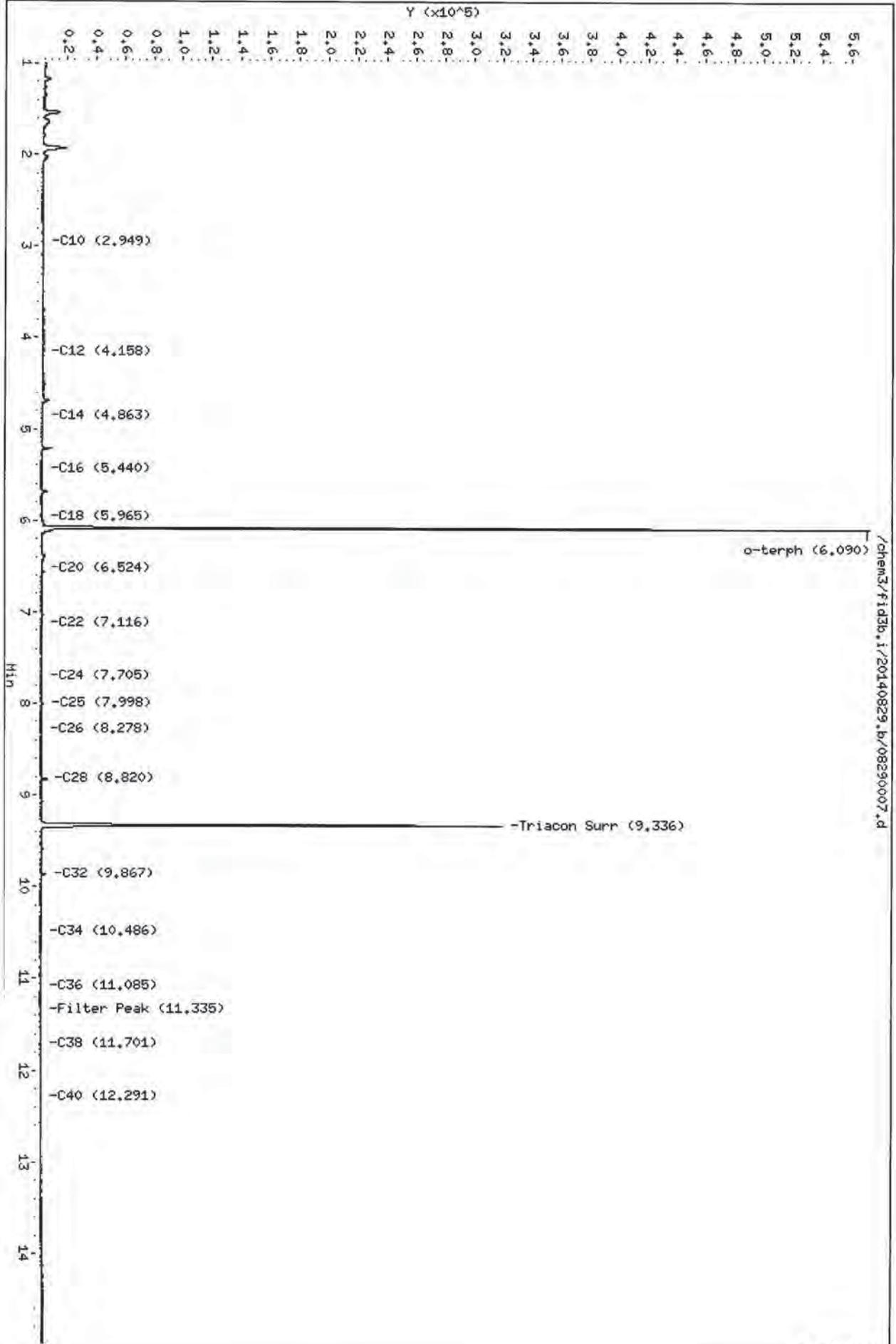
Sample Info: YX24HBM1

Column phase: RTX-1

Instrument: fid3b.i

Operator: JM

Column diameter: 0.25



YX24 08290007

Data File: /chem3/fid3b.i/20140829.b/08290008.d

Date: 29-AUG-2014 14:15

Client ID: YX24LCSM4

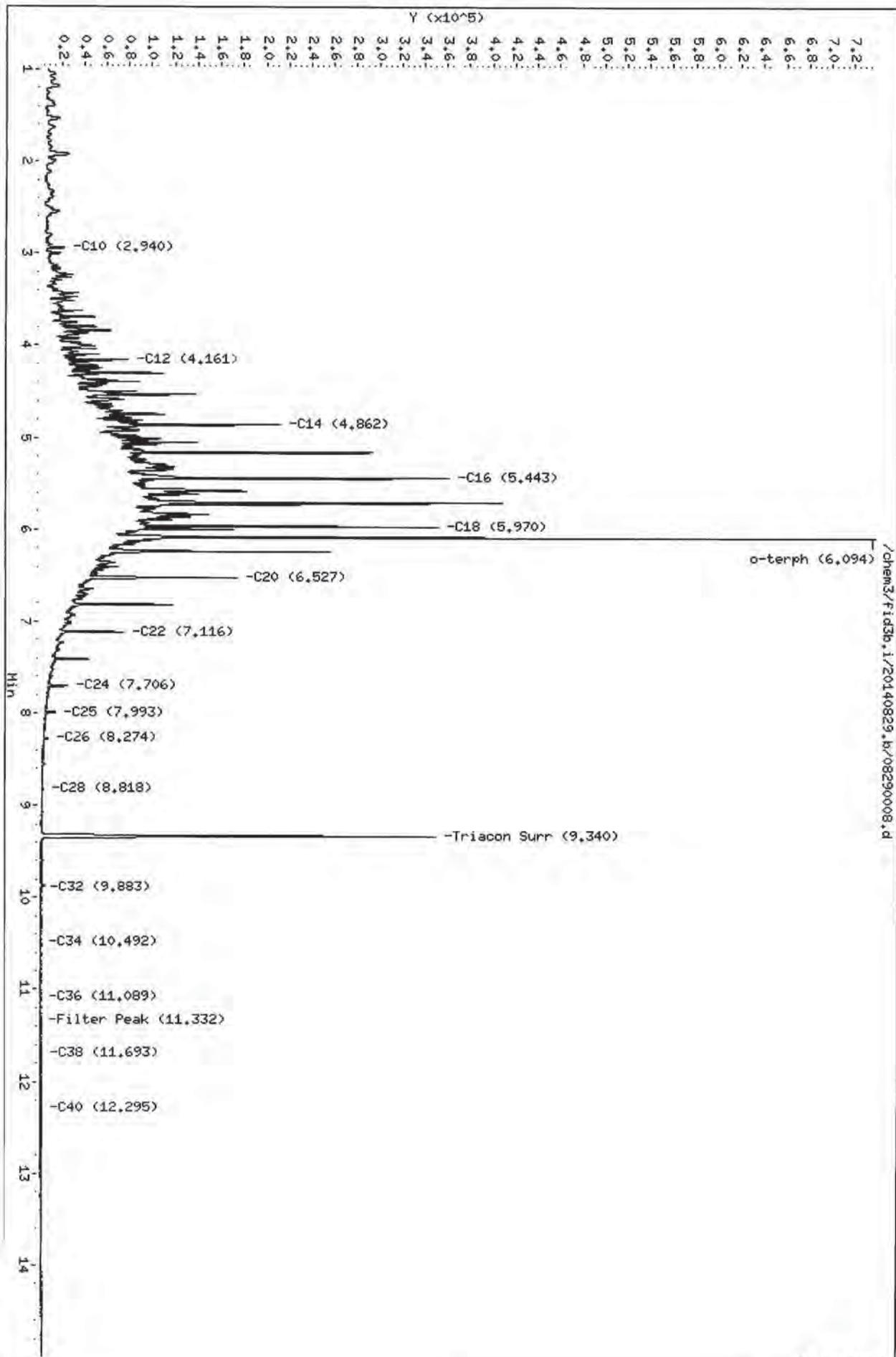
Sample Info: YX24LCSM4

Column phase: RTX-1

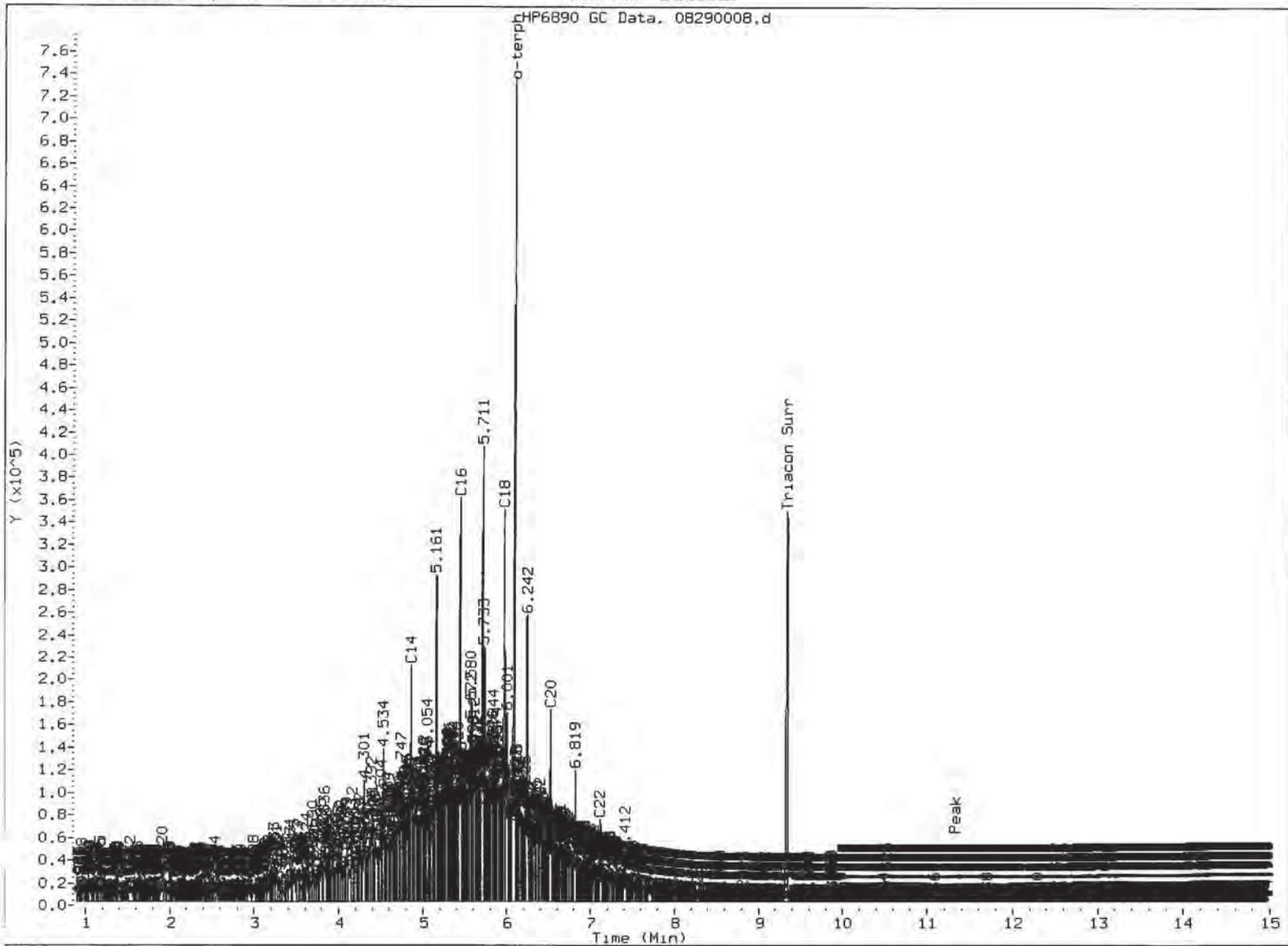
Instrument: fid3b.i

Operator: JM

Column diameter: 0.25



YX24 000000



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- ⑤ Skimmed surrogate

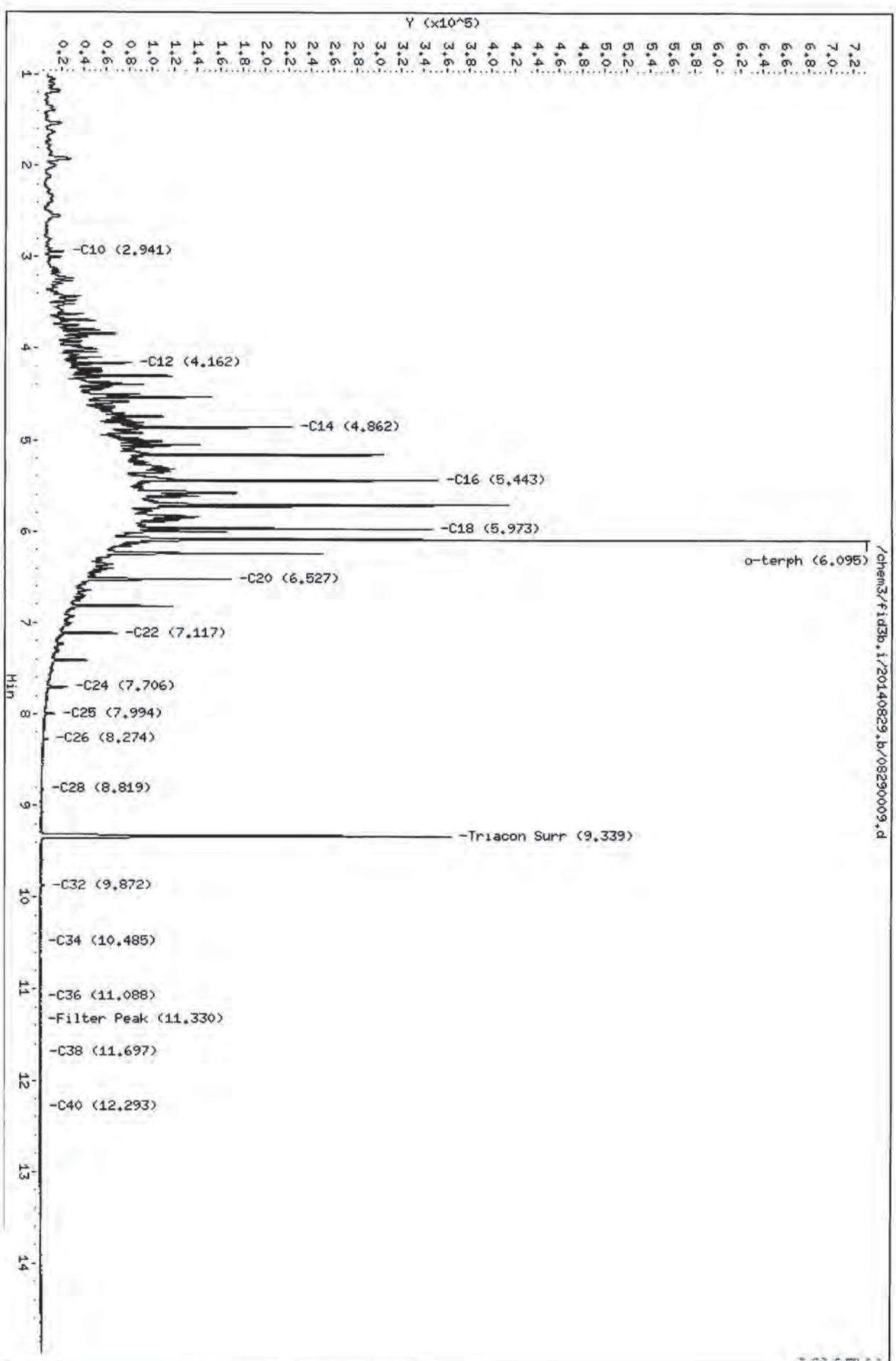
Analyst: JW

Date: 9/1/14

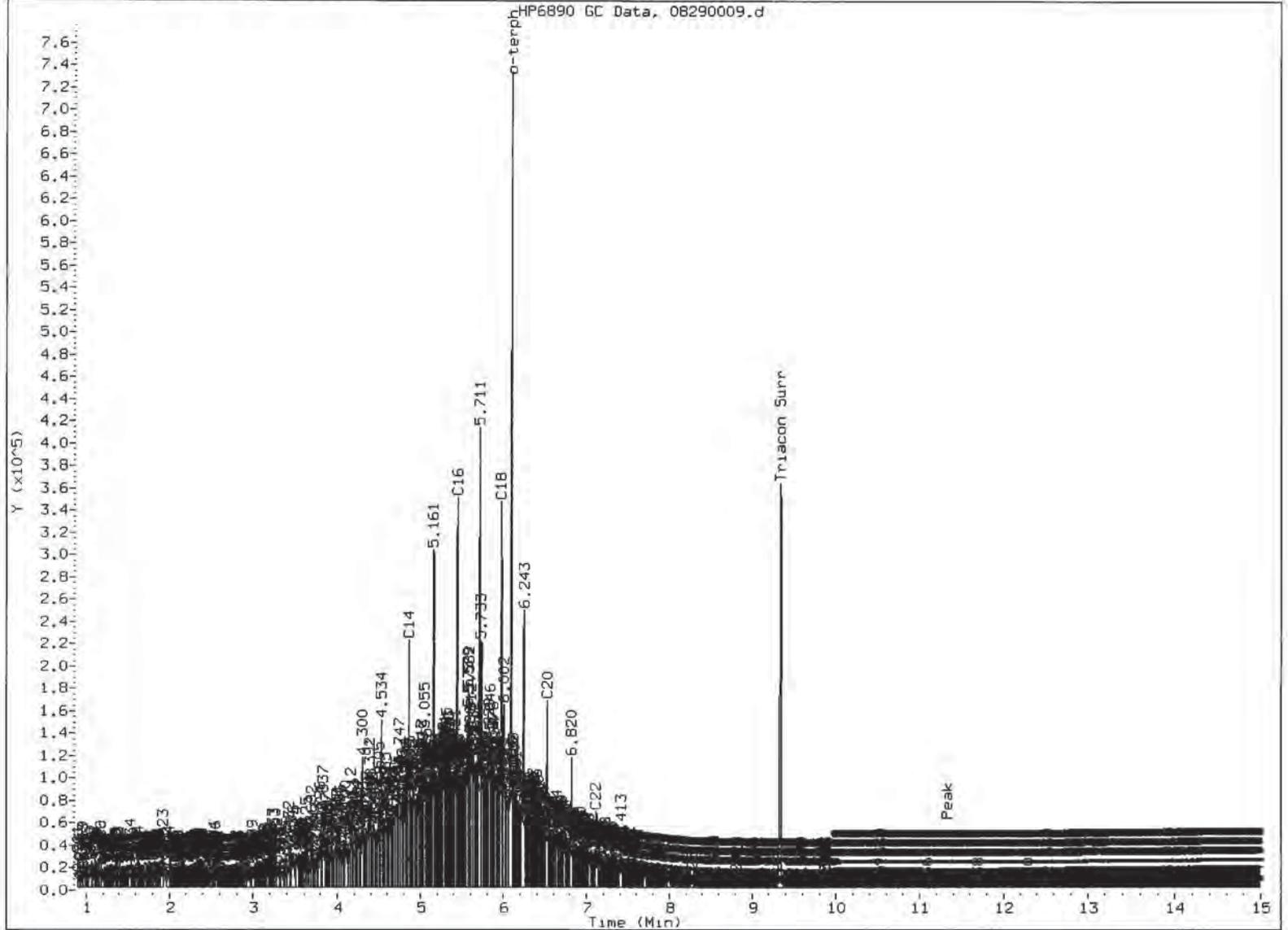
Data File: /chem3/fid3b.i/20140829.b/08290009.d
Date: 29-AUG-2014 14:40
Client ID: YX24LCSDM4
Sample Info: YX24LCSDM4

Column phase: RTX-1

Instrument: fid3b.i
Operator: JM
Column diameter: 0.25



YX24 0829



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skimmed surrogate

Analyst: JW

Date: 9/1/11

Data File: /chem3/fid3b.i/20140829.b/08290010.d

Date: 29-AUG-2014 15:06

Client ID: HMI

Sample Info: YX244

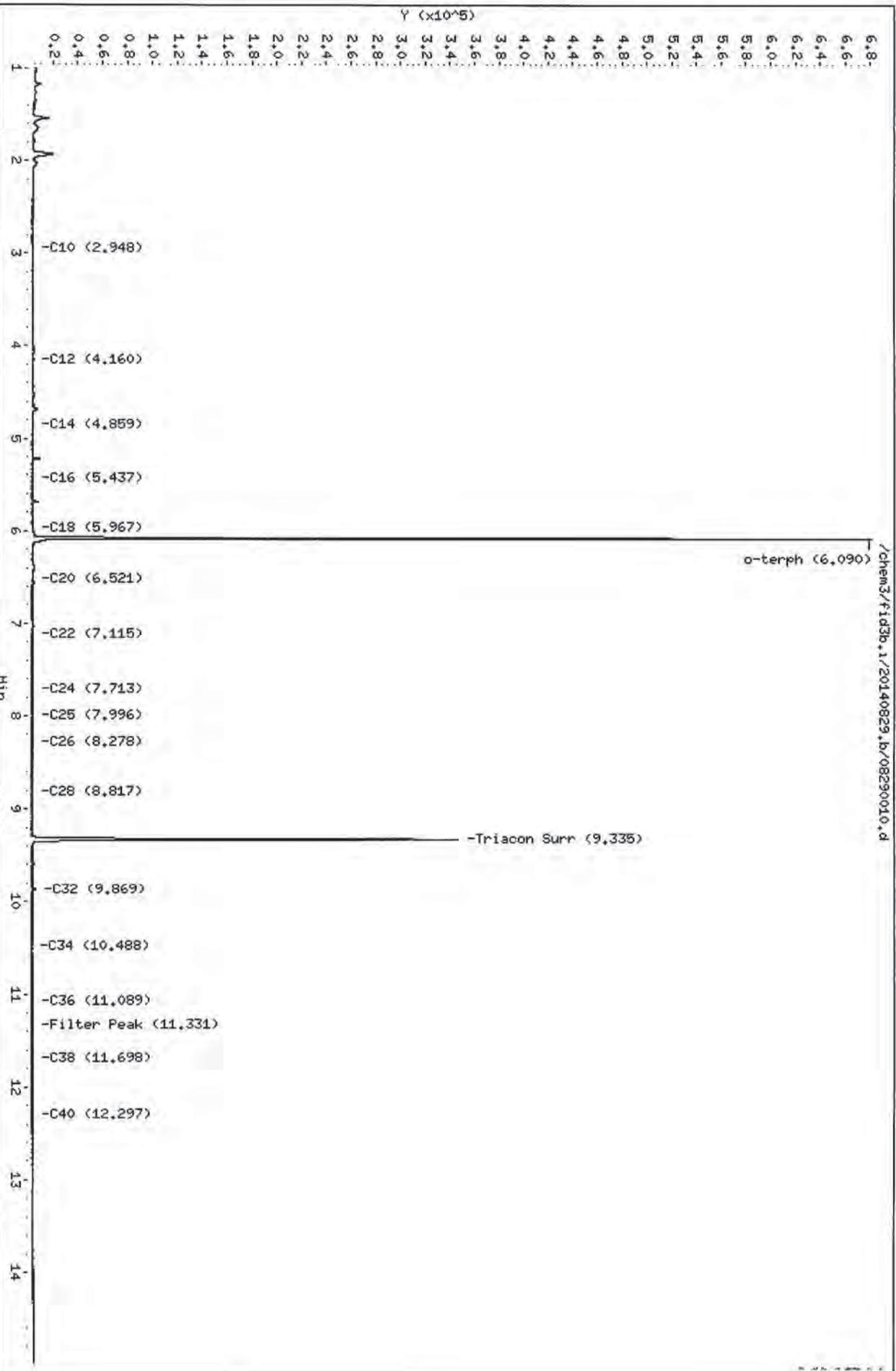
Column phase: RTX-1

Instrument: fid3b.i

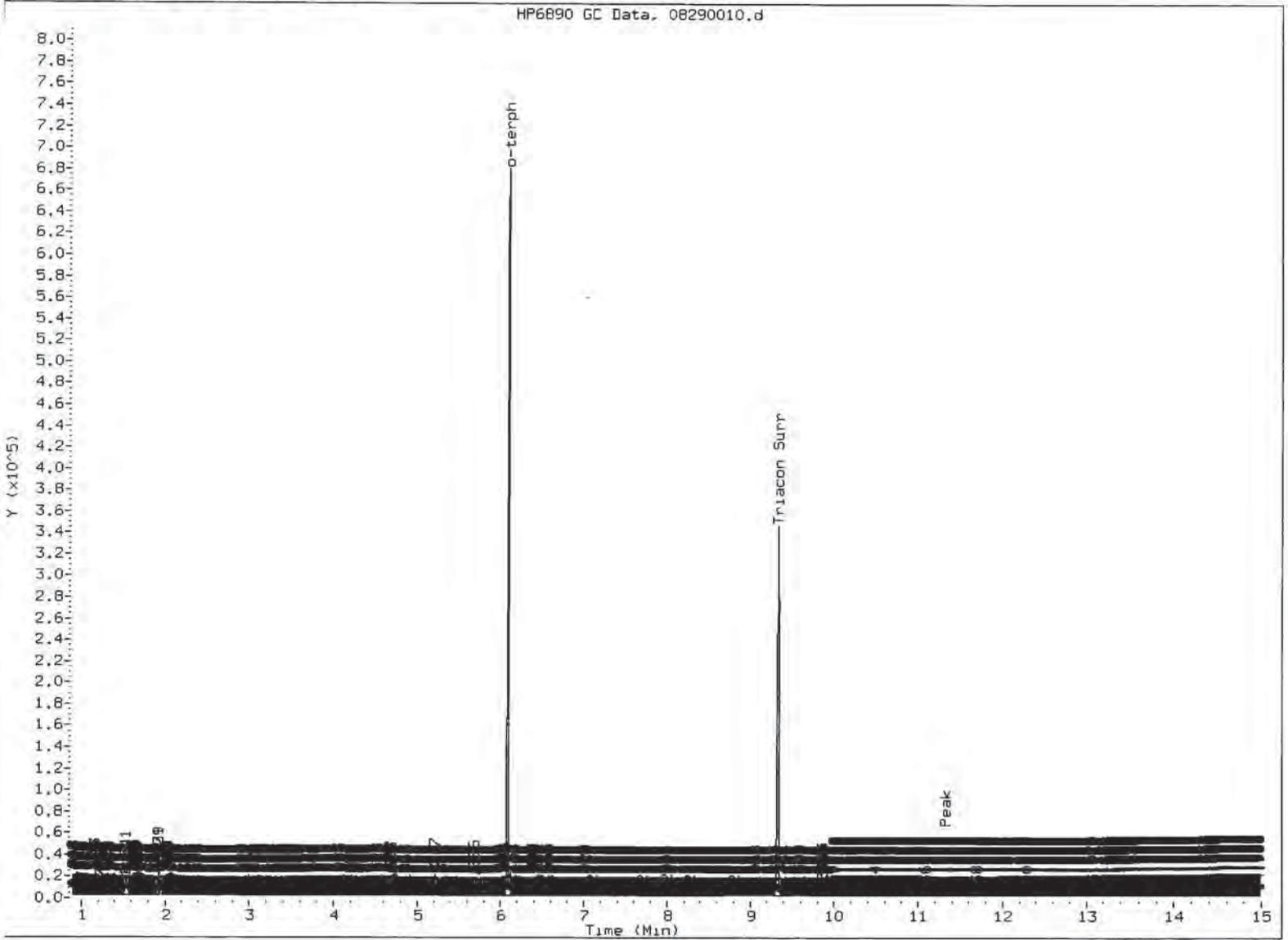
Operator: JM

Column diameter: 0.25

Page 1



YX244 0829



MANUAL INTEGRATION

- ①. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: SW

Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290011.d

Date: 29-AUG-2014 15:31

Client ID: MN2

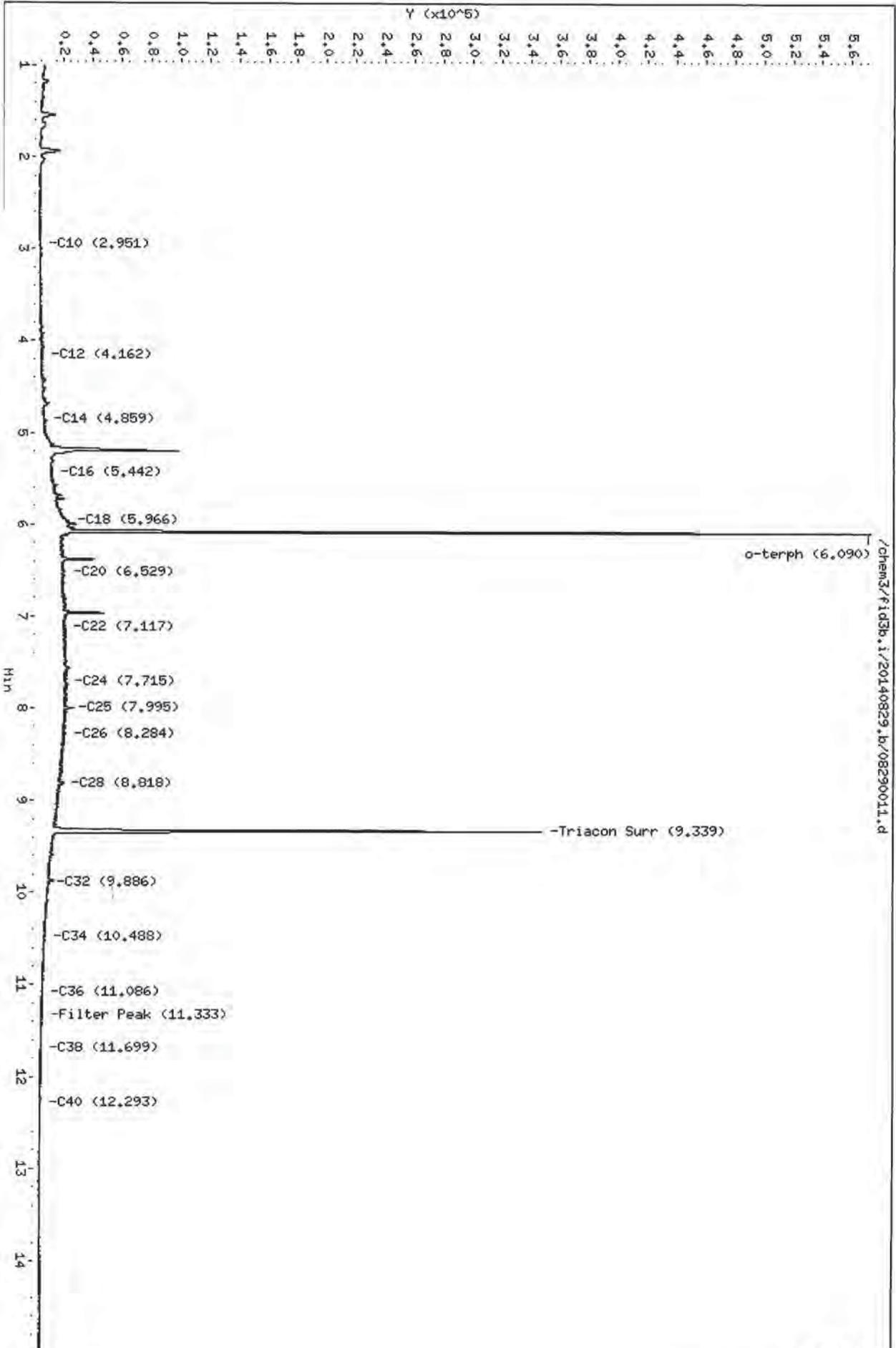
Sample Info: YX24B

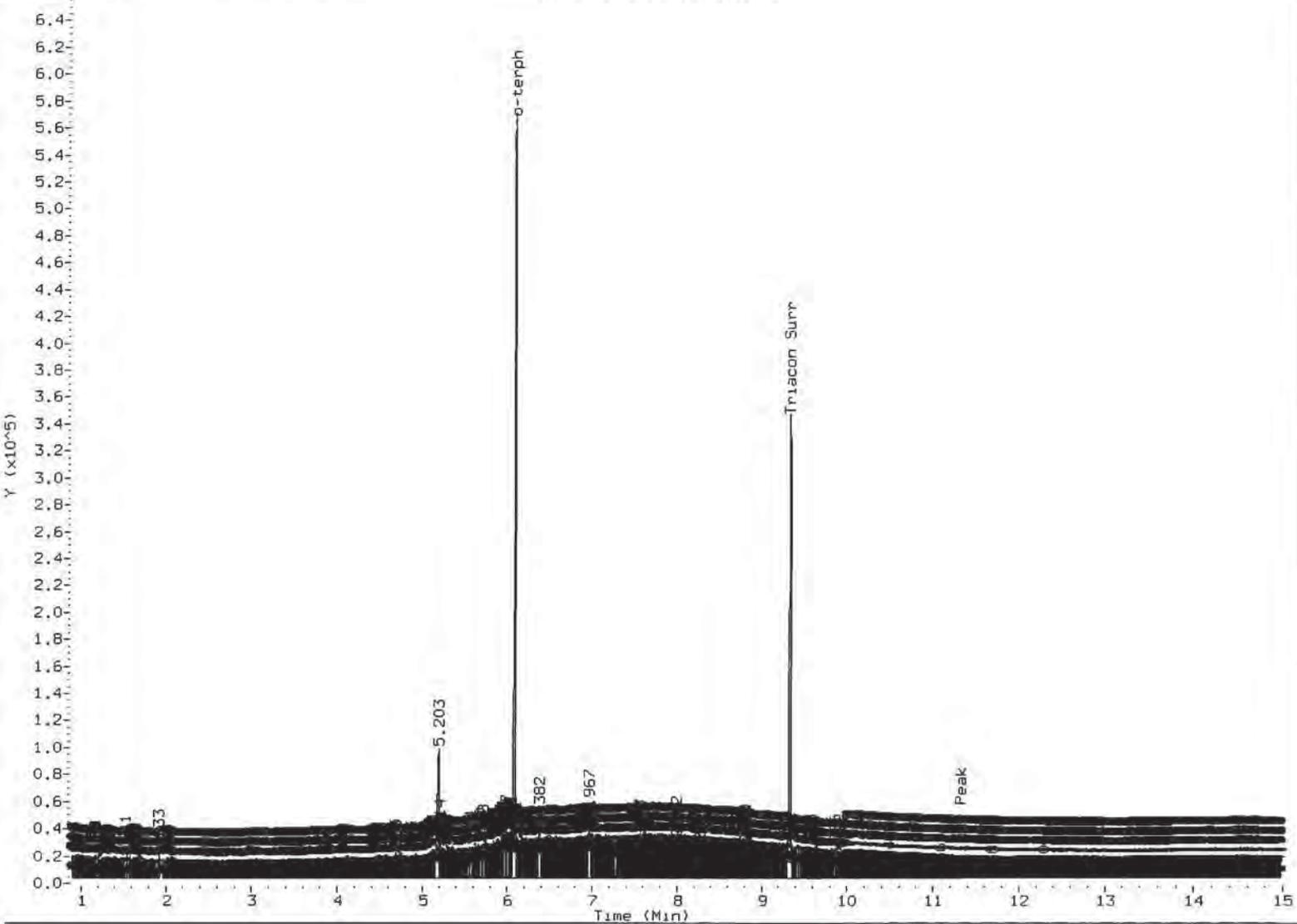
Column phase: RTX-1

Instrument: fid3b.1

Operator: JM

Column diameter: 0.25





MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: JW

Date: 9/1/14

Data File: /chem3/fid3b.i/20140829.b/08290012.d

Date: 29-AUG-2014 15:57

Client ID: MM4

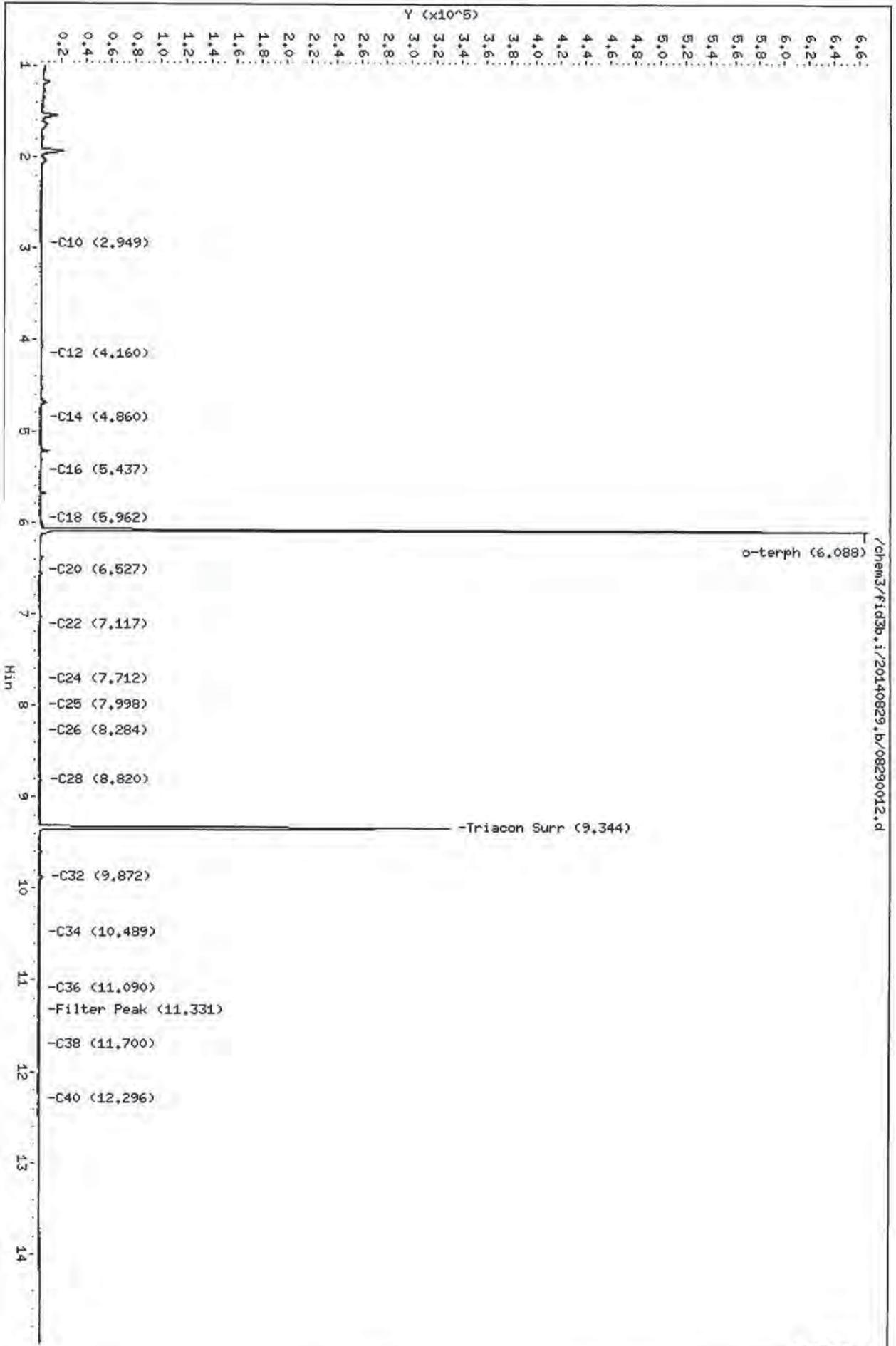
Sample Info: YX24C

Column phase: RTX-1

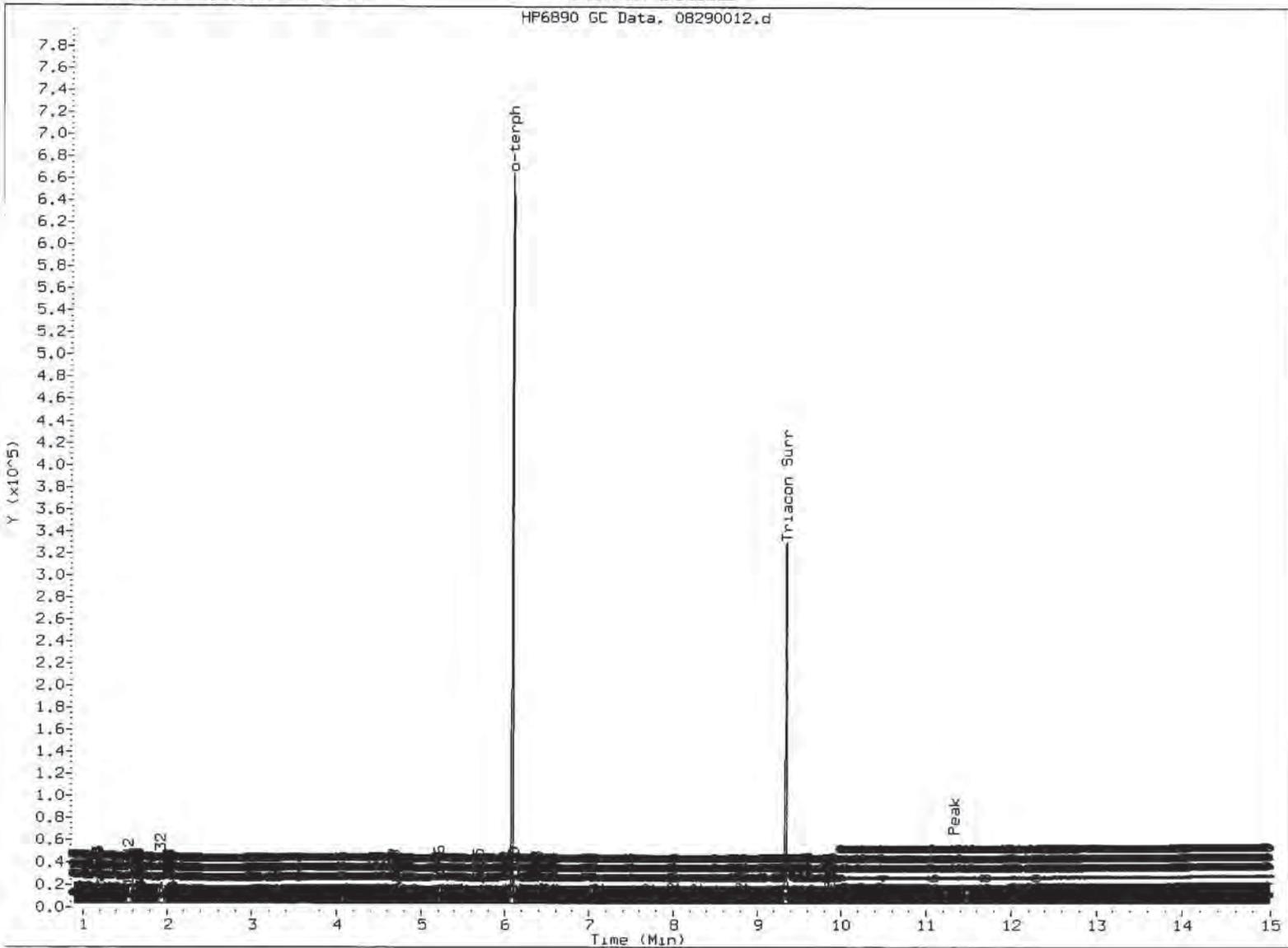
Instrument: fid3b.i

Operator: JM

Column diameter: 0.25



YX24 08290012



MANUAL INTEGRATION

- 1. Baseline correction
- 3. Peak not found
- 5. Skipped surrogate

Analyst: TW

Date: 9/1/14

Data File: /chem3/fid3b,1/20140829,b/08290013.d

Date: 29-AUG-2014 16:22

Client ID: MM4-1

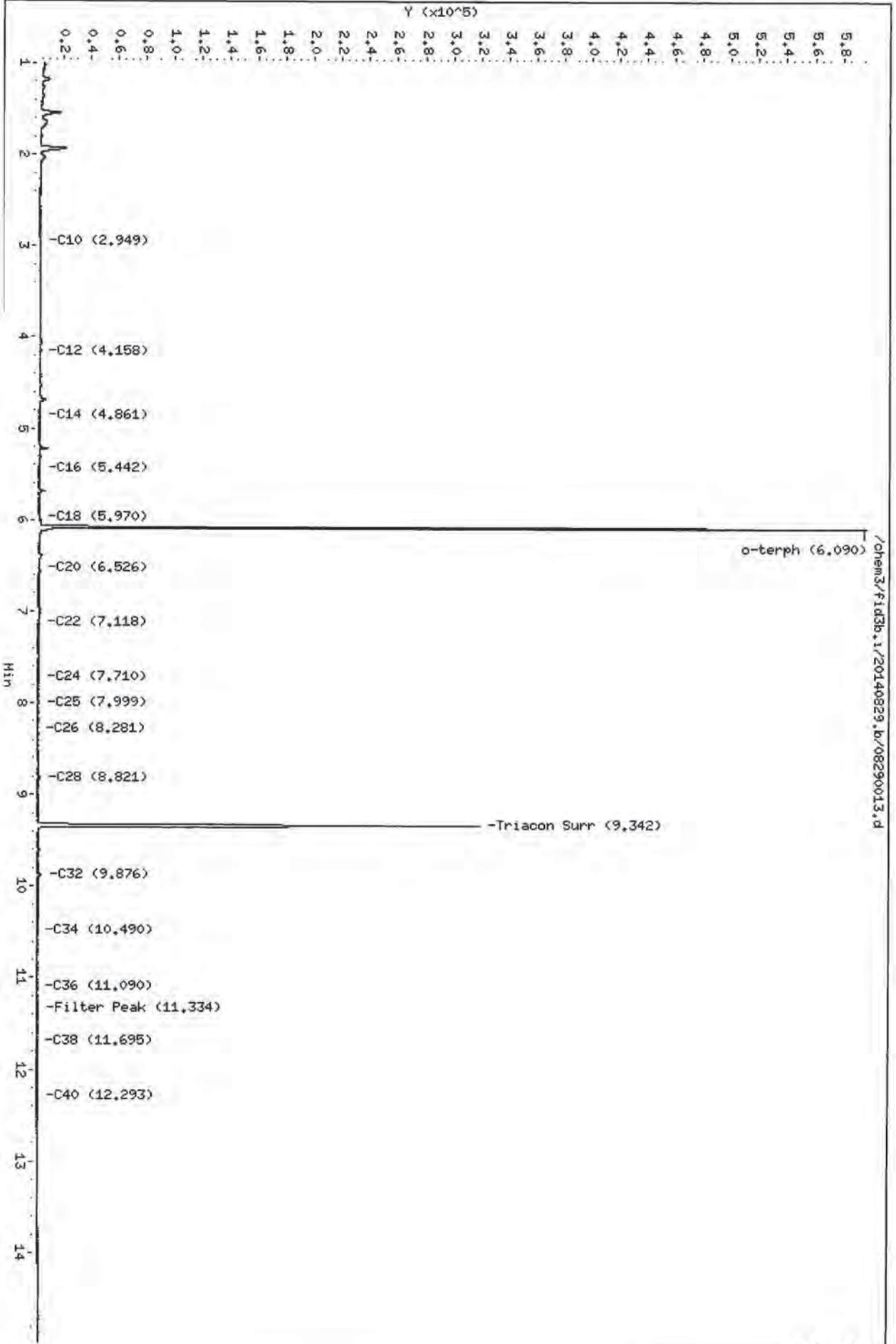
Sample Info: YX24D

Column phase: RTX-1

Instrument: fid3b,1

Operator: JM

Column diameter: 0.25



YX24D

Data File: /chem3/fid3b.i/20140829.b/08290014.d

Date: 29-AUG-2014 16:48

Client ID: HM7

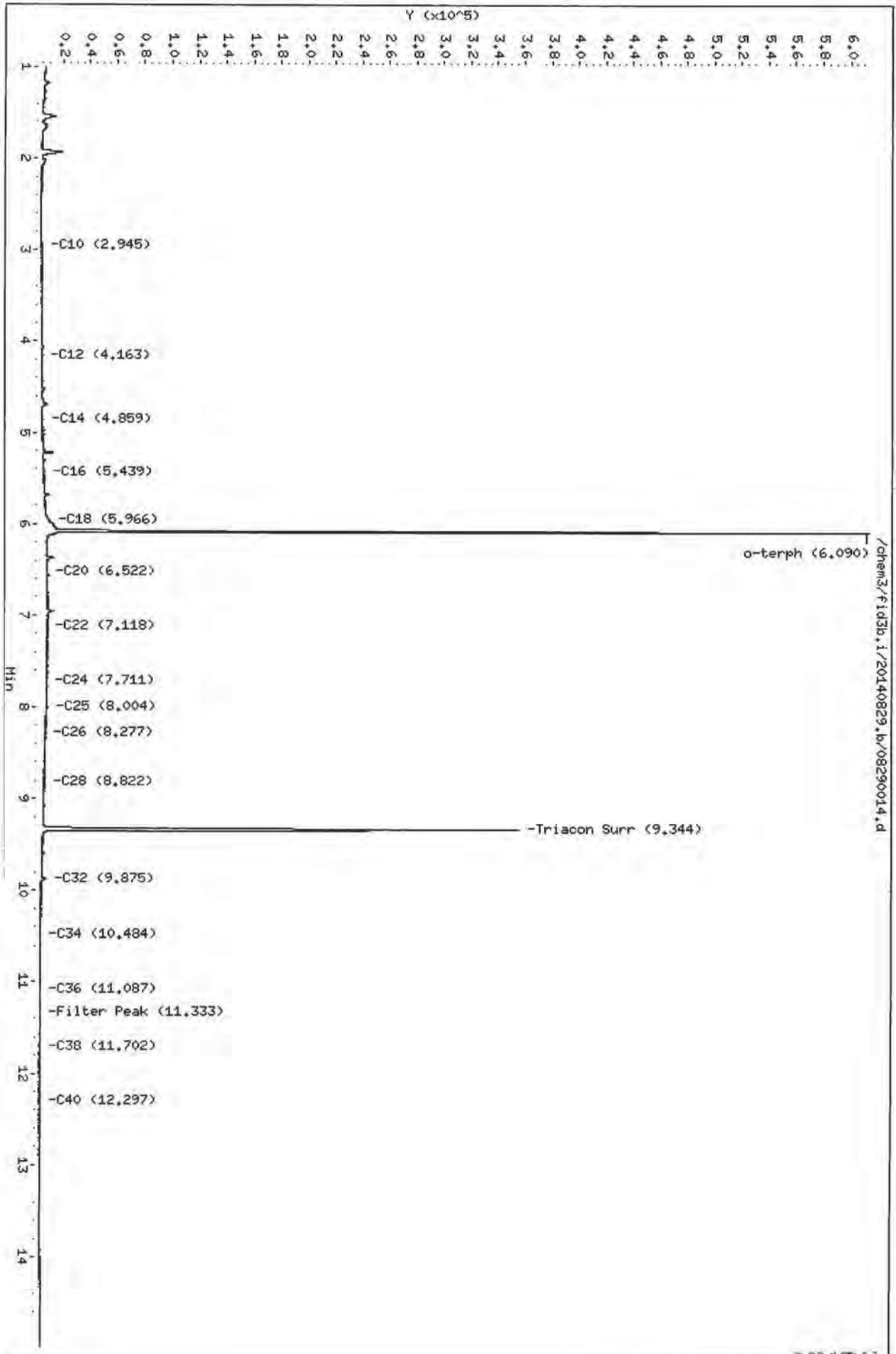
Sample Info: YX24E

Column phase: RTX-1

Instrument: fid3b.i

Operator: JM

Column diameter: 0.25



YX24E 08290014

Data File: /chem3/fid3b.i/20140829.b/08290015.d

Date: 29-AUG-2014 17:13

Client ID: HHS

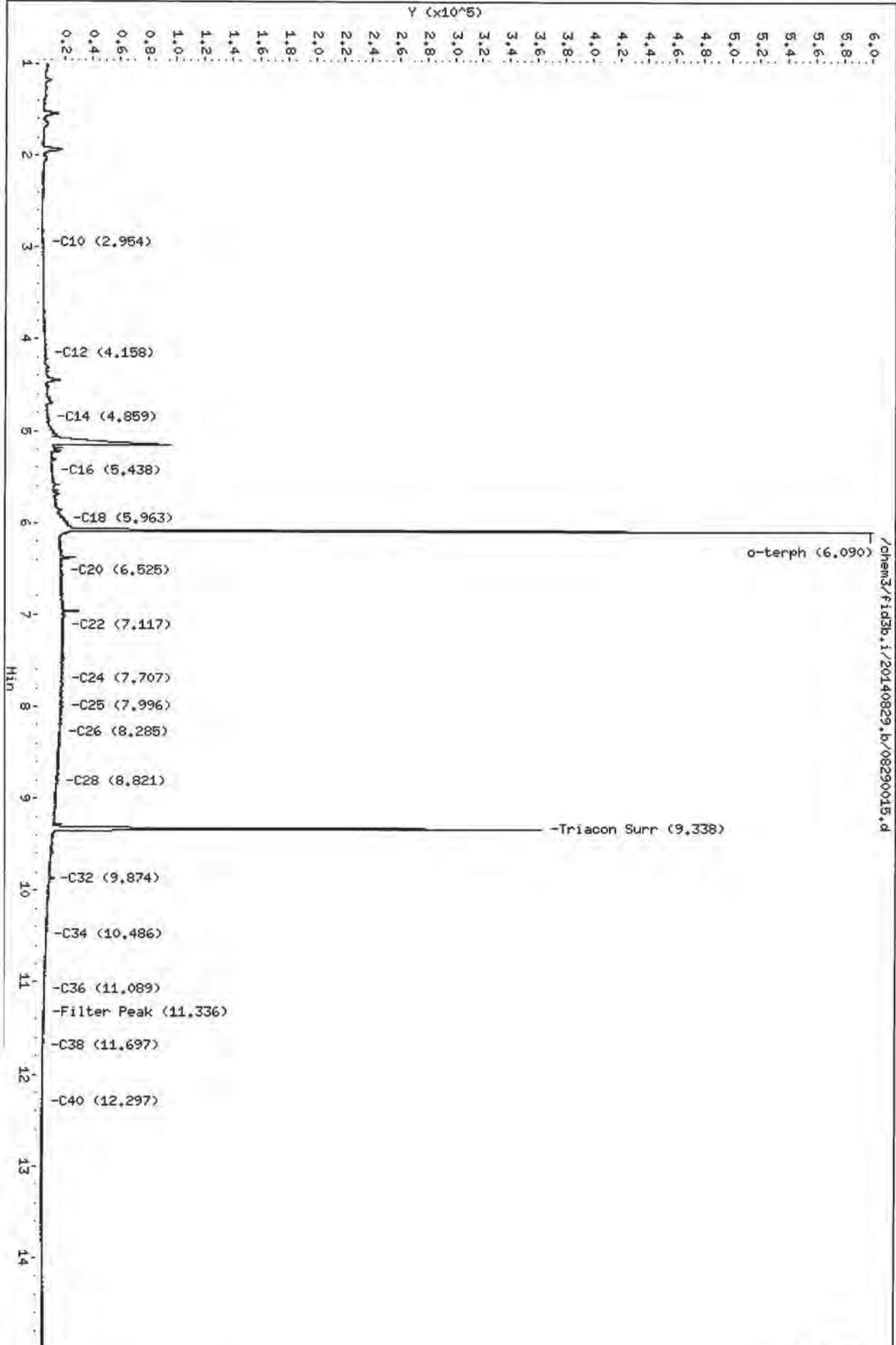
Sample Info: YX24F

Column phase: RTX-1

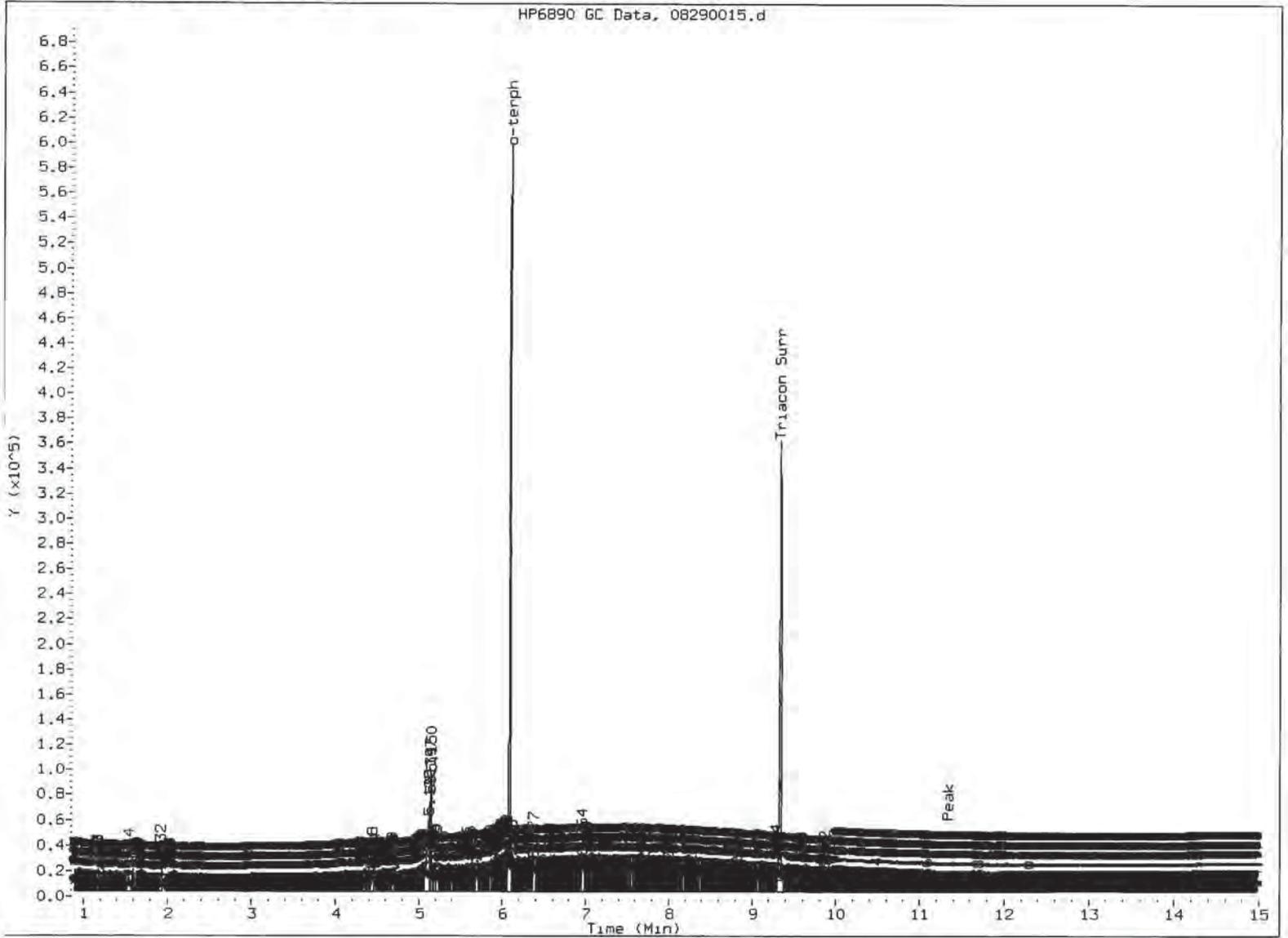
Instrument: fid3b.i

Operator: JM

Column diameter: 0.25



YX24F 08290015



MANUAL INTEGRATION

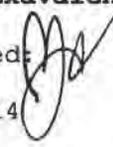
- 1. Baseline correction
- 3. Peak not found
- ⑤ Skimmed surrogate

Analyst: ju

Date: 9/1/14

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B



Data Release Authorized: 
Reported: 08/22/14
Date Received: 08/20/14
Page 1 of 1

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW1 YX24A 14-17143	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW2 YX24B 14-17144	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW4 YX24C 14-17145	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW4-1 YX24D 14-17146	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW7 YX24E 14-17147	08/20/14	Water	08/20/14 082014#1	0.010	< 0.010 U
MW8 YX24F 14-17148	08/20/14	Water	08/20/14 082014#1	0.010	0.017

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized
Reported: 08/22/14

A handwritten signature in black ink, appearing to be 'JW' or similar, written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	08/20/14 20:15	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/22/14

A handwritten signature in black ink, appearing to be 'JG' or similar initials.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	08/20/14 20:15	mg/L	0.514	0.500	102.8%

REPLICATE RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 08/22/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YX24A Client ID: MW1					
Hexavalent Chromium	08/20/14	mg/L	< 0.010	< 0.010	NA

MS/MSD RESULTS-CONVENTIONALS
YX24-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/22/14

A handwritten signature in black ink, appearing to be 'MJ' or similar, written over the 'Data Release Authorized' line.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YX24A Client ID: MW1						
Hexavalent Chromium	08/20/14	mg/L	< 0.010	0.065	0.063	103.2%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW1
SAMPLE

Lab Sample ID: YX24A

LIMS ID: 14-17143

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/20/14

Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit



INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW1
DUPLICATE

Lab Sample ID: YX24A
LIMS ID: 14-17143
Matrix: Water
Data Release Authorized:
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L
Chromium	6010C	0.005 U	0.005 U	0.0%	+/- 0.005	L
Lead	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Selenium	6010C	0.05 U	0.05 U	0.0%	+/- 0.05	L

Reported in mg/L

*-Control Limit Not Met

L-RPD Invalid, Limit = Detection Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW1
MATRIX SPIKE

Lab Sample ID: YX24A

LIMS ID: 14-17143

Matrix: Water

Data Release Authorized: 

Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/20/14

Date Received: 08/20/14

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.05 U	2.13	2.00	106%	
Chromium	6010C	0.005 U	0.503	0.500	101%	
Lead	6010C	0.02 U	1.99	2.00	99.5%	
Selenium	6010C	0.05 U	2.06	2.00	103%	

Reported in mg/L

N-Control Limit Not Met

H-% Recovery Not Applicable, Sample Concentration Too High

NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW2
SAMPLE

Lab Sample ID: YX24B
LIMS ID: 14-17144
Matrix: Water
Data Release Authorized: 
Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.006	
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW4
SAMPLE

Lab Sample ID: YX24C
LIMS ID: 14-17145
Matrix: Water
Data Release Authorized:
Reported: 08/28/14



QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW4-1
SAMPLE

Lab Sample ID: YX24D

LIMS ID: 14-17146

Matrix: Water

Data Release Authorized: 

Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/20/14

Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW7
SAMPLE

Lab Sample ID: YX24E
LIMS ID: 14-17147
Matrix: Water
Data Release Authorized:
Reported: 08/28/14



QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW8
SAMPLE

Lab Sample ID: YX24F
LIMS ID: 14-17148
Matrix: Water
Data Release Authorized:
Reported: 08/28/14



QC Report No: YX24-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/20/14
Date Received: 08/20/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.008	
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YX24LCS

LIMS ID: 14-17148

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

BLANK SPIKE/BLANK SPIKE DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Dup Found	Spike Added	Spike Recovery	Spike Dup Recovery	RPD	Q
Arsenic	6010C	2.13	2.13	2.00	106%	106%	0.0%	
Chromium	6010C	0.530	0.526	0.500	106%	105%	0.8%	
Lead	6010C	2.06	2.06	2.00	103%	103%	0.0%	
Selenium	6010C	2.12	2.12	2.00	106%	106%	0.0%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Sample ID: METHOD BLANK

Page 1 of 1

Lab Sample ID: YX24MB

LIMS ID: 14-17148

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 08/28/14

QC Report No: YX24-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/22/14	6010C	08/26/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/22/14	6010C	08/26/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/22/14	6010C	08/26/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/22/14	6010C	08/26/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit



Analytical Resources, Incorporated
Analytical Chemists and Consultants

4 September 2014

Jessica Faragalli
Kennedy Jenks Consultants
1191 2nd Avenue, Suite 630
Seattle, WA 98101

Client Project: Precision Engineering
ARI Job No.: YX35

Dear Jessica:

Please find enclosed the original Chain-of-Custody records (COCs) and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) received six water samples on August 21, 2014. The samples were analyzed for VOCs, NWTPH-Dx, hexavalent chromium and total metals as requested.

The percent differences (%Ds) for chloroethane and acetone were not within control limits for the 8/27/14 and 8/28/14 CCALs, respectively, that bracketed the VOA analyses of these samples. All positive results for these compounds have been flagged with a "Q" to denote the high %Ds.

A matrix spike (MS) was prepared and analyzed for hexavalent chromium in conjunction with sample MW3. The percent recovery for hexavalent chromium was low following the analysis of the MS. Since the percent recovery for hexavalent chromium was within acceptable QC limits for the corresponding SRM, it was concluded that the sample matrix was the cause of the low MS recovery. No corrective actions were taken.

There were no further anomalies associated with the analyses of these samples.

An electronic copy of this report and all raw data will be kept on file with ARI. Should you have any questions or problems, please feel free to call me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com
www.arilabs.com

eFile: YX35

Enclosures

Page 1 of 85



Cooler Receipt Form

ARI Client: Kennedy Jenks
 COC No(s): _____ (NA)
 Assigned ARI Job No: YX35

Project Name: Precision Engineering
 Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO
 Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) 34
 Time: 1610
 If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952
 Cooler Accepted by: CA Date: 8/21/14 Time: 1610

Complete custody forms and attach all shipping documents

Log-In Phase:

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

Samples Logged by: AV Date: 8/22/14 Time: 830

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

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

Additional Notes, Discrepancies, & Resolutions:

AW10 = 3LG MW10 = 3pb MW11 = 3pb
MW16 = 3LG

By: AV Date: 8/22/14

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

Sample ID Cross Reference Report



ARI Job No: YX35
Client: Kennedy Jenks Consultants, Inc.
Project Event: 1396024*00
Project Name: Precision Engineering

Sample ID	ARI		Matrix	Sample Date/Time	VTSR
	Lab ID	LIMS ID			
1. MW3	YX35A	14-17239	Water	08/21/14 10:15	08/21/14 16:10
2. MW5	YX35B	14-17240	Water	08/21/14 11:30	08/21/14 16:10
3. MW6	YX35C	14-17241	Water	08/21/14 07:40	08/21/14 16:10
4. MW9	YX35D	14-17242	Water	08/21/14 14:40	08/21/14 16:10
5. MW10	YX35E	14-17243	Water	08/21/14 13:30	08/21/14 16:10
6. MW11	YX35F	14-17244	Water	08/21/14 09:10	08/21/14 16:10



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

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

Organic Data

- U Indicates that the target analyte was not detected at the reported concentration
- * Flagged value is not within established control limits
- B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J Estimated concentration when the value is less than ARI's established reporting limits
- D The spiked compound was not detected due to sample extract dilution
- E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



**Analytical Resources,
Incorporated**
Analytical Chemists and
Consultants

- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**



Geotechnical Data

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

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MB-082714A
METHOD BLANK

Lab Sample ID: MB-082714A

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17239

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *MW*

Date Sampled: NA

Reported: 09/03/14

Date Received: NA

Instrument/Analyst: NT2/LH

Sample Amount: 10.0 mL

Date Analyzed: 08/27/14 16:47

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MB-082714A

METHOD BLANK

Lab Sample ID: MB-082714A

LIMS ID: 14-17239

Matrix: Water

Date Analyzed: 08/27/14 16:47

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

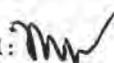
Volatile Surrogate Recovery

d4-1,2-Dichloroethane	98.5%
d8-Toluene	103%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	97.7%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MB-082814A
METHOD BLANK

Lab Sample ID: MB-082814A
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized: 
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT2/LH
Date Analyzed: 08/28/14 13:27

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	0.50	< 0.50	U
74-83-9	Bromomethane	1.0	< 1.0	U
75-01-4	Vinyl Chloride	0.20	< 0.20	U
75-00-3	Chloroethane	0.20	< 0.20	U
75-09-2	Methylene Chloride	1.0	< 1.0	U
67-64-1	Acetone	5.0	< 5.0	U
75-15-0	Carbon Disulfide	0.20	< 0.20	U
75-35-4	1,1-Dichloroethene	0.20	< 0.20	U
75-34-3	1,1-Dichloroethane	0.20	< 0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	< 0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	< 0.20	U
67-66-3	Chloroform	0.20	< 0.20	U
107-06-2	1,2-Dichloroethane	0.20	< 0.20	U
78-93-3	2-Butanone	5.0	< 5.0	U
71-55-6	1,1,1-Trichloroethane	0.20	< 0.20	U
56-23-5	Carbon Tetrachloride	0.20	< 0.20	U
108-05-4	Vinyl Acetate	0.20	< 0.20	U
75-27-4	Bromodichloromethane	0.20	< 0.20	U
78-87-5	1,2-Dichloropropane	0.20	< 0.20	U
10061-01-5	cis-1,3-Dichloropropene	0.20	< 0.20	U
79-01-6	Trichloroethene	0.20	< 0.20	U
124-48-1	Dibromochloromethane	0.20	< 0.20	U
79-00-5	1,1,2-Trichloroethane	0.20	< 0.20	U
71-43-2	Benzene	0.20	< 0.20	U
10061-02-6	trans-1,3-Dichloropropene	0.20	< 0.20	U
110-75-8	2-Chloroethylvinylether	1.0	< 1.0	U
75-25-2	Bromoform	0.20	< 0.20	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	5.0	< 5.0	U
591-78-6	2-Hexanone	5.0	< 5.0	U
127-18-4	Tetrachloroethene	0.20	< 0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
108-90-7	Chlorobenzene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
100-42-5	Styrene	0.20	< 0.20	U
75-69-4	Trichlorofluoromethane	0.20	< 0.20	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U
95-50-1	1,2-Dichlorobenzene	0.20	< 0.20	U
541-73-1	1,3-Dichlorobenzene	0.20	< 0.20	U
106-46-7	1,4-Dichlorobenzene	0.20	< 0.20	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-082814A

METHOD BLANK

Page 2 of 2

Lab Sample ID: MB-082814A

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17240

Project: Precision Engineering

Matrix: Water

1396024*00

Date Analyzed: 08/28/14 13:27

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	5.0	< 5.0	U
74-88-4	Iodomethane	1.0	< 1.0	U
74-96-4	Bromoethane	0.20	< 0.20	U
107-13-1	Acrylonitrile	1.0	< 1.0	U
563-58-6	1,1-Dichloropropene	0.20	< 0.20	U
74-95-3	Dibromomethane	0.20	< 0.20	U
630-20-6	1,1,1,2-Tetrachloroethane	0.20	< 0.20	U
96-12-8	1,2-Dibromo-3-chloropropane	0.50	< 0.50	U
96-18-4	1,2,3-Trichloropropane	0.50	< 0.50	U
110-57-6	trans-1,4-Dichloro-2-butene	1.0	< 1.0	U
108-67-8	1,3,5-Trimethylbenzene	0.20	< 0.20	U
95-63-6	1,2,4-Trimethylbenzene	0.20	< 0.20	U
87-68-3	Hexachlorobutadiene	0.50	< 0.50	U
106-93-4	1,2-Dibromoethane	0.20	< 0.20	U
74-97-5	Bromochloromethane	0.20	< 0.20	U
594-20-7	2,2-Dichloropropane	0.20	< 0.20	U
142-28-9	1,3-Dichloropropane	0.20	< 0.20	U
98-82-8	Isopropylbenzene	0.20	< 0.20	U
103-65-1	n-Propylbenzene	0.20	< 0.20	U
108-86-1	Bromobenzene	0.20	< 0.20	U
95-49-8	2-Chlorotoluene	0.20	< 0.20	U
106-43-4	4-Chlorotoluene	0.20	< 0.20	U
98-06-6	tert-Butylbenzene	0.20	< 0.20	U
135-98-8	sec-Butylbenzene	0.20	< 0.20	U
99-87-6	4-Isopropyltoluene	0.20	< 0.20	U
104-51-8	n-Butylbenzene	0.20	< 0.20	U
120-82-1	1,2,4-Trichlorobenzene	0.50	< 0.50	U
91-20-3	Naphthalene	0.50	< 0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	< 0.50	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	104%
Bromofluorobenzene	96.0%
d4-1,2-Dichlorobenzene	98.1%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW3

Page 1 of 2

SAMPLE

Lab Sample ID: YX35A

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17239

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *MW*

Date Sampled: 08/21/14

Reported: 09/03/14

Date Received: 08/21/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/27/14 17:45

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
 Page 2 of 2

Sample ID: MW3
 SAMPLE



Lab Sample ID: YX35A
 LIMS ID: 14-17239
 Matrix: Water
 Date Analyzed: 08/27/14 17:45

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.1%
d8-Toluene	101%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	98.0%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MW5
SAMPLE

Lab Sample ID: YX35B
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized: *WV*
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/28/14 14:23

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	3.1	
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW5

SAMPLE



Lab Sample ID: YX35B

LIMS ID: 14-17240

Matrix: Water

Date Analyzed: 08/28/14 14:23

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	99.9%
Bromofluorobenzene	102%
d4-1,2-Dichlorobenzene	97.8%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MW6
SAMPLE

Lab Sample ID: YX35C
LIMS ID: 14-17241
Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 18:42

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW6

SAMPLE



Lab Sample ID: YX35C

LIMS ID: 14-17241

Matrix: Water

Date Analyzed: 08/27/14 18:42

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	102%
Bromofluorobenzene	97.3%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MW9

Page 1 of 2

SAMPLE

Lab Sample ID: YX35D

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17242

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *MW*

Date Sampled: 08/21/14

Reported: 09/03/14

Date Received: 08/21/14

Instrument/Analyst: NT2/LH

Sample Amount: 2.00 mL

Date Analyzed: 08/27/14 19:11

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW9

SAMPLE



Lab Sample ID: YX35D

LIMS ID: 14-17242

Matrix: Water

Date Analyzed: 08/27/14 19:11

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	103%
Bromofluorobenzene	94.5%
d4-1,2-Dichlorobenzene	99.6%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MW10
SAMPLE

Lab Sample ID: YX35E
LIMS ID: 14-17243
Matrix: Water
Data Release Authorized: *MW*
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 19:40

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW10

SAMPLE



Lab Sample ID: YX35E

LIMS ID: 14-17243

Matrix: Water

Date Analyzed: 08/27/14 19:40

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	102%
Bromofluorobenzene	93.5%
d4-1,2-Dichlorobenzene	99.2%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: MW11
SAMPLE

Lab Sample ID: YX35F
LIMS ID: 14-17244
Matrix: Water
Data Release Authorized: *MW*
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Instrument/Analyst: NT2/LH
Date Analyzed: 08/27/14 20:09

Sample Amount: 2.00 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
74-87-3	Chloromethane	2.5	< 2.5	U
74-83-9	Bromomethane	5.0	< 5.0	U
75-01-4	Vinyl Chloride	1.0	< 1.0	U
75-00-3	Chloroethane	1.0	< 1.0	U
75-09-2	Methylene Chloride	5.0	< 5.0	U
67-64-1	Acetone	25	< 25	U
75-15-0	Carbon Disulfide	1.0	< 1.0	U
75-35-4	1,1-Dichloroethene	1.0	< 1.0	U
75-34-3	1,1-Dichloroethane	1.0	< 1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	< 1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	< 1.0	U
67-66-3	Chloroform	1.0	< 1.0	U
107-06-2	1,2-Dichloroethane	1.0	< 1.0	U
78-93-3	2-Butanone	25	< 25	U
71-55-6	1,1,1-Trichloroethane	1.0	< 1.0	U
56-23-5	Carbon Tetrachloride	1.0	< 1.0	U
108-05-4	Vinyl Acetate	1.0	< 1.0	U
75-27-4	Bromodichloromethane	1.0	< 1.0	U
78-87-5	1,2-Dichloropropane	1.0	< 1.0	U
10061-01-5	cis-1,3-Dichloropropene	1.0	< 1.0	U
79-01-6	Trichloroethene	1.0	< 1.0	U
124-48-1	Dibromochloromethane	1.0	< 1.0	U
79-00-5	1,1,2-Trichloroethane	1.0	< 1.0	U
71-43-2	Benzene	1.0	< 1.0	U
10061-02-6	trans-1,3-Dichloropropene	1.0	< 1.0	U
110-75-8	2-Chloroethylvinylether	5.0	< 5.0	U
75-25-2	Bromoform	1.0	< 1.0	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	25	< 25	U
591-78-6	2-Hexanone	25	< 25	U
127-18-4	Tetrachloroethene	1.0	< 1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	1.0	< 1.0	U
108-88-3	Toluene	1.0	< 1.0	U
108-90-7	Chlorobenzene	1.0	< 1.0	U
100-41-4	Ethylbenzene	1.0	< 1.0	U
100-42-5	Styrene	1.0	< 1.0	U
75-69-4	Trichlorofluoromethane	1.0	< 1.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	< 1.0	U
179601-23-1	m,p-Xylene	2.0	< 2.0	U
95-47-6	o-Xylene	1.0	< 1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	< 1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	< 1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	< 1.0	U

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Page 2 of 2

Sample ID: MW11

SAMPLE



Lab Sample ID: YX35F

LIMS ID: 14-17244

Matrix: Water

Date Analyzed: 08/27/14 20:09

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

CAS Number	Analyte	LOQ	Result	Q
107-02-8	Acrolein	25	< 25	U
74-88-4	Iodomethane	5.0	< 5.0	U
74-96-4	Bromoethane	1.0	< 1.0	U
107-13-1	Acrylonitrile	5.0	< 5.0	U
563-58-6	1,1-Dichloropropene	1.0	< 1.0	U
74-95-3	Dibromomethane	1.0	< 1.0	U
630-20-6	1,1,1,2-Tetrachloroethane	1.0	< 1.0	U
96-12-8	1,2-Dibromo-3-chloropropane	2.5	< 2.5	U
96-18-4	1,2,3-Trichloropropane	2.5	< 2.5	U
110-57-6	trans-1,4-Dichloro-2-butene	5.0	< 5.0	U
108-67-8	1,3,5-Trimethylbenzene	1.0	< 1.0	U
95-63-6	1,2,4-Trimethylbenzene	1.0	< 1.0	U
87-68-3	Hexachlorobutadiene	2.5	< 2.5	U
106-93-4	1,2-Dibromoethane	1.0	< 1.0	U
74-97-5	Bromochloromethane	1.0	< 1.0	U
594-20-7	2,2-Dichloropropane	1.0	< 1.0	U
142-28-9	1,3-Dichloropropane	1.0	< 1.0	U
98-82-8	Isopropylbenzene	1.0	< 1.0	U
103-65-1	n-Propylbenzene	1.0	< 1.0	U
108-86-1	Bromobenzene	1.0	< 1.0	U
95-49-8	2-Chlorotoluene	1.0	< 1.0	U
106-43-4	4-Chlorotoluene	1.0	< 1.0	U
98-06-6	tert-Butylbenzene	1.0	< 1.0	U
135-98-8	sec-Butylbenzene	1.0	< 1.0	U
99-87-6	4-Isopropyltoluene	1.0	< 1.0	U
104-51-8	n-Butylbenzene	1.0	< 1.0	U
120-82-1	1,2,4-Trichlorobenzene	2.5	< 2.5	U
91-20-3	Naphthalene	2.5	< 2.5	U
87-61-6	1,2,3-Trichlorobenzene	2.5	< 2.5	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	99.7%
d8-Toluene	106%
Bromofluorobenzene	93.4%
d4-1,2-Dichlorobenzene	100%

2-Chloroethylvinylether is an acid labile compound and may not be recovered from an acid preserved sample.

EPA SW-846 indicates that vinyl chloride and styrene may degrade in the presence of acid preservative.

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-082714A

Page 1 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082714A

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17239

Project: Precision Engineering

Matrix: Water

1396024*00

Data Release Authorized: *MMW*

Date Sampled: NA

Reported: 09/03/14

Date Received: NA

Instrument/Analyst LCS: NT2/LH

Sample Amount LCS: 10.0 mL

LCS: NT2/LH

LCS: 10.0 mL

Date Analyzed LCS: 08/27/14 15:54

Purge Volume LCS: 10.0 mL

LCS: 08/27/14 16:21

LCS: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCS	LCS	Spike Added-LCS	LCS Recovery	RPD
Chloromethane	8.58	10.0	85.8%	9.10	10.0	91.0%	5.9%	
Bromomethane	8.29	10.0	82.9%	8.38	10.0	83.8%	1.1%	
Vinyl Chloride	8.78	10.0	87.8%	9.01	10.0	90.1%	2.6%	
Chloroethane	7.50 Q	10.0	75.0%	7.81 Q	10.0	78.1%	4.0%	
Methylene Chloride	8.70	10.0	87.0%	9.31	10.0	93.1%	6.8%	
Acetone	42.2	50.0	84.4%	45.9	50.0	91.8%	8.4%	
Carbon Disulfide	8.72	10.0	87.2%	9.32	10.0	93.2%	6.7%	
1,1-Dichloroethene	8.81	10.0	88.1%	9.37	10.0	93.7%	6.2%	
1,1-Dichloroethane	9.23	10.0	92.3%	9.49	10.0	94.9%	2.8%	
trans-1,2-Dichloroethene	8.90	10.0	89.0%	9.28	10.0	92.8%	4.2%	
cis-1,2-Dichloroethene	9.14	10.0	91.4%	9.51	10.0	95.1%	4.0%	
Chloroform	9.01	10.0	90.1%	9.34	10.0	93.4%	3.6%	
1,2-Dichloroethane	9.13	10.0	91.3%	9.74	10.0	97.4%	6.5%	
2-Butanone	45.6	50.0	91.2%	47.8	50.0	95.6%	4.7%	
1,1,1-Trichloroethane	8.57	10.0	85.7%	9.24	10.0	92.4%	7.5%	
Carbon Tetrachloride	8.53	10.0	85.3%	8.86	10.0	88.6%	3.8%	
Vinyl Acetate	9.90	10.0	99.0%	9.98	10.0	99.8%	0.8%	
Bromodichloromethane	9.33	10.0	93.3%	9.64	10.0	96.4%	3.3%	
1,2-Dichloropropane	9.70	10.0	97.0%	9.81	10.0	98.1%	1.1%	
cis-1,3-Dichloropropene	10.2	10.0	102%	9.85	10.0	98.5%	3.5%	
Trichloroethene	9.83	10.0	98.3%	9.96	10.0	99.6%	1.3%	
Dibromochloromethane	9.08	10.0	90.8%	9.38	10.0	93.8%	3.3%	
1,1,2-Trichloroethane	9.97	10.0	99.7%	9.55	10.0	95.5%	4.3%	
Benzene	9.77	10.0	97.7%	10.0	10.0	100%	2.3%	
trans-1,3-Dichloropropene	10.4	10.0	104%	9.72	10.0	97.2%	6.8%	
2-Chloroethylvinylether	11.1	10.0	111%	10.9	10.0	109%	1.8%	
Bromoform	9.42	10.0	94.2%	8.91	10.0	89.1%	5.6%	
4-Methyl-2-Pentanone (MIBK)	48.1	50.0	96.2%	49.4	50.0	98.8%	2.7%	
2-Hexanone	50.2	50.0	100%	53.1	50.0	106%	5.6%	
Tetrachloroethene	10.1	10.0	101%	10.1	10.0	101%	0.0%	
1,1,2,2-Tetrachloroethane	9.75	10.0	97.5%	9.63	10.0	96.3%	1.2%	
Toluene	9.82	10.0	98.2%	9.69	10.0	96.9%	1.3%	
Chlorobenzene	9.78	10.0	97.8%	9.79	10.0	97.9%	0.1%	
Ethylbenzene	9.86	10.0	98.6%	9.90	10.0	99.0%	0.4%	
Styrene	10.2	10.0	102%	10.5	10.0	105%	2.9%	
Trichlorofluoromethane	8.72	10.0	87.2%	9.09	10.0	90.9%	4.2%	
1,1,2-Trichloro-1,2,2-trifluoroethane	8.76	10.0	87.6%	9.13	10.0	91.3%	4.1%	
m,p-Xylene	20.2	20.0	101%	20.9	20.0	104%	3.4%	

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-082714A

Page 2 of 2

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082714A

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

LIMS ID: 14-17239

Project: Precision Engineering

Matrix: Water

1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	9.88	10.0	98.8%	10.1	10.0	101%	2.2%
1,2-Dichlorobenzene	9.63	10.0	96.3%	9.59	10.0	95.9%	0.4%
1,3-Dichlorobenzene	10.2	10.0	102%	10.0	10.0	100%	2.0%
1,4-Dichlorobenzene	10.2	10.0	102%	10.1	10.0	101%	1.0%
Acrolein	42.0	50.0	84.0%	47.1	50.0	94.2%	11.4%
Iodomethane	8.73	10.0	87.3%	9.35	10.0	93.5%	6.9%
Bromoethane	8.99	10.0	89.9%	9.59	10.0	95.9%	6.5%
Acrylonitrile	8.84	10.0	88.4%	9.62	10.0	96.2%	8.5%
1,1-Dichloropropene	9.82	10.0	98.2%	10.0	10.0	100%	1.8%
Dibromomethane	9.41	10.0	94.1%	9.55	10.0	95.5%	1.5%
1,1,1,2-Tetrachloroethane	9.00	10.0	90.0%	9.52	10.0	95.2%	5.6%
1,2-Dibromo-3-chloropropane	8.43	10.0	84.3%	8.55	10.0	85.5%	1.4%
1,2,3-Trichloropropane	10.0	10.0	100%	9.46	10.0	94.6%	5.5%
trans-1,4-Dichloro-2-butene	9.80	10.0	98.0%	9.63	10.0	96.3%	1.7%
1,3,5-Trimethylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9%
1,2,4-Trimethylbenzene	10.9	10.0	109%	10.7	10.0	107%	1.9%
Hexachlorobutadiene	9.41	10.0	94.1%	8.92	10.0	89.2%	5.3%
1,2-Dibromoethane	9.76	10.0	97.6%	9.58	10.0	95.8%	1.9%
Bromochloromethane	8.73	10.0	87.3%	9.25	10.0	92.5%	5.8%
2,2-Dichloropropane	8.41	10.0	84.1%	9.08	10.0	90.8%	7.7%
1,3-Dichloropropane	9.67	10.0	96.7%	9.97	10.0	99.7%	3.1%
Isopropylbenzene	10.8	10.0	108%	10.6	10.0	106%	1.9%
n-Propylbenzene	11.0	10.0	110%	10.5	10.0	105%	4.7%
Bromobenzene	9.95	10.0	99.5%	9.75	10.0	97.5%	2.0%
2-Chlorotoluene	10.2	10.0	102%	10.1	10.0	101%	1.0%
4-Chlorotoluene	10.6	10.0	106%	10.3	10.0	103%	2.9%
tert-Butylbenzene	10.8	10.0	108%	10.4	10.0	104%	3.8%
sec-Butylbenzene	10.8	10.0	108%	10.6	10.0	106%	1.9%
4-Isopropyltoluene	11.1	10.0	111%	10.8	10.0	108%	2.7%
n-Butylbenzene	10.9	10.0	109%	10.8	10.0	108%	0.9%
1,2,4-Trichlorobenzene	10.9	10.0	109%	10.5	10.0	105%	3.7%
Naphthalene	10.4	10.0	104%	10.3	10.0	103%	1.0%
1,2,3-Trichlorobenzene	10.5	10.0	105%	10.3	10.0	103%	1.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.3%	94.4%
d8-Toluene	102%	101%
Bromofluorobenzene	98.3%	100%
d4-1,2-Dichlorobenzene	98.9%	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 2

Sample ID: LCS-082814A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082814A
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized: *mm*
Reported: 09/03/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT2/LH
LCSD: NT2/LH
Date Analyzed LCS: 08/28/14 12:34
LCSD: 08/28/14 13:00

Sample Amount LCS: 10.0 mL
LCSD: 10.0 mL
Purge Volume LCS: 10.0 mL
LCSD: 10.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	9.17	10.0	91.7%	9.71	10.0	97.1%	5.7%
Bromomethane	8.59	10.0	85.9%	9.25	10.0	92.5%	7.4%
Vinyl Chloride	9.33	10.0	93.3%	9.90	10.0	99.0%	5.9%
Chloroethane	10.3	10.0	103%	10.6	10.0	106%	2.9%
Methylene Chloride	8.78	10.0	87.8%	9.21	10.0	92.1%	4.8%
Acetone	43.8 Q	50.0	87.6%	46.1 Q	50.0	92.2%	5.1%
Carbon Disulfide	9.28	10.0	92.8%	9.49	10.0	94.9%	2.2%
1,1-Dichloroethene	9.21	10.0	92.1%	9.46	10.0	94.6%	2.7%
1,1-Dichloroethane	9.17	10.0	91.7%	9.48	10.0	94.8%	3.3%
trans-1,2-Dichloroethene	8.95	10.0	89.5%	9.10	10.0	91.0%	1.7%
cis-1,2-Dichloroethene	9.06	10.0	90.6%	9.38	10.0	93.8%	3.5%
Chloroform	9.18	10.0	91.8%	9.37	10.0	93.7%	2.0%
1,2-Dichloroethane	9.61	10.0	96.1%	9.62	10.0	96.2%	0.1%
2-Butanone	44.8	50.0	89.6%	45.9	50.0	91.8%	2.4%
1,1,1-Trichloroethane	8.94	10.0	89.4%	9.25	10.0	92.5%	3.4%
Carbon Tetrachloride	8.63	10.0	86.3%	8.90	10.0	89.0%	3.1%
Vinyl Acetate	9.72	10.0	97.2%	10.2	10.0	102%	4.8%
Bromodichloromethane	9.07	10.0	90.7%	9.56	10.0	95.6%	5.3%
1,2-Dichloropropane	9.82	10.0	98.2%	9.64	10.0	96.4%	1.8%
cis-1,3-Dichloropropene	9.92	10.0	99.2%	9.88	10.0	98.8%	0.4%
Trichloroethene	9.74	10.0	97.4%	9.82	10.0	98.2%	0.8%
Dibromochloromethane	9.39	10.0	93.9%	9.58	10.0	95.8%	2.0%
1,1,2-Trichloroethane	9.38	10.0	93.8%	9.48	10.0	94.8%	1.1%
Benzene	9.65	10.0	96.5%	9.78	10.0	97.8%	1.3%
trans-1,3-Dichloropropene	9.94	10.0	99.4%	9.88	10.0	98.8%	0.6%
2-Chloroethylvinylether	10.6	10.0	106%	10.4	10.0	104%	1.9%
Bromoform	9.82	10.0	98.2%	9.32	10.0	93.2%	5.2%
4-Methyl-2-Pentanone (MIBK)	47.5	50.0	95.0%	49.8	50.0	99.6%	4.7%
2-Hexanone	52.7	50.0	105%	53.4	50.0	107%	1.3%
Tetrachloroethene	10.4	10.0	104%	10.5	10.0	105%	1.0%
1,1,2,2-Tetrachloroethane	10.1	10.0	101%	10.1	10.0	101%	0.0%
Toluene	9.73	10.0	97.3%	9.70	10.0	97.0%	0.3%
Chlorobenzene	10.0	10.0	100%	10.2	10.0	102%	2.0%
Ethylbenzene	10.4	10.0	104%	10.5	10.0	105%	1.0%
Styrene	10.7	10.0	107%	10.7	10.0	107%	0.0%
Trichlorofluoromethane	8.95	10.0	89.5%	9.33	10.0	93.3%	4.2%
1,1,2-Trichloro-1,2,2-trifluoroethane	9.30	10.0	93.0%	9.56	10.0	95.6%	2.8%
m,p-Xylene	20.8	20.0	104%	21.5	20.0	108%	3.3%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 2 of 2

Sample ID: LCS-082814A

LAB CONTROL SAMPLE

Lab Sample ID: LCS-082814A
LIMS ID: 14-17240
Matrix: Water

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
o-Xylene	10.4	10.0	104%	10.7	10.0	107%	2.8%
1,2-Dichlorobenzene	10.0	10.0	100%	10.4	10.0	104%	3.9%
1,3-Dichlorobenzene	10.4	10.0	104%	10.7	10.0	107%	2.8%
1,4-Dichlorobenzene	10.5	10.0	105%	10.7	10.0	107%	1.9%
Acrolein	44.6	50.0	89.2%	46.0	50.0	92.0%	3.1%
Iodomethane	9.11	10.0	91.1%	9.29	10.0	92.9%	2.0%
Bromoethane	9.33	10.0	93.3%	9.49	10.0	94.9%	1.7%
Acrylonitrile	9.33	10.0	93.3%	9.86	10.0	98.6%	5.5%
1,1-Dichloropropene	9.57	10.0	95.7%	9.57	10.0	95.7%	0.0%
Dibromomethane	9.18	10.0	91.8%	9.78	10.0	97.8%	6.3%
1,1,1,2-Tetrachloroethane	9.83	10.0	98.3%	9.89	10.0	98.9%	0.6%
1,2-Dibromo-3-chloropropane	8.97	10.0	89.7%	10.8	10.0	108%	18.5%
1,2,3-Trichloropropane	10.0	10.0	100%	10.5	10.0	105%	4.9%
trans-1,4-Dichloro-2-butene	11.3	10.0	113%	11.2	10.0	112%	0.9%
1,3,5-Trimethylbenzene	11.3	10.0	113%	11.2	10.0	112%	0.9%
1,2,4-Trimethylbenzene	11.3	10.0	113%	11.2	10.0	112%	0.9%
Hexachlorobutadiene	11.8	10.0	118%	12.3	10.0	123%	4.1%
1,2-Dibromoethane	9.65	10.0	96.5%	9.76	10.0	97.6%	1.1%
Bromochloromethane	9.33	10.0	93.3%	9.47	10.0	94.7%	1.5%
2,2-Dichloropropane	8.97	10.0	89.7%	9.20	10.0	92.0%	2.5%
1,3-Dichloropropane	10.2	10.0	102%	10.1	10.0	101%	1.0%
Isopropylbenzene	10.9	10.0	109%	11.2	10.0	112%	2.7%
n-Propylbenzene	10.9	10.0	109%	10.8	10.0	108%	0.9%
Bromobenzene	10.3	10.0	103%	10.2	10.0	102%	1.0%
2-Chlorotoluene	10.6	10.0	106%	10.5	10.0	105%	0.9%
4-Chlorotoluene	10.8	10.0	108%	10.6	10.0	106%	1.9%
tert-Butylbenzene	10.9	10.0	109%	10.9	10.0	109%	0.0%
sec-Butylbenzene	11.1	10.0	111%	11.1	10.0	111%	0.0%
4-Isopropyltoluene	11.2	10.0	112%	11.3	10.0	113%	0.9%
n-Butylbenzene	11.3	10.0	113%	11.5	10.0	115%	1.8%
1,2,4-Trichlorobenzene	11.1	10.0	111%	11.8	10.0	118%	6.1%
Naphthalene	11.3	10.0	113%	12.5	10.0	125%	10.1%
1,2,3-Trichlorobenzene	11.0	10.0	110%	11.9	10.0	119%	7.9%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	97.7%	101%
d8-Toluene	101%	102%
Bromofluorobenzene	97.6%	99.5%
d4-1,2-Dichlorobenzene	98.2%	98.7%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
 Project: Precision Engineering
 1396024*00

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-082714A	Method Blank	10	98.5%	103%	96.8%	97.7%	0
LCS-082714A	Lab Control	10	94.3%	102%	98.3%	98.9%	0
LCSD-082714A	Lab Control Dup	10	94.4%	101%	100%	100%	0
YX35A	MW3	10	97.1%	101%	100%	98.0%	0
YX35C	MW6	10	103%	102%	97.3%	100%	0
YX35D	MW9	10	101%	103%	94.5%	99.6%	0
YX35E	MW10	10	104%	102%	93.5%	99.2%	0
YX35F	MW11	10	99.7%	106%	93.4%	100%	0

LCS/MB LIMITS

QC LIMITS

SW8260C
 (DCE) = d4-1,2-Dichloroethane
 (TOL) = d8-Toluene
 (BFB) = Bromofluorobenzene
 (DCB) = d4-1,2-Dichlorobenzene

(80-120)
 (80-120)
 (80-120)
 (80-120)

(80-130)
 (80-120)
 (80-120)
 (80-120)

Prep Method: SW5030B
 Log Number Range: 14-17239 to 14-17244

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 27-AUG-2014 12:13
 Lab File ID: sch0016cal5cc.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 11:40 14:53
 Lab Sample ID: SCH0016-CAL5 Quant Type: ISTD
 Method: /chem3/nt2.i/20140827.b/82600827L.m

COMPOUND	RRF / AMOUNT	RF10	CCAL RRF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
1 Dichlorodifluoromethane	1.34050	1.49830	1.49830	0.010	11.77125	20.00000	Averaged
2 Chloromethane	1.70094	1.81266	1.81266	0.100	6.56783	20.00000	Averaged
3 Vinyl Chloride	1.70918	1.83560	1.83560	0.100	7.39654	20.00000	Averaged
4 Bromomethane	0.82395	0.86221	0.86221	0.100	4.64324	20.00000	Averaged
5 Chloroethane	12.04822	10.00000	0.98746	0.010	20.48222	20.00000	Linear <-
6 Trichlorofluoromethane	1.63223	1.72260	1.72260	0.010	5.53693	20.00000	Averaged
7 1,1-Dichloroethene	1.74793	1.82008	1.82008	0.100	4.12746	20.00000	Averaged
8 Carbon Disulfide	3.68300	3.87153	3.87153	0.010	5.11888	20.00000	Averaged
9 1,1,2-Trichloro-2,2,2-Trifluoroethane	1.12433	1.14895	1.14895	0.010	2.18945	20.00000	Averaged
10 Iodomethane	1.50739	1.56177	1.56177	0.010	3.60772	20.00000	Averaged
11 Bromoethane	0.72031	0.74453	0.74453	0.100	3.36325	20.00000	Averaged
12 Acrolein	0.10942	0.10451	0.10451	0.000	-4.48680	20.00000	Averaged
13 Methylene Chloride	1.02297	1.05019	1.05019	0.010	2.66025	20.00000	Averaged
14 Acetone	0.17522	0.16972	0.16972	0.001	-3.13971	20.00000	Averaged
15 Trans-1,2-Dichloroethene	1.00618	1.02239	1.02239	0.010	1.61134	20.00000	Averaged
16 n-hexane	0.81617	0.73898	0.73898	0.100	-9.45693	20.00000	Averaged
17 Methyl tert butyl ether	2.15209	2.10420	2.10420	0.100	-2.22496	20.00000	Averaged
18 1,1-Dichloroethane	1.70174	1.74815	1.74815	0.200	2.72725	20.00000	Averaged
19 Acrylonitrile	0.22206	0.21213	0.21213	0.001	-4.47030	20.00000	Averaged
20 Vinyl Acetate	0.37254	0.30200	0.30200	0.010	-18.93549	20.00000	Averaged
22 Cis-1,2-Dichloroethene	0.94272	0.94699	0.94699	0.010	0.45329	20.00000	Averaged
23 2,2-Dichloropropane	1.01181	1.00866	1.00866	0.010	-0.31137	20.00000	Averaged
24 Bromochloromethane	0.39197	0.39207	0.39207	0.050	0.02642	20.00000	Averaged
25 Chloroform	1.47217	1.48476	1.48476	0.200	0.85516	20.00000	Averaged
26 Carbon Tetrachloride	0.59819	0.63869	0.63869	0.100	6.77003	20.00000	Averaged
27 Dibromofluoromethane	0.69112	0.70457	0.70457	0.100	1.94597	20.00000	Averaged
28 1,1,1-Trichloroethane	1.43465	1.47437	1.47437	0.100	2.76871	20.00000	Averaged
29 2-Butanone	0.20939	0.19345	0.19345	0.001	-7.61244	20.00000	Averaged
30 1,1-Dichloropropene	0.57491	0.56133	0.56133	0.010	-2.36275	20.00000	Averaged
31 Benzene	1.64110	1.67792	1.67792	0.500	2.24373	20.00000	Averaged
33 d4-1,2-Dichloroethane	0.76558	0.75864	0.75864	0.010	-0.90708	20.00000	Averaged
34 1,2-Dichloroethane	0.50444	0.48774	0.48774	0.100	-3.31154	20.00000	Averaged
36 Trichloroethene	0.37780	0.38395	0.38395	0.100	1.62814	20.00000	Averaged
38 Dibromomethane	0.20936	0.19933	0.19933	0.010	-4.79238	20.00000	Averaged
39 1,2-Dichloropropane	0.38065	0.37149	0.37149	0.100	-2.40581	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 27-AUG-2014 12:13
 Lab File ID: sch0016cal5cc.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 11:40 14:53
 Lab Sample ID: SCH0016-CAL5 Quant Type: ISTD
 Method: /chem3/nt2.i/20140827.b/82600827L.m

COMPOUND	RRF / AMOUNT		CCAL		MIN		MAX		CURVE TYPE
	RRF	AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT		
40 Bromodichloromethane	0.47040		0.47437	0.47437	0.100	0.84529	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.13926		0.12388	0.12388	0.000	-11.04533	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.47827		0.46556	0.46556	0.200	-2.65756	20.00000	Averaged	
43 d8-Toluene	1.26522		1.26272	1.26272	0.010	-0.19768	20.00000	Averaged	
44 Toluene	0.95750		0.93053	0.93053	0.400	-2.81679	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.10979		0.10685	0.10685	0.000	-2.68050	20.00000	Averaged	
46 Tetrachloroethene	0.30695		0.31552	0.31552	0.200	2.79236	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.39623		0.38946	0.38946	0.010	-1.71068	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.25361		0.24657	0.24657	0.100	-2.77586	20.00000	Averaged	
49 Chlorodibromomethane	0.25957		0.25454	0.25454	0.100	-1.93528	20.00000	Averaged	
50 1,3-Dichloropropane	0.41974		0.40048	0.40048	0.100	-4.58840	20.00000	Averaged	
51 1,2-Dibromoethane	0.26980		0.24967	0.24967	0.010	-7.45755	20.00000	Averaged	
52 2-Hexanone	0.16957		0.16575	0.16575	0.010	-2.25634	20.00000	Averaged	
54 Chlorobenzene	0.97688		0.96840	0.96840	0.500	-0.86810	20.00000	Averaged	
55 Ethyl Benzene	0.54168		0.54668	0.54668	0.100	0.92402	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.34043		0.36608	0.36608	0.010	7.53654	20.00000	Averaged	
57 m,p-xylene	0.65853		0.68618	0.68618	0.300	4.19832	20.00000	Averaged	
58 o-Xylene	0.69382		0.73362	0.73362	0.300	5.73585	20.00000	Averaged	
59 Styrene	1.11296		1.19516	1.19516	0.300	7.38585	20.00000	Averaged	
60 Bromoform	0.24740		0.24060	0.24060	0.010	-2.75174	20.00000	Averaged	
61 Isopropyl Benzene	2.89403		2.94515	2.94515	0.010	1.76624	20.00000	Averaged	
62 4-Bromofluorobenzene	0.58751		0.60911	0.60911	0.200	3.67617	20.00000	Averaged	
63 Bromobenzene	0.66911		0.62991	0.62991	0.010	-5.85859	20.00000	Averaged	
64 N-Propyl Benzene	3.43787		3.43183	3.43183	0.010	-0.17585	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.56690		0.53384	0.53384	0.100	-5.83136	20.00000	Averaged	
66 2-Chloro Toluene	2.51805		2.46417	2.46417	0.010	-2.13969	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.52446		2.61663	2.61663	0.010	3.65097	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.16816		0.14837	0.14837	0.010	-11.76834	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.16652		0.16250	0.16250	0.001	-2.41271	20.00000	Averaged	
70 4-Chloro Toluene	2.31781		2.26025	2.26025	0.010	-2.48321	20.00000	Averaged	
71 T-Butyl Benzene	2.00560		1.97823	1.97823	0.010	-1.36443	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	2.55281		2.61663	2.61663	0.010	3.65097	20.00000	Averaged	
73 S-Butyl Benzene	3.22991		3.31594	3.31594	0.010	2.66355	20.00000	Averaged	
74 4-Isopropyl Toluene	2.49005		2.54739	2.54739	0.010	2.30264	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.42369		1.40466	1.40466	0.600	-1.33662	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 27-AUG-2014 12:13
Lab File ID: sch0016cal5cc.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
Analysis Type: WATER Init. Cal. Times: 11:40 14:53
Lab Sample ID: SCH0016-CAL5 Quant Type: ISTD
Method: /chem3/nt2.i/20140827.b/82600827L.m

COMPOUND	___		CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
77 1,4-Dichlorobenzene	1.43106	1.44126	1.44126	0.500	0.71295	20.00000	Averaged
78 N-Butyl Benzene	2.56285	2.62517	2.62517	0.010	2.43185	20.00000	Averaged
\$ 79 d4-1,2-Dichlorobenzene	0.92258	0.91926	0.91926	0.010	-0.35967	20.00000	Averaged
80 1,2-Dichlorobenzene	1.36067	1.30227	1.30227	0.400	-4.29234	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.09053	0.09286	0.09286	0.010	2.57598	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	11.42311	10.00000	0.31787	0.010	14.23114	20.00000	Linear
84 1,2,4-Trichlorobenzene	0.69478	0.73908	0.73908	0.010	6.37594	20.00000	Averaged
85 Naphthalene	1.19928	1.24332	1.24332	0.010	3.67222	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.54771	0.56120	0.56120	0.010	2.46293	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 28-AUG-2014 12:07
 Lab File ID: cc0828.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 11:40 14:53
 Lab Sample ID: CC0828 Quant Type: ISTD
 Method: /chem3/nt2.i/20140828.b/82600827L.m

COMPOUND	RF10		CCAL	MIN	MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
1 Dichlorodifluoromethane	1.28772	1.22299	1.22299	0.010	-5.02638	20.00000	Averaged
2 Chloromethane	1.66898	1.41378	1.41378	0.100	-15.29099	20.00000	Averaged
3 Vinyl Chloride	1.68559	1.42171	1.42171	0.100	-15.65508	20.00000	Averaged
4 Bromomethane	0.81243	0.65506	0.65506	0.100	-19.37077	20.00000	Averaged
5 Chloroethane	9.48642	10.00000	0.77753	0.010	-5.13577	20.00000	Linear
6 Trichlorofluoromethane	1.60350	1.38336	1.38336	0.010	-13.72880	20.00000	Averaged
7 1,1-Dichloroethene	1.72817	1.52739	1.52739	0.100	-11.61839	20.00000	Averaged
8 Carbon Disulfide	3.62748	3.17498	3.17498	0.010	-12.47420	20.00000	Averaged
9 1,1,2-Trichloro-1,2,2-Trifluoroethane	1.10182	0.94050	0.94050	0.010	-14.64108	20.00000	Averaged
10 Iodomethane	1.48721	1.28897	1.28897	0.010	-13.32938	20.00000	Averaged
11 Bromoethane	0.71980	0.63410	0.63410	0.100	-11.90580	20.00000	Averaged
12 Acrolein	0.10898	0.09054	0.09054	0.000	-16.92266	20.00000	Averaged
13 Methylene Chloride	1.03903	0.87702	0.87702	0.010	-15.59237	20.00000	Averaged
14 Acetone	0.17637	0.13621	0.13621	0.001	-22.76914	20.00000	Averaged
15 Trans-1,2-Dichloroethene	0.99767	0.87169	0.87169	0.010	-12.62773	20.00000	Averaged
16 n-hexane	0.79410	0.85900	0.85900	0.100	8.17298	20.00000	Averaged
17 Methyl tert butyl ether	2.11778	1.74095	1.74095	0.100	-17.79353	20.00000	Averaged
18 1,1-Dichloroethane	1.69995	1.51075	1.51075	0.200	-11.12966	20.00000	Averaged
19 Acrylonitrile	0.22103	0.18317	0.18317	0.001	-17.13078	20.00000	Averaged
20 Vinyl Acetate	0.37626	0.33183	0.33183	0.010	-11.80719	20.00000	Averaged
22 Cis-1,2-Dichloroethene	0.94059	0.82943	0.82943	0.010	-11.81780	20.00000	Averaged
23 2,2-Dichloropropane	0.98736	0.84875	0.84875	0.010	-14.03846	20.00000	Averaged
24 Bromochloromethane	0.38828	0.31787	0.31787	0.050	-18.13343	20.00000	Averaged
25 Chloroform	1.46371	1.29072	1.29072	0.200	-11.81888	20.00000	Averaged
26 Carbon Tetrachloride	0.58717	0.49515	0.49515	0.100	-15.67150	20.00000	Averaged
27 Dibromofluoromethane	0.68947	0.63175	0.63175	0.100	-8.37167	20.00000	Averaged
28 1,1,1-Trichloroethane	1.41274	1.21054	1.21054	0.100	-14.31258	20.00000	Averaged
29 2-Butanone	0.21388	0.17921	0.17921	0.001	-16.20671	20.00000	Averaged
30 1,1-Dichloropropene	0.57459	0.54026	0.54026	0.010	-5.97331	20.00000	Averaged
31 Benzene	1.62784	1.57829	1.57829	0.500	-3.04366	20.00000	Averaged
33 d4-1,2-Dichloroethane	0.76465	0.71854	0.71854	0.010	-6.03001	20.00000	Averaged
34 1,2-Dichloroethane	0.50464	0.46681	0.46681	0.100	-7.49722	20.00000	Averaged
36 Trichloroethene	0.37870	0.36317	0.36317	0.100	-4.09935	20.00000	Averaged
38 Dibromomethane	0.20829	0.18578	0.18578	0.010	-10.80477	20.00000	Averaged
39 1,2-Dichloropropane	0.38245	0.36675	0.36675	0.100	-4.10614	20.00000	Averaged

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 28-AUG-2014 12:07
 Lab File ID: cc0828.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 11:40 14:53
 Lab Sample ID: CC0828 Quant Type: ISTD
 Method: /chem3/nt2.i/20140828.b/82600827L.m

COMPOUND	RRF / AMOUNT		CCAL		MIN		MAX		CURVE TYPE
	RRF	AMOUNT	RRF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT		
40 Bromodichloromethane	0.47014		0.42920	0.42920	0.100	-8.70693	20.00000	Averaged	
41 2-Chloroethyl Vinyl Ether	0.14480		0.14351	0.14351	0.000	-0.89066	20.00000	Averaged	
42 Cis 1,3-dichloropropene	0.47473		0.46411	0.46411	0.200	-2.23690	20.00000	Averaged	
\$ 43 d8-Toluene	1.26383		1.27196	1.27196	0.010	0.64353	20.00000	Averaged	
44 Toluene	0.95067		0.92715	0.92715	0.400	-2.47462	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.11111		0.10048	0.10048	0.000	-9.56422	20.00000	Averaged	
46 Tetrachloroethene	0.30275		0.31794	0.31794	0.200	5.01839	20.00000	Averaged	
47 Trans 1,3-Dichloropropene	0.39743		0.39067	0.39067	0.010	-1.70197	20.00000	Averaged	
48 1,1,2-Trichloroethane	0.25545		0.22912	0.22912	0.100	-10.30545	20.00000	Averaged	
49 Chlorodibromomethane	0.25462		0.23346	0.23346	0.100	-8.31294	20.00000	Averaged	
50 1,3-Dichloropropane	0.41914		0.41449	0.41449	0.100	-1.10940	20.00000	Averaged	
51 1,2-Dibromoethane	0.27048		0.25259	0.25259	0.010	-6.61416	20.00000	Averaged	
52 2-Hexanone	0.17101		0.16810	0.16810	0.010	-1.70111	20.00000	Averaged	
54 Chlorobenzene	0.97508		0.97499	0.97499	0.500	-0.00906	20.00000	Averaged	
55 Ethyl Benzene	0.53553		0.55092	0.55092	0.100	2.87261	20.00000	Averaged	
56 1,1,1,2-Tetrachloroethane	0.33195		0.31440	0.31440	0.010	-5.28597	20.00000	Averaged	
57 m,p-xylene	0.65350		0.68616	0.68616	0.300	4.99774	20.00000	Averaged	
58 o-Xylene	0.68554		0.70353	0.70353	0.300	2.62448	20.00000	Averaged	
59 Styrene	1.10049		1.15943	1.15943	0.300	5.35608	20.00000	Averaged	
60 Bromoform	0.24618		0.23697	0.23697	0.010	-3.74358	20.00000	Averaged	
61 Isopropyl Benzene	2.88780		3.35438	3.35438	0.010	16.15679	20.00000	Averaged	
\$ 62 4-Bromofluorobenzene	0.58491		0.55600	0.55600	0.200	-4.94366	20.00000	Averaged	
63 Bromobenzene	0.66987		0.71984	0.71984	0.010	7.46040	20.00000	Averaged	
64 N-Propyl Benzene	3.46118		4.03008	4.03008	0.010	16.43683	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.57292		0.58373	0.58373	0.100	1.88735	20.00000	Averaged	
66 2-Chloro Toluene	2.51006		2.78976	2.78976	0.010	11.14297	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.51770		2.93995	2.93995	0.010	16.77127	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.16882		0.17412	0.17412	0.010	3.13572	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.16261		0.17664	0.17664	0.001	8.62399	20.00000	Averaged	
70 4-Chloro Toluene	2.32237		2.61578	2.61578	0.010	12.63398	20.00000	Averaged	
71 T-Butyl Benzene	2.00675		2.30283	2.30283	0.010	14.75397	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	2.58145		2.98253	2.98253	0.010	15.53691	20.00000	Averaged	
73 S-Butyl Benzene	3.22332		3.74212	3.74212	0.010	16.09500	20.00000	Averaged	
74 4-Isopropyl Toluene	2.46417		2.89632	2.89632	0.010	17.53762	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.42365		1.54210	1.54210	0.600	8.32001	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt2.i Injection Date: 28-AUG-2014 12:07
 Lab File ID: cc0828.d Init. Cal. Date(s): 27-AUG-2014 27-AUG-2014
 Analysis Type: WATER Init. Cal. Times: 11:40 14:53
 Lab Sample ID: CC0828 Quant Type: ISTD
 Method: /chem3/nt2.i/20140828.b/82600827L.m

COMPOUND	CCAL		MIN		MAX		CURVE TYPE
	RRF / AMOUNT	RF10	RRF10	RRF	%D / %DRIFT	%D / %DRIFT	
77 1,4-Dichlorobenzene	1.43711	1.53406	1.53406	0.500	6.74628	20.00000	Averaged
78 N-Butyl Benzene	2.52568	2.91049	2.91049	0.010	15.23603	20.00000	Averaged
79 d4-1,2-Dichlorobenzene	0.92198	0.88914	0.88914	0.010	-3.56245	20.00000	Averaged
80 1,2-Dichlorobenzene	1.35607	1.38165	1.38165	0.400	1.88612	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.08814	0.08394	0.08394	0.010	-4.76206	20.00000	Averaged
83 Hexachloro 1,3-Butadiene	11.88166	10.00000	0.33067	0.010	18.81656	20.00000	Linear
84 1,2,4-Trichlorobenzene	0.68756	0.74662	0.74662	0.010	8.58987	20.00000	Averaged
85 Naphthalene	1.17723	1.21236	1.21236	0.010	2.98385	20.00000	Averaged
86 1,2,3-Trichlorobenzene	0.54054	0.55549	0.55549	0.010	2.76604	20.00000	Averaged

Matrix: Water

Date Received: 08/21/14

Data Release Authorized: *MW*
 Reported: 09/02/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-082714 14-17239	Method Blank HC ID: ---	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 88.2%
YX35A 14-17239	MW3 HC ID: ---	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 91.7%
YX35B 14-17240	MW5 HC ID: ---	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 88.9%
YX35C 14-17241	MW6 HC ID: DRO	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.30 < 0.20 U 67.5%
YX35D 14-17242	MW9 HC ID: ---	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 85.5%
YX35E 14-17243	MW10 HC ID: DRO	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.13 < 0.20 U 83.4%
YX35F 14-17244	MW11 HC ID: DRO	08/27/14	08/29/14 FID9	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.12 < 0.20 U 86.8%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.

DL-Dilution of extract prior to analysis.

RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.

Motor Oil range quantitation on total peaks in the range from C24 to C38.

HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-082714	88.2%	0
LCS-082714	83.6%	0
LCSD-082714	84.2%	0
MW3	91.7%	0
MW5	88.9%	0
MW6	67.5%	0
MW9	85.5%	0
MW10	83.4%	0
MW11	86.8%	0

(OTER) = o-Terphenyl

LCS/MB LIMITS **QC LIMITS**
(50-150) (50-150)

Prep Method: SW3510C
Log Number Range: 14-17239 to 14-17244

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID

Page 1 of 1



Sample ID: LCS-082714

LCS/LCSD

Lab Sample ID: LCS-082714

LIMS ID: 14-17239

Matrix: Water

Data Release Authorized: *AMW*

Reported: 09/02/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

Date Extracted LCS/LCSD: 08/27/14

Sample Amount LCS: 500 mL

LCSD: 500 mL

Date Analyzed LCS: 08/29/14 16:21

Final Extract Volume LCS: 1.0 mL

LCSD: 08/29/14 16:42

LCSD: 1.0 mL

Instrument/Analyst LCS: FID9/JLW

Dilution Factor LCS: 1.00

LCSD: FID9/JLW

LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.75	3.00	91.7%	2.77	3.00	92.3%	0.7%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	83.6%	84.2%

Results reported in mg/L

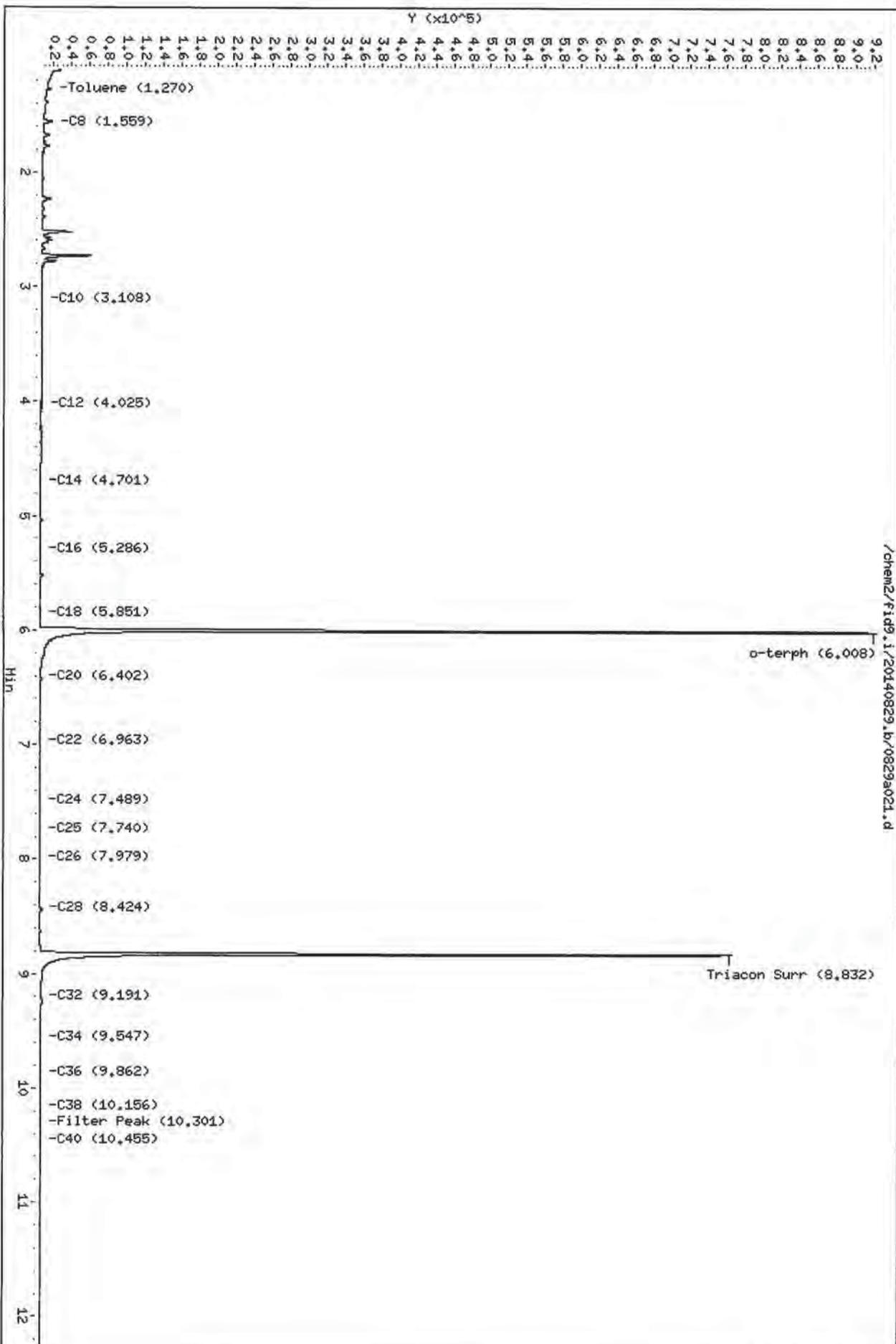
RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 08/21/14

ARI Job: YX35
Project: Precision Engineering
1396024*00

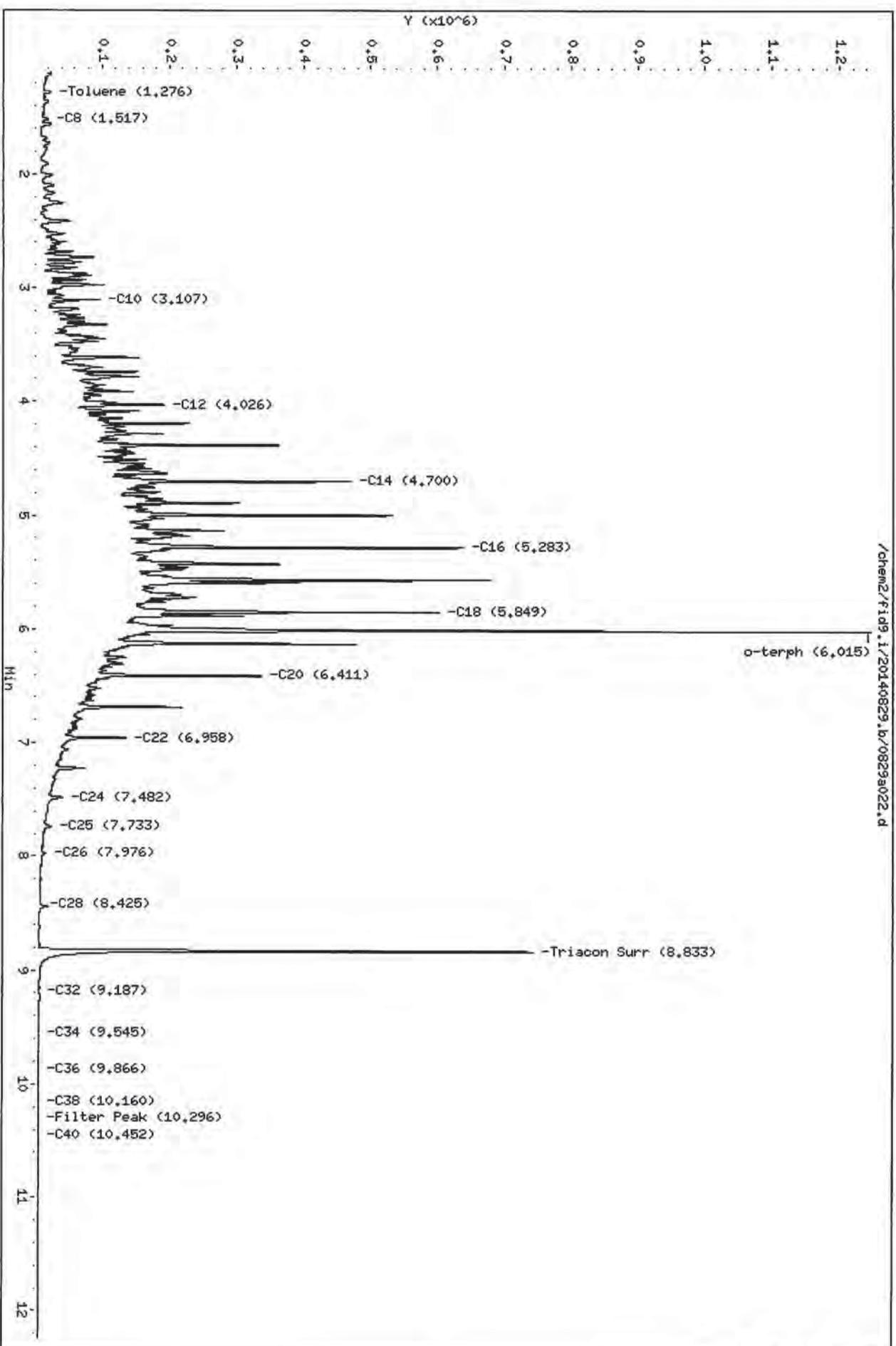
ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-17239-082714MB1	Method Blank	500 mL	1.00 mL	08/27/14
14-17239-082714LCS1	Lab Control	500 mL	1.00 mL	08/27/14
14-17239-082714LCSD1	Lab Control Dup	500 mL	1.00 mL	08/27/14
14-17239-YX35A	MW3	500 mL	1.00 mL	08/27/14
14-17240-YX35B	MW5	500 mL	1.00 mL	08/27/14
14-17241-YX35C	MW6	500 mL	1.00 mL	08/27/14
14-17242-YX35D	MW9	500 mL	1.00 mL	08/27/14
14-17243-YX35E	MW10	500 mL	1.00 mL	08/27/14
14-17244-YX35F	MW11	500 mL	1.00 mL	08/27/14



Printed on 08/29/14

Data File: /chem2/fid9.i/20140829.b/0829a022.d
Date: 29-AUG-2014 16:21
Client ID: YX3SLCSM4
Sample Info: YX3SLCSM4
Column phase: RTX-1

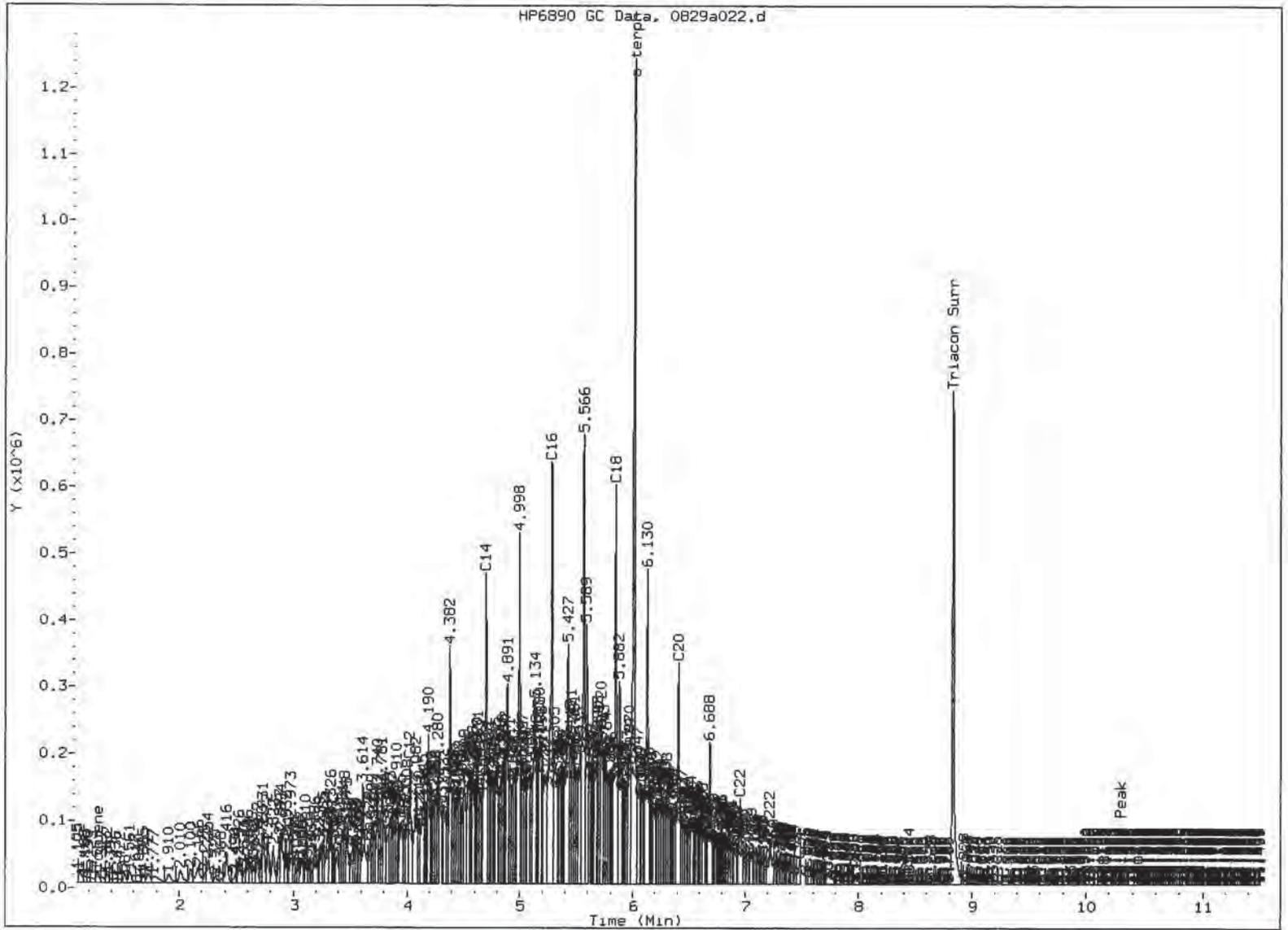
Instrument: fid9.i
Operator: JM
Column diameter: 0.25



/chem2/fid9.i/20140829.b/0829a022.d

YX35:00040

HP6890 GC Data, 0829a022.d



MANUAL INTEGRATION

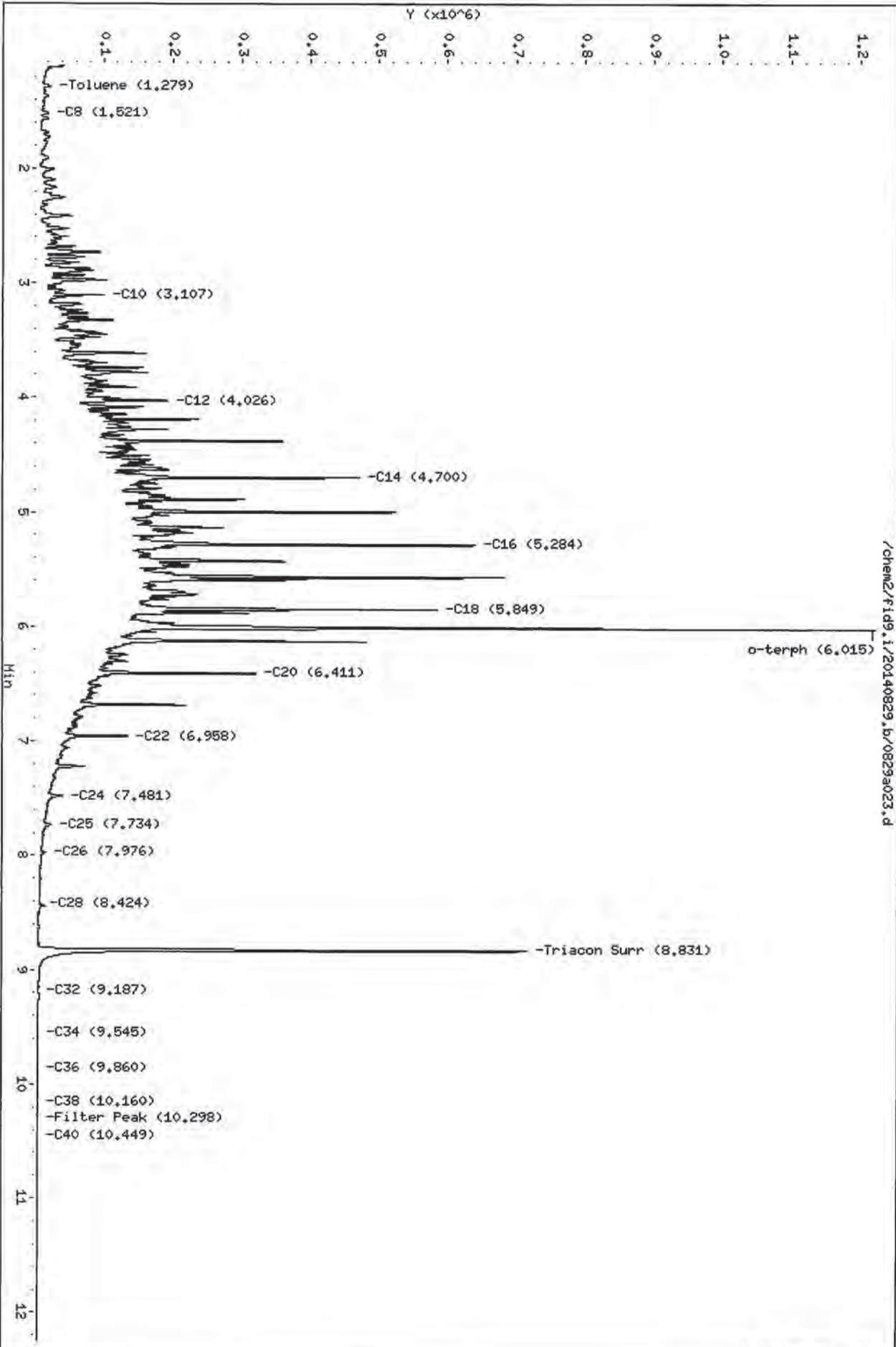
- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skimmed

Analyst: JW

Date: 7/1/14

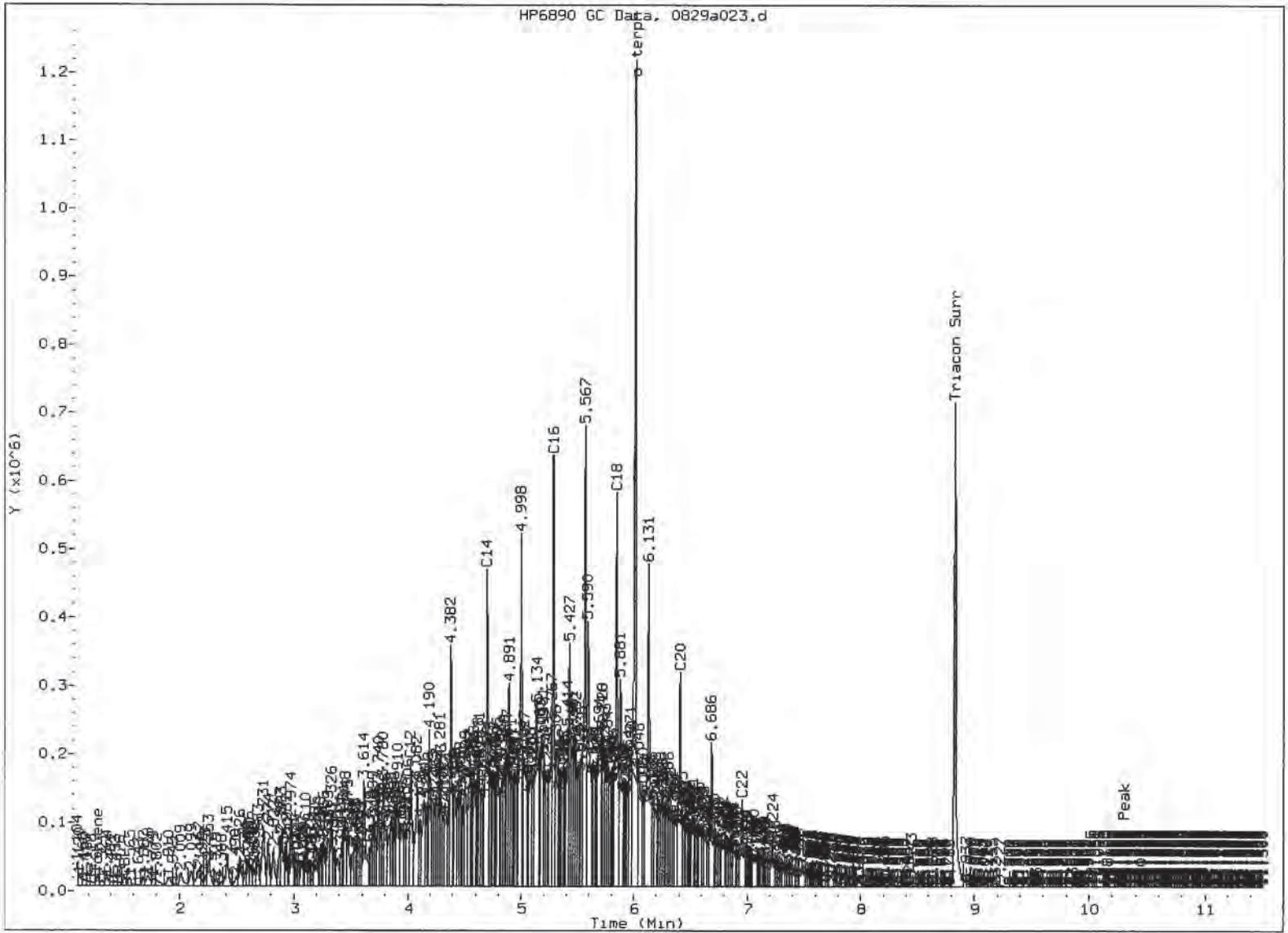
Data File: /chem2/fid9.i/20140829.br/0829a023.d
Date: 29-AUG-2014 16:42
Client ID: YX35LCS0M1
Sample Info: YX35LCS0M1
Column phase: RTX-1

Instrument: fid9.i
Operator: JM
Column diameter: 0.25



YX35. 20142

HP6890 GC Data, 0829a023.d



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

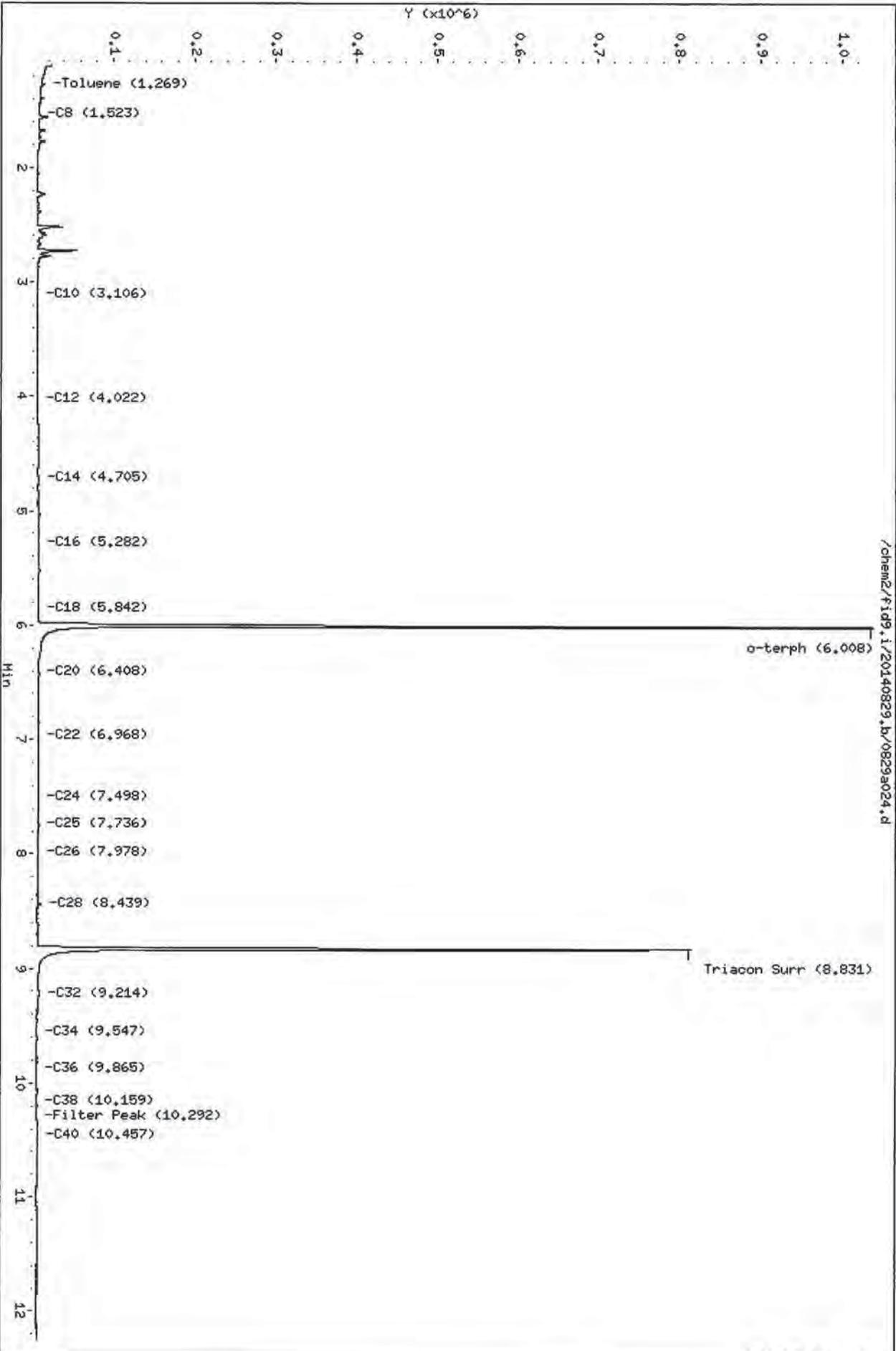
Analyst: JD

Date: 2/1/14

Data File: /chem2/fid9.i/20140829.br/0829a024.d
Date: 29-AUG-2014 17:04
Client ID: MM3
Sample Info: YX35A

Column phase: RTX-1

Instrument: fid9.i
Operator: JM
Column diameter: 0.25

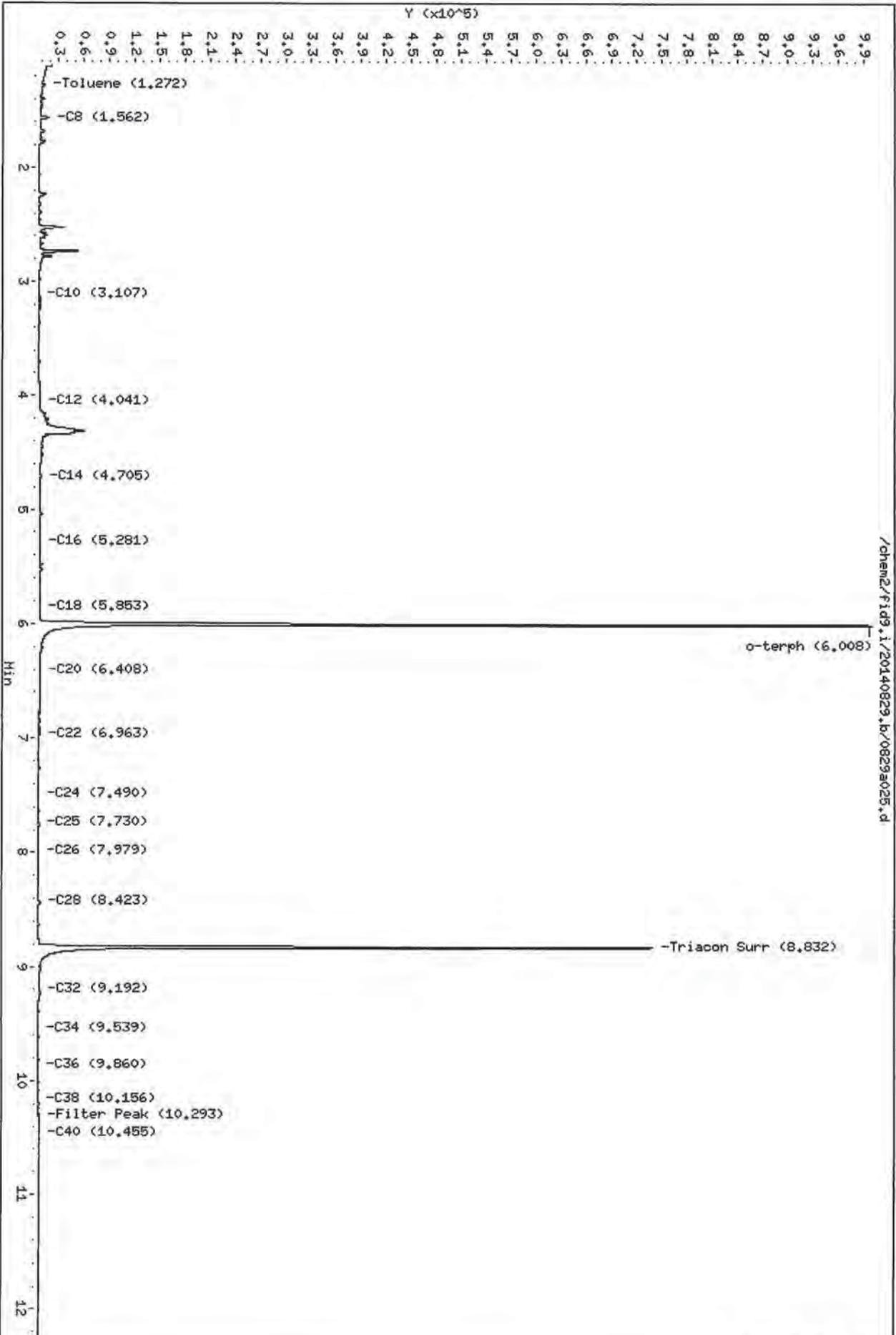


YX35-00044

Data File: /chem2/fid9.i/20140829.b/0829a025.d
Date: 29-AUG-2014 17:25
Client ID: MMS
Sample Info: YX35B

Column phase: RTX-1

Instrument: fid9.i
Operator: JM
Column diameter: 0.25



Data File: /chem2/fid9.i/20140829.b/0829a026.d
Date: 29-AUG-2014 17:46

Client ID: HMK

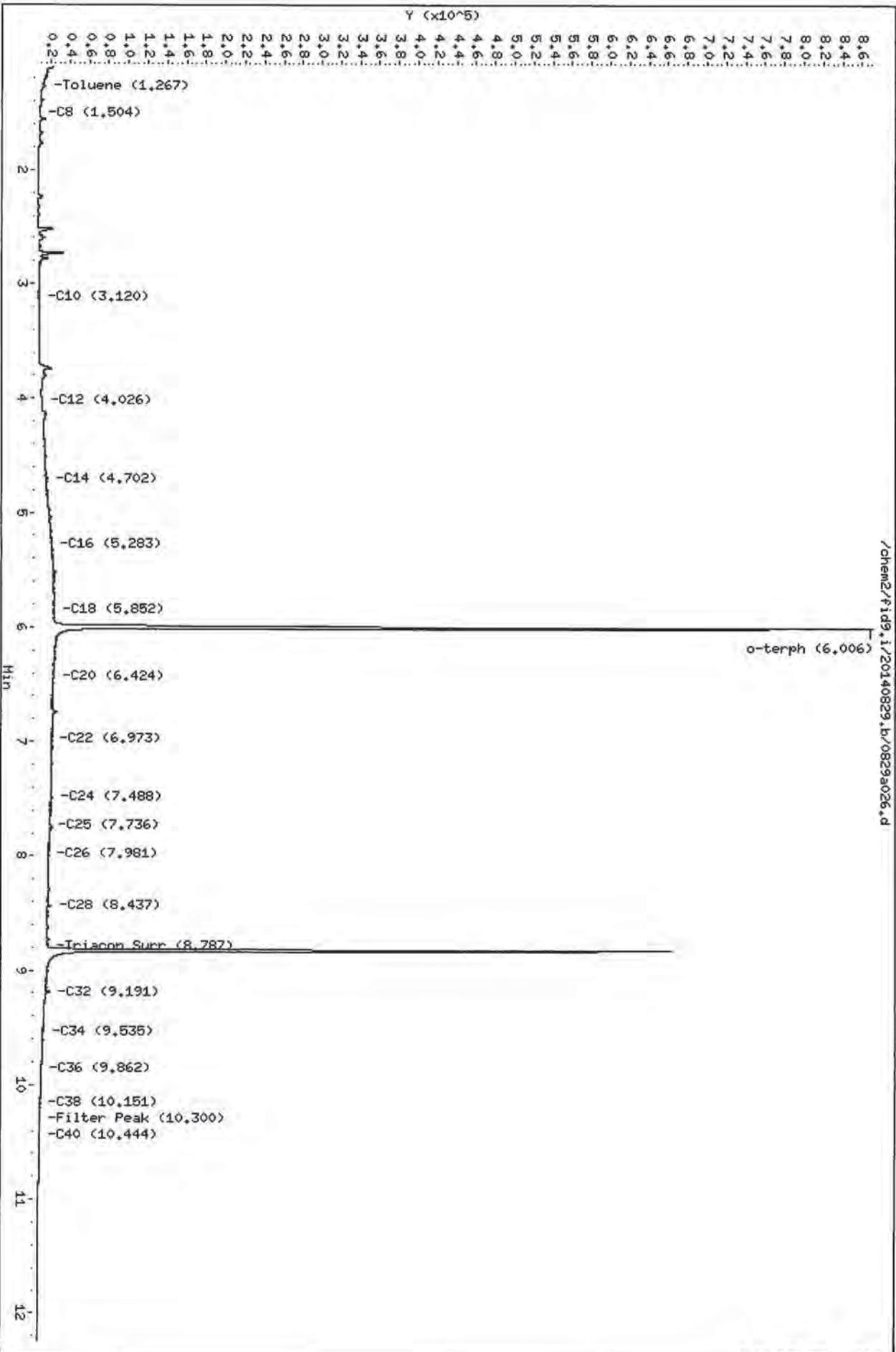
Sample Info: YX35C

Column phase: RTX-1

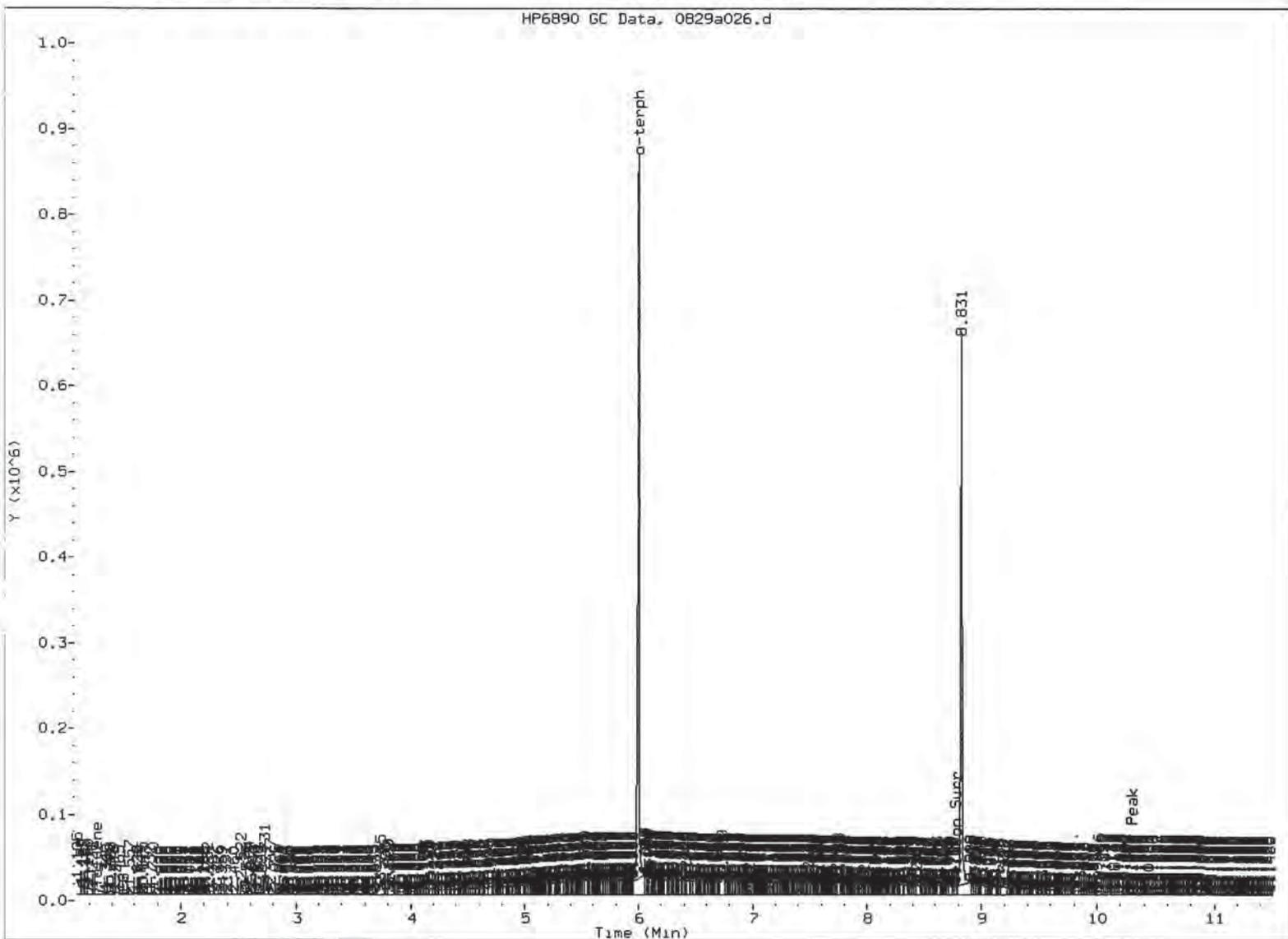
Instrument: fid9.i

Operator: JM

Column diameter: 0.25



YX35.082046



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skipped

Analyst: JD

Date: 9/1/14

Data File: /chem2/fid9.i/20140829.b/0829a027.d
Date: 29-AUG-2014 18:07
Client ID: MM9

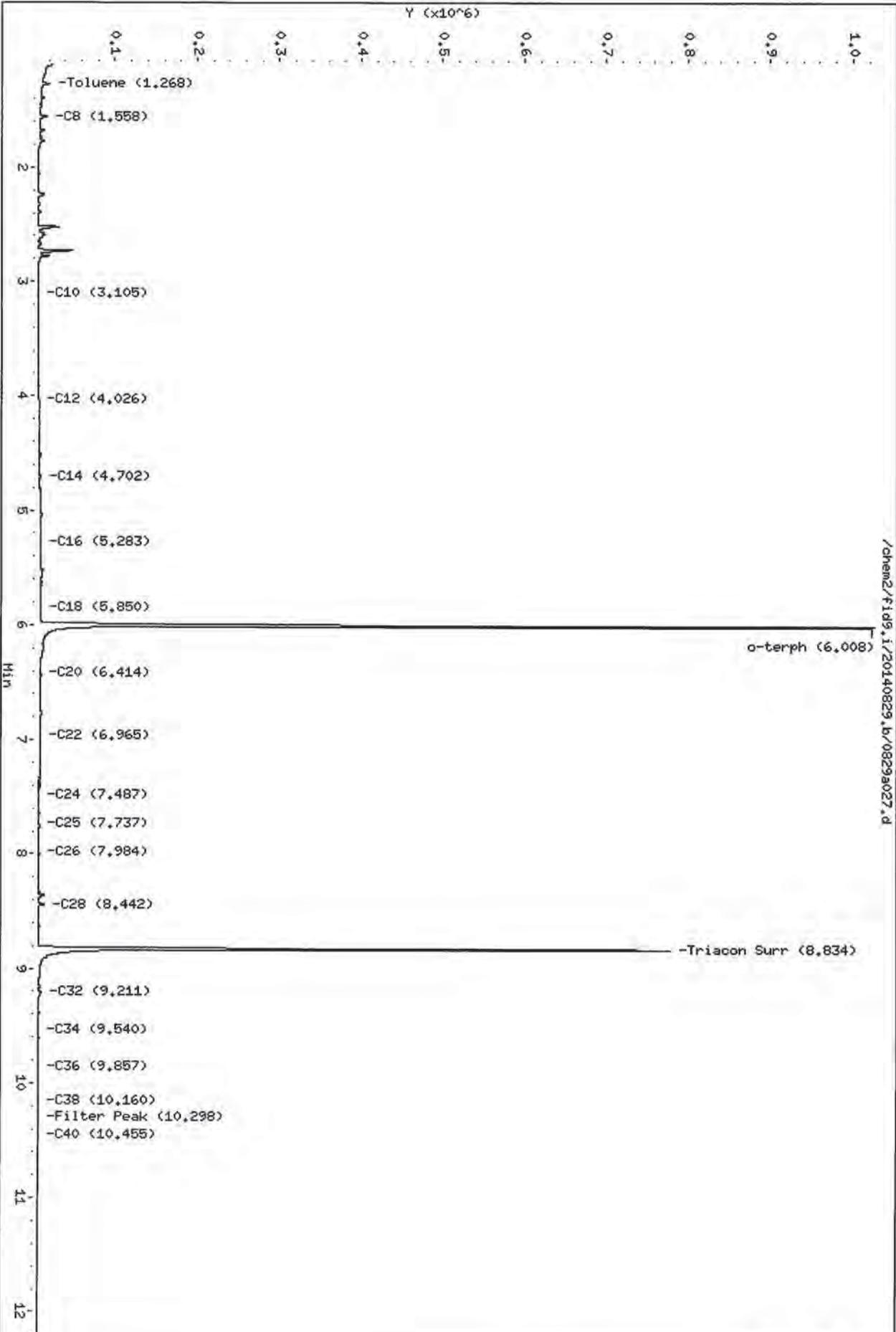
Sample Info: YX35D

Column phase: RTX-1

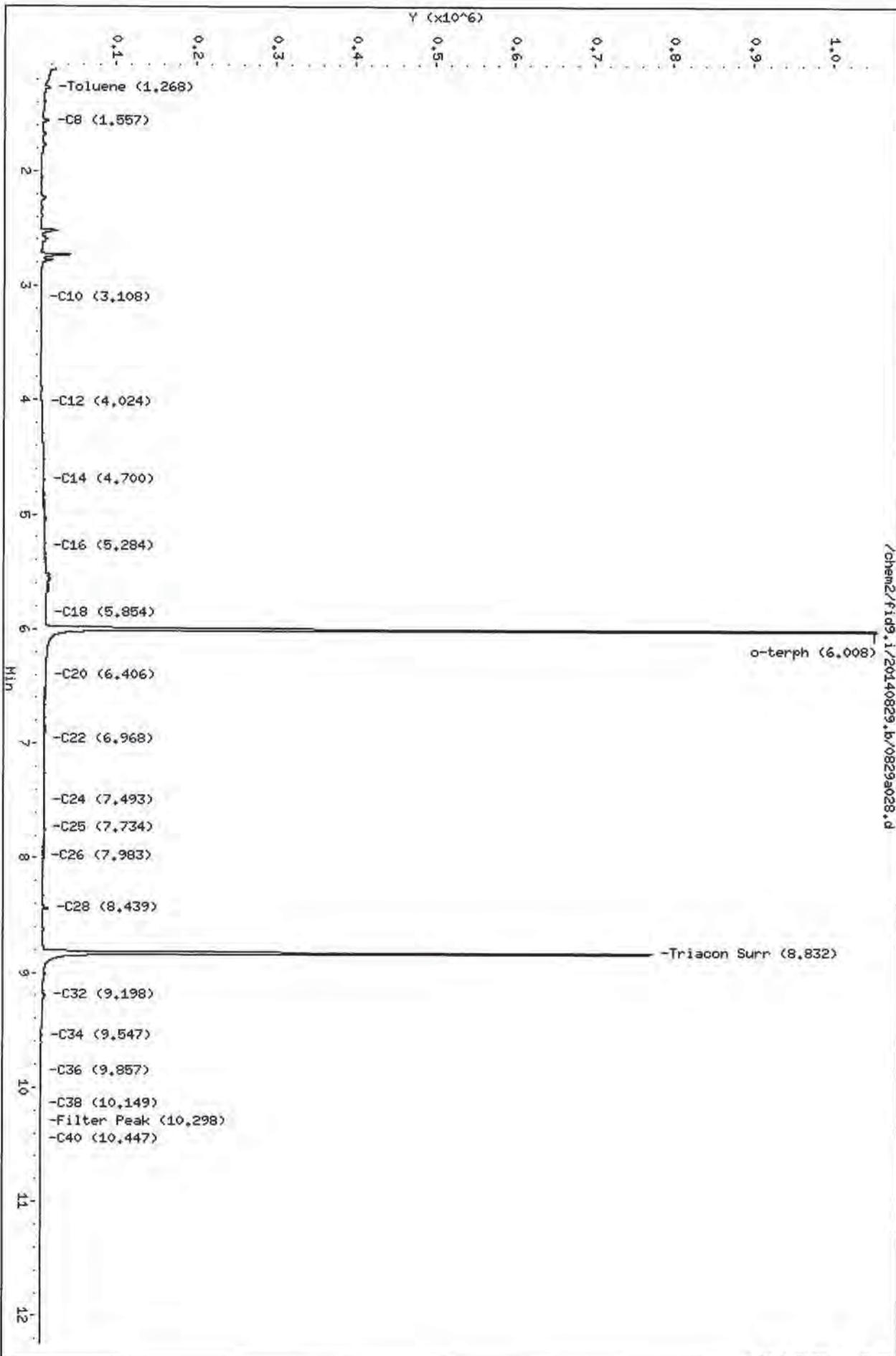
Instrument: fid9.i

Operator: JM

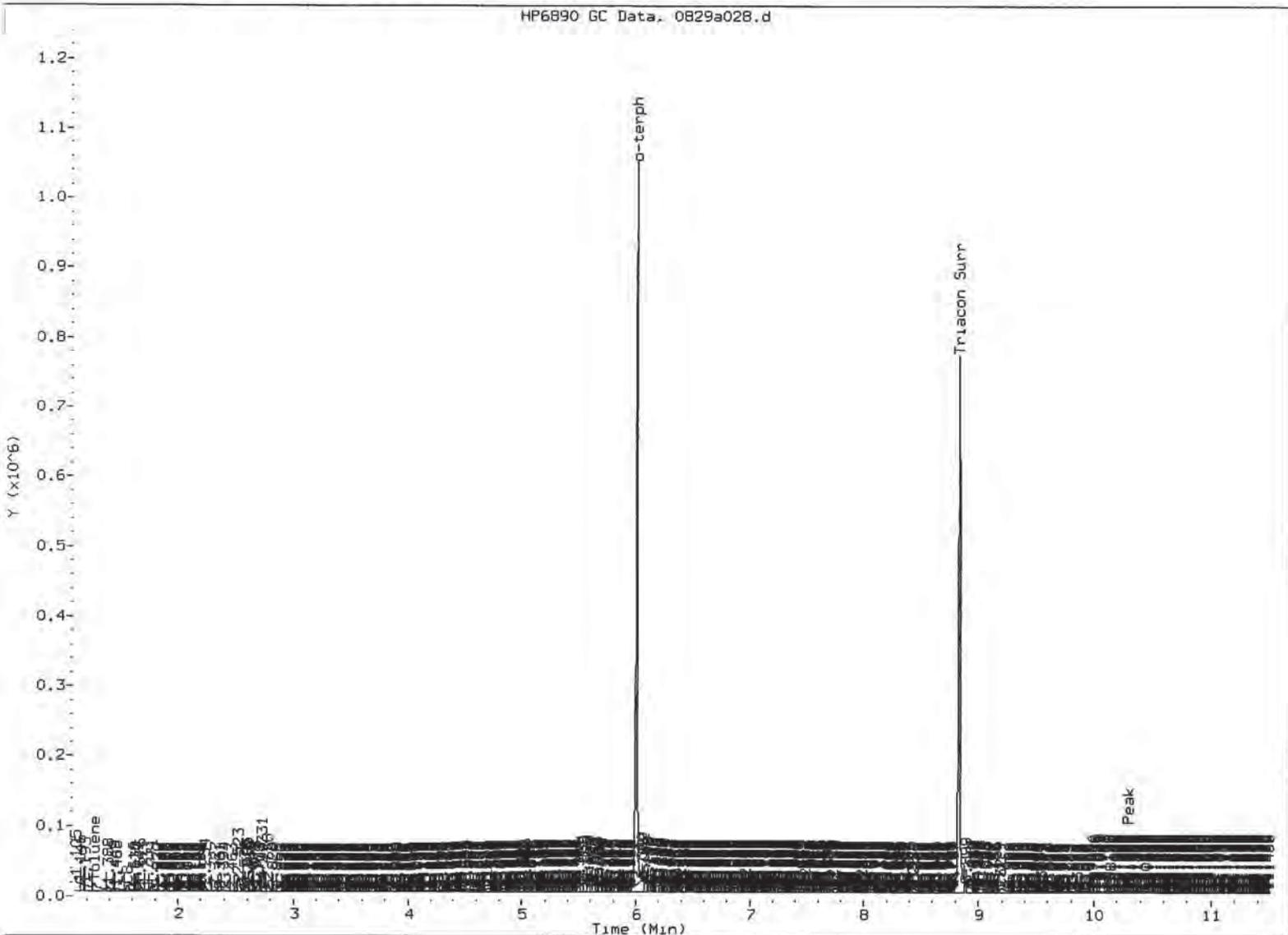
Column diameter: 0.25



YX35D



10-19-14 15:55:11

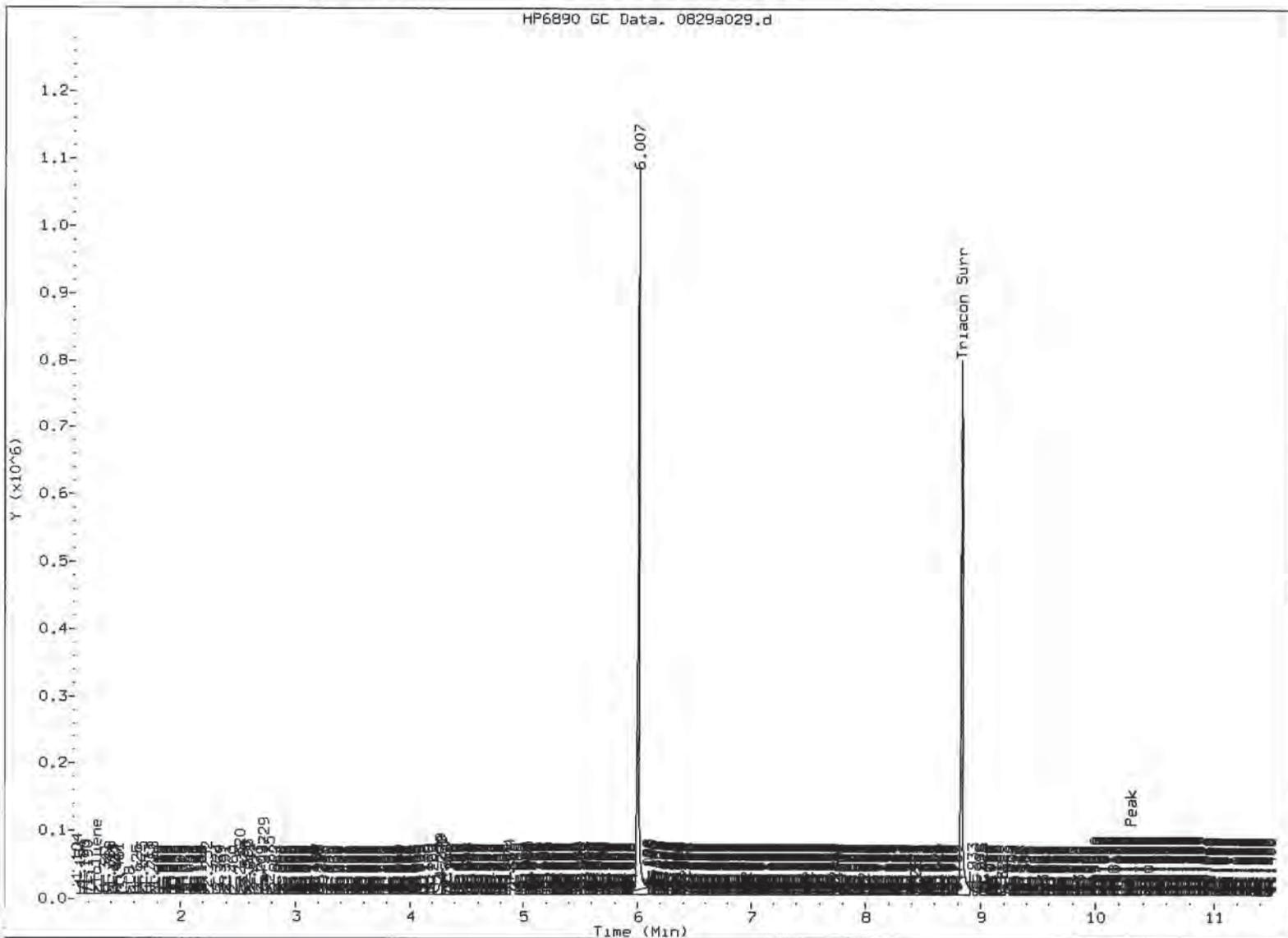


MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skipped

Analyst: JW

Date: 9/1/14



MANUAL INTEGRATION

- 1. Baseline correction
- 2. Poor chromatography
- 3. Peak not found
- 4. Totals calculation
- 5. Surrogate Skipped

Analyst: SD

Date: 9/1/14

INORGANICS ANALYSIS DATA SHEET
Hexavalent Chromium by Method SM3500Cr-B



Data Release Authorized: 
Reported: 08/25/14
Date Received: 08/21/14
Page 1 of 1

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00

Client/ ARI ID	Date Sampled	Matrix	Analysis Date & Batch	RL	Result
MW3 YX35A 14-17239	08/21/14	Water	08/21/14 082114#1	0.010	0.012
MW5 YX35B 14-17240	08/21/14	Water	08/21/14 082114#1	5.00	95.5
MW6 YX35C 14-17241	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U
MW9 YX35D 14-17242	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U
MW10 YX35E 14-17243	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U
MW11 YX35F 14-17244	08/21/14	Water	08/21/14 082114#1	0.010	< 0.010 U

Reported in mg/L

RL-Analytical reporting limit
U-Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 08/25/14

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte	Date/Time	Units	Blank
Hexavalent Chromium	08/21/14 16:35	mg/L	< 0.010 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/25/14

A handwritten signature in black ink, appearing to be a stylized name, positioned over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date/Time	Units	SRM	True Value	Recovery
Hexavalent Chromium ERA #160412	08/21/14 16:35	mg/L	0.639	0.630	101.4%

REPLICATE RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/25/14

A handwritten signature in black ink, appearing to be 'JG' or similar, written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YX35A Client ID: MW3					
Hexavalent Chromium	08/21/14	mg/L	0.012	0.015	22.2%

MS/MSD RESULTS-CONVENTIONALS
YX35-Kennedy Jenks Consultants, Inc.



Matrix: Water
Data Release Authorized:
Reported: 08/25/14

A handwritten signature in black ink, appearing to be 'AJ' or similar, written over the 'Data Release Authorized' text.

Project: Precision Engineering
Event: 1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YX35A Client ID: MW3						
Hexavalent Chromium	08/21/14	mg/L	0.012	0.017	0.063	7.9%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW3
SAMPLE

Lab Sample ID: YX35A

LIMS ID: 14-17239

Matrix: Water

Data Release Authorized: 

Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/21/14

Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW5
SAMPLE

Lab Sample ID: YX35B
LIMS ID: 14-17240
Matrix: Water
Data Release Authorized
Reported: 08/28/14



QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	82.4	
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW6
SAMPLE

Lab Sample ID: YX35C

LIMS ID: 14-17241

Matrix: Water

Data Release Authorized: 

Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/21/14

Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.08	
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.023	
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW9
SAMPLE

Lab Sample ID: YX35D
LIMS ID: 14-17242
Matrix: Water
Data Release Authorized
Reported: 08/28/14



QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW10
SAMPLE

Lab Sample ID: YX35E
LIMS ID: 14-17243
Matrix: Water
Data Release Authorized: 
Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.
Project: Precision Engineering
1396024*00
Date Sampled: 08/21/14
Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL
RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: MW11
SAMPLE

Lab Sample ID: YX35F

LIMS ID: 14-17244

Matrix: Water

Data Release Authorized 

Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: 08/21/14

Date Received: 08/21/14

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

RL-Reporting Limit

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: LAB CONTROL

Lab Sample ID: YX35LCS

LIMS ID: 14-17244

Matrix: Water

Data Release Authorized 

Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6010C	2.06	2.00	103%	
Chromium	6010C	0.508	0.500	102%	
Lead	6010C	2.00	2.00	100%	
Selenium	6010C	2.06	2.00	103%	

Reported in mg/L

N-Control limit not met

Control Limits: 80-120%

INORGANICS ANALYSIS DATA SHEET

TOTAL METALS

Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: YX35MB

LIMS ID: 14-17244

Matrix: Water

Data Release Authorized: 

Reported: 08/28/14

QC Report No: YX35-Kennedy Jenks Consultants, Inc.

Project: Precision Engineering

1396024*00

Date Sampled: NA

Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	mg/L	Q
3010A	08/25/14	6010C	08/27/14	7440-38-2	Arsenic	0.05	0.05	U
3010A	08/25/14	6010C	08/27/14	7440-47-3	Chromium	0.005	0.005	U
3010A	08/25/14	6010C	08/27/14	7439-92-1	Lead	0.02	0.02	U
3010A	08/25/14	6010C	08/27/14	7782-49-2	Selenium	0.05	0.05	U

U-Analyte undetected at given RL

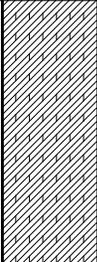
RL-Reporting Limit

Attachment 3

Soil Boring and Well Construction Logs

Boring Log

BORING LOCATION South side of current facility building		DRILLER Kasey Goble		Boring Name SB1	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 7.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 7		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES			DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
TYPE	RECOV (FEET)	PENETR. RESIST. BLOWS/6"							
	4.5		5	SB1-5		0.0 / NO/NS		GW/GM	Asphalt, gravel, road grade material
	1.5								Well-graded GRAVEL with silt and sand Well graded gravel with silt and sand, dry; damp at 5ft to 7ft

NOTES

- PID PPM = Photo ionization detector (reading in parts per million)
- ST = Sheen test: NS, WS, MS, SS indicates no sheen, weak sheen, moderate sheen, and strong sheen, respectively
- bgs = below ground surface
- No apparent environmental impacts in boring as would be indicated by field screening methods

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING DRAFT

Boring Log

BORING LOCATION North side of current facility building		DRILLER Kasey Goble		Boring Name <u>SB10</u>	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name <u>Ecology Precision Engineering</u>	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number <u>1396024.00</u>	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 14.5 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 14.5		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS	
				WELL COMPLETION	
				<input type="checkbox"/> SURFACE HOUSING	
				<input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.5								Asphalt, gravel, road fill material
	4.5		5	SB10-7		0.0 / NO/NS		GW/GM	Well-graded GRAVEL with silt and sand gray, blue gray, Well graded gravel with sand and silt, mostly damp with some thin zones of water
	4.5							SP	Poorly graded SAND gray - dark gray - black gray, Poorly graded firm sand, some course, wet
	3.5		10	SB7		0.0 / NO/NS		GW/GM	Well-graded GRAVEL with silt and sand gray - light to dark gray, Well graded gravel with silt and sand, gray - light to dark gray, damp, mostly wet in places

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING

Boring Log

BORING LOCATION South-bound shoulder of 14th Avenue South		DRILLER Kasey Goble		Boring Name SB11	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 30.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/7/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/7/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 30		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt and road grade material
	4								dark red brown, gray, at 4ft blue gray color, Sandy silt, with 10% sand and <5% gravel, damp
	4.8		5	SB11		0.0 / NO/NS			light brown - gray, Silty sand, up to 30% silt in places, traces of gravel; wet at 7ft
			10	SB11-10		0.0 / NO/NS			Silty clay, lean in phases, organic material in places, moderate
	5		15			0.0 / NO/NS	SP		Grades to silty sand with clay, dense, clay in places otherwise very homogenous
	5		20			0.0 / NO/NS	ML		Poorly graded SAND Thin medium sand layer
			25			0.0 / NO/NS			SILT with sand Silt with traces of sand up to 10%, traces of clay
	0		30			0.0 / NO/NS			No return
	3.5			SB11-30		0.0 / NO/NS	ML		SILT with sand color change to olive green, becomes sandier with abundant shell fragments

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ.PNW.GDT 8/19/14

Boring Log

BORING LOCATION South-bound shoulder of 14th Avenue South		DRILLER Kasey Goble		Boring Name SB12	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/7/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/7/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt and gravel, road grade material
	4							CL/ ML	Sandy silty CLAY gray - blue gray, Silty, sandy clay, dense, firm, low, dry to damp
	4		5			0.4 / NO/NS			
	5		10	SB12 SB12-12		0.0 / NO/NS		ML	Sandy SILT brown to red brown, red to gray, Sandy silt with traces of clay and thin clay stringers, local gravel <5% and traces of wood, moderate density; at 8ft to 10ft clay rich layer; at 17ft homogenous silty sands to sandy silts; less dense sand, more water
	2.5		15			0.0 / NO/NS			
			20			0.0 / NO/NS			

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING

Boring Log

BORING LOCATION South-bound shoulder of 14th Avenue South		DRILLER Kasey Goble		Boring Name SB13	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/7/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/7/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.5								Gravel and road grade material
			5	SB13		0.0 / NO/NS		SP	Poorly graded SAND with gravel brown, brown gray, gray, Well graded sand with gravel
	4			SB13-9				CL/ ML	Sandy silty CLAY brown gray to red brown gray, Silty sandy clay, moderately dense, trace sand no visible silt
			10			0.0 / NO/NS		SM	Silty SAND dark gray - dark brown gray, Silty sand, courser sand (m)at base, wet
	5								Sandy clayey SILT Clayey sandy silt, up to 40% clay in places, up to 25% sand in places, becoming denser with depth (soft at top moderately firm - firm at bottom
			15			0.0 / NO/NS		ML/ CL	
	4								
			20			0.0 / NO/NS			

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING DRAFT

Boring Log

BORING LOCATION South-bound shoulder of 14th Avenue South		DRILLER Kasey Goble		Boring Name SB14	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 30.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/7/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/7/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 30		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

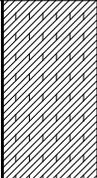
SAMPLES TYPE	RECOV (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	2								Gravel and road fill material
	4.5		5	SB14-6		44.5 / NO/NS		SM	Silty SAND Silty sand, moderately graded, very fine to medium
						53.1 / NO/NS		SM	Silty SAND brown gray to gray, Silty sandy clay, dense, high organic (black) in part, moderate
	5		10	SB14		1.2 / NO/NS		SP/SM	Poorly graded SAND with silt brown red brown, Poorly graded sand with trace of silt, fine grained moderately graded in places, high water yield
	2.5		15			0.0 / NO/NS		ML	Sandy SILT brown, Sandy silt, ~10% to 20% sand traces of clay, firm, high density, homogenous material, at 17ft sandy zone, damp
	0		20			0.0 / NO/NS			No return
	5		25			0.0 / NO/NS		ML	Sandy SILT brown, Sandy silt, ~10% to 20% sand traces of clay, firm, high density, homogenous material, damp
						0.0 / NO/NS		ML	Sandy SILT color change to olive green, Sandy silt, becoming sandy with abundant shells
			30			0.0 / NO/NS		CL	Lean CLAY blue green - gray, Very hard, lean clay, abundant shells, dry

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ.PNW.GDT 8/19/14

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION South side of current facility building		DRILLER Kasey Goble		Boring Name <u>SB2</u>	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name <u>Ecology Precision Engineering</u>	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number <u>1396024.00</u>	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 4.8 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 4.8		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS	
				WELL COMPLETION	
				<input type="checkbox"/> SURFACE HOUSING	
				<input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES			DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
TYPE	RECOV (FEET)	PENETR. RESIST. BLOWS/6"							
	4.2								Asphalt, gravel, road grade material
								GW/GM	Well-graded GRAVEL with silt and sand run 1 refusal at 4.8ft with torn liner; run 2 refusal at 3.5 ft Well graded gravel with silt and sand (fill), damp

0.07
NO/NS

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING DRAFT

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION South East side of current facility building		DRILLER Kasey Goble		Boring Name SB3	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.5		4.5	SB3-2		91 / SO/MS			Asphalt, concrete, road grade material, at 2ft strong hydrocarbopn odor with moderate sheen
	3		5	SB3-8		1.0 / NO/NS		ML	Sandy SILT brown - brown gray, Silty sand and sandy silt 50% each with local clayey areas, firm at top becoming soft towards bottom, damp
	4.8		10			0.0 / NO/NS		CL/ ML	Silty CLAY silty clay, firm
	5		15	SB3		0.1 / NO/NS		SM	Silty SAND with gravel light gray - gray, silty sandy gravel, very hard dense, unable to cut with a knife in places, dry, from 15ft to 15.6ft wet, water producing zone
			20			0.2 / NO/NS			

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING

Boring Log

BORING LOCATION South East side of current facility building		DRILLER Kasey Goble		Boring Name <u>SB4</u>	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name <u>Ecology Precision Engineering</u>	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number <u>1396024.00</u>	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/7/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/7/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt, gravel, fill material
	4		5	SB4-5		0.0 / NO/NS			Sandy clayey SILT brown to gray, Silty clayey sand, well graded very fine to fine, silt and clay ~20% each, dense, mostly homogenous
	3.8		10	SB4		0.0 / NO/NS	ML / CL		
	5		15			0.0 / NO/NS			Silty SAND red brown - brown, brown - gray, Silty sand, soft with mostly lean clay
	5		20	SB4-20		0.0 / NO/NS	SM CL SW		
									Lean CLAY brown - gray brown, lean clay, firm, dense, moderate plasticity, some shell fragments
									Well-graded SAND with gravel Well graded sand with gravel

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

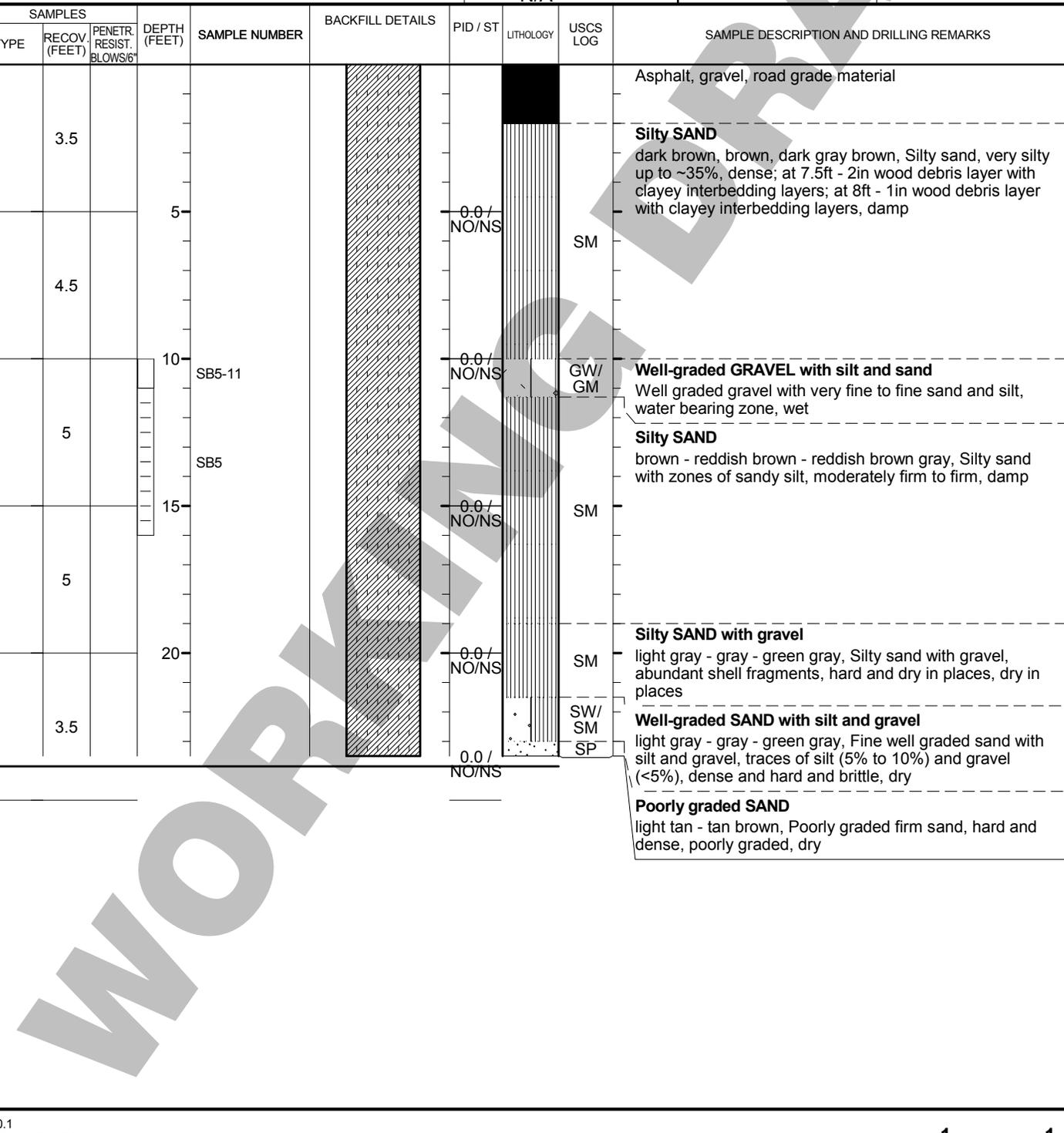
WORKING DRAFT

Boring Log

BORING LOCATION East side of current facility building		DRILLER Kasey Goble		Boring Name <u>SB5</u>	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number <u>1396024.00</u>	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 23.5 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 23.5		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt, gravel, road grade material
	3.5		5			0.0 / NO/NS		SM	Silty SAND dark brown, brown, dark gray brown, Silty sand, very silty up to ~35%, dense; at 7.5ft - 2in wood debris layer with clayey interbedding layers; at 8ft - 1in wood debris layer with clayey interbedding layers, damp
	4.5		10	SB5-11		0.0 / NO/NS		GW/GM	Well-graded GRAVEL with silt and sand Well graded gravel with very fine to fine sand and silt, water bearing zone, wet
	5		15	SB5		0.0 / NO/NS		SM	Silty SAND brown - reddish brown - reddish brown gray, Silty sand with zones of sandy silt, moderately firm to firm, damp
	5		20			0.0 / NO/NS		SM	Silty SAND with gravel light gray - gray - green gray, Silty sand with gravel, abundant shell fragments, hard and dry in places, dry in places
	3.5					0.0 / NO/NS		SW/SM SP	Well-graded SAND with silt and gravel light gray - gray - green gray, Fine well graded sand with silt and gravel, traces of silt (5% to 10%) and gravel (<5%), dense and hard and brittle, dry
									Poorly graded SAND light tan - tan brown, Poorly graded firm sand, hard and dense, poorly graded, dry

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14



Boring Log

BORING LOCATION East side of current facility building		DRILLER Kasey Goble		Boring Name <u>SB6</u>	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name <u>Ecology Precision Engineering</u>	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number <u>1396024.00</u>	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS	
				WELL COMPLETION	
				<input type="checkbox"/> SURFACE HOUSING	
				<input type="checkbox"/> STAND PIPE _____ FT.	
				Continuous Core	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.0							SM	Asphalt, gravel and sand fill material
	4.5		5			0.6 / NO/NS		SM	Silty SAND brown, dark brown, gray brown, Silty sand, high silt (~40%) with fine sand, mostly firm, poor to moderately graded, damp
	5		10			0.0 / NO/NS		ML/CL	Sandy clayey SILT Sandy clayey silt, firm, moderate plasticity, damp
	5		15	SB6 SB6-16		0.0 / NO/NS		SM	Silty SAND brown, Silty sand, soft - moderately firm, poorly graded, wet
	5		20			0.0 / NO/NS		SM	Silty SAND with gravel gray, blue - gray green - gray, Silty sand with gravel, abundant shells, well graded, hard, dry

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING

Boring Log

BORING LOCATION East side of current facility building		DRILLER Kasey Goble		Boring Name <u>SB7</u>	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name <u>Ecology Precision Engineering</u>	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number <u>1396024.00</u>	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS	
				WELL COMPLETION	
				<input type="checkbox"/> SURFACE HOUSING	
				<input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6'	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Asphalt, gravel, road grade material
	3.5								Clayey SILT with sand brown, gray brown, Silty sand with clay, very fine to fine sand, firm dense, 7.5ft to 7.8ft woody debris layer, 7.8ft to 8ft clay layer, damp
			5			0.3 / NO/NS	ML/CL		
	4.5								Poorly graded SAND with silt and gravel brown-tan, gray brown, Silty sand with gravel, well graded, soft, wet with water
			10	SB7-11		0.0 / NO/NS	SP/SM		
	5								Sandy SILT brown, Sandy silt, firm, dense, damp
			15			0.0 / NO/NS	ML		Silty SAND with gravel Silty sand with gravel, up to ~30% silt, up to 15% gravel up to 1/4in
				SB7			SM		
	5								Silty SAND with gravel Silty sand with abundant gravel and shell, very hard, dry
				SB7-19		0.0 / NO/NS	SM		
			20						

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING

Boring Log

BORING LOCATION East side of current facility building		DRILLER Kasey Goble		Boring Name SB8	
DRILLING COMPANY Cascade Drilling, L.P.		DRILL BIT(S) SIZE 2.25		Project Name Ecology Precision Engineering	
DRILLING METHOD(S) Direct Push Geoprobe MC-5 Drill String		FROM TO FT. N/A N/A		Project Number 1396024.00	
ISOLATION CASING N/A		FROM TO FT. N/A N/A		ELEVATION AND DATUM bgs	
BLANK CASING N/A		FROM TO FT. N/A N/A		TOTAL DEPTH 20.0 ft. bgs	
SLOTTED CASING N/A		FROM TO FT. N/A N/A		DATE STARTED 8/8/14	
SIZE AND TYPE OF FILTER PACK N/A		FROM TO FT. N/A N/A		DATE COMPLETED 8/8/14	
SEAL 3/8" Bentonite chips (hydrated in place)		FROM TO FT. 0 20		INITIAL WATER DEPTH (FT) N/A	
GROUT N/A		FROM TO FT. N/A N/A		LOGGED BY J. Sawdey	
				SAMPLING METHODS Continuous Core	
				WELL COMPLETION <input type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID / ST	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.5								Asphalt, gravel, road fill
	5		5			0.0 / NO/NS		ML / CL	Clayey SILT with sand brown to brown gray. Silty clayey sand, traces of gravel <5%; at 8ft wood layer
	5		10			0.0 / NO/NS		CL	Lean CLAY Clay
	5		15	SB8-16		0.0 / NO/NS		CL / ML	Silty CLAY Silty clay
	5		20			0.0 / NO/NS			Fill material Fill

KJ PNW WK DRAFT AUG 2014 DIRECT PUSH.GPJ KJ PNW.GDT 8/19/14

WORKING DRAFT

Project Name Ecology Precision Engineering Project Number _____ Well Name MW-9

SAMPLES			DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
TYPE	RECOV (FEET)	PENETR. RESIST. BLOWS/6'							
SS	1	25 50	25			0.0		SP/SM	<p>Poorly graded SAND with silt and gravel Greenish-gray at top to medium gray by ~23' bgs, silty fine sand with ~5-15% gravel, ~20-30% silt, TILL, dense to very dense, slightly moist, no odor, no sheen. <i>(Continued)</i></p>
SS	L 0	50-3							
SS	0.8	35 50-5	30			0.0		SP/SM	<p>@ ~28' bgs, brown, sandier than above and slightly less dense, possible faint odor, no sheen.</p>
SS	1	41 50-5							
SS	1	45 50	35	MW9-32.5-33.5		0.0		SW	<p>Well-graded SAND with gravel Gray, medium to coarse sand with some gravel, minor silt, moderately dense, wet, no odor, no sheen.</p>
SS	1	50-5						SP/SM	<p>Poorly graded SAND with silt and gravel Medium brown, medium to fine sand with ~10-15% silt overall (texture varies locally) and 5-10% gravel, moderately dense, wet, no odor, no sheen.</p>
SS	0.7	50	40	MW9-38-39		0.0		SM	<p>Silty SAND with gravel Brown, silty fine sand with gravel, TILL-like, dense, moist, no odor, no sheen.</p>
SS	0.7	41 50-1						SP	<p>Poorly graded SAND Gray, medium sand with minor silt and gravel, moderately dense, wet, no odor, no sheen.</p>
SS	0.4	50	45			0.0		SP/SM	<p>Poorly graded SAND with silt and gravel Gray to greenish-gray, medium to fine sand with ~20% silt and 10-15% gravel, TILL-like, dense, slightly moist to moist, no odor, no sheen.</p>
SS	1	25 50-3							

KJ PNW PRECISION AUG.2014 WELLS.GPJ KJ PNW.GDT 9/19/14

Boring & Well Construction Log

Kennedy/Jenks Consultant

BORING LOCATION NE part of site in driveway		Well Name <u>MW-11</u>	
DRILLING COMPANY Holt		DRILLER	
DRILLING METHOD(S) HSA		DRILL BIT(S) SIZE 9-inch	
ISOLATION CASING N/A		Project Name <u>Ecology Precision Engineering</u>	
BLANK CASING 2" Schedule 40 PVC Pipe		Project Number _____	
SLOTTED CASING 2" Schedule 40 PVC Pipe 0.010" Slots		ELEVATION AND DATUM ground surface	
SIZE AND TYPE OF FILTER PACK Colorado 10/20 Silica Sand		TOTAL DEPTH 20.0 ft. bgs	
SEAL 3/8" Bentonite Chips		DATE STARTED 8/16/14	
GROUT Concrete		DATE COMPLETED 8/16/14	
		INITIAL WATER DEPTH (FT) 6.0	
		LOGGED BY DKM	
		SAMPLING METHODS Split spoon	
		WELL COMPLETION <input checked="" type="checkbox"/> SURFACE HOUSING <input type="checkbox"/> STAND PIPE _____ FT.	

SAMPLES			DEPTH (FEET)	SAMPLE NUMBER	WELL CONSTRUCTION	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
TYPE	RECOV (FEET)	PENETR. RESIST. BLOWS/6'							
									Asphalt and crushed rock base
SS	1	2 4 5				0.6	SM		Silty SAND Medium brown (above ~3' bgs) to dark gray (below ~3' bgs, abrupt color change), silty fine sand with ~25-30% silt, "shiny" surface appearance to some grains in dark gray material below 3' bgs, up to 60% silt locally below ~5' bgs, moderately dense, slightly moist, no odor, no sheen.
SS	1.5	2 1 4	5			0.0	Pt ML		PEAT Brown, woody material in ~2" layer, peat-like, soft.
SS	1.5	1 1 1				0.0	Pt		Sandy SILT Medium gray, silt with ~40% fine sand and some woody material, minor gravel, moderately soft, wet, no odor, no sheen.
SS	1.5	1 0 0	10			0.0	CL/ ML		PEAT Brown, woody material in ~1" layer, peat-like, soft.
SS	1.5	1 1 0				0.0	ML/ CL		Silty CLAY Medium to light gray above ~9' bgs becoming brownish-gray below, silty clay with some root-like woody material, moderately stiff above ~9' bgs then moderately soft, moderately high plasticity, moist to wet, no odor, no sheen.
SS	1.5	1 1 0	15			0.0	ML		Clayey SILT Medium brown, clayey silt, moderately stiff, moderately high plasticity, moist to wet, no odor, no sheen.
SS	1.5	1 3 4				0.0	ML		SILT with sand Medium brown, silt with some fine sand and clay, coarsens downward gradually becoming sandier, moderately dense, low plasticity, wet, no odor, no sheen.
SS	1	7 27 36		MW11-18-19 DUP MW100		0.0	SP		Poorly graded SAND Gray, medium sand, moderately dense, wet, no odor, no sheen.
SS	1	34 42	20			0.0	SP/ SM		Poorly graded SAND Greenish-gray, medium to fine sand with up to ~10% silt and 5-10% gravel, looks like weathered TILL, moderately dense, moist to wet, no odor, no sheen.
									Poorly graded SAND with silt Greenish-gray, medium to fine sand with 15-20% silt and 5-10% gravel, looks like TILL, dense, moist, no odor, no sheen.

KJPNW PRECISION AUG 2014 WELLS.GPJ KJPNW/GDT 9/19/14