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January 28, 2021

Mr. Jeff Newschwander
Washington State Department of Ecology
1250 West Alder Street
Union Gap, Washington 98903-0009

Subject: Soil Confirmation Sampling Report Former Bingo Fuel Stop – Off-Site Area
Thorp, Washington

Dear Mr. Burns:

This letter documents the field methods and findings of soil confirmation sampling conducted by CDM Smith Inc. (CDM Smith) at the Former Bingo Fuel Stop Off-Site Area. CDM Smith's services were performed on behalf of Burns Bros., Inc. in accordance with CDM Smith's Task Order 1 proposal dated September 11, 2020 and Stantec Consulting Services Inc.'s (Stantec) *Former Bingo Fuel Stop Subsurface Investigation Work Plan*¹, dated May 12, 2020 and CDM Smith's *Operations and Maintenance Plan*² (O&M Plan) dated April 10, 2002.

Site Description

The Former Bingo Fuel Stop property is located at the intersection of Interstate 90 and Thorp Highway South, in Thorp, Washington. For the purposes of this report, the Former Bingo Fuel Stop property consists of the parcel where a former fueling station and deli were located, and the off-site area, consisting of the Thorp Highway right-of-way (ROW) and Interstate 90 eastbound off-ramp ROW. These are collectively referred to as the "Site." The Site location with the property boundary and approximate extent of the off-site area is shown on **Figure 1**.

The Former Bingo Fuel Stop property is currently a vacant lot and is owned by a third party. The northwestern half of the site is paved, while the northeastern half of the site features a combination of gravel and grass covered surfaces. A barbed wire fence extends along the north side of the Site. Grass-covered slopes, drainage swales, and ditches border the paved roadways in the areas along the eastbound off ramp of Interstate 90 and Thorp Highway South. Overhead power lines traverse the west side of Thorp Highway South.

¹ Stantec. 2020: Former Bingo Fuel Stop Subsurface Investigation Work Plan. May 12.

² CDM Smith. 2002. Operations and Maintenance Plan Monitored Natural Attenuation Former Bingo Fuel Stop. Thorp, Washington. April 10.



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According to the Geologic Map of the Wenatchee 1:100,000 quadrangle³, the site is situated in the Kittitas Valley of the Yakima River and is underlain by Quaternary age mainstream alluvium consisting of mixed lithology cobble gravel, which forms a distinct terrace situated approximately 60 to 170 feet above the river. The lithology is generally described on the geologic map as consisting of boulder to pebble size gravel containing rounded stones; primarily of volcanic origin intermixed with sand and fine-grained silt and clay. Groundwater is present in the offsite area at depths ranging from approximately 8 to 20 feet below ground surface (bgs).

Background

The Site is the location of a former combination retail fueling station and deli store. Historical releases of petroleum hydrocarbons from the fueling station resulted in the contamination of soil and groundwater at the Site. A release of petroleum hydrocarbons was first reported to Ecology in 1989. Following a site inspection by Ecology on February 7, 1992, emergency actions were undertaken to address the most dangerous conditions including free product found floating on groundwater in open excavations on-site. Since that time, cleanup of the Site has progressed steadily toward compliance with the cleanup regulations.

For regulatory cleanup purposes, the property and surrounding area was divided into two areas: 1) the area encompassing the legal description of the former retail fueling station property, and 2) the adjacent "off-site" areas (i.e., Thorp Highway ROW and Interstate 90 eastbound off-ramp ROW). Petroleum hydrocarbon contaminated soil and groundwater at the Site was initially addressed under the previous Enforcement Order No. DE 92TC-C109, Agreed Order No. 93TC-C171, and Agreed Order No. 95TC-C236, which have been completed. On June 3, 2002, Agreed Order DE 02TCPCR-3976, was entered to address cleanup of the off-site area, which is in-progress and remains as the open order for the Site.

Cleanup activities performed at the Site in 1999 included removing source area contamination beneath the property by excavating and treating approximately 15,700 cubic yards of petroleum contaminated soil and recovering and treating impacted groundwater. Soil containing total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and total xylenes (BTEX) at concentrations exceeding the site-specific cleanup levels, has been removed throughout the property limits; however, several confirmation soil samples collected from the limits of the soil removal excavation, where it was extended beyond the north and east property boundary, contained TPH and/or BTEX at concentrations exceeding the cleanup levels. Confirmation soil samples collected from the north and east limits of the excavation indicated that petroleum contaminated soil extended beyond the parcel boundary and into the off-site areas. The limits of the 1999 soil removal excavation and selected confirmation soil sample locations are shown on **Figure 2**. Complete removal of petroleum contaminated soil in the off-site areas to the north and east of the parcel was not completed due to

³ Tabor, R.W., 1982. Geologic map of the Wenatchee 1:100,000 quadrangle, central Washington. Published by U.S. Geological Survey, Miscellaneous Investigations Series Map I-1311 and accessed at http://ngmdb.usgs.gov/Prodesc/prodesc_9137.htm by CDM Smith on January 22, 2021.

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physical constraints of performing additional excavation along the Interstate-90 and Thorp Highway South ROW, which included the presence of a high pressure gas line which runs along the east and north sides of the property.

Historical groundwater sampling data collected through 2001, from monitoring wells installed within the property limits, demonstrated that groundwater underlying the parcel boundary did not contain TPH or BTEX at concentrations exceeding the cleanup levels. As stated in a February 5, 2001 letter, Ecology concurred that soil and groundwater remediation within the legal boundaries of the property has been completed. Groundwater monitoring wells located within the property limits (MW-1, MW-2, MW-3, MW-4 and MW-11) were abandoned by a licensed driller on November 15, 2001.

Following the soil removal action and cleanup of groundwater within the property boundary, which was completed in 2001, TPH- and BTEX-impacted soil and groundwater remained in place in the off-site areas adjacent to and downgradient of the former Bingo Fuel Stop property. A summary of historical conformation soil sample results collected from the limits of the removal excavation which exceeded the cleanup levels is shown in **Table 1**. The locations of the samples (S171, S174, S175, S191 and S221) are shown on **Figure 2**. Petroleum hydrocarbon contaminated soil and groundwater in the off-site area is addressed under the June 3, 2002 Agreed Order (DE 02TCPCR-3976) and the O&M Plan. The O&M Plan selected monitored natural attenuation (MNA) as the preferred remedy for the Site and established the Natural Attenuation Decision Flow Chart shown on **Figure 3**. According to the chart, natural attenuation monitoring should be conducted at the wells MW-6A, MW-8 and MW-12 to demonstrate a reduction in TPH and BTEX concentrations over time, until TPH and BTEX in the groundwater samples are less than the cleanup levels for two consecutive rounds of sampling. Once that condition has been met, conformation soil sampling in the off-site area shall be initiated.

From the period of 2002 through 2013, CDM Smith conducted annual groundwater monitoring in the off-site area at the point of compliance wells MW-6A, MW-8 and MW-12. Groundwater sampling data demonstrated that natural attenuation was occurring and the assimilative capacity was sufficient to support a long-term trend of decreasing total petroleum hydrocarbon and BTEX concentrations within the off-site groundwater plume; however, concentrations of TPH and benzene continued to exceed the cleanup levels at well MW-6A.

Based on discussions in 2014 between CDM Smith and Ecology, an interim remedial action was completed to accelerate the degradation of petroleum hydrocarbons and BTEX in the vicinity of MW-6A. To enhanced in-situ aerobic biodegradation in the area if impacted groundwater, ORC Advanced® socks (ORC socks) were installed in monitoring well MW-6A. This was coupled with MNA at the down-gradient wells MW-8 and MW-12, and institutional controls to prevent unintended human contact with contaminated soil and/or groundwater in the offsite area. During the period of January 2015 through September 2019, CDM Smith installed ORC socks in the monitoring well MW-6A and performed periodic groundwater sampling and site inspections to evaluate the effectiveness of the remedy.

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As documented in Stantec's *Former Bingo Fuel Stop Annual 2019 Groundwater Monitoring and Sampling Report*⁴, dated March 10, 2020, the measured TPH and BTEX concentrations in groundwater samples collected from monitoring wells MW-6A and MW-8 were less than the cleanup levels for two consecutive sampling events conducted October 2018 and October 2019 and downgradient monitoring well MW-12 has not had TPH and BTEX cleanup level exceedances for XX years.. As outlined on the Natural Attenuation Decision Flow Chart, shown on **Figure 3**, when TPH and BTEX concentrations in groundwater are less than the cleanup levels for two consecutive rounds of groundwater sampling, the next phase of confirmation soil sampling in the off-site area shall be initiated. This report documents the off-site area confirmation soil sampling methods and results.

Regulatory Status

The initial site discovery/release report was made in November 1989. The Site is listed under Facility ID No. 388 in Ecology's UST database under the Cleanup Site ID (CSID) No. 4902. The Site is recorded in the Leaking Underground Storage Tank (LUST) database under UST ID No. 6131. Cleanup action within the legal description of the parcel boundaries of the Former Bingo Fuel Stop property is considered complete as documented in Ecology's February 5, 2001 Letter of Opinion. The Site is currently entered into Agreed Order No. DE 02TCPCR-3976 which addresses cleanup of the off-site area.

The Agreed Order cleanup levels (cleanup levels) and points of compliance established in the Agreed Order are listed as follows:

<u>Cleanup Levels</u>		
<u>Contaminant</u>	<u>Soil in mg/kg</u>	<u>Groundwater in µg/L</u>
TPH, Gas	400.0**	1000.0
TPH, Diesel	400.0**	1000.0
Benzene	0.5	5.0
Ethylbenzene	40.0	400.0
Toluene	80.0	800.0
Total xylenes	800.0	8000.0
Anthracene	N/A*	4800.0
Fluorene	32.0	320.0
Naphthalene	32.0	320.0
Lead	250.0	3.2

* not applicable

** for those portions of the site within 20 feet of surface water, or where saturated conditions are encountered due to surface water influence, soil cleanup levels for TPH are Method A: 100 milligrams per kilogram (mg/kg) for TPH gasoline and 200 mg/kg for TPH diesel.

⁴ Stantec. 2020. *Former Bingo Fuel Stop Annual 2019 Groundwater Monitoring and Sampling Report*, Agreed Order No. DE 02TCPCR-3976. March 10.

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The Agreed Order defines the points of compliance as follows. Points of compliance with the cleanup levels for soil and groundwater shall be throughout each contiguous contaminated area of the facility.

1. For groundwater it is expected that existing monitoring wells will be adequate to demonstrate compliance with cleanup levels.
2. For petroleum contaminated soil left under the eastbound I-90 off-ramp right-of-way and the Thorp Highway right-of-way in the areas specified in Section II, paragraph 5, compliance shall be the soil horizon directly overlying the groundwater in the areas of the historical confirmation soil samples exceeding the cleanup levels set forth in the Order. The soil horizon will be considered clean if the cleanup levels are met in the soil (points of compliance) in accordance with the cleanup levels.

Scope of Services

CDM Smith's Scope of services conducted during this subsurface investigation included the following tasks:

- Field planning and preparation activities;
- Drilling, sampling and abandonment of four soil borings;
- Soil sampling and laboratory analysis;
- Investigation derived waste (IDW) management; and,
- Data analysis and reporting.

Field Investigation Methods

The confirmation soil sampling work was completed in general accordance with the *Former Bingo Fuel Stop Subsurface Investigation Work Plan*¹. Prior to drilling, soil boring locations were marked in the field and the one-call utility notification center was notified of planned drilling activities. On November 12, 2020, a private utility locator (Applied Professional Services [APS]) was employed to check for possible conflicts with underground utilities. Due to the known presence of an 8-inch diameter, high pressure gas line operated by Puget Sound Energy (PSE), a representative of PSE was on site during all drilling activities to ensure safe drilling in the vicinity of the gas line.

On November 12 and 13, 2020, a track-mounted Mobile Drill B-57 hollow-stem auger drill rig, equipped with a split-spoon sampler, was utilized to advance four soil borings in the off-site areas located in the Interstate 90 Exit 101 and Thorp Highway South ROW. Holt Services (Holt) of Lacey, Washington was the drilling contractor. The soil boring locations are shown on **Figure 2**.

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Soil borings locations were chosen to target specific historical confirmation soil sample locations collected from the 1999 soil removal excavation limits as shown on **Figure 2**. As discussed in the O&M Plan, five confirmation soil samples collected during the soil removal excavation in 1999, required follow-up assessment because the reported concentrations exceeded the site-specific cleanup levels.

Each borehole was located as close as possible to the target locations of the confirmation soil samples, as constrained by undulating terrain, underground utilities, and overhead utility lines. The borehole B1 was placed as close as possible to the locations of confirmation samples S221 and S191. The borehole B2 was placed to the north of MW-6A and was moved from the originally planned location near confirmation sample S175, due to the presence of a deep swale and the presence of a high pressure underground natural gas line in the vicinity which prevented access to the area immediately adjacent to S175. The boring B3 was placed to the south of MW-6A and adjacent to confirmation sample S174. The boring B4 was placed along the west side of Thorp Highway South as close as possible to the location of confirmation sample S171, while ensuring a safe distance was maintained from the overhead powerlines that run along the west side of Thorp Highway South.

Soil samples were collected at a 2.5- or 5-foot intervals using a California-Modified Style Split-Spoon Sampler that was advanced 1.5 feet (less than 1.5 feet in hard or very dense soil) at each sample depth. Soil samples were logged by a CDM Smith geologist and classified according to the Unified Soil Classification System (USCS). Soil recovered in the sampler was visually examined for indications of contamination (i.e., discoloration and noticeable odor), non-soil materials, and screened for volatile organic compounds (VOCs) using a photoionization detector (PID). To do so, soil samples were placed in a plastic re-sealable bag and disaggregated; after approximately 2-3 minutes, the PID probe was inserted through the bag into the space (headspace) above the soil and the maximum reading on the instrument was recorded. This screening technique is not a compound-specific analysis and is affected by, among other influences, climate, (e.g., temperature, humidity), soil type, and condition, and instrument calibration and operation. The intent of this analysis is to qualitatively compare the presence of potential VOCs in soil samples and assist in selecting samples for laboratory analysis. Blow counts to drive the split-spoon sampler were recorded on the boring log as an estimate of soil consistency or density.

Soil samples to be submitted for analytical testing were collected in laboratory-supplied pre-cleaned 8-ounce jars for non-volatile analyses and dry weight determination, and pre-weighed 40-milliliter (mL) VOA vials pursuant EPA Method 5035A for volatile analyses. The EPA 5035A sampling method entailed collecting 5-gram core samples using disposable core samplers, which were then dispensed immediately into the 40 mL VOA vials. Soil samples are identified by the boring number and approximate sample depth in feet below ground surface (e.g., B1-12.5).

Two soil samples per boring were selected for laboratory analysis. One soil sample was collected as near as possible to the water table interface and a second sample was collected from a depth interval where field screening results indicated the most likely interval containing the highest levels of contamination. Soil samples collected at the point of compliance, which is defined as the soil horizon

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directly overlying the groundwater in the areas of the historical confirmation soil samples which exceeded the cleanup levels are listed as follows:

- B1-12.5 (in the vicinity of S191 and S221);
- B2-13 (in the vicinity of S175 and MW6A);
- B3-15 (in the vicinity of S175 and MW6A); and
- B4-11 (in the vicinity of S171).

After completion, Holt Drilling backfilled the boring with bentonite chips which were hydrated and patched the surface with concrete or gravel to match the existing ground surface. Drill cuttings were placed into DOT approved 55-gallon drums for storage at a designated location at the Site pending characterization and disposal.

On November 13, 2012, soil samples were delivered under chain-of-custody protocol to OnSite Environmental Inc. in Redmond, Washington.

Soil samples were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPH-G) by NWTPH-Gx;
- BTEX by EPA Method 8021B; and
- Total petroleum hydrocarbons as diesel (TPH-D) and lube oil (TPH-O) by Northwest Method NWTPH-Dx without an acid-silica gel cleanup preparation.

The characterization sample for IDW disposal included one composite soil sample analysis for:

- Total metals (MTCA 5 metals plus, copper, nickel and zinc) by EPA Methods 6010D/7471B.

One field duplicate sample (B99-12.5) was collected for the sample B1-12.5 and a laboratory matrix spike/matrix spike duplicate (MS/MSD) sample was collected for the sample B2-13.

On January 6, 2021, the IDW was picked up by Clean Harbors and transported under manifest for final disposal at the Clean Harbors Grassy Mountain facility located in Grantsville, Utah.

Discussion of Findings

The borings B1 and B2 were completed to 16.5 feet bgs, B3 was completed to 26.5 feet and B4 was completed 11.5 feet bgs. Each boring was completed to at least the depth of first encountered groundwater. Soil samples observed during drilling generally consisted of a mix of hard gravelly, sandy silt or stiff, gravelly, sandy and clay in the upper 10 feet bgs, underlain by dense, clayey sand or silty sand or gravelly sand. Groundwater was encountered in the borings B1 and B2 at a depth of

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approximately 13 feet bgs, an approximate depth of 15 feet bgs in boring B3, and at an approximate depth of 10 feet bgs in boring B4. Boring logs are included as **Attachment A**.

Analytical results of soil sampling for TPH-G, TPH-D, TPH-O and BTEX are summarized in **Table 2** and the laboratory report is included in **Attachment B**. CDM Smith reviewed the analytical reports and it appears that Onsite followed all of their quality control procedures and no significant anomalies noted in the data. Based on CDM Smith's review of the laboratory report, the data are considered appropriate for use on this project. The results of soil sampling are summarized as follows.

All of the analytical results for the point of compliance samples (B1-12.5, B2-13, B3-15 and B5-11) were less than their respective cleanup levels. Additional discussion of the analytical results is provided below.

The soil sample B3-15, which was collected at the water table interface, contained TPH-O at a concentration of 1,200 mg/kg. No cleanup level for lube oil range organics was defined in the Agreed Order, so the sample result is compared to the MTCA Method A soil cleanup level for unrestricted land use at 2,000 mg/kg. The sample B3-15 contained TPH-G and TPH-D at concentrations of 180 mg/kg and 170 mg/kg, respectively, and benzene at a concentration of 0.083 mg/kg. The results for these constituents are less than their respective cleanup levels.

The soil sample collected from boring B3 below the water table at 20.5 feet bgs (sample B3-20.5) had TPH-G and TPH-D detected at concentrations of 2,500 mg/kg and 2,100 mg/kg, respectively, which exceeds the site-specific cleanup levels of 400 mg/kg for each constituent. The sample B3-20.5 also contained benzene at a concentration of 1.2 mg/kg, which exceeds the site-specific cleanup level for benzene of 0.5 mg/kg. The soil sample also contained ethylbenzene and m,p-xylene at concentrations of 68 mg/kg and 22 mg/kg, respectively, which are both less than the cleanup levels of 80 mg/kg and 800 mg/kg.

TPH-D was detected in the sample B1-12.5 at a concentration of 64 mg/kg. TPH-G and m,p-xylene were detected in the sample B4-5.5 at concentrations of 44 mg/kg and 0.091 mg/kg. Benzene and ethylbenzene were detected in the sample B4-11 at concentrations of 0.021 mg/kg and 0.083 mg/kg. All these results are less than their respective cleanup levels.

All other samples did not have detectable TPH or BTEX concentrations greater than the laboratory practical quantitation limits (PQLs). Analytical results for metals analysis conducted for waste profiling purposes show that metals are not present at elevated concentrations above background⁵. Metals results for IDW sampling are shown on **Table 3**.

⁵ San Juan, Charles. 1994. Natural Background Soil Metals Concentrations in Washington State. Washington State Department of Ecology Toxics Cleanup Program. Publication No. 94-115.

Conclusions

Results of the 2020 confirmation soil sampling (borings B1 through B4) demonstrate that the soil meets the cleanup levels at the point of compliance, which was defined in the Agreed Order as the soil horizon directly overlying the groundwater in the area where the soil removal excavation confirmation soil samples previously exceeded the cleanup levels. The Agreed Order states that soil is considered clean if the cleanup levels are met for soil at the point of compliance in the off-site area where petroleum contaminated soil was left under the eastbound I-90 off-ramp ROW and the Thorp Highway ROW.

The additional soil sample collected from saturated zone at boring B3 at a depth of 20 feet bgs indicates that highly weathered TPH-G, TPH-D and benzene are present at concentrations that exceed the site-specific cleanup levels. This residual contamination is localized to B3 at a depth below 15 feet bgs based on: the lack of contamination exceeding soil cleanup levels at the 15-foot soil sample from B3; lack of contamination exceeding soil cleanup levels at nearby boring B2; no groundwater exceedances of the TPH-G, TPH-D, or benzene cleanup levels at adjacent monitoring well MW-6A; and no groundwater exceedances of the TPH-G, TPH-D, or benzene cleanup levels at the downgradient monitoring wells MW8, MW9, and MW12. Based on the location of B3 in a paved highway with the depth of contamination exceeding the cleanup levels at greater than 15 feet bgs, and no downgradient groundwater contamination, no complete contaminant transport/exposure pathways exist. Pathways considered include construction worker direct contact, residential direct contact, vapor intrusion to buildings, and the groundwater to drinking water pathway.

Given that groundwater sampling results for samples collected from monitoring wells MW-6A, MW-8 and MW-12 were less than the cleanup levels for two consecutive sampling events conducted during October 2018 and October 2019, and soil at the point of compliance at borings B1, B2, B3, and B4 does not exceed cleanup levels, residual contamination at depth in the smear zone at boring B3 appears to be limited in lateral and vertical extent and is not impacting adjacent or downgradient groundwater. Historical groundwater sampling data demonstrates that there is sufficient assimilative capacity for residual petroleum hydrocarbon contamination to continue to degrade through natural processes. Groundwater data collected over the past 20 years demonstrate a long-term trend of declining concentrations.

The natural attenuation monitoring decision flow chart from the Site O&M plan which was developed to guide the last 20 years of groundwater monitoring and to guide the regulatory closure process under the Agreed Order is shown in **Figure 3**. This decisions logic in the flow chart concludes with the following two steps:

1. *Are TPH and BETX concentrations below cleanup levels for 2 rounds (groundwater)?*
2. *Are soil TPH and BETX concentrations below cleanup levels?*

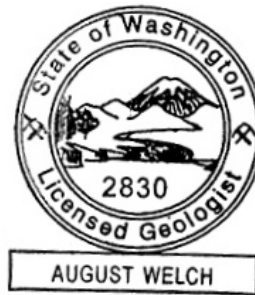
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The results of the 2018 and 2019 annual groundwater monitoring events and the results of the 2020 confirmation soil sampling at the point of compliance confirm that monitored natural attenuation has achieved these criteria. The next step in the decision logic is to request a letter from Ecology stating that remediation of the offsite area is substantively complete. CDM Smith respectfully requests that Ecology issue a letter to document regulatory concurrence that remediation is substantively complete, close the Agreed Order and associated institutional controls, and issue a no further action determination. We appreciate the opportunity to prepare this letter for your review. If you have any questions, please call me at (425) 519-8352.

Very truly yours,

A handwritten signature in black ink that reads "August Welch".

August Welch, LG, PMP
Geologist
CDM Smith, Inc.



Enclosures:

Table 1 – Historical Confirmation Soil Sample Results
Table 2 - Soil Analytical Results
Table 3 – IDW Sampling Results - Metals

Figure 1 – Site Vicinity Map
Figure 2 – Site Plan with Sampling Locations
Figure 3 – Natural Attenuation Decision Flow Chart
Attachment A – Boring Logs
Attachment B – Laboratory Report

Tables

Table 1**Historical Confirmation Soil Sample Results**

Bingo Fuel Stop Off-Site Area

Exit 101 Interstate 90 and Thorp Highway South

Thorp, Washington

Sample ID	Approximate Sample Depth (ft bgs)	Date Sampled	EPA Test Method				Washington State Test Method		
			BTEX 5030/8020				WTPH-G	WTPH-D	
			Benzene	Ethylbenzene	Toluene	Total Xylenes ^c	Gasoline	Diesel	Heavy Oil
			mg/kg				mg/kg		
S171	12	4/30/1999	<0.30	8.8	1.6	23	910	<30	<30
S174	13	4/30/1999	1.8	4.9	0.061	21	340	<34	<68
S175	15	5/4/1999	0.56	0.61	<0.36	3.8	430	<36	<72
S191	10	5/4/1999	<0.29	1.6	<0.29	3.1	<29	2,000	<65
S221	14	5/18/1999	<0.28	6.1	<0.28	10	<28	3,900	<110
Agreed Order Cleanup Levels ^a			0.5	40	80	800	400	400	2000^b

Notes:

Bolded values are detected analytes at the listed concentration.

Boxed values exceed the Agreed Order cleanup level.

a) Cleanup levels defined in Agreed Order No. DE 02TCPCR-3976

b) Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A soil cleanup level for unrestricted land use, Chapter 173-340 WAC, Revised 2013

c) Total of m,p-Xylenes and o-Xylene

< - analyte not detected at or greater than the listed concentration.

mg/kg - milligrams per kilogram

ft bgs - feet below ground surface

Table 2

Soil Analytical Results

Bingo Fuel Stop Off-Site Area

Exit 101 Interstate 90 and Thorp Highway South

Thorp, Washington

Analytical Method and Analyte	Agreed Order Cleanup Level ^a	Sample ID (Boring ID and Depth in feet bgs) and Date Sampled								
		B1-12.5 ^c	B99-12.5 ^a	B1-15	B2-13 ^c	B2-16	B3-15 ^c	B3-20.5	B4-5.5 ^c	B4-11
		11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/12/2020	11/13/2020	11/13/2020	11/13/2020	11/13/2020
NWTPH-Gx(mg/kg)										
Gasoline Range Organics	400	<40 U1	<53 U1	<3.8	<6.3	<4.9	180	2,500	44 O	<6.3
NWTPH-Dx (mg/kg)										
Diesel Range Organics	400	64	<28	<28	<31	<29	170 M, N	2,100 M	<30	<28
Lube Oil Range Organics	2,000 ^b	<58	<56	<55	<61	<59	1,200	230 N1	<59	<56
BTEX (mg/kg)										
EPA 8021B										
Benzene	0.5	<0.020	<0.020	<0.020	<0.020	<0.020	0.083	1.2	<0.020	0.021
Toluene	40	<0.048	<0.048	<0.038	<0.063	<0.049	<0.050	<0.098	<0.051	<0.063
Ethylbenzene	80	<0.048	<0.048	<0.038	<0.063	<0.049	0.88	68	<0.051	0.083
m, p-Xylene	800 ^d	<0.048	<0.048	<0.038	<0.063	<0.049	0.67	22	0.091	<0.058
o-Xylene		<0.048	<0.048	<0.038	<0.063	<0.049	<0.050	<0.098	<0.051	<0.058

Notes:

Bolded values are detected analytes at the listed concentration.

Boxed values exceed the Agreed Order cleanup level.

a) Cleanup levels defined in Agreed Order No. DE 02TCPCR-3976

b) Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A soil cleanup level for unrestricted land use, Chapter 173-340 WAC, Revised 2013

c) Point of compliance sample defined in the Agreed Order as the soil horizon directly overlying the groundwater table.

d) Total of m,p-Xylenes and o-Xylene

e) Soil sample B99-12.5 was collected as a field duplicate for the sample B1-12.5.

< - analyte not detected at or greater than the listed concentration.

BTEX - benzene, toluene, ethylbenzene, total xylenes.

-- not analyzed.

mg/kg - milligrams per kilogram

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

Table 3

IDW Soil Analytical Results - Metals
Bingo Fuel Stop Off-Site Area
Exit 101 Interstate 90 and Thorp Highway South
Thorp, Washington

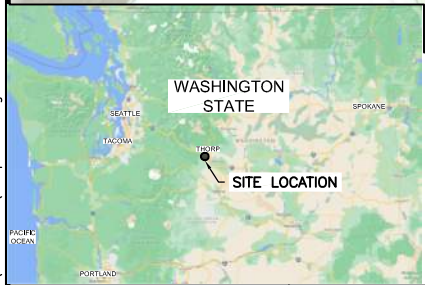
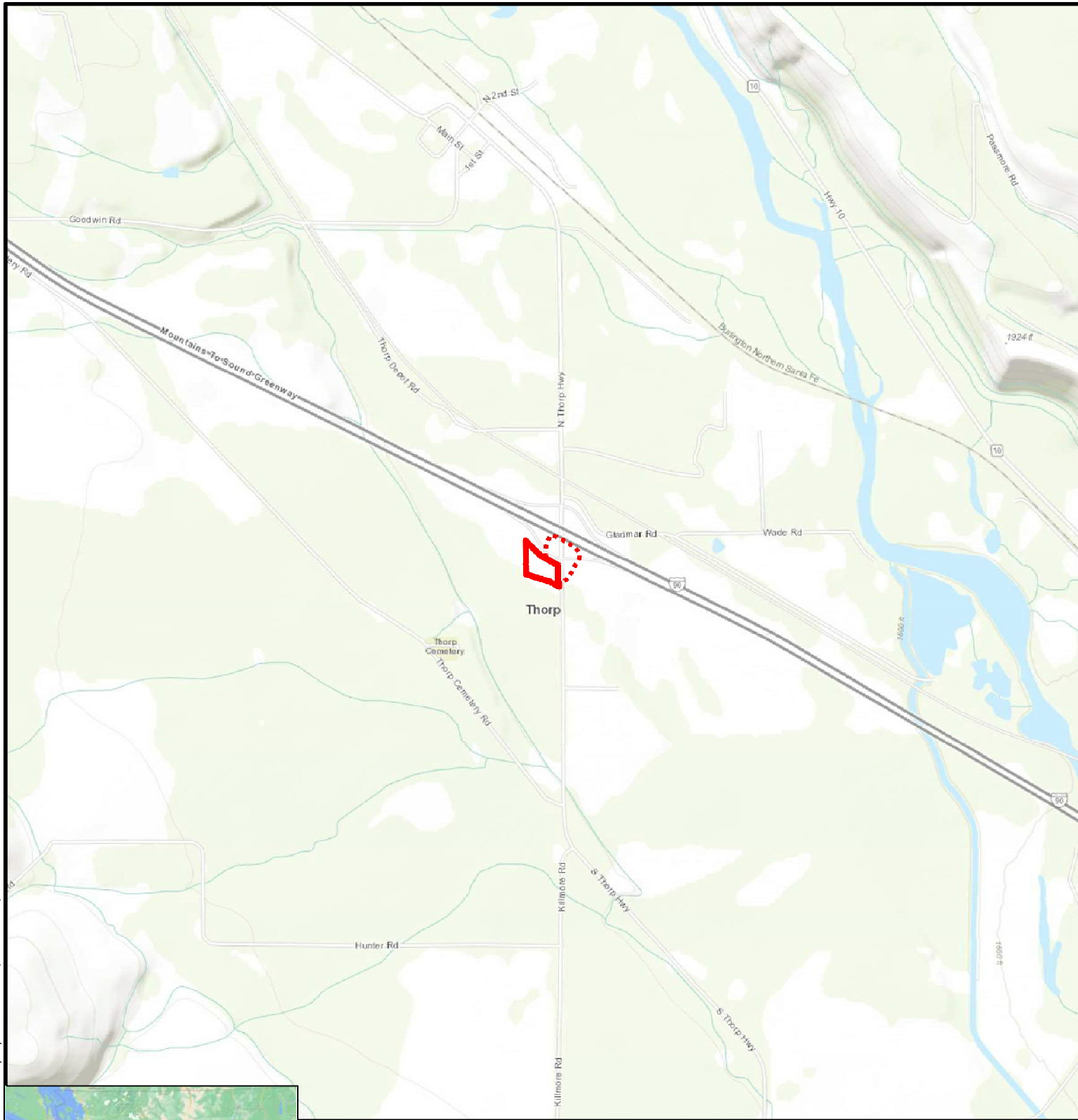
Analytical Method and Analyte	Sample ID and Date IDW-S-Comp 11/13/2020
Total Metals (mg/kg)	
EPA 6010D/7471B	
Arsenic	<11
Barium	79
Cadmium	<0.55
Chromium	41
Copper	20
Lead	<5.5
Mercury	<0.27
Nickel	58
Selenium	<11
Silver	<1.1
Zinc	31

mg/kg - milligrams per kilogram

Bolded values are detected analytes at the listed concentration.

Figures

DWG: c:\pw_pl\hathasom\02314254\thorp-site.dwg — PLOT DATE: 1/19/2021 3:42 PM, BY: Nathas, Omar



NOTES:
1. SHOWN AREAL OUTLINES ARE APPROXIMATE



NOT TO SCALE



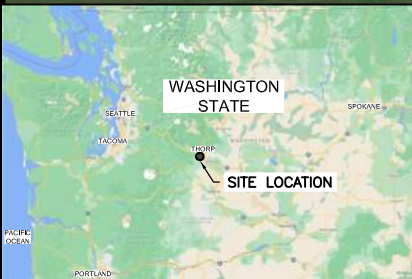
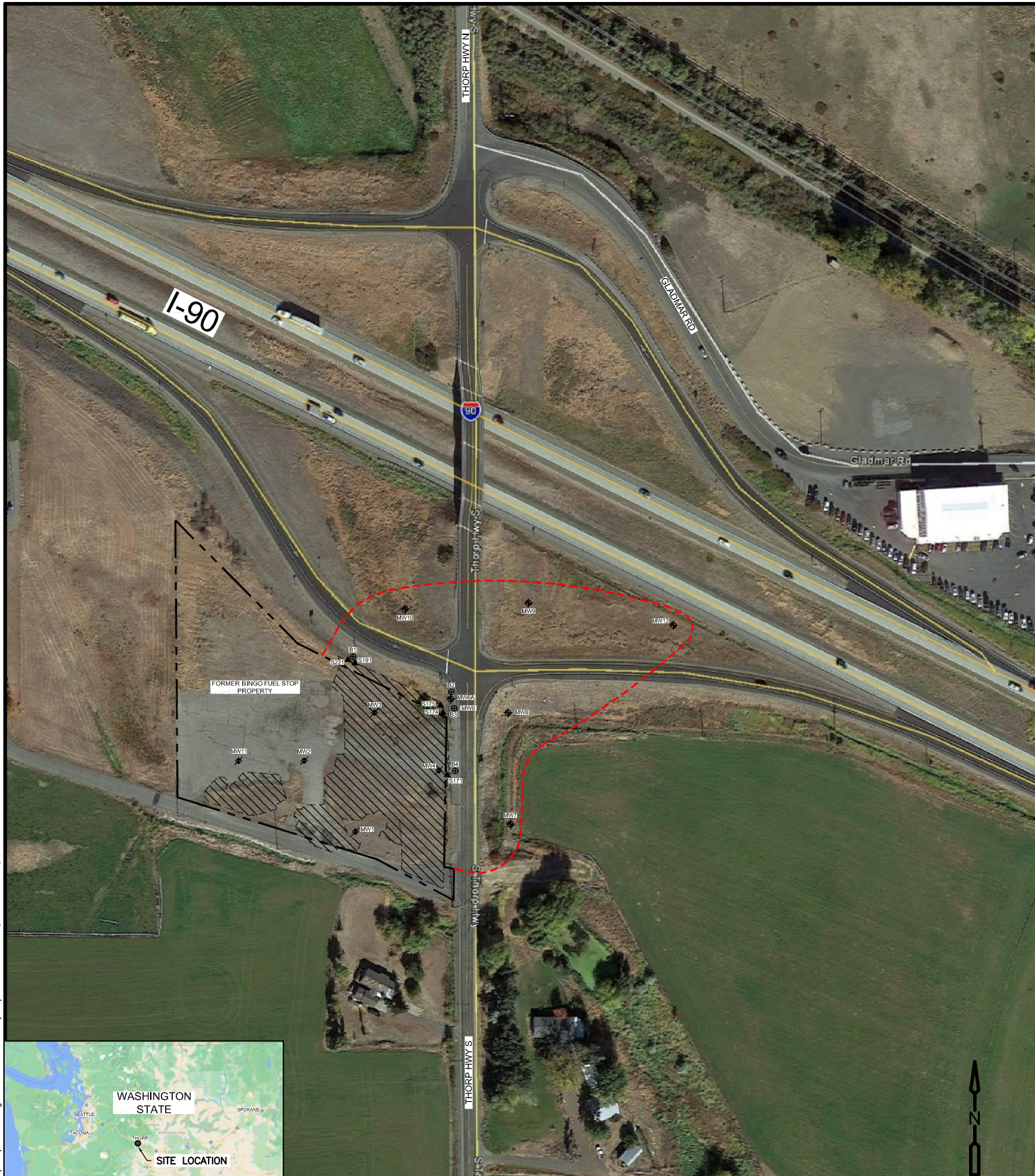
— APPROXIMATE PARCEL BOUNDARY
- - - APPROXIMATE EXTENT OF "OFF-SITE" AREA

CLIENT/PROJECT:
BURNS BROS INC. /BINGO FUEL STOP
SUBSURFACE INVESTIGATION
THORP, WASHINGTON

TITLE:
SITE VICINITY

FIGURE
1

DWG: c:\pw.pl\hathasom\02314254\thorp-site.dwg — PLOT DATE: 1/19/2021 3:44 PM, BY: Nathas, Omar



- NOTES:
1. COORDINATE SYSTEM: NAD83 WASHINGTON STATE PLANES, SOUTH ZONE, US FOOT
 2. SHOWN LOCATIONS AND AREAL OUTLINES ARE APPROXIMATE

1" = 200'

100 0 200

**CDM
Smith**

- ⊕ SOIL BORING LOCATION
- ⊕ APPROXIMATE MONITORING WELL LOCATION
- ⊕ ABANDONED MONITORING WELL LOCATION
- ▲ CONFIRMATORY SAMPLE COLLECTED FROM PREVIOUS EXCAVATION WITH TOTAL PETROLEUM HYDROCARBON AND/OR BTEX CONTAMINATION EXCEEDING CLEANUP LEVELS
- - - - - APPROXIMATE PARCEL BOUNDARY
- - - - - APPROXIMATE EXTENT OF "OFF-SITE" AREA
- ▨▨▨▨▨ APPROXIMATE AREAL EXTENT OF 1999 SOIL REMOVAL EXCAVATION

CLIENT/PROJECT:
BURNS BROS INC. /BINGO FUEL STOP
SUBSURFACE INVESTIGATION
THORP, WASHINGTON

TITLE:
SITE PLAN WITH SAMPLING LOCATIONS

FIGURE
2

Attachment A
Boring Logs

PROJECT: Bingo Fuel Stop LOCATION:	SOIL BORING NO: B1
STARTED: 11/12/20 COMPLETED: 11/12/20 DRILLING COMPANY: Holt DRILLING EQUIPMENT: Track-Mounted Mobile Drill B57 DRILLING METHOD: HSA SAMPLING METHOD: Spilt Spoon SURFACE COMPLETION: N/A	NORTHING: G.S. ELEVATION: INITIAL DTW: 13 LOGGED BY: A. Welch HORIZONTAL DATUM: , COORD. SYS.: VERTICAL DATUM:
EASTING: M.P. ELEV: TOTAL DEPTH:16.5	

DEPTH (feet)	ELEV. (ft)	GRAPHIC LOG	USCS	DESCRIPTION (Sampler Length: 1.5 Feet)	LITHOLOGIC SAMPLE	Blow Counts	PID (ppm)	ANALYTICAL SAMPLE	SAMPLE ID
5			ML	Gravelly sandy SILT (ML), brown, fine sand, fine rounded gravel, non-plastic fines, hard, dry.		32 52 38	0		
10				Drilling becomes harder.		75/6	0		
15			SM	Drilling becomes very hard. Gravelly silty SAND (SM), gray, fine sand, fine gravel, some clay, low plasticity, very dense, wet, odor.		38 50/6	5.6	G	B1-12.5 12.5 To 13 Feet B99-12.5 12.5 To 13 Feet
15			SW	Gravelly SAND (SW), brown, well graded fine to coarse sand, fine to coarse subangular gravel, trace silt, very dense, wet.		50 75/4	0	G	B1-15 15 To 15.5 Feet
20				Boring terminated at 16.5 feet bgs.					
25									






STANDARD LOG: DORCHESTER BINGO DATABASE.GPJ STANDARD ENVIRONMENTAL PROJECT.GDT 1/20/21 REV.



14432 SE Eastgate Way, Ste 100
 Bellevue, WA 98007
 Telephone: (425) 519-8300

SOIL BORING LOG

PROJECT: Bingo Fuel Stop LOCATION:	SOIL BORING NO: B2
STARTED: 11/12/20 COMPLETED: 11/12/20 DRILLING COMPANY: Holt DRILLING EQUIPMENT: Track-Mounted Mobile Drill B57 DRILLING METHOD: HSA SAMPLING METHOD: Split Spoon SURFACE COMPLETION: N/A	NORTHING: EASTING: G.S. ELEVATION: M.P. ELEV: INITIAL DTW: 13 TOTAL DEPTH:16.5 LOGGED BY: A. Welch HORIZONTAL DATUM: , COORD. SYS.: VERTICAL DATUM:

DEPTH (feet)	ELEV. (ft)	GRAPHIC LOG	USCS	DESCRIPTION (Sampler Length: 1.5 Feet)	LITHOLOGIC SAMPLE	Blow Counts	PID (ppm)	ANALYTICAL SAMPLE	SAMPLE ID
5			CL	Sandy CLAY (CL), brown, medium plasticity, very stiff, moist.		7 8 9	0		
10			SC	Clayey SAND (SC), gray, fine sand, low-medium plasticity, dense, moist.		14 20 25	0		
13	▼			Increasing sand and coarse rounded gravel, becomes wet, slight odor, gray staining.		21 20 15	1	G	B2-13 13 To 13.5 Feet
15						17 15 15	0	G	B2-16 16 To 16.5 Feet
20				Boring terminated at 16.5 feet bgs.					
25									

STANDARD LOG: DORCHESTER BINGO DATABASE: GPJ STANDARD ENVIRONMENTAL PROJECT.GDT 1/20/21 REV.


 14432 SE Eastgate Way, Ste 100
 Bellevue, WA 98007
 Telephone: (425) 519-8300

SOIL BORING LOG

PROJECT: Bingo Fuel Stop LOCATION:	SOIL BORING NO: B3
STARTED: 11/13/20 COMPLETED: 11/13/20 DRILLING COMPANY: Holt DRILLING EQUIPMENT: Track-Mounted Mobile Drill B57 DRILLING METHOD: HSA SAMPLING METHOD: Split Spoon SURFACE COMPLETION: N/A	NORTHING: G.S. ELEVATION: EASTING: M.P. ELEV: INITIAL DTW: 15 TOTAL DEPTH:26.5 LOGGED BY: A. Welch HORIZONTAL DATUM: , COORD. SYS.: VERTICAL DATUM:

DEPTH (feet)	ELEV. (ft)	GRAPHIC LOG	USCS	DESCRIPTION (Sampler Length: 1.5 Feet)	LITHOLOGIC SAMPLE	Blow Counts	PID (ppm)	ANALYTICAL SAMPLE	SAMPLE ID
				3 inches of asphalt.					
5			CL	Gravelly sandy CLAY (CL), brown, fine sand, fine to coarse rounded gravel, medium plasticity, stiff, moist.		4 3 6			
10									
			SC	Clayey SAND (SC), gray, fine sand, trace fine gravel, medium plasticity, medium stiff, moist.			0.9		
				No recovery.					
15				Becomes gravelly, fine to coarse rounded gravel; sand becomes fine to medium grained; fines become low plasticity; wet; brick and asphalt fragments.					
							340	G	B3-15 15 To 15.5 Feet
20									
			SM	SAND with silt (SM), gray, fine sand, non-plastic fines, medium dense, wet, odor.		4 5 6	1008	G	B3-20.5 20.5 To 21 Feet
25				Becomes dense and gravelly, fine to coarse rounded gravel.		18 22 21	24.9		
				Boring terminated at 26.5 feet bgs.					

STANDARD LOG: DORCHESTER BINGO DATABASE: GPJ STANDARD ENVIRONMENTAL PROJECT.GDT 1/20/21 REV.



14432 SE Eastgate Way, Ste 100
 Bellevue, WA 98007
 Telephone: (425) 519-8300

SOIL BORING LOG

PROJECT: Bingo Fuel Stop				SOIL BORING NO: B4					
LOCATION:									
STARTED: 11/13/20 COMPLETED: 11/13/20 DRILLING COMPANY: Holt DRILLING EQUIPMENT: Track-Mounted Mobile Drill B57 DRILLING METHOD: HSA SAMPLING METHOD: Spilt Spoon SURFACE COMPLETION: N/A				NORTHING: G.S. ELEVATION: INITIAL DTW: 10 LOGGED BY: A. Welch HORIZONTAL DATUM: , COORD. SYS.: VERTICAL DATUM:					
DEPTH (feet)	ELEV. (ft)	GRAPHIC LOG	USCS	DESCRIPTION (Sampler Length: 1.5 Feet)	LITHOLOGIC SAMPLE	Blow Counts	PID (ppm)	ANALYTICAL SAMPLE	SAMPLE ID
5			SM	Gravelly silty SAND (SM), gray, fine to medium sand, fine to coarse rounded gravel, non-plastic fines, medium dense, moist.		8 12 15	8.8	G	B4-5.5 5.5 To 6 Feet
10			SC	Clayey SAND (SC), gray, fine sand, medium plasticity fines, loose, wet, slight odor.		2 2 4	3.9	G	B4-11 11 To 11.5 Feet
				Boring terminated at 11.5 feet bgs.					
15									
20									
25									

STANDARD LOG: DORCHESTER BINGO DATABASE: GPJ STANDARD ENVIRONMENTAL PROJECT.GDT 1/20/21 REV.



14432 SE Eastgate Way, Ste 100
 Bellevue, WA 98007
 Telephone: (425) 519-8300

SOIL BORING LOG

Attachment B
Laboratory Report



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

November 24, 2020

August Welch
CDM Smith, Inc
14432 SE Eastgate Way, Suite 100
Bellevue, WA 98007-6493

Re: Analytical Data for Project Bingo Fuel Stop
Laboratory Reference No. 2011-141

Dear August:

Enclosed are the analytical results and associated quality control data for samples submitted on November 13, 2020.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: November 24, 2020
Samples Submitted: November 13, 2020
Laboratory Reference: 2011-141
Project: Bingo Fuel Stop

Case Narrative

Samples were collected on November 12 and 13, 2020 and received by the laboratory on November 13, 2020. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Total Metals EPA 6010D/7471B Analysis

The duplicate RPD for Zinc is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**GASOLINE RANGE ORGANICS/BTEX
 NWTPH-Gx/EPA 8021B**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	B1-12.5					
Laboratory ID:	11-141-01					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.048	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.048	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.048	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.048	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	40	NWTPH-Gx	11-18-20	11-18-20	U1

Surrogate: *Percent Recovery* *Control Limits*
Fluorobenzene 99 58-129

Client ID:	B1-15					
Laboratory ID:	11-141-02					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.038	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.038	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.038	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.038	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	3.8	NWTPH-Gx	11-18-20	11-18-20	

Surrogate: *Percent Recovery* *Control Limits*
Fluorobenzene 90 58-129

Client ID:	B2-13					
Laboratory ID:	11-141-03					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	6.3	NWTPH-Gx	11-18-20	11-18-20	

Surrogate: *Percent Recovery* *Control Limits*
Fluorobenzene 98 58-129



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**GASOLINE RANGE ORGANICS/BTEX
 NWTPH-Gx/EPA 8021B**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	B2-16					
Laboratory ID:	11-141-04					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.049	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.049	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.049	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.049	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	4.9	NWTPH-Gx	11-18-20	11-18-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	93	58-129				
Client ID:	B3-15					
Laboratory ID:	11-141-05					
Benzene	0.083	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.050	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	0.88	0.050	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	0.67	0.050	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.050	EPA 8021B	11-18-20	11-18-20	
Gasoline	180	5.0	NWTPH-Gx	11-18-20	11-18-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	106	58-129				
Client ID:	B3-20.5					
Laboratory ID:	11-141-06					
Benzene	1.2	0.20	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.98	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	68	0.98	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	22	0.98	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.98	EPA 8021B	11-18-20	11-18-20	
Gasoline	2500	98	NWTPH-Gx	11-18-20	11-18-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	95	58-129				



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**GASOLINE RANGE ORGANICS/BTEX
 NWTPH-Gx/EPA 8021B**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	B4-5.5					
Laboratory ID:	11-141-07					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.051	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.051	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	0.091	0.051	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.051	EPA 8021B	11-18-20	11-18-20	
Gasoline	44	5.1	NWTPH-Gx	11-18-20	11-18-20	O
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	98	58-129				
Client ID:	B4-11					
Laboratory ID:	11-141-08					
Benzene	0.021	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	0.083	0.063	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.063	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	6.3	NWTPH-Gx	11-18-20	11-18-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	109	58-129				
Client ID:	B99-12.5					
Laboratory ID:	11-141-09					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.092	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.092	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.092	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.092	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	53	NWTPH-Gx	11-18-20	11-18-20	U1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	58-129				



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**GASOLINE RANGE ORGANICS/BTEX
 NWTPH-Gx/EPA 8021B
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118S2					
Benzene	ND	0.020	EPA 8021B	11-18-20	11-18-20	
Toluene	ND	0.050	EPA 8021B	11-18-20	11-18-20	
Ethyl Benzene	ND	0.050	EPA 8021B	11-18-20	11-18-20	
m,p-Xylene	ND	0.050	EPA 8021B	11-18-20	11-18-20	
o-Xylene	ND	0.050	EPA 8021B	11-18-20	11-18-20	
Gasoline	ND	5.0	NWTPH-Gx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	92	58-129				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	11-186-02							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	NA	30
Toluene	ND	ND	NA	NA	NA	NA	NA	30
Ethyl Benzene	ND	ND	NA	NA	NA	NA	NA	30
m,p-Xylene	ND	ND	NA	NA	NA	NA	NA	30
o-Xylene	ND	ND	NA	NA	NA	NA	NA	30
Gasoline	ND	ND	NA	NA	NA	NA	NA	30
Surrogate:								
Fluorobenzene				89	91	58-129		

SPIKE BLANKS

Laboratory ID:	SB1118S1								
	SB	SBD	SB	SBD	SB	SBD			
Benzene	0.925	0.947	1.00	1.00	93	95	68-112	2	10
Toluene	0.954	0.973	1.00	1.00	95	97	70-114	2	10
Ethyl Benzene	0.953	0.971	1.00	1.00	95	97	70-115	2	10
m,p-Xylene	0.961	0.979	1.00	1.00	96	98	69-117	2	11
o-Xylene	0.971	0.986	1.00	1.00	97	99	71-115	2	11
Surrogate:									
Fluorobenzene					91	93	58-129		



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**DIESEL AND HEAVY OIL RANGE ORGANICS
 NWTPH-Dx**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	B1-12.5					
Laboratory ID:	11-141-01					
Diesel Fuel #2	64	29	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	58	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	77	50-150				

Client ID:	B1-15					
Laboratory ID:	11-141-02					
Diesel Range Organics	ND	28	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	55	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	84	50-150				

Client ID:	B2-13					
Laboratory ID:	11-141-03					
Diesel Range Organics	ND	31	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	61	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	84	50-150				

Client ID:	B2-16					
Laboratory ID:	11-141-04					
Diesel Range Organics	ND	29	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	59	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	88	50-150				

Client ID:	B3-15					
Laboratory ID:	11-141-05					
Diesel Range Organics	170	140	NWTPH-Dx	11-18-20	11-18-20	M,N
Lube Oil Range Organics	1200	280	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	97	50-150				

Client ID:	B3-20.5					
Laboratory ID:	11-141-06					
Diesel Range Organics	2100	38	NWTPH-Dx	11-18-20	11-18-20	M
Lube Oil Range Organics	230	76	NWTPH-Dx	11-18-20	11-18-20	N1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	84	50-150				



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

DIESEL AND HEAVY OIL RANGE ORGANICS
NWTPH-Dx

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	B4-5.5					
Laboratory ID:	11-141-07					
Diesel Range Organics	ND	30	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	59	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	86	50-150				
Client ID:	B4-11					
Laboratory ID:	11-141-08					
Diesel Range Organics	ND	32	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	64	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	80	50-150				
Client ID:	B99-12.5					
Laboratory ID:	11-141-09					
Diesel Fuel #2	94	28	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	56	NWTPH-Dx	11-18-20	11-18-20	
Surrogate:	Percent Recovery	Control Limits				
<i>o-Terphenyl</i>	79	50-150				



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**DIESEL AND HEAVY OIL RANGE ORGANICS
 NWTPH-Dx
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1118S1					
Diesel Range Organics	ND	25	NWTPH-Dx	11-18-20	11-18-20	
Lube Oil Range Organics	ND	50	NWTPH-Dx	11-18-20	11-18-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	96	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	SB1118S1									
	ORIG	DUP								
Diesel Fuel #2	89.6	87.6	NA	NA		NA	NA	2	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						95	95	50-150		



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**TOTAL METALS
 EPA 6010D/7471B**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	IDW-S-Comp					
Laboratory ID:	11-141-10					
Arsenic	ND	11	EPA 6010D	11-20-20	11-20-20	
Barium	79	2.7	EPA 6010D	11-20-20	11-20-20	
Cadmium	ND	0.55	EPA 6010D	11-20-20	11-20-20	
Chromium	41	0.55	EPA 6010D	11-20-20	11-20-20	
Copper	20	1.1	EPA 6010D	11-19-20	11-20-20	
Lead	ND	5.5	EPA 6010D	11-20-20	11-20-20	
Mercury	ND	0.27	EPA 7471B	11-20-20	11-20-20	
Nickel	58	2.7	EPA 6010D	11-20-20	11-20-20	
Selenium	ND	11	EPA 6010D	11-20-20	11-20-20	
Silver	ND	1.1	EPA 6010D	11-20-20	11-20-20	
Zinc	31	2.7	EPA 6010D	11-20-20	11-20-20	



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**TOTAL METALS
 EPA 6010D/7471B
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1120SM1					
Arsenic	ND	10	EPA 6010D	11-20-20	11-20-20	
Barium	ND	2.5	EPA 6010D	11-20-20	11-20-20	
Cadmium	ND	0.50	EPA 6010D	11-20-20	11-20-20	
Chromium	ND	0.50	EPA 6010D	11-20-20	11-20-20	
Lead	ND	5.0	EPA 6010D	11-20-20	11-20-20	
Nickel	ND	2.5	EPA 6010D	11-20-20	11-20-20	
Selenium	ND	10	EPA 6010D	11-20-20	11-20-20	
Silver	ND	1.0	EPA 6010D	11-20-20	11-20-20	
Zinc	ND	2.5	EPA 6010D	11-20-20	11-20-20	
<hr/>						
Laboratory ID:	MB1120S1					
Mercury	ND	0.25	EPA 7471B	11-20-20	11-20-20	
<hr/>						
Laboratory ID:	MB1119SM2					
Copper	ND	1.0	EPA 6010D	11-19-20	11-19-20	



Date of Report: November 24, 2020
 Samples Submitted: November 13, 2020
 Laboratory Reference: 2011-141
 Project: Bingo Fuel Stop

**TOTAL METALS
 EPA 6010D/7471B
 QUALITY CONTROL**

Matrix: Soil
 Units: mg/Kg (ppm)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	11-118-04							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	46.4	41.1	NA	NA	NA	12	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	17.5	16.6	NA	NA	NA	5	20	
Lead	5.70	ND	NA	NA	NA	NA	20	
Nickel	22.6	21.8	NA	NA	NA	3	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	
Zinc	21.1	17.0	NA	NA	NA	21	20	K

Laboratory ID:	11-118-04							
Mercury	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	11-118-04							
Copper	6.80	8.05	NA	NA	NA	17	20	

MATRIX SPIKES

Laboratory ID:	11-118-04							
	MS	MSD	MS	MSD		MS	MSD	
Arsenic	89.3	90.1	100	100	ND	89	90	75-125
Barium	133	138	100	100	46.4	86	92	75-125
Cadmium	43.8	44.3	50.0	50.0	ND	88	89	75-125
Chromium	109	111	100	100	17.5	92	93	75-125
Lead	237	239	250	250	5.70	92	93	75-125
Nickel	111	114	100	100	22.6	89	92	75-125
Selenium	94.1	93.3	100	100	ND	94	93	75-125
Silver	22.1	22.6	25.0	25.0	ND	88	90	75-125
Zinc	102	105	100	100	21.1	81	84	75-125

Laboratory ID:	11-118-04							
Mercury	0.455	0.475	0.500	0.500	0.0226	87	91	80-120

Laboratory ID:	11-118-04							
Copper	51.4	55.4	50.0	50.0	6.80	89	97	75-125



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 Project: Bingo Fuel Stop

% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
B1-12.5	11-141-01	14	11-18-20
B1-15	11-141-02	9	11-18-20
B2-13	11-141-03	19	11-18-20
B2-16	11-141-04	15	11-18-20
B3-15	11-141-05	11	11-18-20
B3-20.5	11-141-06	34	11-18-20
B4-5.5	11-141-07	16	11-18-20
B4-11	11-141-08	22	11-18-20
B99-12.5	11-141-09	11	11-18-20
IDW-S-Comp	11-141-10	8	11-18-20





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





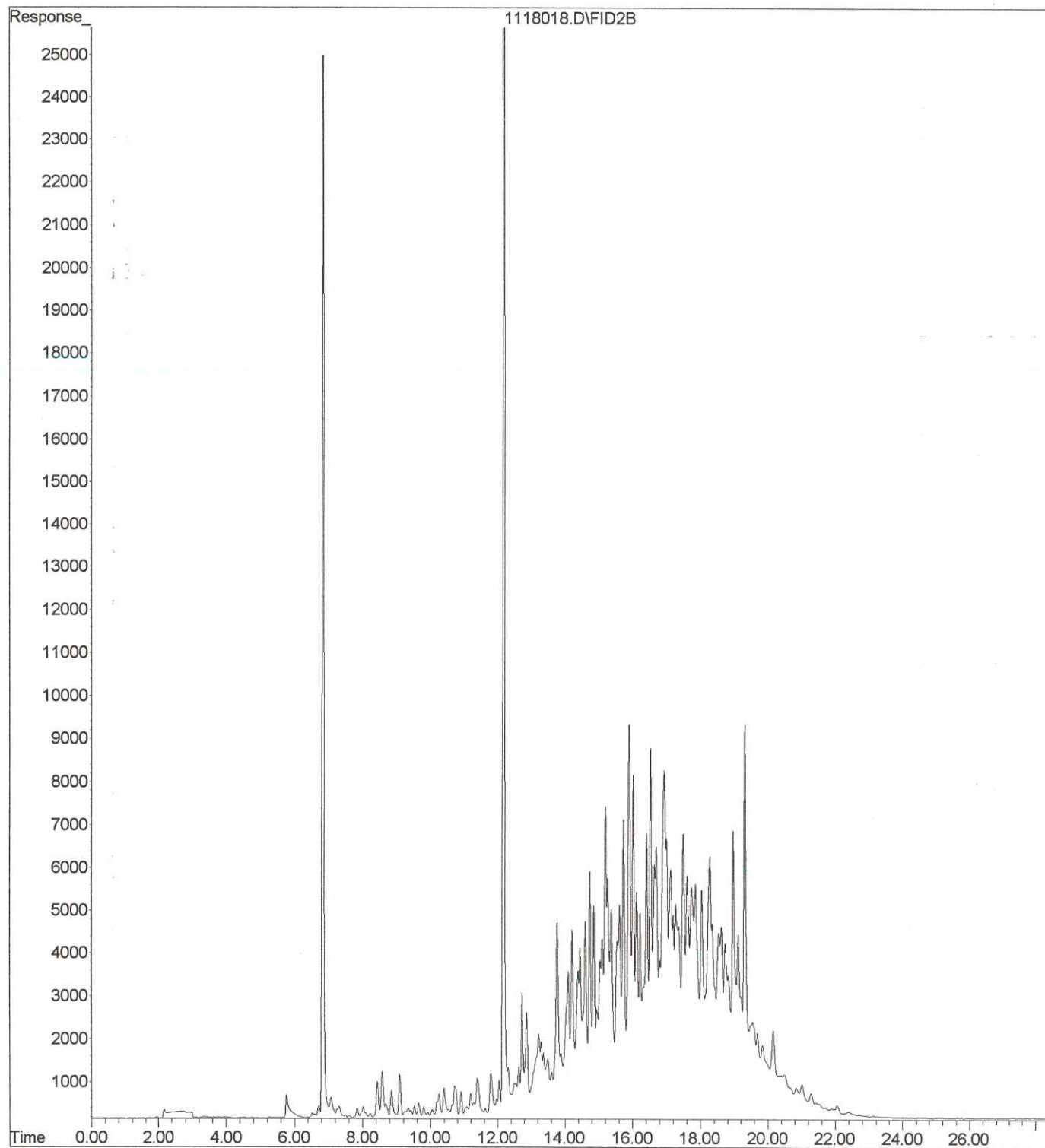
onsite
Environmental Inc.

Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

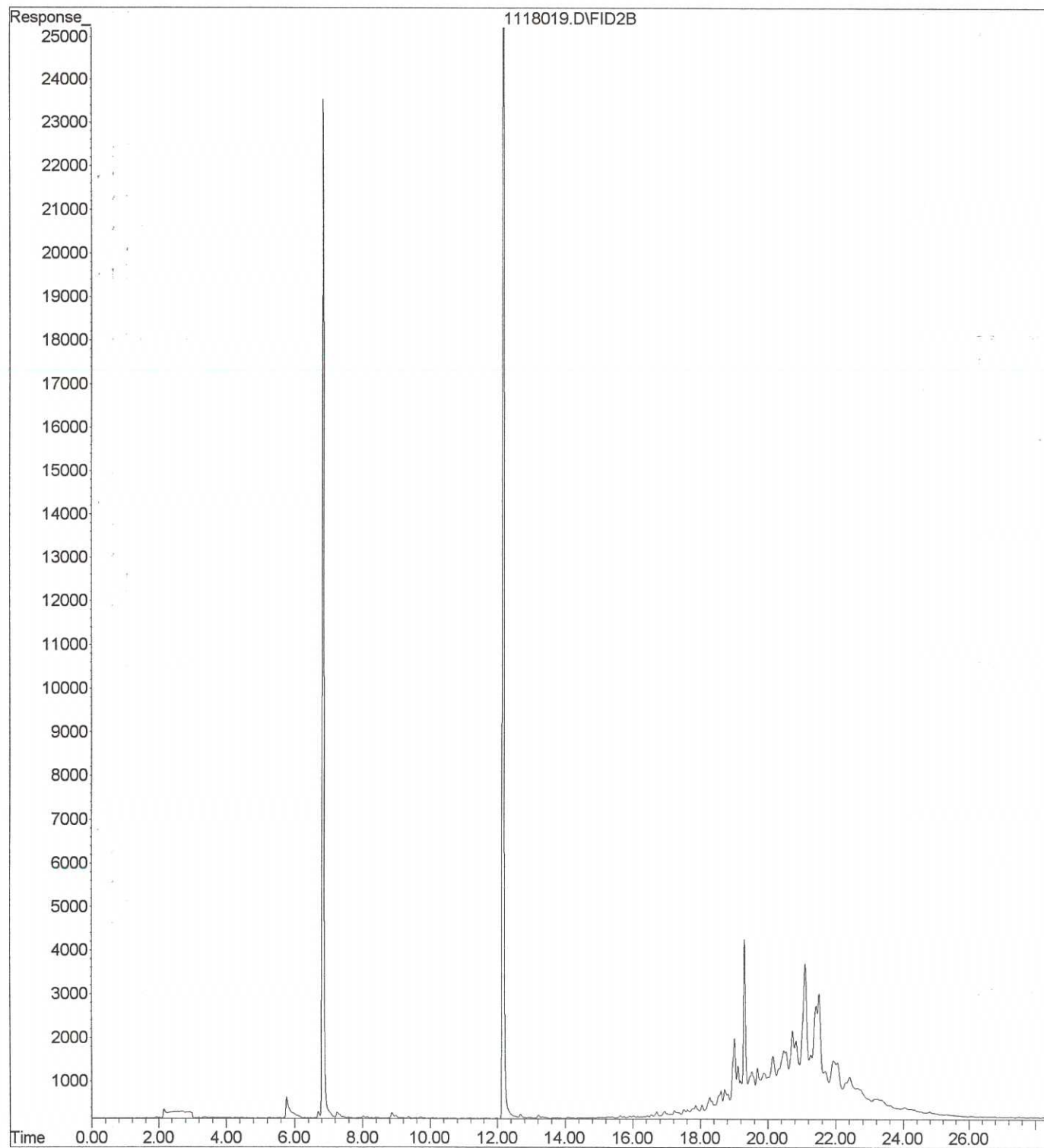
Chain of Custody

Company: CDM Smith		Turnaround Request (in working days)		Laboratory Number: 11-141													
Project Number: PO# 98060		(Check One)															
Project Name: Bingo Fuel Stop		<input type="checkbox"/> Same Day <input type="checkbox"/> 1 Day															
Project Manager: August Webb		<input type="checkbox"/> 2 Days <input type="checkbox"/> 3 Days															
Sampled by: August Webb		<input checked="" type="checkbox"/> Standard (7 Days)															
		<input type="checkbox"/> (other)															
Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers												
1	B1-12.5	11/12/20	1305	SO	2												
2	B1-15	11/12/20	1315	SO	2												
3	B2-13	11/12/20	1515	SO	4												
4	B2-16	11/12/20	1530	SO	2												
5	B3-15	11/13/20	0850	SO	2												
6	B3-20.5	11/13/20	0910	SO	2												
7	B4-5.5	11/13/20	1035	SO	2												
8	B4-11	11/13/20	1045	SO	2												
9	B99-12.5	11/12/20	1310	SO	2												
10	STDW-5-Camp	11/13/20	1110	SO	1												
Signature: August Webb		Company: CDM Smith		Date: 11/13/20	Time: 1435	Comments/Special Instructions											
Received		Relinquished															
Received		Relinquished															
Received		Relinquished															
Reviewed/Date		Reviewed/Date				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>											
						Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>											

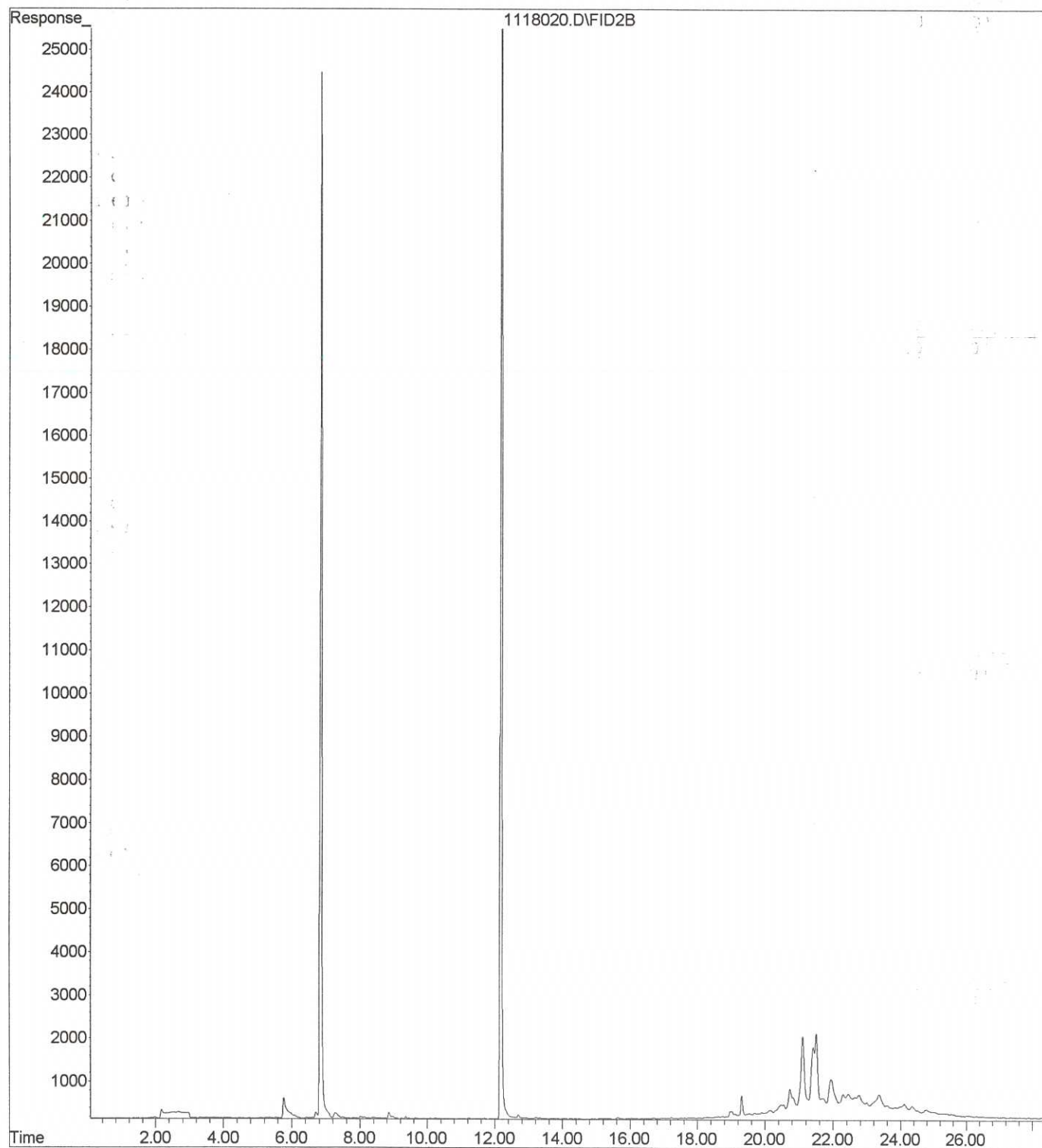
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Instrument : Daryl
Sample Name: 11-141-01s
Misc Info :
Vial Number: 18



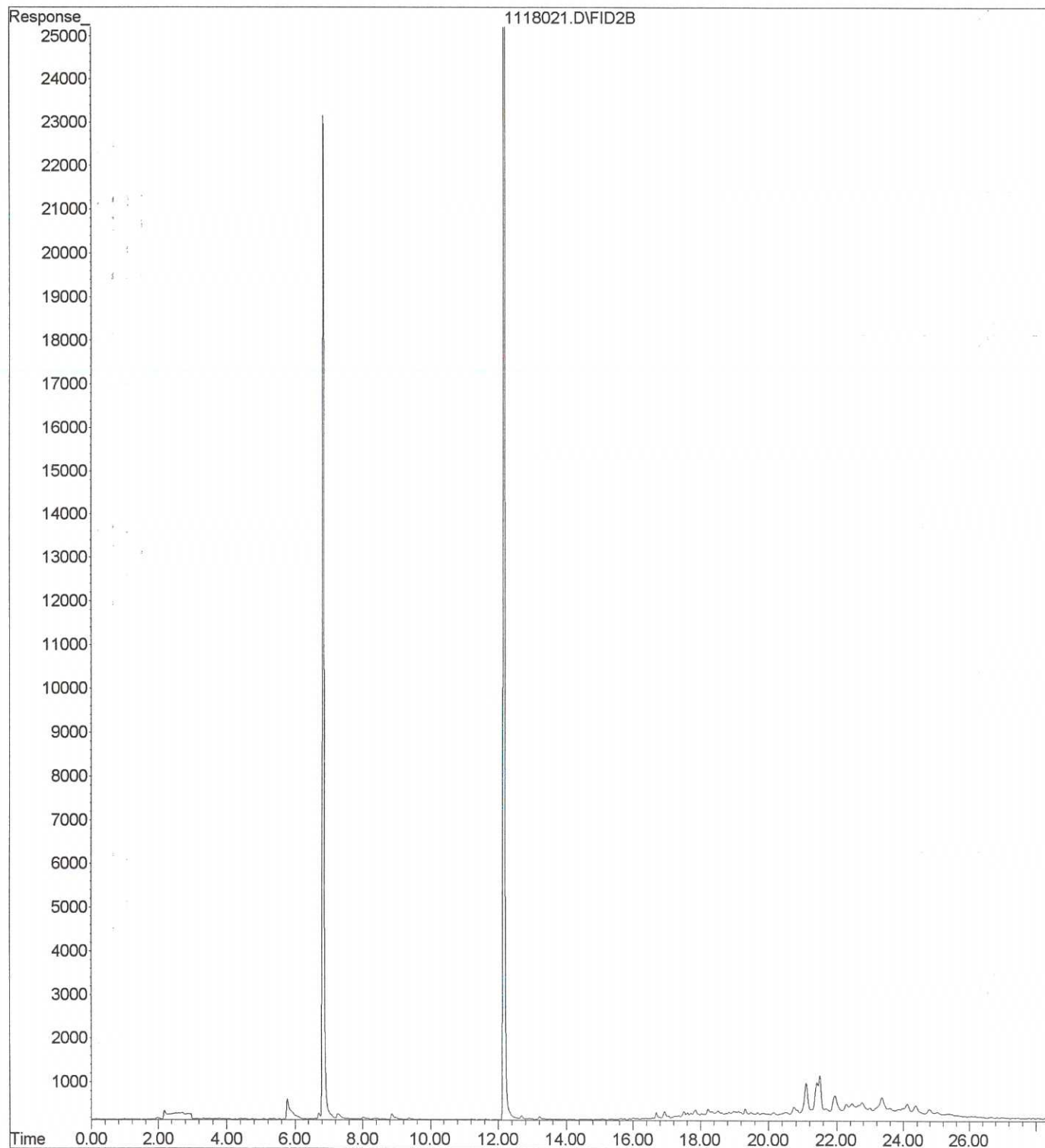
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Misc Info :
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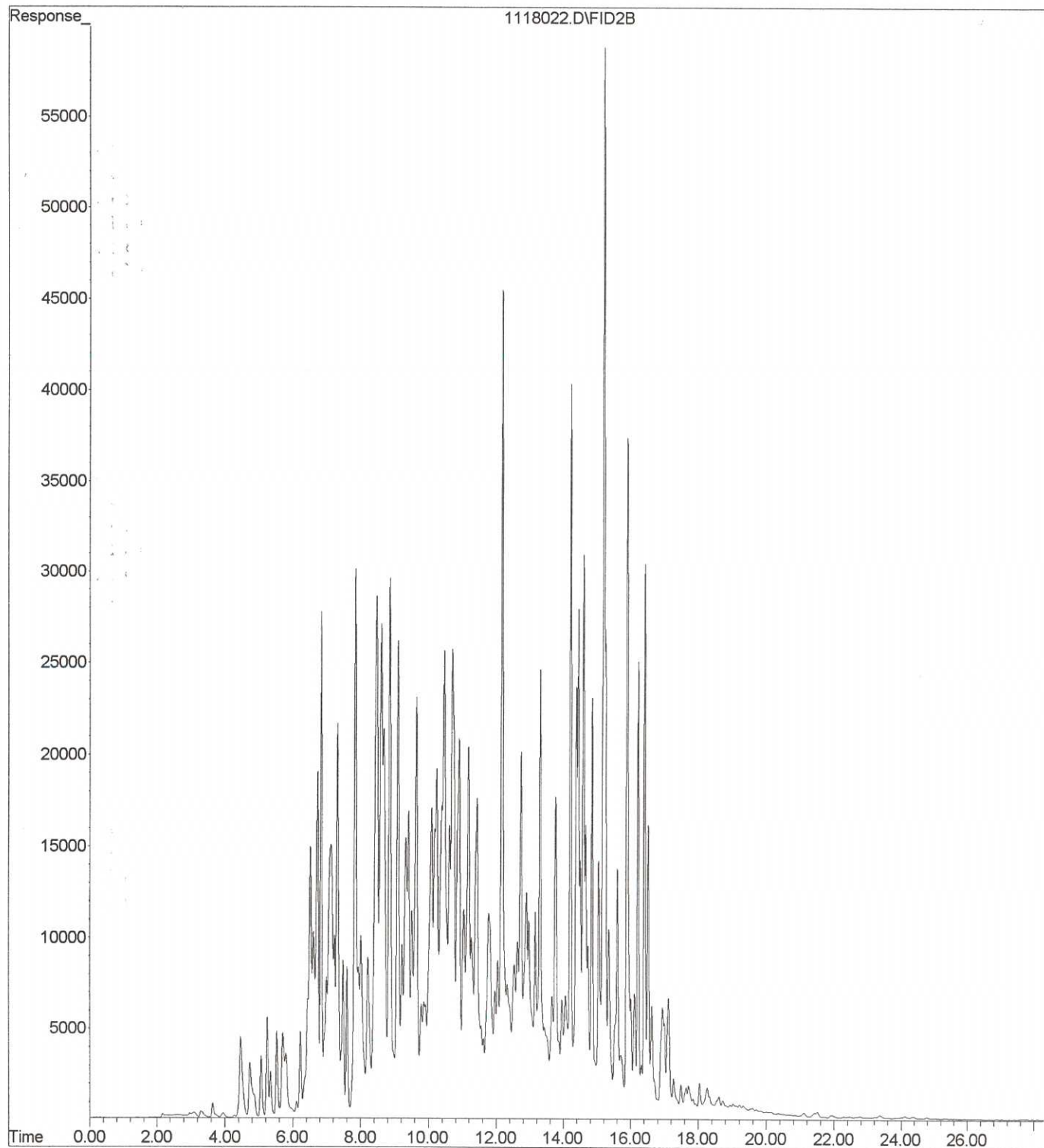
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Instrument : Daryl
Sample Name: 11-141-03s
Misc Info :
Vial Number: 20



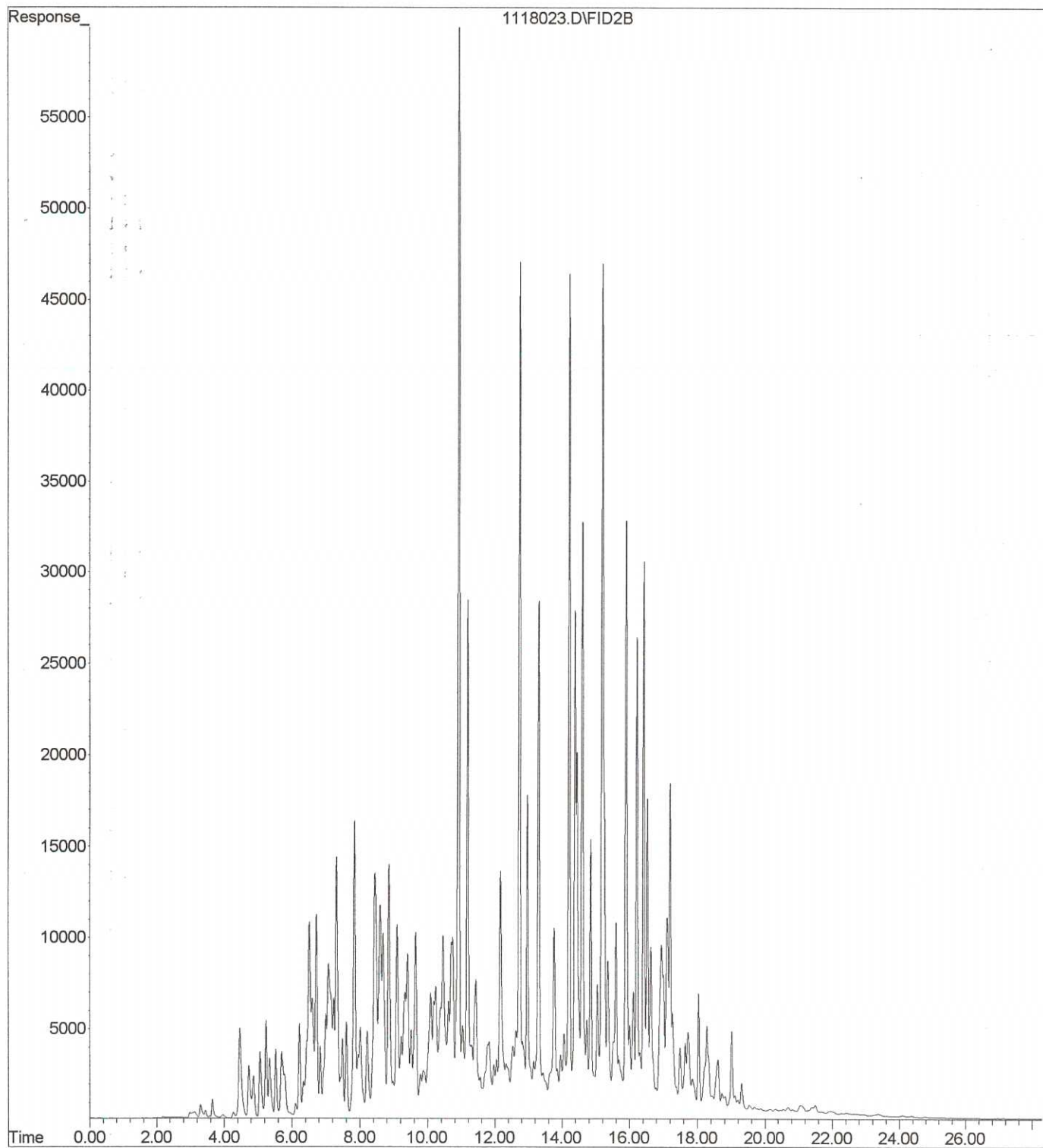
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Instrument : Daryl
Sample Name: 11-141-04s
Misc Info :
Vial Number: 21



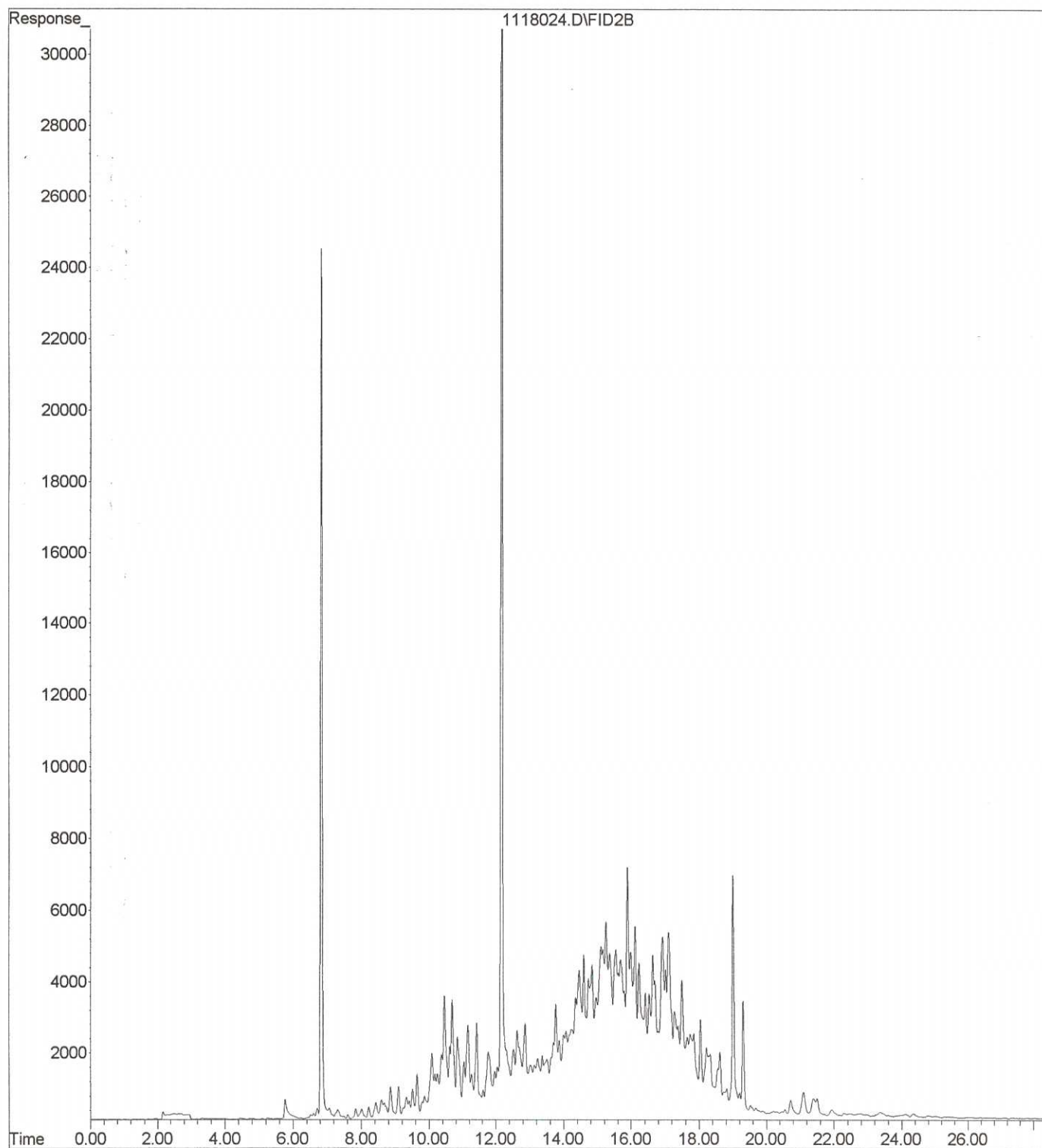
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Instrument : Daryl
Sample Name: 11-141-05s
Misc Info :
Vial Number: 22



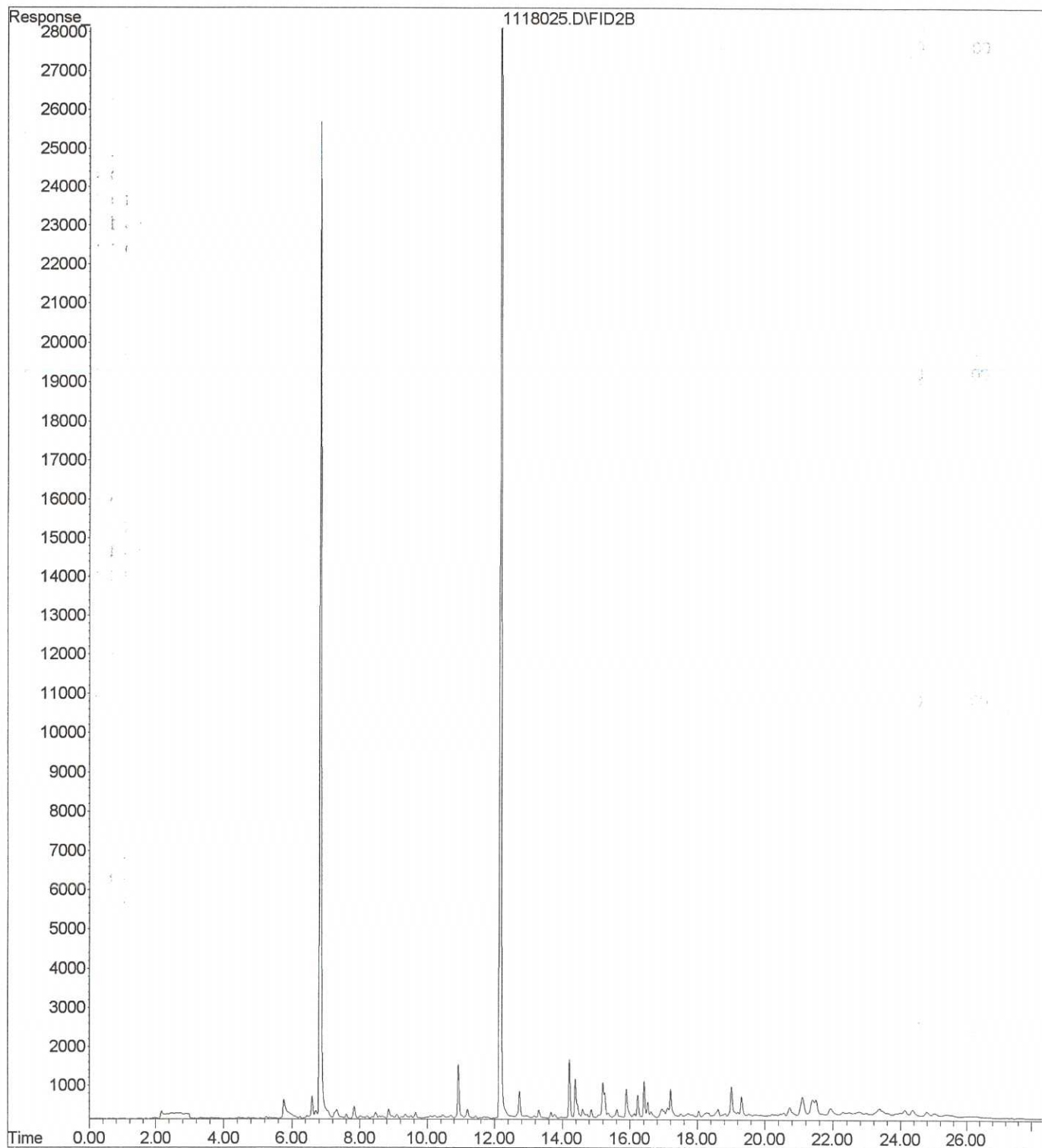
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Instrument : Daryl
Sample Name: 11-141-06s 1:500
Misc Info :
Vial Number: 23



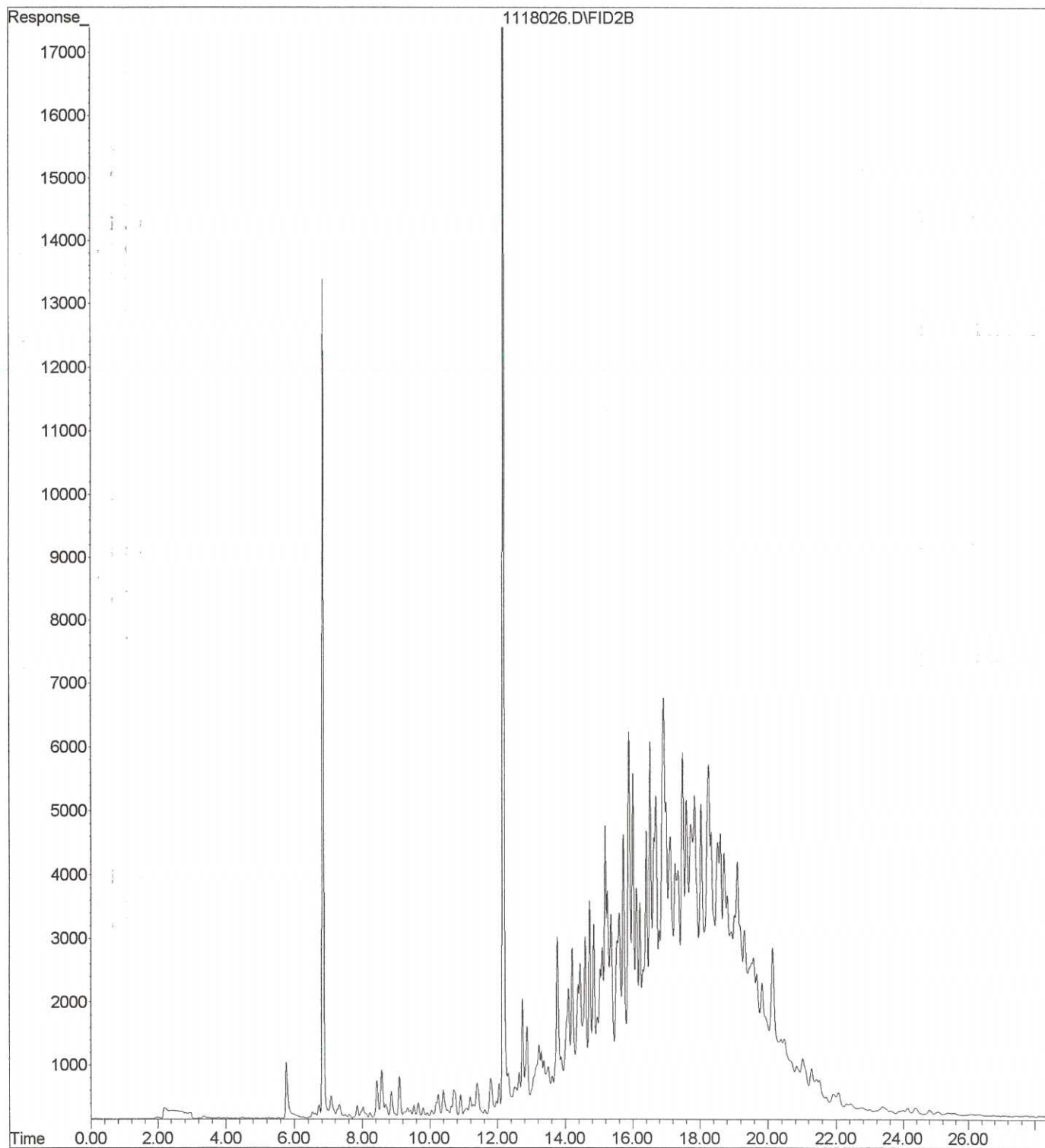
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Sample Name: 11-141-07s
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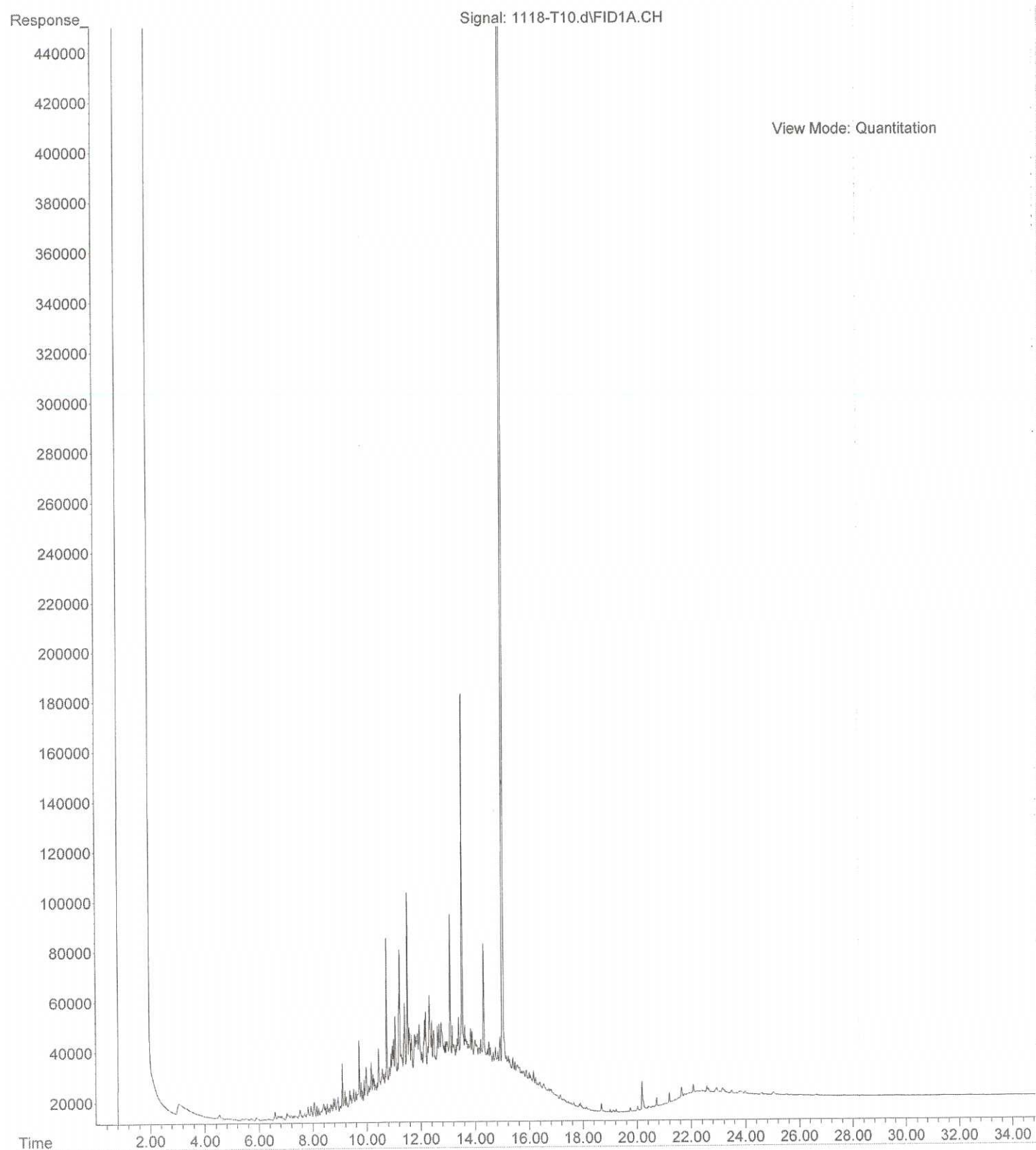
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Sample Name: 11-141-08s
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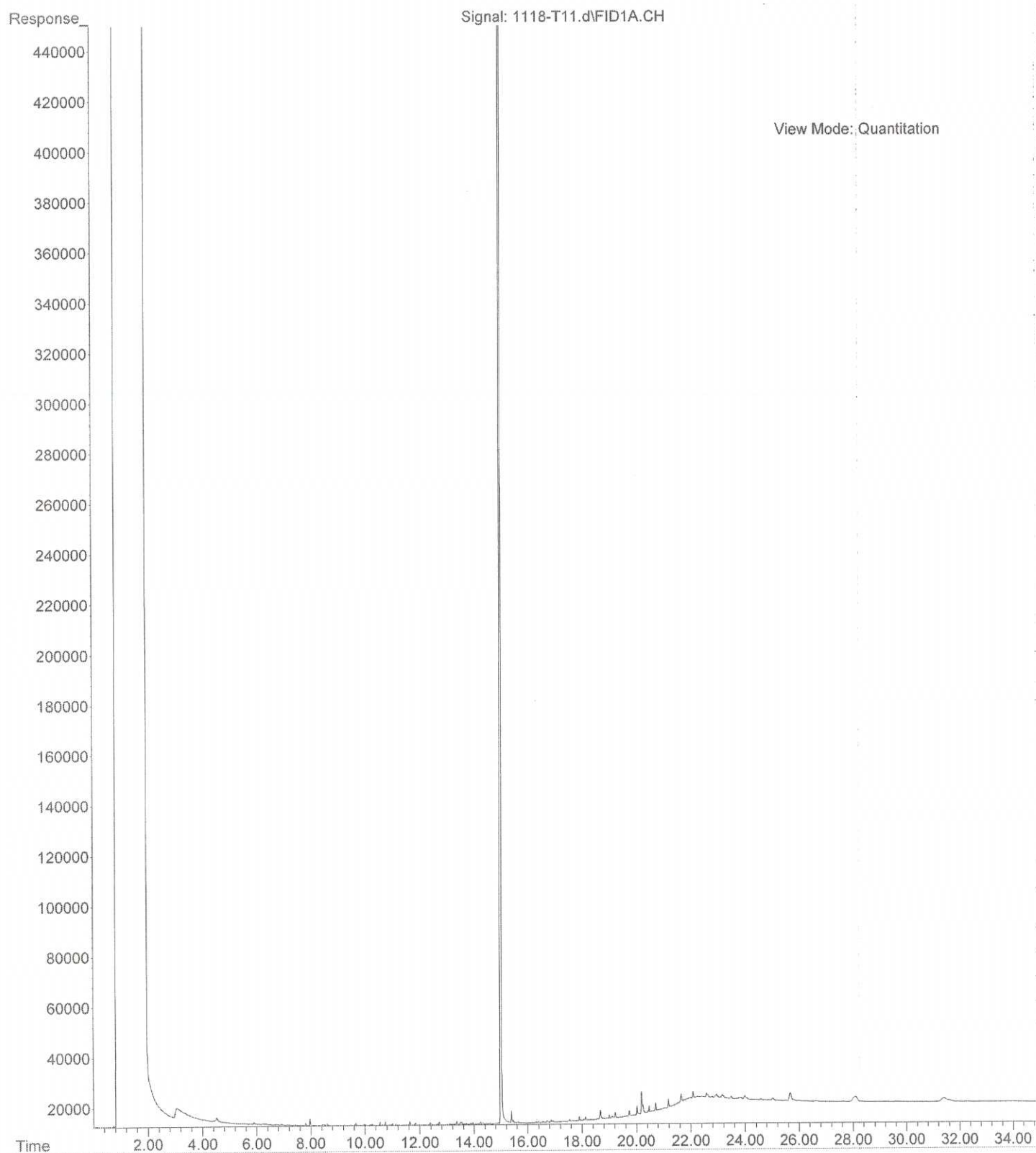
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Instrument : Daryl
Sample Name: 11-141-09s 1:100
Misc Info :
Vial Number: 26



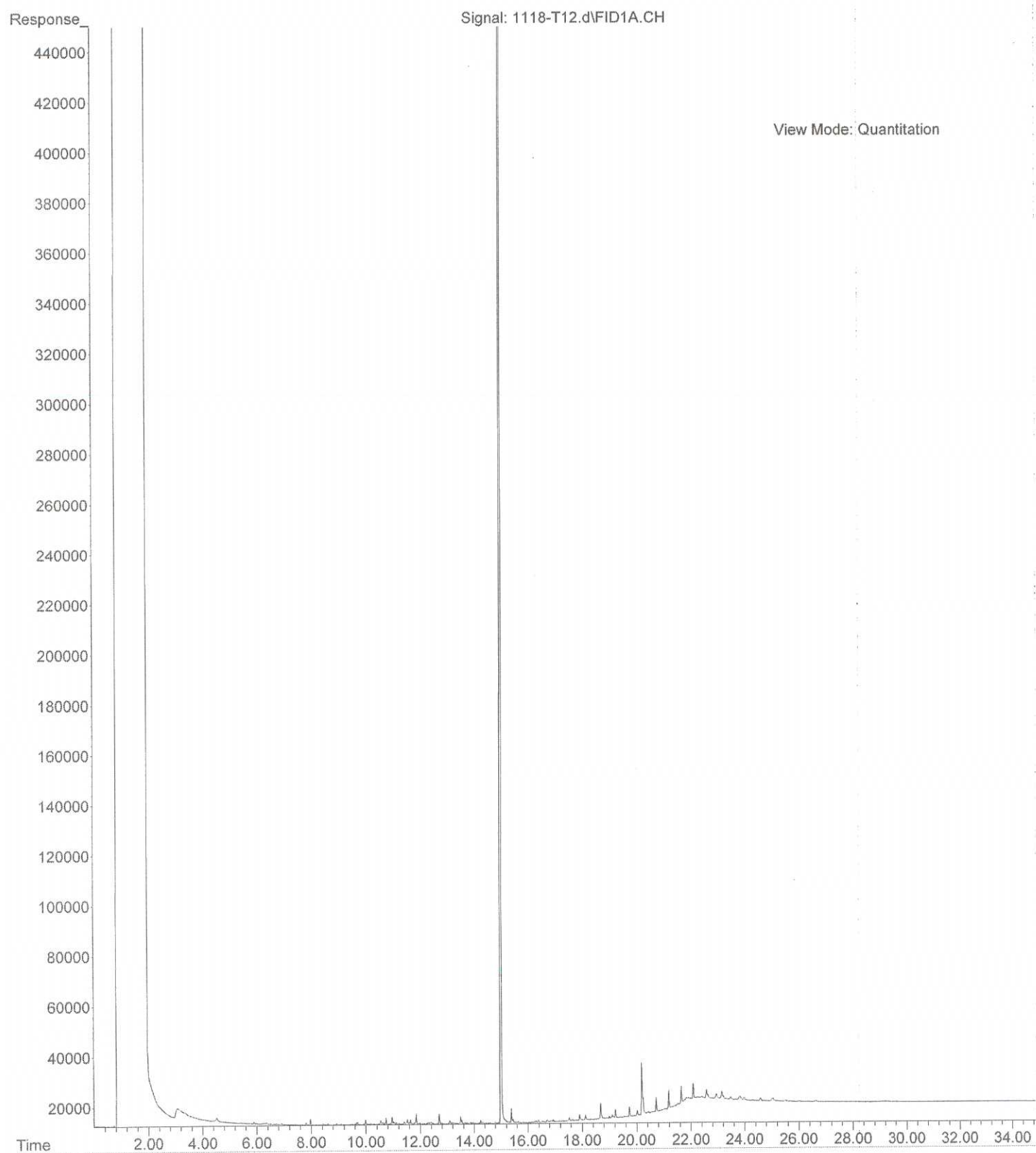
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Instrument : Teri
Sample Name: 11-141-01
Misc Info :
Vial Number: 10



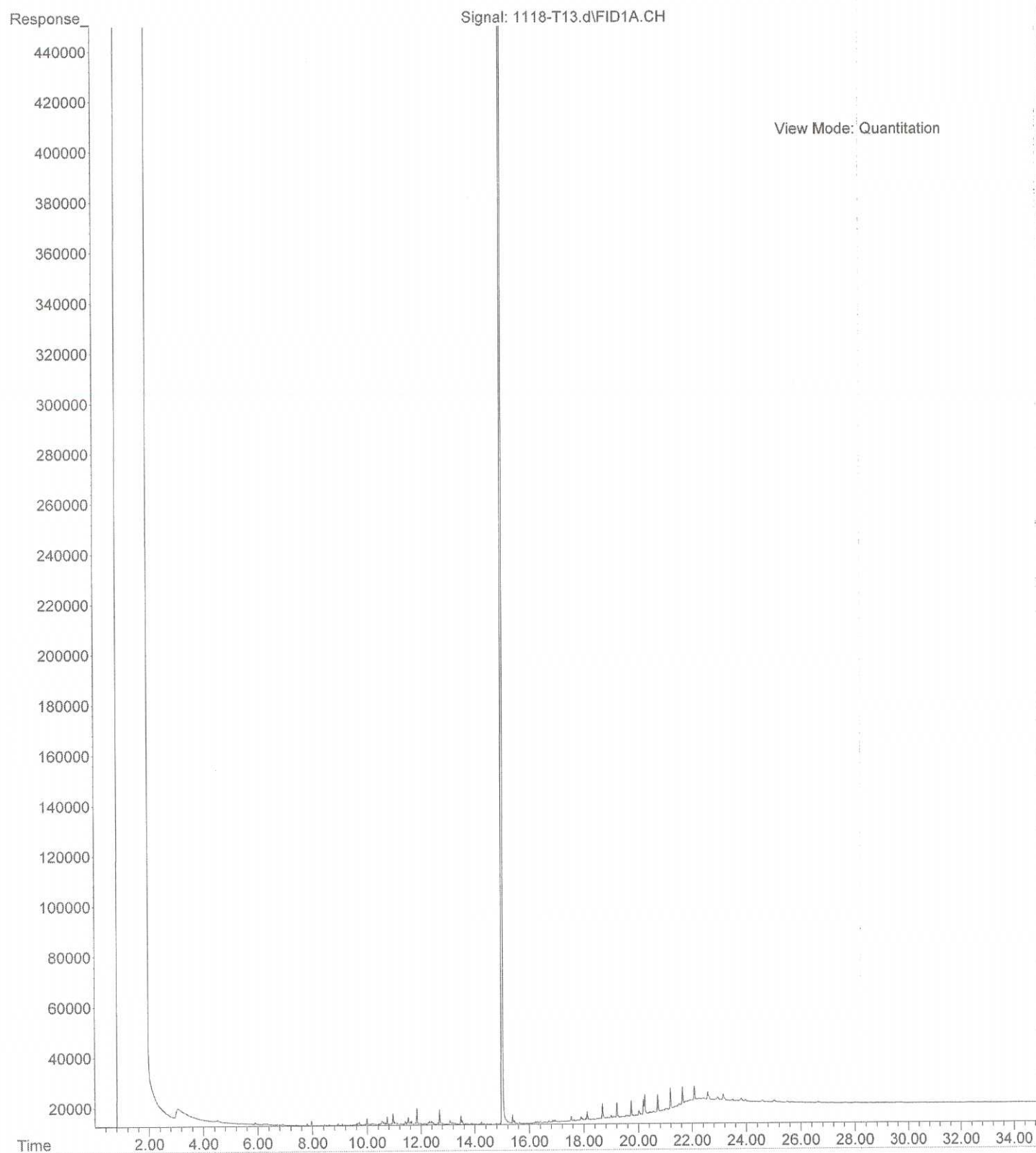
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Instrument : Teri
Sample Name: 11-141-02
Misc Info :
Vial Number: 11



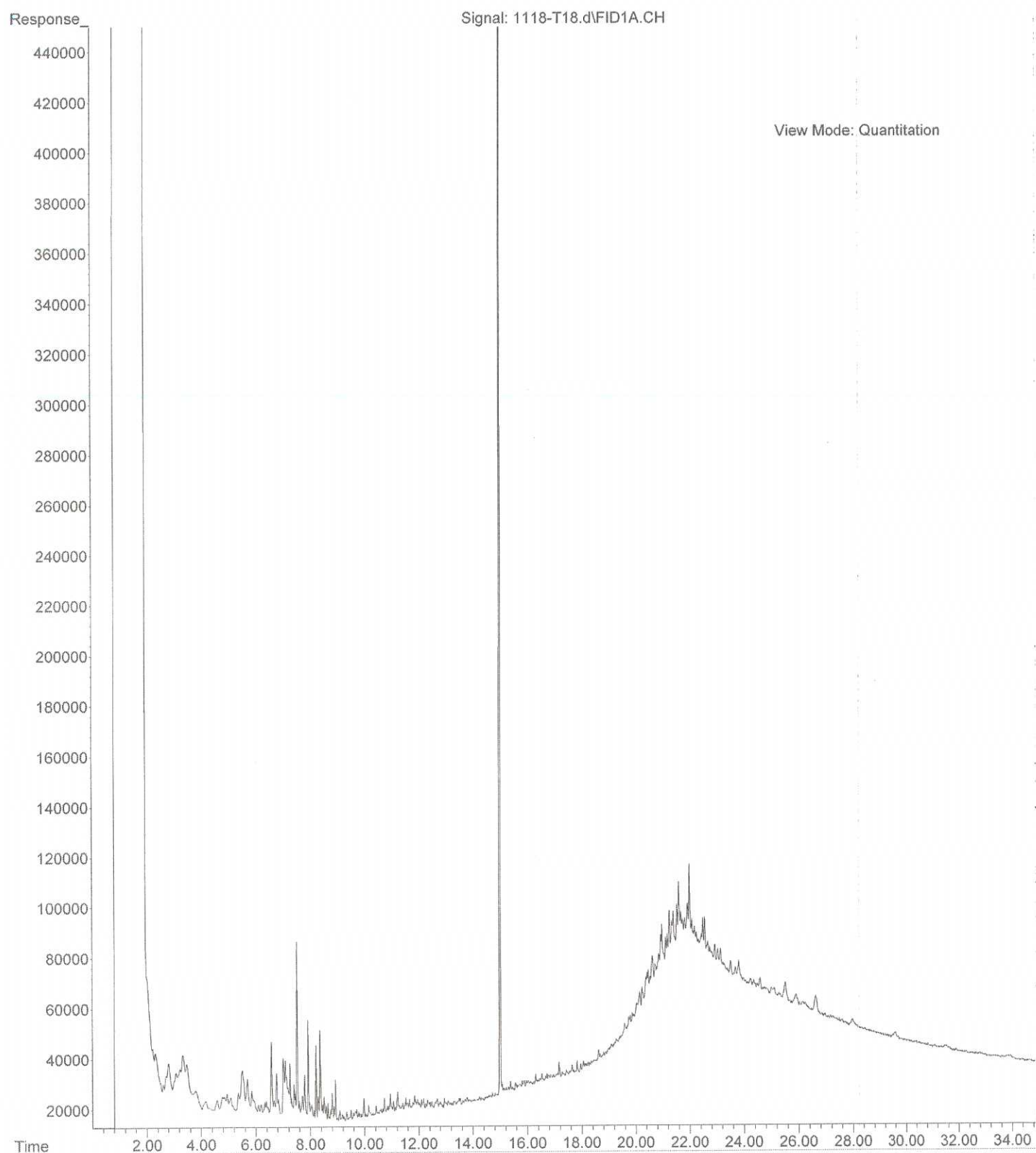
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Instrument : Teri
Sample Name: 11-141-03
Misc Info :
Vial Number: 12



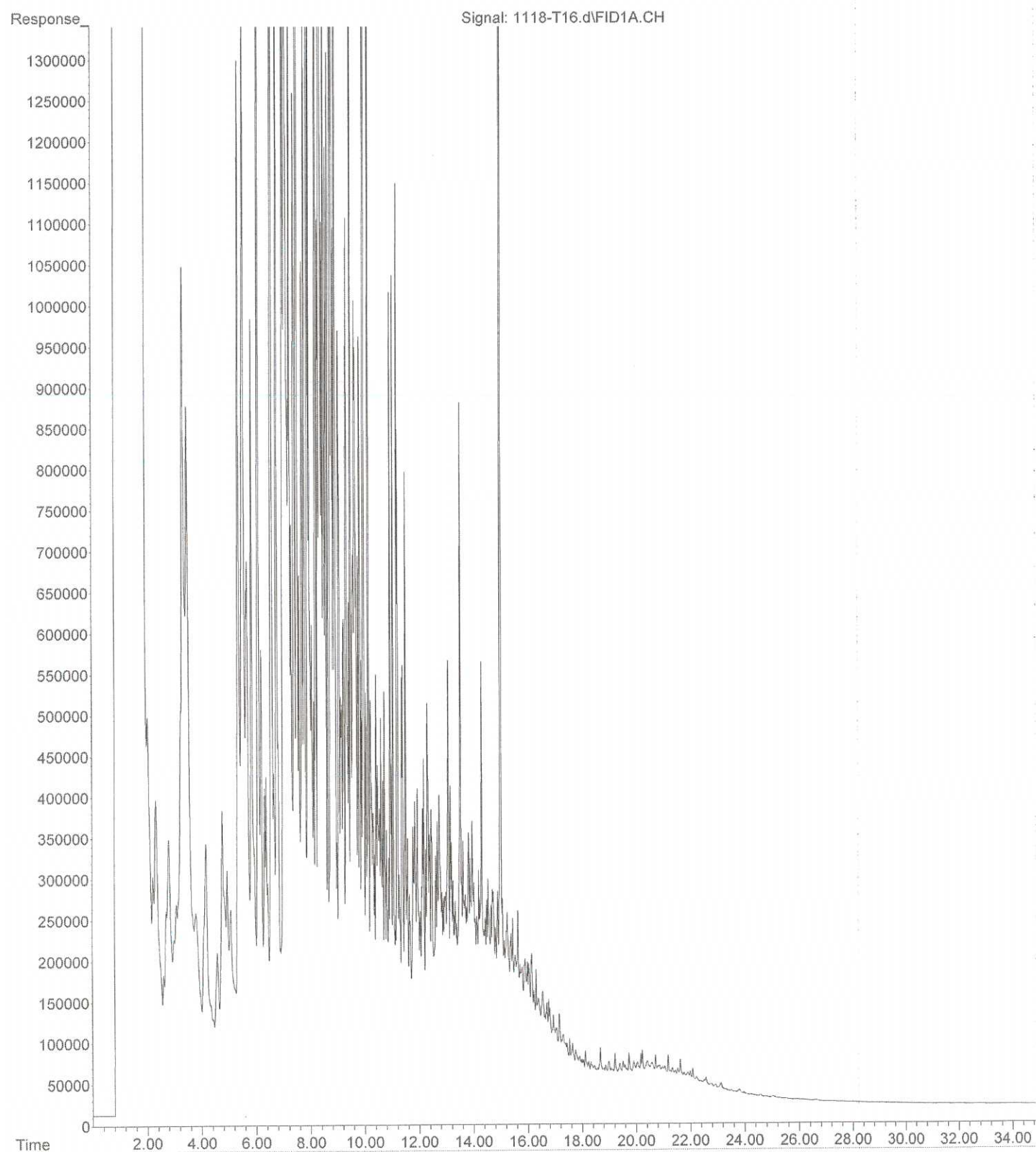
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Misc Info :
Vial Number: 13



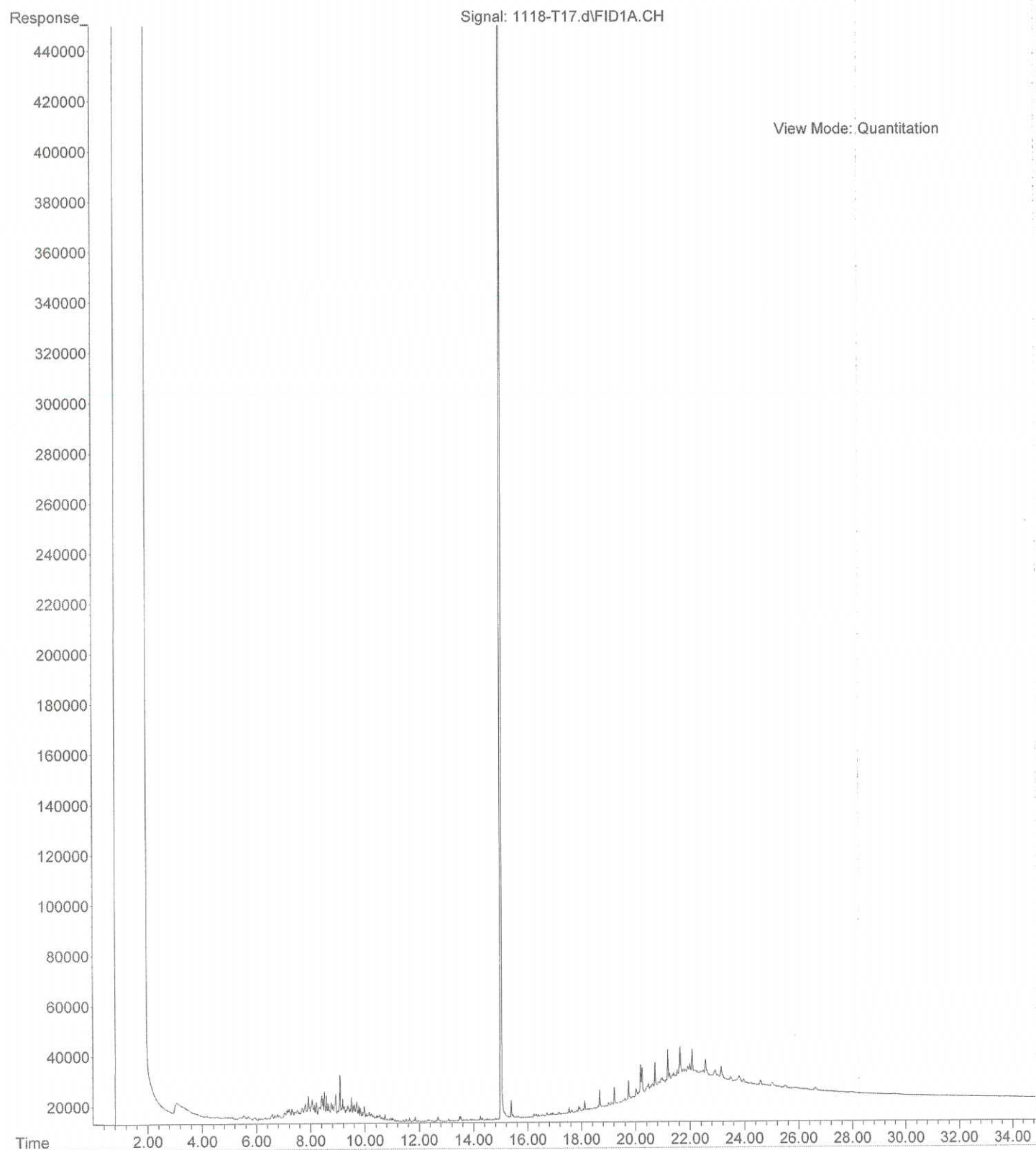
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Instrument : Teri
Sample Name: 11-141-05 5X
Misc Info :
Vial Number: 18



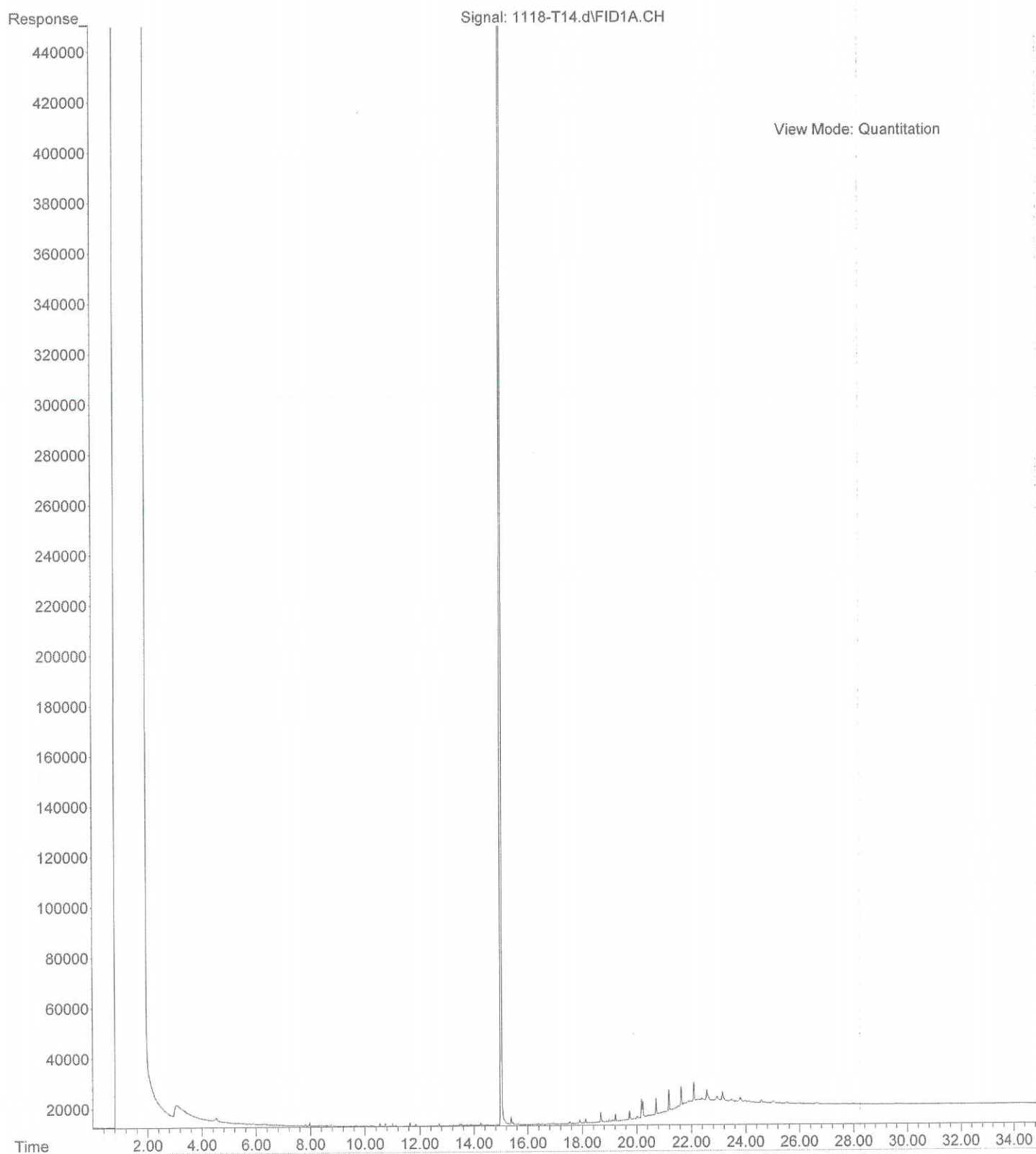
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Instrument : Teri
Sample Name: 11-141-06
Misc Info :
Vial Number: 16



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Operator : JT
Acquired : 18 Nov 2020 18:28 using AcqMethod T201031F.M
Instrument : Teri
Sample Name: 11-141-07
Misc Info :
Vial Number: 17



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Operator : JT
Acquired : 18 Nov 2020 16:20 using AcqMethod T201031F.M
Instrument : Teri
Sample Name: 11-141-08
Misc Info :
Vial Number: 14



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Operator : JT
Acquired : 18 Nov 2020 17:03 using AcqMethod T201031F.M
Instrument : Teri
Sample Name: 11-141-09
Misc Info :
Vial Number: 15

