

Limited Phase II Environmental Site Assessment

Former Speedway Gas Station
3744 Chicago Avenue South
Minneapolis, Minnesota

Prepared for

City of Minneapolis

June 27, 2023

Project B2208959.00

Ms. Rebecca Parrell
City of Minneapolis – Community Planning and Economic Development
505 4th Ave S, Suite 320
Minneapolis, MN 55415

Re: Limited Phase II Environmental Site Assessment
Former Speedway Gas Station
3744 Chicago Avenue South
Minneapolis, Minnesota

Dear Ms. Parrell:

On behalf of the city of Minneapolis, Braun Intertec Corporation conducted a Limited Phase II Environmental Site Assessment (ESA) of the above-referenced site (Site) in accordance with the authorized scope of services described in the proposal dated May 30, 2023. The Limited Phase II ESA was conducted in association with the proposed purchase of the Site. For a complete discussion of our assessment, please refer to the attached Phase II Environmental Site Assessment report.

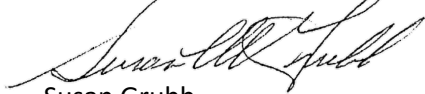
The objective of the Limited Phase II ESA was to evaluate whether the soil, soil vapor and/or groundwater beneath the Site has been impacted due to the recognized environmental conditions identified in the Phase I ESA conducted at the Site by Braun Intertec (Project B2208959) dated May 10, 2023.

This Limited Phase II ESA was prepared on behalf of and for use by the City of Minneapolis, and Northern Tier Retail, LLC, successor in interest to Speedway SuperAmerica, LLC. No other party has a right to rely on the contents of this Limited Phase II ESA without the written authorization of Braun Intertec.

We appreciate the opportunity to provide our professional services to you for this project. If you have any questions or comments regarding this report, please contact Susan Grubb at 651.900.4885.

Sincerely,

BRAUN INTERTEC CORPORATION



Susan Grubb
Senior Project Manager



Mary Canino, PG, CHMM
Business Unit Leader, Principal Scientist

Attachment:
Phase II Environmental Site Assessment Report

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A. Introduction

A.1. Authorization

Braun Intertec Corporation received authorization from Ms. Rebecca Parrell, Project Supervisor for the City of Minneapolis, to conduct a Limited Phase II Environmental Site Assessment (ESA) of the former Speedway gas station site located at 3744 Chicago Avenue South/George Perry Floyd Jr. Square in Minneapolis, Minnesota (the Site), in accordance with the scope of services described in the Braun Intertec proposal dated May 30, 2023. The Phase I Environmental Site Assessment was prepared in association with the proposed purchase of the Site.

This Limited Phase II ESA was prepared on behalf of and for use by the city of Minneapolis and Northern Tier Retail, LLC, successor in interest to Speedway SuperAmerica, LLC, in accordance with the contract between the city of Minneapolis and Braun Intertec. No other party has a right to rely on the contents of this Limited Phase II ESA without the written authorization of Braun Intertec.

The Phase II ESA was limited in scope in that it did not evaluate potential groundwater impacts because the estimated depth to groundwater is greater than 45 feet and no dewatering or other contact with the groundwater is anticipated.

A.2. Project Objective

The objective of the Limited Phase II ESA was to evaluate whether the soil or groundwater beneath the Site has been impacted due to the recognized environmental conditions identified in a Phase I ESA conducted at the Site by Braun Intertec (Project B2208959) dated May 10, 2023.

B. Site Background

B.1. Site Location and Description

The Site is located at 3744 Chicago Avenue/George Perry Floyd Jr. Square, in Minneapolis Minnesota (see Figure 1). The Site is located within the SE quarter of the SW quarter of Section 2 Township 28 North, Range 24 West, in the city of Minneapolis, Hennepin County, Minnesota.

The Site is a 0.31-acre parcel that is currently owned by Realty Income Properties 3, LLC and leased by Northern Tier Retail, LLC, successor in interest to Speedway SuperAmerica, LLC. The Site contains a 2,400-square foot single-story slab-on-grade former Speedway gas station/convenience store building located along the west side of the Site. A concrete sidewalk apron is located along the east side of the building. The areas to the east, southeast, and south of the building and sidewalk apron are paved with asphaltic concrete.

The tank basin is located near the northeast corner of the Site. The fuel from the three 10,000-gallon “temporarily closed” E-10 unleaded gasoline (10% ethanol/90% gasoline) underground storage tanks (USTs) was removed from the tanks on August 26, 2020. The tank bottom water and sludge were pumped out of the tanks on June 16, 2023, by Rock Leaf Water Environmental. Copies of the disposal information documents are provided in Appendix A

A free-standing canopy and two gas pump islands are located to the east of the building and south of the tank basin. The gas pumps have been inoperable since August 20, 2020.

In addition to the structures associated with the former gas station, several temporary structures have been constructed at the Site by members of the local community. These include a small shed at the northeast corner of the Site used as a community library, a roofless metal, plastic, and plywood structure along the north side of the property to house a community garden of potted plants, and two wooden sheds located to the south of the former gas station building. Two portable bathroom units are situated along the southern edge of the Site.

The Site is bordered on the north by a mixed-use property with two tenant spaces on the first floor (Onyx Coffeehouse – 3740 Chicago Avenue South) and a vacant former event center (3736 Chicago Avenue), a vacant basement commercial tenant space, and four residential apartments on the second floor. A petroleum release from a former fuel oil aboveground storage tank in the basement of the building was reported to the MPCA on April 12, 2023. A fill pipe and manhole access associated with the former fuel oil tank are present along the north side of the building bordering the alley between the 3736/3740 Chicago Avenue property and the Site.

The northbound lane of Chicago Avenue to the east of the Site has been at least temporarily converted to a memorial “plaza” for George Perry Floyd, Jr. Adjacent properties to the east of the Site include Fire Arts (a community art center) and Cup Foods. The Site is bounded to the south by Worldwide Outreach for Christ church (3800 Chicago Avenue South), to the southwest by a single-family home (3801 Columbus Avenue South), and to the west by a small commercial office building (730 – 732 East 38th Street) with recent tenants including Sartori Integrative Physical Therapy and Caval Servicios. The area to

the northwest of the Site contains residential apartment buildings. A Site Location Map is included as Figure 1.

B.2. Proposed Development

The city of Minneapolis plans to acquire the site and remove the three “temporarily closed” underground storage tanks (USTs) as soon as it can be arranged with the community. The city plans for the Site to continue to be used in its current state as a community gathering and memorial space for George Perry Floyd, Jr. in the near term, as long-term redevelopment plans are created with the community.

B.3. Previous Site Investigations

Braun Intertec completed a Phase I ESA of the Site, the results of which are presented in the report entitled: *Phase I Environmental Assessment, Former Speedway Gas Station, 3744 Chicago Avenue South, Minneapolis, Minnesota*, dated May 10, 2023 (2023 Phase I ESA).

Before 1912, the Site consisted of five undeveloped city lots (lots 8 through 12). The Site was developed in 1912 with a 120-square foot office building located along the east side of the Site.

The first gas station/automobile repair building was constructed at the Site in 1921 near the center of the site, with the gas tanks pump(s) situated just east of the building and the gas tanks located to the northeast of the building, near the northeast corner of the Site. Additions were constructed onto the north side of the building in 1938 and 1955.

The gas station building was demolished in 1965, then a larger gas station building and larger pump island were constructed at the Site. A permit was issued in 1975 for the demolition of the 1965 gas station.

A permit was issued for the demolition of the gas station in 1975, however, no gas station building is visible at the Site in the 1972 aerial photograph of the Site.

The current gas station/convenience store building was constructed along the western edge of the Site in 1975, with a small pump island to the east of the building. The current pump island canopy was constructed between 1987 and 1991.

No records were available for the tanks that were located at the Site between 1921 and 1936; however, tank information from 1936 through 2023 is compiled in the table below:

Tank Volume (gallons)	# of Tanks	Tank Contents	Installed	Removed or Closed Date	Tank Owner	Address
1,000 ¹	5	Not listed	11/24/1936	07/02/1954	Standard Oil Co.	736 E. 38 th St.
100 ¹	3	Not listed	11/24/1936	07/02/1954	Standard Oil Co.	736 E. 38 th St.
3,000 ²	2	Gasoline	08/31/1954	09/14/1965	Standard Oil Co.	736 E. 38 th St.
2,000 ²	2	Gasoline	08/31/1954	09/14/1965	Standard Oil Co.	736 E. 38 th St.
1,000 ³	1	Drain Oil	08/31/1954	09/14/1965	Standard Oil Co.	736 E. 38 th St.
100 ⁴	3	White Gas and Naphtha	08/31/1954	09/14/1965	Standard Oil Co.	736 E. 38 th St.
10,000 ⁵	1	Gasoline	09/09/1977	1987 ⁶	Southland Corp.	3744 Chicago
6,000 ⁵	1	Unleaded Gasoline	09/09/1977	1987	Southland Corp.	3744 Chicago
10,000	1	E-10 (10%	08/17/1987	Temporarily Closed ⁷ 03/20/2020	Speedway LLC (formerly SuperAmerica LLC)	3744 Chicago
10,000	1	Ethanol)	08/17/1987			3744 Chicago
10,000	1	Gasoline	08/17/1987			3744 Chicago

¹The tanks were located 36 feet from the sidewalk and the pumps were located 16 feet from the sidewalk.

²The gasoline tanks were located between the two fuel pumps, 14 feet from the sidewalk.

³The drain oil tank was located along the north side of the gas station building.

⁴The white gas and naphtha tanks were located to the rear (west) of the gas station building and were equipped with two hand pumps.

⁵The locations of the tanks were not provided.

⁶The removal date was obtained from MPCA tank records.

⁷The MPCA changed the designation of the tanks from “active” to “temporarily closed” after the tanks were pumped out following the closure of the gas station.

Two gasoline leaks and one gasoline spill were reported for the former gas station:

- On December 20, 1994, a hose broke and back pressure caused unleaded gasoline to “shoot out” of the hose during filter replacement. A Remedial Investigation report for the release indicated that no contamination was encountered within a depth of 30 feet below the ground surface and that laboratory results for all the soil samples were below the laboratory indicated quantification limits. The MPCA granted site file closure for this release on June 6, 1995.
- A release of unleaded gasoline was reported on August 7, 2004 (Leak #LS0015803) from a leak at a submersible pump pit caused gasoline to fill the manhole and run down the adjacent alley to the north of the site along the street curb. Sorbent materials were applied to the spill. An investigation of the release was performed and no gasoline range organic compounds (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), or methyl tert butyl

ether (MTBE) were detected above the laboratory indicated quantification limits. The Request for Site Closure letter concluded that the release was contained before impacted the subsurface soil and groundwater, so petroleum impacts were confined to the surface. The MPCA granted site file closure for this release on March 25, 2005.

The Request for Site Closure letter also referred to the presence of former observation wells adjacent to the tank basin that had been grouted prior to 2004; it is presumed that the wells were associated with the 1994 gasoline release.

- A spill of 5 gallons of leaded gasoline occurred when the fuel tank/line of a customer's vehicle leaked, and gas spilled out of the bottom of the tank. Minneapolis Fire Department and gas station personnel applied absorbent material to recover the spilled gasoline.

The following recognized environmental conditions were identified in the 2023 Phase I ESA:

- The gasoline releases and spill documented in the environmental database listings were minor and did not cause significant impacts to soil or groundwater beneath the Site, therefore, these releases represent a historical REC.
- The use of Site for the past 100 years as a gas station and automobile service business likely included processes that involved the use of petroleum, solvents, and other hazardous substances. The manner in which these substances were historically stored, used, and disposed of is not known. Therefore, the past use of the Site as a gas station and for automotive repair represents a REC due to the potential for past, undocumented releases of petroleum products or other hazardous materials to soil, soil vapor, and/or groundwater.
- The three 10,000-gallon "temporarily closed" E-10 (10% ethanol/90% gasoline) USTs remaining at the Site in an unmonitored setting represents a REC due to the potential for damage to the USTs and/or release of gasoline due to vandalism by persons at the Site who are not affiliated with the gas station lessee or the property owner.

B.4. Published Geologic Information

The Site-specific groundwater flow direction was not determined through direct measurement during this Phase I ESA. Additional field investigation, beyond the Scope of Services of this Phase I ESA, would be required to determine this information.

B.4.a. Topography

According to the United States Geological Survey (USGS) 7.5-minute topographic map series, Minneapolis, Minnesota quadrangle, the Site is located at an elevation of approximately 850 to 855 feet above mean sea level.

B.4.b. Geology

The unconsolidated sediment in the Site vicinity consists of Pleistocene age Des Moines Lobe and Grantsburg sublobe glacial outwash deposits of sand, loamy sand, and gravel (Patterson, 1992).

The uppermost bedrock unit in the Site vicinity is the Middle Ordovician Platteville and Glenwood Formations (Olson and Bloomgren, 1989). The Platteville Formation is described as fine-grained limestone containing thin shale partings near the top and base, underlain by green, sandy shale of the Glenwood Formation. The depth to bedrock in the Site vicinity is approximately 50 to 100 feet below land surface (Bloomgren, Cleland, and Olson, 1989).

B.4.c. Hydrogeology

According to published geologic information, the regional groundwater flow direction within the unconsolidated deposits in the Site vicinity is generally to the southeast, toward the Mississippi River (Kanivetsky, 1989). According to published geologic information, the regional groundwater table in the vicinity of the Site occurs within the unconsolidated deposits at a depth of approximately 50 feet below the ground surface (bgs).

C. Scope of Services

The following tasks were conducted at the Site as part of this Limited Phase II ESA:

- Subcontracted a licensed drilling contractor to clear public utilities through Gopher State One Call and private utilities for the investigation locations.
- Subcontracted a licensed drilling contractor to complete soil borings, install temporary groundwater monitoring wells, and complete soil vapor probes.
- Advanced five environmental soil borings (GP-1 through GP-5) and collected soil samples.

- Conducted environmental monitoring during drilling and screened soil samples collected from the borings for the presence of organic vapors using a photoionization detector (PID). Visual and olfactory observations regarding potential contamination were also made and recorded.
- Analyzed representative samples of soil and groundwater for one or more of the following parameters: benzene, ethylbenzene, toluene, xylenes, diesel range organics (DRO), gasoline range organics (GRO), and Resource Conservation and Recovery Act (RCRA) metals - lead (Pb).
- Evaluated the data and prepared this report.

C.1. Deviations from Work Plan/Proposal

The purpose of this Limited Phase II ESA was to determine whether the soil and/or groundwater beneath the Site has been impacted due to the recognized environmental conditions identified in the Phase I ESA conducted at the Site by Braun Intertec (Project B2208959) dated May 10, 2023.

Soil boring SB-5 was moved approximately 5 feet to the north from the originally proposed location, due to the proximity of buried utilities discovered during the private utility locate.

Groundwater was not encountered during the advancement of the five soil borings for this Limited Phase II ESA. Therefore, no temporary wells were established and no groundwater samples were collected for analysis.

D. Investigation Methods and Procedures

The field work relating to the investigation was conducted on June 9, 2023. Prior to beginning the field investigation, public utilities were cleared through Gopher State One Call and private utilities were cleared through a subcontracted private utility locator.

Field methods and results are discussed in the following sections: Photographic documentation is provided in Appendix C, soil boring logs are provided in Appendix D, laboratory analytical report(s) is (are) provided in Appendix E, and Braun Intertec Standard Operating Procedures (SOPs) are provided in Appendix F.

Five geoProbe soil borings (designated SB-1 through SB-5) were advanced at the Site. The soil borings were advanced as follows:

- SB-1 was advanced to the east of the tank basin to a depth of 30 feet bgs. The SB-1 location was selected to provide data between the UST basin and the buried utility corridor along Chicago Avenue
- SB-2 was advanced to the southeast of the tank basin/east of the northern pump island to a depth of 30 feet bgs. SB-2 advanced in a location to provide data between the locations of the north pump island and the buried utility corridor along Chicago Avenue.
- SB-3 was advanced just west of the tank basin, and south of the former tank vault/petroleum release site in the basement of the adjacent property to the north of the Site to a depth of 30 feet bgs. SB-3 was advanced at a location to provide data to the west of the UST basin and to the south of a reported fuel oil release from a former basement fuel oil tank vault along the south side of the north-adjacent 3736/3740 Chicago Avenue building.
- SB-4 was advanced to the southwest of the tank basin and west of the northern pump island to a depth of 30 feet bgs. SB-4 was advanced to the west of the south pump island to a depth of 30 feet bgs. SB-4 was selected to provide data to the west of the north pump island.
- SB-5 was advanced to the west northwest of the south pump island. The location of SB-5 was selected to provide data to the west of the south pump island; however, the location had to be moved approximately 5 feet to the north of the proposed location because of the proximity of underground utilities at the Site. The location of buried utilities also prevented the advancement of soil borings to the east and south of the south pump island.

D.1.a.1. Receptor Survey

A Receptor Survey has been conducted in general accordance with Regulatory Agency Guidelines for Investigations of Contaminant Release Sites. Receptors that would be impacted by the petroleum releases reported at the Site include the adjacent 3736/3740 Chicago Avenue South mixed commercial (basement and 1st floor)/residential (2nd floor) property to the north and the adjacent 730 East 38th Street office building property to the west. None of the analytical parameters exceeded the applicable residential criteria in the soil samples collected in the exterior soil borings or the other hand auger borings advanced at the Site.

D.1.b. Water Wells

A well records search was conducted on the Minnesota Well Index (MWI), which is a limited database of water well records maintained by the MPCA for wells located within 1,000 feet of the Site. The MWI was accessed through the Minnesota Department of Health (MDH) website. Not all private water wells are listed in the MWI database; however, the MDH also maintains a database of water well records disclosed and registered during real estate property transactions (the Well Disclosure Certificate database) within in their Well management Section that may contain well records not listed in the MWI. No documentation was encountered in either of these databases that indicates the presence or former presence of wells at the Site.

D.1.c. Surface Water

The nearest surface water feature is a small pond located approximately 0.2 mile north of the Site.

D.2. Soil Evaluation

D.2.a. Soil Borings

Braun Intertec advanced five soil borings at the Site, designated as SB-1 to SB-5, to a depth of 30 feet bgs.

Braun Intertec subcontracted Bergerson Caswell Inc., Maple Plain, Minnesota, to advance five soil borings, designated as SB-1 to SB-5, at the Site to a depth of 30 feet bgs. The soil borings were completed with a hydraulically driven push-probe sampling rig. To collect the soil samples from the borings, a disposable thin-walled PVC liner was placed inside of a 5-foot long sampling tool. The borehole was then advanced using a dual-tube system, which allows for the inner sampling tool to be pushed through a larger outer-diameter rod with a total penetration depth of up to 5 feet. After advancing the tooling, the sampler was removed from the borehole, but the outer rod remained, keeping the borehole open, and the soil sample was retrieved from the PVC liner for field screening and classification. The process was then repeated to the termination depths of the borings.

Before arrival onsite, the drill rig and sampling equipment were cleaned with a high-pressure, hot water sprayer.

This investigation includes soil borings advanced to a depth of 30 feet. Upon completion, soil borings were sealed in accordance with MDH regulations. The concrete or asphalt surface at the boring location was patched.

D.2.b. Soil Classification and Monitoring

Soils samples from the soil borings were visually and manually classified in the field by an environmental technician using American Society for Testing and Materials (ASTM) D 2487 “Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)” and ASTM D 2488 “Standard Practice for Description and Identification of Soils (Visual-Manual Procedures)”. Additionally, soils were classified at the Braun Intertec soils laboratory by a geotechnical engineer using ASTM D 2487 and ASTM D 2488.

The soil samples retrieved were examined by an environmental technician, for unusual staining, odors, and other apparent signs of contamination. In addition, the soil samples were screened for the presence of organic vapors using a PID. The PID was equipped with a 10.6-electron-volt lamp and calibrated to an isobutylene standard. The PID was used to perform direct measurement and a headspace method of field analysis in accordance with Braun Intertec SOPs and the MPCA recommended procedures.

D.2.c. Soil Analyses

Selected soil samples were collected from the soil borings for laboratory analysis as identified in the following table. Samples were submitted to Pace Analytical, Minneapolis, MN.

Soil Boring Sample Name	Sampling Depth (feet bgs)	Rationale	Analytical Parameters
SB-1	28-30	East Side of Tank Basin	VOCs ¹ , GRO ² , DRO ³ , and RCRA ⁴ metals – lead (Pb)
SB-2	28-30	By Southeast Corner of Tank Basin and North Pump Island	VOCs, GRO, DRO, and RCRA metals – lead (Pb)
SB-3	8-10	West Side of Tank Basin by Former Fuel Tank Vault on Adjacent Property	VOCs, GRO, DRO, and RCRA metals – lead (Pb)
SB-4	28-30	By Southwest Corner of Tank Basin and North Pump Island	VOCs, GRO, DRO, and RCRA metals – lead (Pb)
SB-5	28-30	West of South Pump Island	VOCs, GRO, DRO, and RCRA metals – lead (Pb)

¹VOCs = Volatile Organic Compounds

²GRO = Gasoline Range Organic Compounds

³DRO = Diesel Range Organic Compounds

⁴RCRA = Resource Conservation and Recovery Act.

The analytical parameters for soil samples collected from each soil boring are summarized in Table 1.

D.3. Groundwater Evaluation

Groundwater was not encountered in any of the soil borings.

E. Investigation Results

E.1. Geologic Conditions

Soil boring logs with descriptions of the various soil strata encountered during the soil boring operations are contained in Appendix D. The depths shown as changes between the soil types are approximate. The actual changes may be transitional, and the transition depths are likely to be horizontally variable.

Fill soils consisting primarily of poorly graded, medium-grained, brown to light-brown sand with isolated horizons of coarse sand and gravel, were encountered from the ground surface to depths of 12 feet bgs. Laminated sand was encountered at depths ranging from 4 feet bgs in SB-3 to 12 feet in SB-4. No lamination was observed in SB-1.

E.2. Hydrogeology

The hydrogeology of the Site could not be determined because groundwater was not encountered in any of the soil borings.

E.3. Field Screening

Soil recovered from the soil borings was screened by the field technician for evidence of contamination, including odors, staining, and the presence of debris. No odors, staining, or debris were observed in the soils recovered from any of the three borings.

Organic vapor/PID readings were recorded for soil samples collected from each borings. The observed organic vapor concentrations ranged from 0.0 to 1.6 parts per million (ppm), which are considered to be general background readings. Soil screening PID results are included on the soil boring logs in Appendix D.

E.4. Soil Analytical Results

This section provides a discussion of soil analytical results. A summary of the soil analytical results is provided in Table 3. Figure 2 shows PID screening ranges and analytical results, where applicable, for the soil samples. The complete laboratory reports with chain-of-custody forms are included in Appendix E.

The soil analytical results can be compared with the Soil Reference Values (SRVs), Background Threshold Values (BTVs), and Screening Soil Leaching Values (SLVs), which are also listed on Table 3. The SRVs and SLVs are allowable risk-based contaminant concentrations derived by the Minnesota Pollution Control Agency (MPCA) using risk assessment methodology, modeling, and risk management policy to guide investigation and cleanup actions. SRVs relate to direct-contact exposure scenarios and SLVs relate to potential leaching of contaminants to groundwater. BTVs were established by the MPCA based on an estimate of state-wide natural background concentrations for inorganics and ambient background concentrations for organics. BTVs are used in instances where the MPCA calculated a health-based SRV that is below estimated background values (MPCA guidance document c-r1-05, April 2021).

Concentrations of contaminants in soil, SRVs, BTVs (where applicable), and SLVs are expressed in units of milligrams per kilogram (mg/kg).

The following is a summary of the soil analytical results.

- DRO was detected at a concentration of 1,520 mg/kg in the soil sample from SB-1 collected from a depth of 8 to 10 feet bgs. The DRO concentration detected exceeds the MPCA unregulated fill criterion of 100 mg/kg.
- No DRO was detected in the other soil borings at concentrations greater than the laboratory reporting limits.
- No benzene, ethylbenzene, toluene, or xylenes were detected at concentrations greater than or equal to corresponding laboratory reporting limits.
- No GRO was detected at concentrations greater than or equal to the laboratory reporting limits.
- The RCRA-Lead (Pb) sample results ranged from 1.3 to 2.7 mg/kg, which is well below both the 200 mg/kg residential/recreational SRV and the 460 mg/kg commercial/industrial SRV.

With the Client's permission, Braun Intertec reported the soil analytical results soil analytical results to Minnesota Duty Officer #35, who assigned Report #214461 to the release.

E.5. Groundwater Analytical Results

Groundwater was not encountered in any of the soil borings. No groundwater samples were collected or analyzed.

E.6. Soil Vapor Analytical Results

Soil Vapor samples could not be collected due to unavailability of soil vapor canisters within the timeframe for the completion of the project from any of the environmental laboratories contacted.

E.7. Quality Assurance/Quality Control

Samples were placed in clean, laboratory supplied containers, preserved, labeled, and transported to the Pace Analytical laboratory in Minneapolis, Minnesota under refrigerated conditions using chain-of-custody procedures. Analyses were performed using EPA (Environmental Protection Agency) or other recognized standard procedures.

A quality assessment of field procedures and analytical laboratory reports was performed to evaluate potential effects on data quality used to support project objectives. All applicable Braun Intertec SOPs were followed as prescribed unless otherwise noted in this report.

A trip blank accompanied the investigative samples and was analyzed for VOCs. No contaminants were detected in the trip blank at concentrations greater than the laboratory method reporting limits. Data were reviewed prior to release, quality-control guidelines were generally met, and the data are considered usable.

F. Conclusions

The Limited Phase II ESA identified one area of soil contamination (SB-3) where analytical testing identified impacts in soil exceeding an established regulated fill criterion for DRO. The location of the contamination is shown on Figure 2 of this report and is summarized below:

- According to the MPCA What's in My Neighborhood (WIMN) database, a release of Fuel Oil #1 and #2 was discovered at the 3736-3740 Chicago Avenue South on March 23, 2023, in conjunction with a Phase II Environmental Site Assessment of that property. The release was reported to the MPCA on April 23, 2023, and was assigned MPCA Leaksite #LS0021965.
- The location of SB-3 was selected for its proximity to the west side of the former Speedway Gas Station tank basin and the former fuel oil tank vault in the basement of the building (3736-3740 Chicago Avenue South) on the adjacent property to the north of the Site. DRO was detected in a soil sample from SB-3 collected from a depth of 8 to 10 feet bgs, in what appeared to be fill material. The PID soil screening readings for this interval ranged from 1.1 to 1.6 parts per million (ppm); no odor or staining were observed in the soil sample.
- The depth and location of the DRO detected in the soil sample collected from SB-3 at the Site appears to be consistent with the release of fuel oil from a basement vault in the basement of the adjacent 3736-3740 Chicago Avenue South property because of the difference in elevation between the two parcels.
- No odor, staining or other evidence of contamination were observed in soil samples collected from the soil borings at the Site. No soil screening readings or analytical data were obtained that would indicate the presence of GRO or BTEX impacts soil from former releases of gasoline at the Site.

G. Recommendations

Tank Removal

- The city of Minneapolis plans to remove the USTs from the Site. Prior to the removal of the tanks the city of Minneapolis will need to engage an environmental professional to perform excavation oversight for the removal of the underground storage tanks and to collect soil samples from the tank basin walls and the bottom of the tank basin for laboratory analysis.

MPCA Brownfields/Voluntary Petroleum Investigation and Cleanup Program Enrollment

- Braun Intertec recommends that the Site be enrolled in the MPCA Petroleum Brownfields Program (PBP) to obtain applicable assurances from the MPCA regarding the impacts at the Site from gasoline releases at the Site and the fuel oil release at the adjacent 3736/3740 Chicago Avenue South property, and to facilitate potential future redevelopment activities at the Site.
- Additional investigation of the Site may be required by the MPCA to obtain soil vapor data, groundwater data, and/or additional soil data to evaluate potential impacts from the use of solvents at the Site in the past, to further define the magnitude and extent of contamination, to evaluate soil re-use and/or disposal options, and/or to obtain applicable liability assurances from the MPCA for future development.
- Should redevelopment plans be made for the Site in the future, it is recommended that a work plan be submitted to the MPCA for review and approval prior to commencing any future redevelopment work at the Site. It is also recommended that the city of Minneapolis have a Response Action Plan (RAP) prepared for the project and submitted for review and approval by MPCA Petroleum Brownfields Program. The RAP should incorporate construction plans and outline methods for segregating and handling potential impacted soils encountered during construction of the project. The RAP should also address the need for vapor barriers and/or other engineering controls for utilities installed in impacted areas. A Construction Contingency Plan (CCP) should be incorporated into the RAP to address the potential for encountering unknown environmental conditions during construction. The RAP/CCP document should be submitted to the MPCA for review and approval prior to the start of construction.

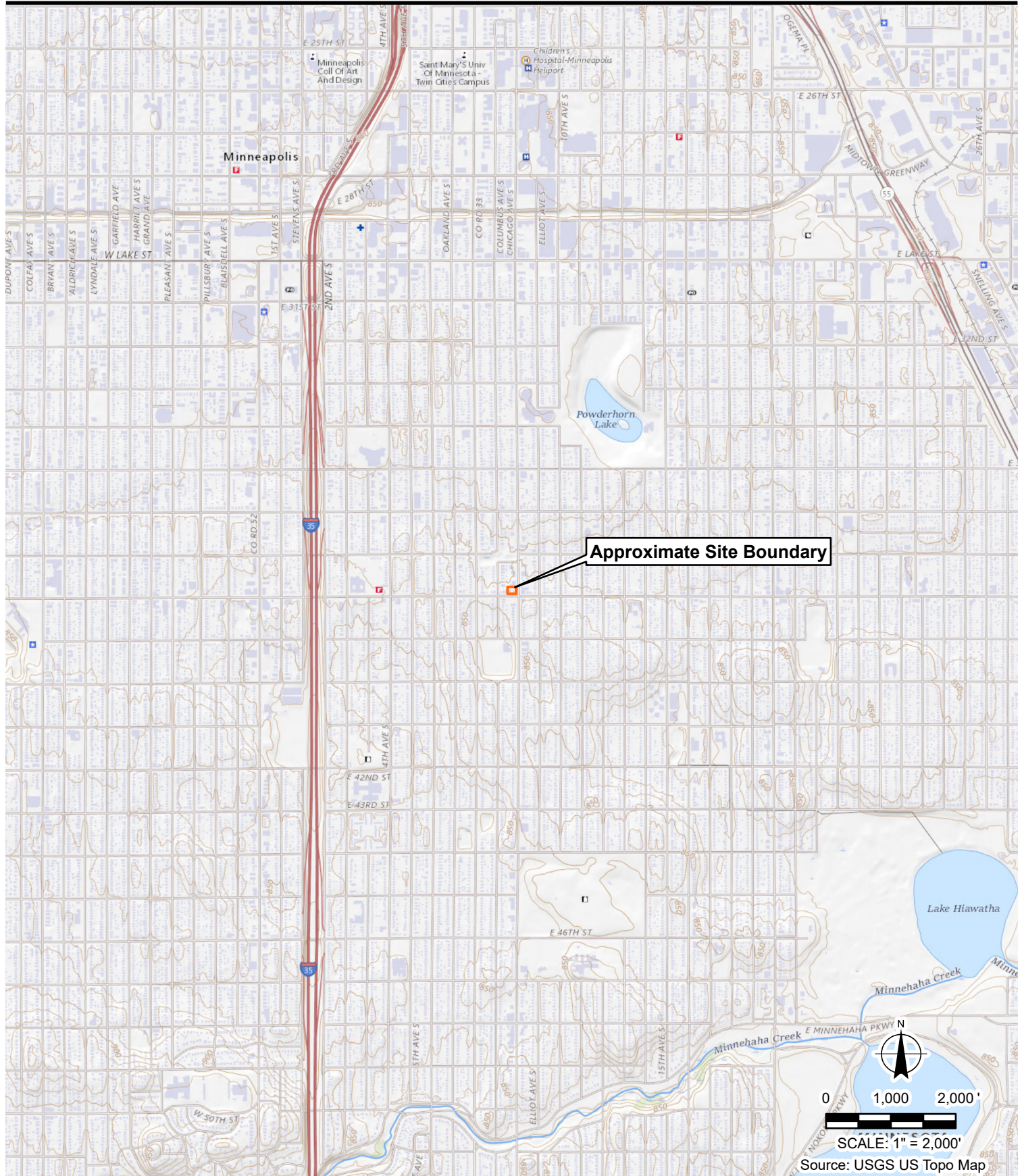
H. Assessment Limitations

The scope of this Phase II ESA was limited in that soil vapor samples and groundwater samples could not be collected. Soil vapor samples could not be collected because no soil vapor canisters were available within the timeframe to complete the investigation before the end of the client's due diligence period. Braun Intertec contacted three laboratories to secure canisters for the project. Groundwater samples could not be collected because the inferred foot depth to the surficial groundwater table at the Site was impracticable for the geoprobe drilling rig and no hollow-stem auger drill rigs were available within the timeframe of the client's due diligence period.

The analyses and conclusions submitted in this report are based on field observations and the results of laboratory analyses of soil samples collected from the soil borings completed for this project.

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Figures



**BRAUN
INTERTEC**
The Science You Build On.

11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Project No:
B2208959

Drawing No:
Fig1_SiteLocation

Drawn By: SL
Date Drawn: 3/3/2023
Checked By: SG
Last Modified: 3/3/2023

Former Speedway Gas Station

3744 Chicago Avenue South

Minneapolis, Minnesota

Site Location Map

Figure 1



NOTES

Analytical results are in milligrams per kilogram (mg/kg).
Indicated depths are feet below ground surface.
DRO = Diesel Range Organics
DRO concentrations greater than 100 mg/kg are not
suitable for reuse as unregulated fill per February 2012
MPCA guidance c-rem1-01.

-  Soil Boring
 Approximate Site Boundary

BRAUN
INTERTEC
The Science You Build On.

11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Drawing Information

Project No:
32208959.00

Drawing No:
Site Layout and Analytical

Drawn By: ZS
Drawn Date: 6/22/2023
Checked By: SG
Last Modified: 6/22/2023

Project Information

Former Speedway
Gas Station

3744 Chicago Ave S

Minneapolis, Minnesota

Soil Analytical Results - Regulatory Exceedances

Figure 2

Tables

Table 1
Soil Analytical Results Former Speedway Gas Station
Minneapolis, Minnesota
Project B22008959.00

Compound/Parameter	CAS No.	Sample Identifier and Date Collected						Residential/ Recreational SRV (mg/kg)	SLV (mg/kg)
		SB-1 28-30'	SB-2 28-30'	SB-3 8-10'	SB-4 28-30'	SB-5 28-30''	Trip Blank		
		3/24/2023	3/24/2023	3/24/2023	3/27/2023	3/27/2023	---		
Volatile Organic Compounds (VOCs) (mg/kg)									
Benzene	71-43-2	<0.0219	<0.0219	<0.0222	<0.0214	<0.0208	<0.0200	cPAH	cPAH
Toluene	100-41-4	<0.0547	<0.0547	<0.0554	<0.0520	<0.0535	<0.0500	cPAH	cPAH
Ethylbenzene	108-88-3	<0.0547	<0.0547	<0.0554	<0.0520	<0.0535	<0.0500	cPAH	cPAH
Total Xylenes	1330-20-7	<0.164	<0.164	<0.166	<0.156	<0.160	<0.156	cPAH	cPAH
Metals (mg/kg)									
Lead, Total	7439-92-1	2.2	2.4	1.3	2.2	2.7	---	200	2,700
Petroleum Parameters (mg/kg)									
								MPCA Unreg. Fill Criterion	
Diesel Range Organics (DRO)	---	<8.1	<8.2	1,520	<7.6	<7.7	---	100 ^[f]	
Gasoline Range Organics (GRO)	---	<10.8	<10.8	<10.8	<10.8	<10.3	<10.0	100 ^[f]	

Notes

Minnesota Pollution Control Agency (MPCA) Soil Reference Values (SRVs) updated in March 2023 and Soil Leaching Values (SLVs) updated in June 2013.

mg/kg = Milligrams per kilogram.

< = Not detected at or above the laboratory reporting limit indicated.

--- = Not analyzed or calculated for this parameter or not applicable.

BTV = Background Threshold Value. BTVs are not calculated health based SRVs. The MPCA calculated SRVs were determined to be below background values (MPCA guidance document c-r1-05, April 2021).

cPAH = Individual regulatory limit not established for this carcinogenic PAH; included in BaP equivalent calculation.

NE = Regulatory limit not established for this parameter.

RL = Reporting limits for other parameters that are not listed individually in this table because their concentrations were below reporting limits provided in the laboratory report.

[a] = Regulatory limit for combination of cis- and trans-1,3-Dichloropropene.

[b] = Regulatory limit for combination of m-, p-, and o-Xylenes.

[c] = Benzo(a)pyrene (BaP) equivalent is calculated based on the concentration and weighted toxicity of cPAHs; MPCA; 2009. If no cPAHs were detected above reasonable laboratory reporting limits the BaP equivalent is reported as 0 mg/kg per MPCA Remediation Division Policy; June 2011.

[e] = Reported result is total chromium, regulatory limit for chromium III and chromium VI are provided.

[f] = DRO/GRO concentrations greater than 100 mg/kg are not suitable for reuse as unregulated fill per MPCA Guidance Document c-rem1-01 "Best Management Practices for the Off-Site Reuse of Unregulated Fill" (February 2012).

Exceeds Residential/Recreational SRV
Exceeds Commercial/Industrial SRV
Exceeds SLV
Exceeds 100 mg/kg for DRO/GRO

Appendix A

Previous Investigation Data



Minneapolis
August 26, 2020 8:15 AM

Edit



LIVE



STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLEShipper's No. **612-812-1218**Carrier **OSI Environmental, Inc.**

SCAC

Carrier's No. **(763) 428-8775**

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at _____, date _____ from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO: **OSI Environmental, Inc**Consignee **1000 Lund Blvd**Street **Anoka, MN 55303**

Destination _____ Zip _____

FROM: **Rock Leaf Water - Chicago Ave Tank**Shipper **3744 Chicago Ave**Street **Minneapolis, MN**Origin _____ Zip **55407**

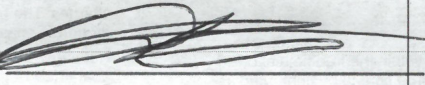
Route _____

Delivering Carrier _____

Vehicle Number _____

U.S. DOT Hazmat Reg. Number

MNT280011586

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
TT	X	UN1203	Gasoline (For Recycling)	3	II	200 250	G	
			End Site Signature 					

Remit COD to:

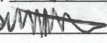
Address:

City: _____ State: _____ Zip: _____

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$ _____ Per _____

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

SHIPPER: **RLW Environmental**PER: DATE: **6-16-27**Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT:

\$

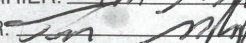
TOTAL CHARGES:

\$

COD FEE:

Prepaid ☐Collect ☐ \$

FREIGHT CHARGES:

☐ Prepaid ☐ CollectPLACARDS
REQUIREDPLACARDS
SUPPLIEDDRIVER'S
SIGNATURE:CARRIER: **Tom M. Galt**PER: DATE: **6/16/27****EMERGENCY RESPONSE
TELEPHONE NUMBER:****NAME OR CONTRACT NUMBER
OR OTHER UNIQUE IDENTIFIER:**

Kelley

FUELS, INC.

250 Sarazin Street, Shakopee, MN 55379
Telephone (952) 884-4100 Fax (952) 884-0160

I N V O I C E

INVOICE#	PAGE
77479	1
INVOICE DATE	
08/26/20	

SOLD
TO

ANDEAVOR
ATTN: Freight A/P
19100 Ridgewood Pkwy
San Antonio TX 78259-1834

SHIP
TO

Speedway #4519
1400 Crystal Lane
Chaska MN

ORDER #	ORD. DATE	CUST.#	LOC.	SLM.	PURCHASE ORDER NO.	SHIP VIA	FRT.
77479	08/26/20	014515	BP	VK	#4382 PUMP 000001	Kelley Fuels	

QTY. ORDER/B.O.	QTY. SHIP/RETURN	ITEM NO./DESC.	UNIT PRICE	UOM DISC.	NET PRICE
13.0	13.0	PUMP Product Pump out	300.0000	EA .00	3,900.00

Customer Copy

COMMENT Please pay from this invoice Drum In: ___ Drum Out: ___ Driver: TERMS Net 10 NTE (SA)	SALES AMOUNT 3,900.00 MISC & SURCHG .00 SALES TAX .00 TOTAL 3,900.00 BALANCE DUE 3,900.00
---	---

Appendix B

Photographic Documentation

Former Speedway Gas Station Minneapolis, MN



SB-1 View to the West Northwest



SB-1, View to the West Southwest



SB-2, View to the South



SB-2, View to the southwest



SB-3, View to the North Northwest



SB-3, View to the East

Former Speedway Gas Station Minneapolis, MN



SB-4 View to the North



SB-4, View to the North Northwest



SB-5, View to the North



SB-5, View to the East Southeast

Appendix C

Soil Boring Logs

Project Number B2208959.00 Environmental Investigation Former Speedway Gas Station 3744 Chicago Avenue Minneapolis, Minnesota					BORING: SB-1	
					LOCATION: See attached figure	
					DATUM: WGS 84	
					LATITUDE:	LONGITUDE:
DRILLER: Bergerson Caswell	LOGGED BY: M. LaGarde		WEATHER: 71°, sunny			
SURFACE ELEVATION:	RIG: Subcontractor	METHOD: Direct Push	☒ During Drilling ☐ Not Encountered ☒ After Drilling			
START DATE: 06/09/23	END DATE: 06/09/23	SURFACING: Bituminous				

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Recovery %	PID ppm	Temp. Well	Tests or Remarks
0.3		BITUMINOUS, 3 inches			0.2		
		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, no debris, brown, moist, no odor, no staining		50	0.1		
4.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, no debris, light brown, moist, no odor, no staining	5	75	0.4		
					0.0		
					0.0		
		Coarse Sand at 11 feet	10	75	0.0		
					0.0		
					0.2		
			15	100	0.0		
					0.2		
		Coarse Sand, brown at approximately 18 feet		100	0.0		
			20		0.1		
				100	0.0		
					0.0		
			25	100	0.0		
					0.0		
				100	0.0		
30.0					0.0		
		END OF BORING	30				
		Boring immediately grouted					

Soil sample SB-1 (28-30')
 @ 09:50 collected for
 BTEX, GRO, DRO, Lead

Project Number B2208959.00 Environmental Investigation Former Speedway Gas Station 3744 Chicago Avenue Minneapolis, Minnesota					BORING: SB-2	
					LOCATION: See attached figure	
					DATUM: WGS 84	
					LATITUDE:	LONGITUDE:
DRILLER: Bergerson Caswell	LOGGED BY: M. LaGarde		WEATHER: 75°, sunny			
SURFACE ELEVATION:	RIG: Subcontractor	METHOD: Direct Push	☒ During Drilling ☐ Not Encountered ☒ After Drilling			
START DATE: 06/09/23	END DATE: 06/09/23	SURFACING: Bituminous				

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Recovery %	PID ppm	Temp. Well	Tests or Remarks
0.3		ASPHALT, 3 inches			0.0		
		FILL: POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist		75	0.0		
			5		0.7		
		Rock at 6 feet, no recovery from 6 to 8 feet		50			
8.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, no debris, light brown, moist, laminated, no odor, no staining			0.0		
			10	94	0.0		
					0.6		
			15	100	0.0		
					0.1		
			20	100	0.0		
					0.1		
			25	100	0.0		
					0.1		
			30	100	0.1		
30.0		END OF BORING					Soil sample SB-2 (28-30') @ 10:35 collected for BTEX, GRO, DRO, Lead
		Boring immediately grouted					

Project Number B2208959.00 Environmental Investigation Former Speedway Gas Station 3744 Chicago Avenue Minneapolis, Minnesota					BORING: SB-3	
					LOCATION: See attached figure	
					DATUM: WGS 84	
					LATITUDE:	LONGITUDE:
DRILLER: Bergerson Caswell	LOGGED BY: M. LaGarde		WEATHER: 80°, sunny			
SURFACE ELEVATION:	RIG: Subcontractor	METHOD: Direct Push	☒ During Drilling ☐ Not Encountered ☒ After Drilling			
START DATE: 06/09/23	END DATE: 06/09/23	SURFACING: Bituminous				

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Recovery %	PID ppm	Temp. Well	Tests or Remarks
0.3		BITUMINOUS, 3 inches			1.3		Soil sample SB-3 (8-10') @ 13:35 collected for BTEX, GRO, DRO, Lead
		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist		75	1.4		
		<i>Bituminous chunk at 2 feet</i>					
4.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, no debris, light brown, moist, no odor, no staining	5	75	1.3		
					1.2		
					1.6		
			10	100	1.1		
		<i>Coarse Sand, brown at 11 feet</i>			0.8		
					100		
			15		0.8		
					1.3		
					100		
			20		0.1		
					100		
					0.1		
			25		0.0		
					100		
					0.0		
30.0				100	0.1		
		END OF BORING	30				
		Boring immediately grouted					

Project Number B2208959.00 Environmental Investigation Former Speedway Gas Station 3744 Chicago Avenue Minneapolis, Minnesota					BORING: SB-4	
					LOCATION: See attached figure	
					DATUM: WGS 84	
					LATITUDE:	LONGITUDE:
DRILLER: Bergerson Caswell	LOGGED BY: M. LaGarde		WEATHER: 80°, sunny			
SURFACE ELEVATION:	RIG: Subcontractor	METHOD: Direct Push	☒ During Drilling ☐ Not Encountered ☒ After Drilling			
START DATE: 06/09/23	END DATE: 06/09/23	SURFACING: Bituminous				

Elev./Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Recovery %	PID ppm	Temp. Well	Tests or Remarks
0.3		BITUMINOUS, 3 inches FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, no debris, brown, moist, no odor, no staining		75	0.2		
6.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, light brown, moist	5	88	0.0		
12.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, light brown, moist, laminated	10	100	0.2		
		Some Gravel from 16 to 20 feet	15	100	0.1		
			20	100	0.4		
			25	100	0.5		
			30	100	0.0		
30.0		END OF BORING					Soil sample SB-4 (28-30') @ 12:55 collected for BTEX, GRO, DRO, Lead
		Boring immediately grouted					

Project Number B2208959.00 Environmental Investigation Former Speedway Gas Station 3744 Chicago Avenue Minneapolis, Minnesota					BORING: SB-5	
					LOCATION: See attached figure	
					DATUM: WGS 84	
					LATITUDE:	LONGITUDE:
DRILLER: Bergerson Caswell	LOGGED BY: M. LaGarde		WEATHER: 80°, sunny			
SURFACE ELEVATION:	RIG: Subcontractor	METHOD: Direct Push	☒ During Drilling ☐ Not Encountered ☒ After Drilling			
START DATE: 06/09/23	END DATE: 06/09/23	SURFACING: Bituminous				

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Recovery %	PID ppm	Temp. Well	Tests or Remarks
0.3		BITUMINOUS, 3 inches			0.4		
		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, intermixed with Clayey Sand, no debris, brown with dark brown, moist, firm, no odor, no staining		62	0.1		
			5	62	0.4		
					0.1		
10.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, no debris, light brown, moist, laminated, no odor, no staining	10	88	0.1		
					0.1		
			15	100	0.1		
					0.3		
				100	0.1		
			20	100	0.2		
					0.0		
			25	100	0.1		
					0.0		
30.0				100	0.3		Soil sample SB-5 (28-30') @ 11:55 collected for BTEX, GRO, DRO, Lead
		END OF BORING	30				
		Boring immediately grouted					

Appendix D

Laboratory Analytical Report

June 20, 2023

Susan Grubb
Braun Intertec Corporation
4205 White Bear Parkway
Saint Paul, MN 55110

RE: Project: B2208959.00
Pace Project No.: 10656797

Dear Susan Grubb:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Brenna Bloome
brenna.bloome@pacelabs.com
(612)607-1700
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: B2208959.00

Pace Project No.: 10656797

Pace Analytical Services, LLC - Minneapolis MN

1700 Elm Street SE, Minneapolis, MN 55414

A2LA Certification #: 2926.01

Alabama Certification #: 40770

Alaska Contaminated Sites Certification #: 17-009

Alaska DW Certification #: MN00064

Arizona Certification #: AZ0014

Arkansas DW Certification #: MN00064

Arkansas WW Certification #: 88-0680

California Certification #: 2929

Colorado Certification #: MN00064

Connecticut Certification #: PH-0256

EPA Region 8 Tribal Water Systems+Wyoming DW

Certification #: via MN 027-053-137

Florida Certification #: E87605

Georgia Certification #: 959

GMP+ Certification #: GMP050884

Hawaii Certification #: MN00064

Idaho Certification #: MN00064

Illinois Certification #: 200011

Indiana Certification #: C-MN-01

Iowa Certification #: 368

Kansas Certification #: E-10167

Kentucky DW Certification #: 90062

Kentucky WW Certification #: 90062

Louisiana DEQ Certification #: AI-03086

Louisiana DW Certification #: MN00064

Maine Certification #: MN00064

Maryland Certification #: 322

Michigan Certification #: 9909

Minnesota Certification #: 027-053-137

Minnesota Dept of Ag Approval: via MN 027-053-137

Minnesota Petrofund Registration #: 1240

Mississippi Certification #: MN00064

Missouri Certification #: 10100

Montana Certification #: CERT0092

Nebraska Certification #: NE-OS-18-06

Nevada Certification #: MN00064

New Hampshire Certification #: 2081

New Jersey Certification #: MN002

New York Certification #: 11647

North Carolina DW Certification #: 27700

North Carolina WW Certification #: 530

North Dakota Certification (A2LA) #: R-036

North Dakota Certification (MN) #: R-036

Ohio DW Certification #: 41244

Ohio VAP Certification (1700) #: CL101

Oklahoma Certification #: 9507

Oregon Primary Certification #: MN300001

Oregon Secondary Certification #: MN200001

Pennsylvania Certification #: 68-00563

Puerto Rico Certification #: MN00064

South Carolina Certification #: 74003001

Tennessee Certification #: TN02818

Texas Certification #: T104704192

Utah Certification #: MN00064

Vermont Certification #: VT-027053137

Virginia Certification #: 460163

Washington Certification #: C486

West Virginia DEP Certification #: 382

West Virginia DW Certification #: 9952 C

Wisconsin Certification #: 999407970

Wyoming UST Certification #: via A2LA 2926.01

USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: B2208959.00

Pace Project No.: 10656797

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10656797001	SB-1 (28-30')	Solid	06/09/23 09:50	06/09/23 14:39
10656797002	SB-2 (28-30')	Solid	06/09/23 10:35	06/09/23 14:39
10656797003	SB-3 (8-10')	Solid	06/09/23 13:35	06/09/23 14:39
10656797004	SB-4 (28-30')	Solid	06/09/23 12:55	06/09/23 14:39
10656797005	SB-5 (28-30')	Solid	06/09/23 11:55	06/09/23 14:39
10656797006	MeOH Trip Blanks	Solid	06/09/23 00:00	06/09/23 14:39

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: B2208959.00

Pace Project No.: 10656797

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10656797001	SB-1 (28-30')	WI MOD DRO	TT2	2	PASI-M
		WI MOD GRO	ALE	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260D	SB2	7	PASI-M
10656797002	SB-2 (28-30')	WI MOD DRO	TT2	2	PASI-M
		WI MOD GRO	ALE	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260D	SB2	7	PASI-M
10656797003	SB-3 (8-10')	WI MOD DRO	TT2	2	PASI-M
		WI MOD GRO	ALE	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260D	SB2	7	PASI-M
10656797004	SB-4 (28-30')	WI MOD DRO	TT2	2	PASI-M
		WI MOD GRO	ALE	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260D	SB2	7	PASI-M
10656797005	SB-5 (28-30')	WI MOD DRO	TT2	2	PASI-M
		WI MOD GRO	ALE	2	PASI-M
		EPA 6010D	DM	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8260D	SB2	7	PASI-M
10656797006	MeOH Trip Blanks	WI MOD GRO	ALE	2	PASI-M
		EPA 8260D	SB2	7	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: B2208959.00

Pace Project No.: 10656797

Method: WI MOD DRO

Description: WIDRO GCS

Client: Braun Intertec Corporation

Date: June 20, 2023

General Information:

5 samples were analyzed for WI MOD DRO by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with WI MOD DRO with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 886911

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- SB-3 (8-10') (Lab ID: 10656797003)
- n-Triacontane (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 886911

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: 886911

T6: High boiling point hydrocarbons are present in the sample.

- SB-3 (8-10') (Lab ID: 10656797003)
- WDRO C10-C28

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: B2208959.00

Pace Project No.: 10656797

Method: WI MOD GRO

Description: WIGRO GCV

Client: Braun Intertec Corporation

Date: June 20, 2023

General Information:

6 samples were analyzed for WI MOD GRO by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 5030 Medium Soil with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: B2208959.00

Pace Project No.: 10656797

Method: EPA 6010D

Description: 6010D MET ICP

Client: Braun Intertec Corporation

Date: June 20, 2023

General Information:

5 samples were analyzed for EPA 6010D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3050B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: B2208959.00

Pace Project No.: 10656797

Method: EPA 8260D

Description: 8260D MSV UST

Client: Braun Intertec Corporation

Date: June 20, 2023

General Information:

6 samples were analyzed for EPA 8260D by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 5035/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 886866

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: B2208959.00

Pace Project No.: 10656797

Sample: SB-1 (28-30') **Lab ID: 10656797001** Collected: 06/09/23 09:50 Received: 06/09/23 14:39 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Pace Analytical Services - Minneapolis								
WDRO C10-C28	ND	mg/kg	8.1	1	06/13/23 11:27	06/14/23 13:21		
Surrogates								
n-Triacontane (S)	89	%.	50-150	1	06/13/23 11:27	06/14/23 13:21		
WIGRO GCV								
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Pace Analytical Services - Minneapolis								
Gasoline Range Organics	ND	mg/kg	10.8	1	06/14/23 14:46	06/15/23 05:42		
Surrogates								
a,a,a-Trifluorotoluene (S)	89	%.	80-200	1	06/14/23 14:46	06/15/23 05:42	98-08-8	
6010D MET ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3050B								
Pace Analytical Services - Minneapolis								
Lead	2.2	mg/kg	0.52	1	06/15/23 12:04	06/16/23 18:18	7439-92-1	
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	5.4	%	0.10	1		06/13/23 16:54		N2
8260D MSV UST								
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B								
Pace Analytical Services - Minneapolis								
Benzene	ND	ug/kg	21.9	1	06/13/23 10:17	06/13/23 16:05	71-43-2	
Ethylbenzene	ND	ug/kg	54.7	1	06/13/23 10:17	06/13/23 16:05	100-41-4	
Toluene	ND	ug/kg	54.7	1	06/13/23 10:17	06/13/23 16:05	108-88-3	
Xylene (Total)	ND	ug/kg	164	1	06/13/23 10:17	06/13/23 16:05	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	99	%.	75-125	1	06/13/23 10:17	06/13/23 16:05	460-00-4	
Toluene-d8 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 16:05	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 16:05	2199-69-1	

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ANALYTICAL RESULTS

Project: B2208959.00

Pace Project No.: 10656797

Sample: SB-2 (28-30') **Lab ID: 10656797002** Collected: 06/09/23 10:35 Received: 06/09/23 14:39 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO								
Pace Analytical Services - Minneapolis								
WDRO C10-C28	ND	mg/kg	8.2	1	06/13/23 11:27	06/14/23 13:28		
Surrogates								
n-Triacontane (S)	95	%.	50-150	1	06/13/23 11:27	06/14/23 13:28		
WIGRO GCV								
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Pace Analytical Services - Minneapolis								
Gasoline Range Organics	ND	mg/kg	10.8	1	06/14/23 14:46	06/15/23 06:01		
Surrogates								
a,a,a-Trifluorotoluene (S)	89	%.	80-200	1	06/14/23 14:46	06/15/23 06:01	98-08-8	
6010D MET ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3050B								
Pace Analytical Services - Minneapolis								
Lead	2.4	mg/kg	0.52	1	06/15/23 12:04	06/16/23 18:30	7439-92-1	
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974								
Pace Analytical Services - Minneapolis								
Percent Moisture	3.9	%	0.10	1		06/13/23 16:54		N2
8260D MSV UST								
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B								
Pace Analytical Services - Minneapolis								
Benzene	ND	ug/kg	22.2	1	06/13/23 10:17	06/13/23 20:13	71-43-2	
Ethylbenzene	ND	ug/kg	55.4	1	06/13/23 10:17	06/13/23 20:13	100-41-4	
Toluene	ND	ug/kg	55.4	1	06/13/23 10:17	06/13/23 20:13	108-88-3	
Xylene (Total)	ND	ug/kg	166	1	06/13/23 10:17	06/13/23 20:13	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 20:13	460-00-4	
Toluene-d8 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 20:13	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 20:13	2199-69-1	

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ANALYTICAL RESULTS

Project: B2208959.00

Pace Project No.: 10656797

Sample: SB-3 (8-10') **Lab ID: 10656797003** Collected: 06/09/23 13:35 Received: 06/09/23 14:39 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO Pace Analytical Services - Minneapolis								
WDRO C10-C28	1520	mg/kg	160	20	06/13/23 11:27	06/14/23 12:46		T6
Surrogates								
n-Triacontane (S)	0	%.	50-150	20	06/13/23 11:27	06/14/23 12:46		S4
WIGRO GCV								
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil Pace Analytical Services - Minneapolis								
Gasoline Range Organics	ND	mg/kg	10.8	1	06/14/23 14:46	06/15/23 06:20		
Surrogates								
a,a,a-Trifluorotoluene (S)	89	%.	80-200	1	06/14/23 14:46	06/15/23 06:20	98-08-8	
6010D MET ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Lead	1.3	mg/kg	0.49	1	06/15/23 12:04	06/16/23 18:32	7439-92-1	
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	4.1	%	0.10	1		06/13/23 16:54		N2
8260D MSV UST								
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis								
Benzene	ND	ug/kg	20.8	1	06/13/23 10:17	06/13/23 16:22	71-43-2	
Ethylbenzene	ND	ug/kg	52.0	1	06/13/23 10:17	06/13/23 16:22	100-41-4	
Toluene	ND	ug/kg	52.0	1	06/13/23 10:17	06/13/23 16:22	108-88-3	
Xylene (Total)	ND	ug/kg	156	1	06/13/23 10:17	06/13/23 16:22	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	93	%.	75-125	1	06/13/23 10:17	06/13/23 16:22	460-00-4	
Toluene-d8 (S)	102	%.	75-125	1	06/13/23 10:17	06/13/23 16:22	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 16:22	2199-69-1	

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ANALYTICAL RESULTS

Project: B2208959.00

Pace Project No.: 10656797

Sample: SB-4 (28-30') **Lab ID: 10656797004** Collected: 06/09/23 12:55 Received: 06/09/23 14:39 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO Pace Analytical Services - Minneapolis								
WDRO C10-C28	ND	mg/kg	7.6	1	06/13/23 11:27	06/14/23 13:14		
Surrogates								
n-Triacontane (S)	83	%.	50-150	1	06/13/23 11:27	06/14/23 13:14		
WIGRO GCV								
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil Pace Analytical Services - Minneapolis								
Gasoline Range Organics	ND	mg/kg	10.3	1	06/14/23 14:46	06/15/23 06:39		
Surrogates								
a,a,a-Trifluorotoluene (S)	90	%.	80-200	1	06/14/23 14:46	06/15/23 06:39	98-08-8	
6010D MET ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Lead	2.2	mg/kg	0.50	1	06/15/23 12:04	06/16/23 18:34	7439-92-1	
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	2.1	%	0.10	1		06/13/23 16:55		N2
8260D MSV UST								
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis								
Benzene	ND	ug/kg	21.4	1	06/13/23 10:17	06/13/23 16:38	71-43-2	
Ethylbenzene	ND	ug/kg	53.5	1	06/13/23 10:17	06/13/23 16:38	100-41-4	
Toluene	ND	ug/kg	53.5	1	06/13/23 10:17	06/13/23 16:38	108-88-3	
Xylene (Total)	ND	ug/kg	160	1	06/13/23 10:17	06/13/23 16:38	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101	%.	75-125	1	06/13/23 10:17	06/13/23 16:38	460-00-4	
Toluene-d8 (S)	103	%.	75-125	1	06/13/23 10:17	06/13/23 16:38	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 16:38	2199-69-1	

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ANALYTICAL RESULTS

Project: B2208959.00

Pace Project No.: 10656797

Sample: SB-5 (28-30') **Lab ID: 10656797005** Collected: 06/09/23 11:55 Received: 06/09/23 14:39 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS								
Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO Pace Analytical Services - Minneapolis								
WDRO C10-C28	ND	mg/kg	7.7	1	06/13/23 11:27	06/14/23 13:00		
Surrogates								
n-Triacontane (S)	83	%.	50-150	1	06/13/23 11:27	06/14/23 13:00		
WIGRO GCV								
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil Pace Analytical Services - Minneapolis								
Gasoline Range Organics	ND	mg/kg	10.5	1	06/14/23 14:46	06/15/23 06:58		
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%.	80-200	1	06/14/23 14:46	06/15/23 06:58	98-08-8	
6010D MET ICP								
Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis								
Lead	2.7	mg/kg	0.48	1	06/15/23 12:04	06/16/23 18:35	7439-92-1	
Dry Weight / %M by ASTM D2974								
Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	3.5	%	0.10	1		06/13/23 16:55		N2
8260D MSV UST								
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis								
Benzene	ND	ug/kg	20.8	1	06/13/23 10:17	06/13/23 17:28	71-43-2	
Ethylbenzene	ND	ug/kg	52.1	1	06/13/23 10:17	06/13/23 17:28	100-41-4	
Toluene	ND	ug/kg	52.1	1	06/13/23 10:17	06/13/23 17:28	108-88-3	
Xylene (Total)	ND	ug/kg	156	1	06/13/23 10:17	06/13/23 17:28	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	98	%.	75-125	1	06/13/23 10:17	06/13/23 17:28	460-00-4	
Toluene-d8 (S)	101	%.	75-125	1	06/13/23 10:17	06/13/23 17:28	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	101	%.	75-125	1	06/13/23 10:17	06/13/23 17:28	2199-69-1	

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ANALYTICAL RESULTS

Project: B2208959.00

Pace Project No.: 10656797

Sample: MeOH Trip Blanks **Lab ID: 10656797006** Collected: 06/09/23 00:00 Received: 06/09/23 14:39 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV								
Analytical Method: WI MOD GRO Preparation Method: EPA 5030 Medium Soil								
Pace Analytical Services - Minneapolis								
Gasoline Range Organics	ND	mg/kg	10.0	1	06/14/23 14:46	06/15/23 04:07		
Surrogates								
a,a,a-Trifluorotoluene (S)	90	%.	80-200	1	06/14/23 14:46	06/15/23 04:07	98-08-8	
8260D MSV UST								
Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B								
Pace Analytical Services - Minneapolis								
Benzene	ND	ug/kg	20.0	1	06/13/23 10:17	06/13/23 15:16	71-43-2	
Ethylbenzene	ND	ug/kg	50.0	1	06/13/23 10:17	06/13/23 15:16	100-41-4	
Toluene	ND	ug/kg	50.0	1	06/13/23 10:17	06/13/23 15:16	108-88-3	
Xylene (Total)	ND	ug/kg	150	1	06/13/23 10:17	06/13/23 15:16	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	103	%.	75-125	1	06/13/23 10:17	06/13/23 15:16	460-00-4	
Toluene-d8 (S)	99	%.	75-125	1	06/13/23 10:17	06/13/23 15:16	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	100	%.	75-125	1	06/13/23 10:17	06/13/23 15:16	2199-69-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: B2208959.00

Pace Project No.: 10656797

QC Batch:	887265	Analysis Method:	WI MOD GRO
QC Batch Method:	EPA 5030 Medium Soil	Analysis Description:	WIGRO Solid GCV
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005, 10656797006

METHOD BLANK: 4675614 Matrix: Solid

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005, 10656797006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	10.0	06/15/23 00:56	
a,a,a-Trifluorotoluene (S)	%.	86	80-200	06/15/23 00:56	

LABORATORY CONTROL SAMPLE & LCSD: 4675615

4675616

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Gasoline Range Organics	mg/kg	50	43.1	43.2	86	86	80-120	0	20	
a,a,a-Trifluorotoluene (S)	%.				101	103	80-200			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4675617

4675618

Parameter	Units	10656761001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	54.2	54.2	58.2	58.5	107	107	80-120	0	20	
a,a,a-Trifluorotoluene (S)	%.						103	103	80-200			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: B2208959.00

Pace Project No.: 10656797

QC Batch: 887387

Analysis Method: EPA 6010D

QC Batch Method: EPA 3050B

Analysis Description: 6010D Solids

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005

METHOD BLANK: 4676017

Matrix: Solid

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	0.47	06/16/23 18:15	

LABORATORY CONTROL SAMPLE: 4676018

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	46.8	47.6	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4676019 4676020

Parameter	Units	10656797001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	2.2	52.1	52.1	51.1	50.4	94	92	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: B2208959.00

Pace Project No.: 10656797

QC Batch: 887093

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005

SAMPLE DUPLICATE: 4674404

Parameter	Units	10656240018 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.2	7.1	2	30	N2

SAMPLE DUPLICATE: 4674671

Parameter	Units	10656797002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	3.9	3.9	2	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: B2208959.00

Pace Project No.: 10656797

QC Batch:	886866	Analysis Method:	EPA 8260D
QC Batch Method:	EPA 5035/5030B	Analysis Description:	8260D MSV UST
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005, 10656797006

METHOD BLANK: 4673520

Matrix: Solid

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005, 10656797006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	20.0	06/13/23 14:59	
Ethylbenzene	ug/kg	ND	50.0	06/13/23 14:59	
Toluene	ug/kg	ND	50.0	06/13/23 14:59	
Xylene (Total)	ug/kg	ND	150	06/13/23 14:59	
1,2-Dichlorobenzene-d4 (S)	%.	100	75-125	06/13/23 14:59	
4-Bromofluorobenzene (S)	%.	106	75-125	06/13/23 14:59	
Toluene-d8 (S)	%.	104	75-125	06/13/23 14:59	

LABORATORY CONTROL SAMPLE & LCSD: 4673521

4673522

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	ug/kg	1000	1120	1110	112	111	72-125	1	20	
Ethylbenzene	ug/kg	1000	991	1050	99	105	75-130	6	20	
Toluene	ug/kg	1000	980	1130	98	113	75-125	14	20	
Xylene (Total)	ug/kg	3000	3020	3220	101	107	75-126	6	20	
1,2-Dichlorobenzene-d4 (S)	%.				99	99	75-125			
4-Bromofluorobenzene (S)	%.				101	106	75-125			
Toluene-d8 (S)	%.				98	112	75-125			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: B2208959.00

Pace Project No.: 10656797

QC Batch: 886911

Analysis Method: WI MOD DRO

QC Batch Method: WI MOD DRO

Analysis Description: WIDRO GCS

Laboratory: Pace Analytical Services - Minneapolis

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005

METHOD BLANK: 4673657

Matrix: Solid

Associated Lab Samples: 10656797001, 10656797002, 10656797003, 10656797004, 10656797005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
WDRO C10-C28	mg/kg	ND	10.0	06/14/23 12:11	
n-Triacontane (S)	%.	100	50-150	06/14/23 12:11	

LABORATORY CONTROL SAMPLE & LCSD: 4673658

4673659

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
WDRO C10-C28	mg/kg	80	75.3	87.0	94	109	70-120	14	20	
n-Triacontane (S)	%.				92	101	50-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: B2208959.00
Pace Project No.: 10656797

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: 887275

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 887391

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
S4 Surrogate recovery not evaluated against control limits due to sample dilution.
T6 High boiling point hydrocarbons are present in the sample.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: B2208959.00

Pace Project No.: 10656797

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10656797001	SB-1 (28-30')	WI MOD DRO	886911	WI MOD DRO	887391
10656797002	SB-2 (28-30')	WI MOD DRO	886911	WI MOD DRO	887391
10656797003	SB-3 (8-10')	WI MOD DRO	886911	WI MOD DRO	887391
10656797004	SB-4 (28-30')	WI MOD DRO	886911	WI MOD DRO	887391
10656797005	SB-5 (28-30')	WI MOD DRO	886911	WI MOD DRO	887391
10656797001	SB-1 (28-30')	EPA 5030 Medium Soil	887265	WI MOD GRO	887487
10656797002	SB-2 (28-30')	EPA 5030 Medium Soil	887265	WI MOD GRO	887487
10656797003	SB-3 (8-10')	EPA 5030 Medium Soil	887265	WI MOD GRO	887487
10656797004	SB-4 (28-30')	EPA 5030 Medium Soil	887265	WI MOD GRO	887487
10656797005	SB-5 (28-30')	EPA 5030 Medium Soil	887265	WI MOD GRO	887487
10656797006	MeOH Trip Blanks	EPA 5030 Medium Soil	887265	WI MOD GRO	887487
10656797001	SB-1 (28-30')	EPA 3050B	887387	EPA 6010D	888031
10656797002	SB-2 (28-30')	EPA 3050B	887387	EPA 6010D	888031
10656797003	SB-3 (8-10')	EPA 3050B	887387	EPA 6010D	888031
10656797004	SB-4 (28-30')	EPA 3050B	887387	EPA 6010D	888031
10656797005	SB-5 (28-30')	EPA 3050B	887387	EPA 6010D	888031
10656797001	SB-1 (28-30')	ASTM D2974	887093		
10656797002	SB-2 (28-30')	ASTM D2974	887093		
10656797003	SB-3 (8-10')	ASTM D2974	887093		
10656797004	SB-4 (28-30')	ASTM D2974	887093		
10656797005	SB-5 (28-30')	ASTM D2974	887093		
10656797001	SB-1 (28-30')	EPA 5035/5030B	886866	EPA 8260D	887275
10656797002	SB-2 (28-30')	EPA 5035/5030B	886866	EPA 8260D	887275
10656797003	SB-3 (8-10')	EPA 5035/5030B	886866	EPA 8260D	887275
10656797004	SB-4 (28-30')	EPA 5035/5030B	886866	EPA 8260D	887275
10656797005	SB-5 (28-30')	EPA 5035/5030B	886866	EPA 8260D	887275
10656797006	MeOH Trip Blanks	EPA 5035/5030B	886866	EPA 8260D	887275

REPORT OF LABORATORY ANALYSIS

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Effective Date: 4/14/2023

Sample Condition Upon Receipt	Client Name: <u>Braun Interfec</u>	Project #:	WO# : 10656797
Courier: ☐ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeedDee ☐ Commercial		PM: BGB Due Date: 06/21/23 CLIENT: Braun-BLM	
Tracking Number: _____		☐ See Exceptions ENV-FRM-MIN4-0142	

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☒ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252/1710	Seals Intact? ☐ Yes ☒ No Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A Temp Blank? ☒ Yes ☐ No Type of Ice: ☒ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted	
---	--	--

Did Samples Originate in West Virginia? ☐ Yes ☒ No Temp should be above freezing to 6 °C Cooler temp Read w/Temp Blank: <u>3.1</u> °C Correction Factor: <u>+0.1</u> Cooler Temp Corrected w/temp blank: <u>3.2</u> °C	Were All Container Temps Taken? ☐ Yes ☐ No ☒ N/A Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container
--	---

USDA Regulated Soil: ☐ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** MK4 6/9/23

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☒ Minneapolis ☐ Virginia Chain of Custody Present and Filled Out? ☒ Yes ☐ No Chain of Custody Relinquished? ☒ Yes ☐ No Sampler Name and/or Signature on COC? ☒ Yes ☐ No ☐ N/A Samples Arrived within Hold Time? ☒ Yes ☐ No Short Hold Time Analysis (<72 hr)? ☐ Yes ☒ No Rush Turn Around Time Requested? ☒ Yes ☐ No Sufficient Sample Volume? ☒ Yes ☐ No Correct Containers Used? ☒ Yes ☐ No ☐ N/A -Pace Containers Used? ☒ Yes ☐ No Containers Intact? ☒ Yes ☐ No Field Filtered Volume Received for Dissolved Tests? ☐ Yes ☐ No ☒ N/A Is sufficient information available to reconcile the samples to the COC? ☒ Yes ☐ No Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other All containers needing acid/base preservation have been checked? ☐ Yes ☐ No ☒ N/A All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH >10 Cyanide) ☐ Yes ☐ No ☒ N/A Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS ☐ Yes ☐ No ☒ N/A (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.) Headspace in Methyl Mercury Container? ☐ Yes ☐ No ☒ N/A Extra labels present on soil VOA or WIDRO containers? ☒ Yes ☐ No ☐ N/A Headspace in VOA Vials (greater than 6mm)? ☒ Yes ☐ No ☒ N/A 3 Trip Blanks Present? ☒ Yes ☐ No ☐ N/A Trip Blank Custody Seals Present? ☒ Yes ☐ No ☐ N/A	COMMENTS 1. _____ 2. _____ 3. _____ 4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No 5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. Is sediment visible in the dissolved container? ☐ Yes ☐ No 11. If no, write ID/Date/Time of container below: ☐ See Exceptions ENV-FRM-MIN4-0142 12. Sample # ☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142 pH Paper Lot # Residual Chlorine 0-6 Roll 0-6 Strip 0-14 Strip 13. _____ 14. _____ ☐ See Exceptions ENV-FRM-MIN4-0142 15. 4TB Pace Trip Blank Lot # (if purchased): <u>032023-3</u>
---	--

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Brenna BloomeDate: 06/11/2023

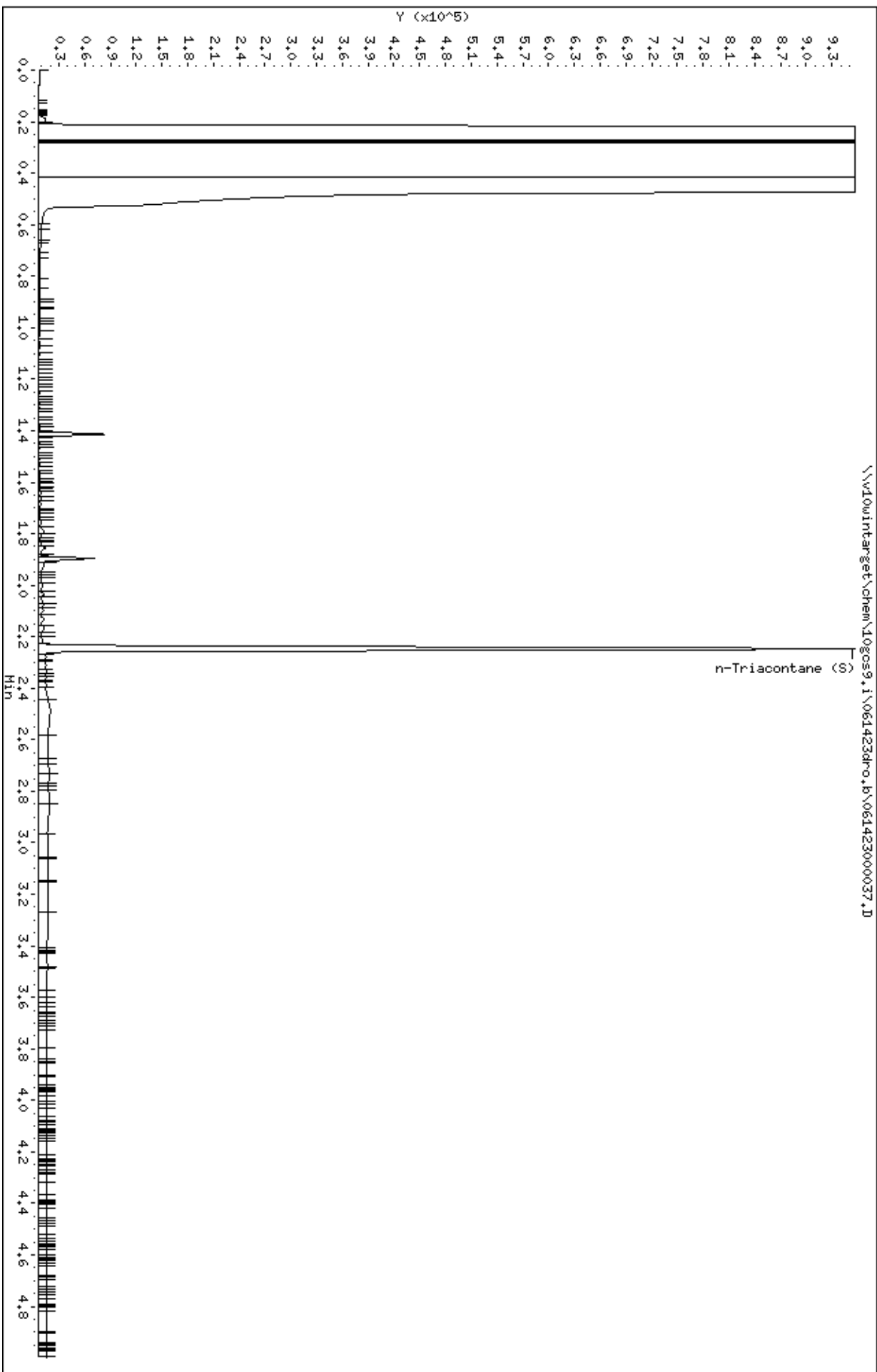
NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: MK4

Line: 3
 Page 23 of 34
 Page 1 of 1

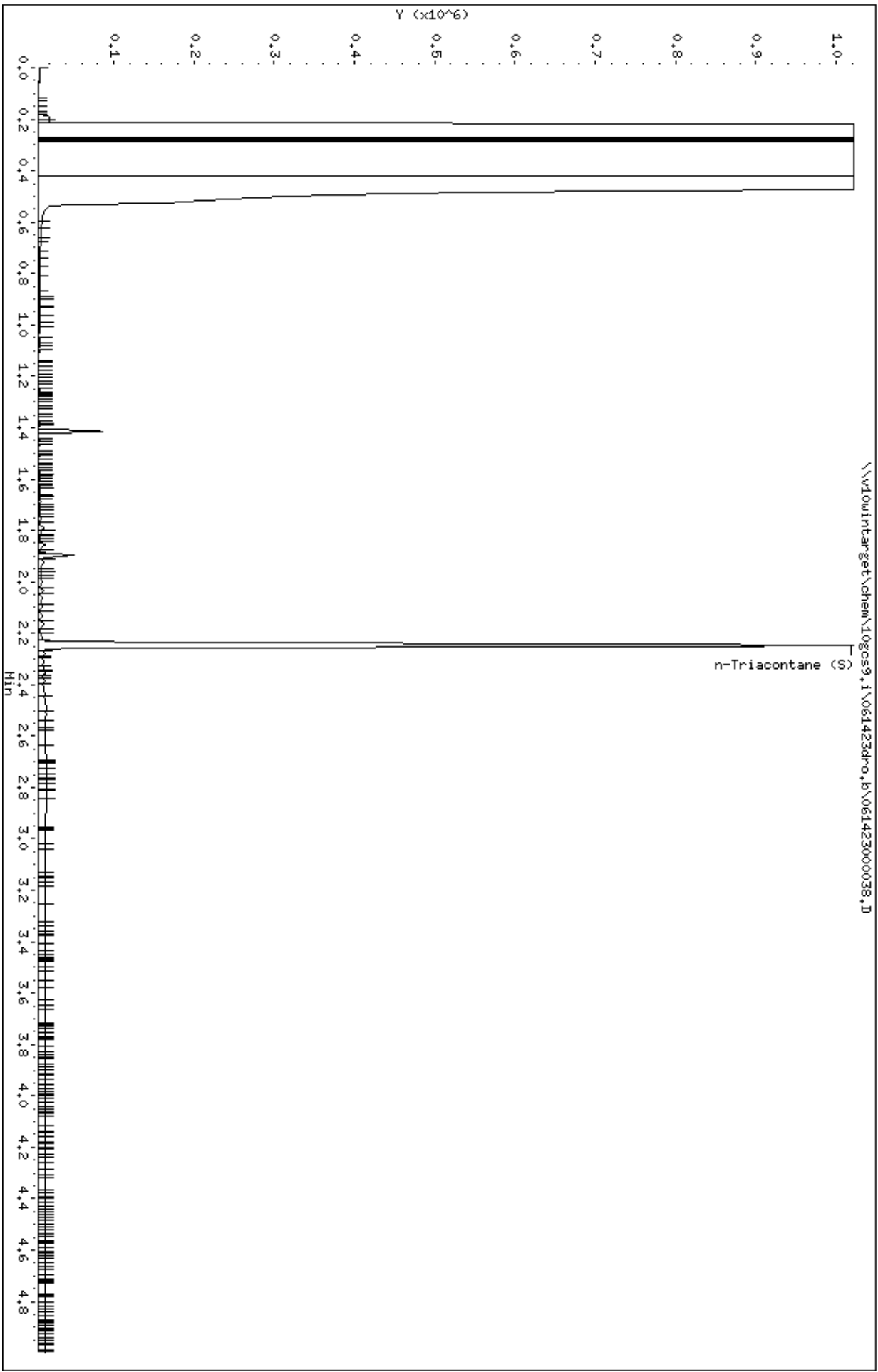
Data File: \\v10win\target\chem\10gos9.i\061423dro.b\061423000037.D
Date : 14-JUN-2023 13:21
Client ID: SB-1 (28-30')
Sample Info: 10656797001
Volume Injected (uL): 1.0
Column phase: DB-5-MS23040003

Instrument: 10gos9.i
Operator: TT2
Column diameter: 0.32



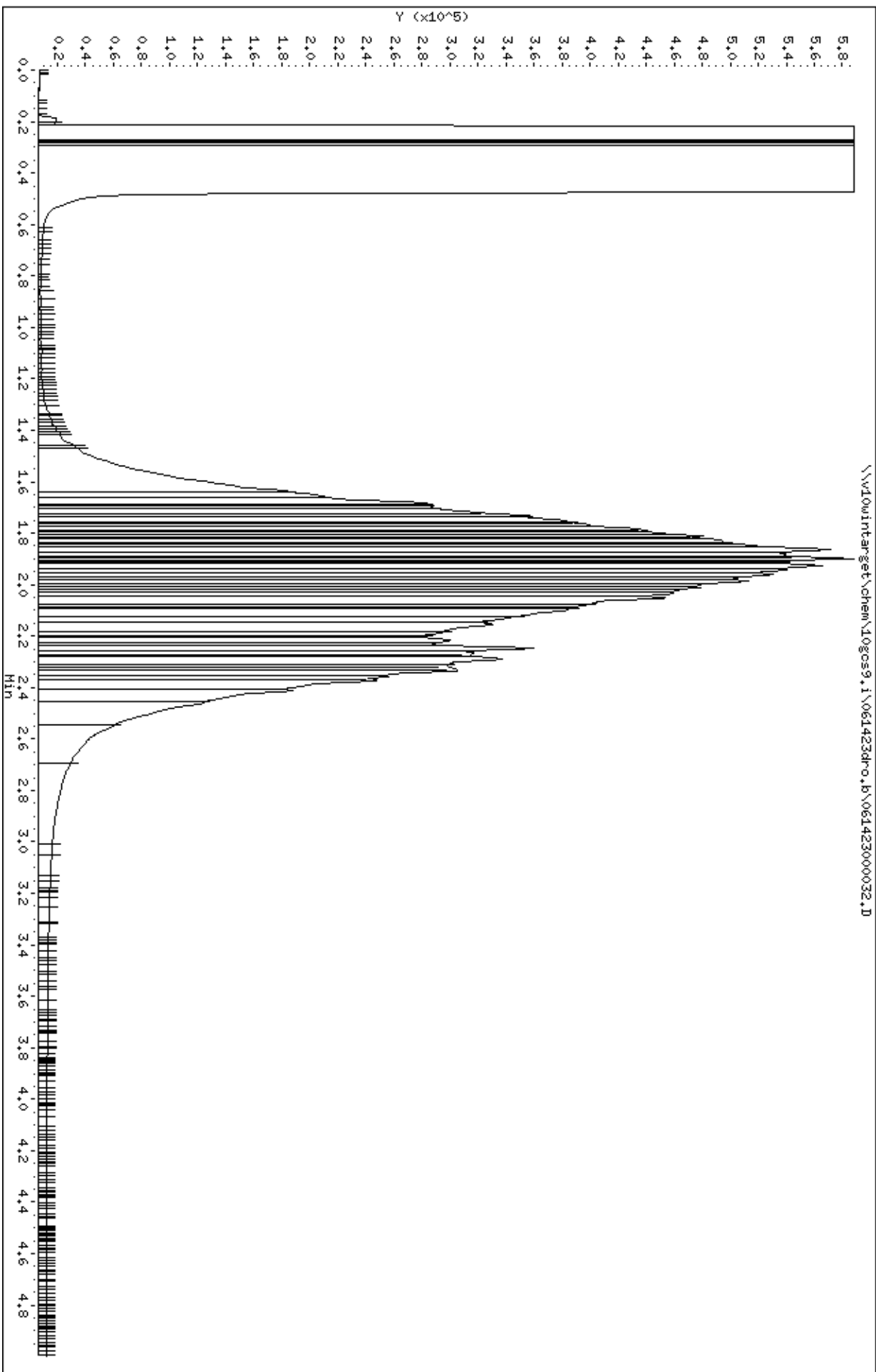
Data File: \\v10win\target\chem\10gos9.i\061423dro.b\061423000038.D
Date : 14-JUN-2023 13:28
Client ID: SB-2 (28-30')
Sample Info: 10656797002
Volume Injected (uL): 1.0
Column phase: DB-5-MS23040003

Instrument: 10gos9.i
Operator: TT2
Column diameter: 0.32



Data File: \\v10win\target\chem\logos9.i\061423dro.b\061423000032.D
Date : 14-JUN-2023 12:46
Client ID: SB-3 (8-10')
Sample Info: 10656797003X20
Volume Injected (uL): 1.0
Column phase: DB-5-US23040003

Instrument: logos9.i
Operator: TT2
Column diameter: 0.32



Date : 14-JUN-2023 13:14

Client ID: SB-4 (28-30')

Sample Info: 10656797004

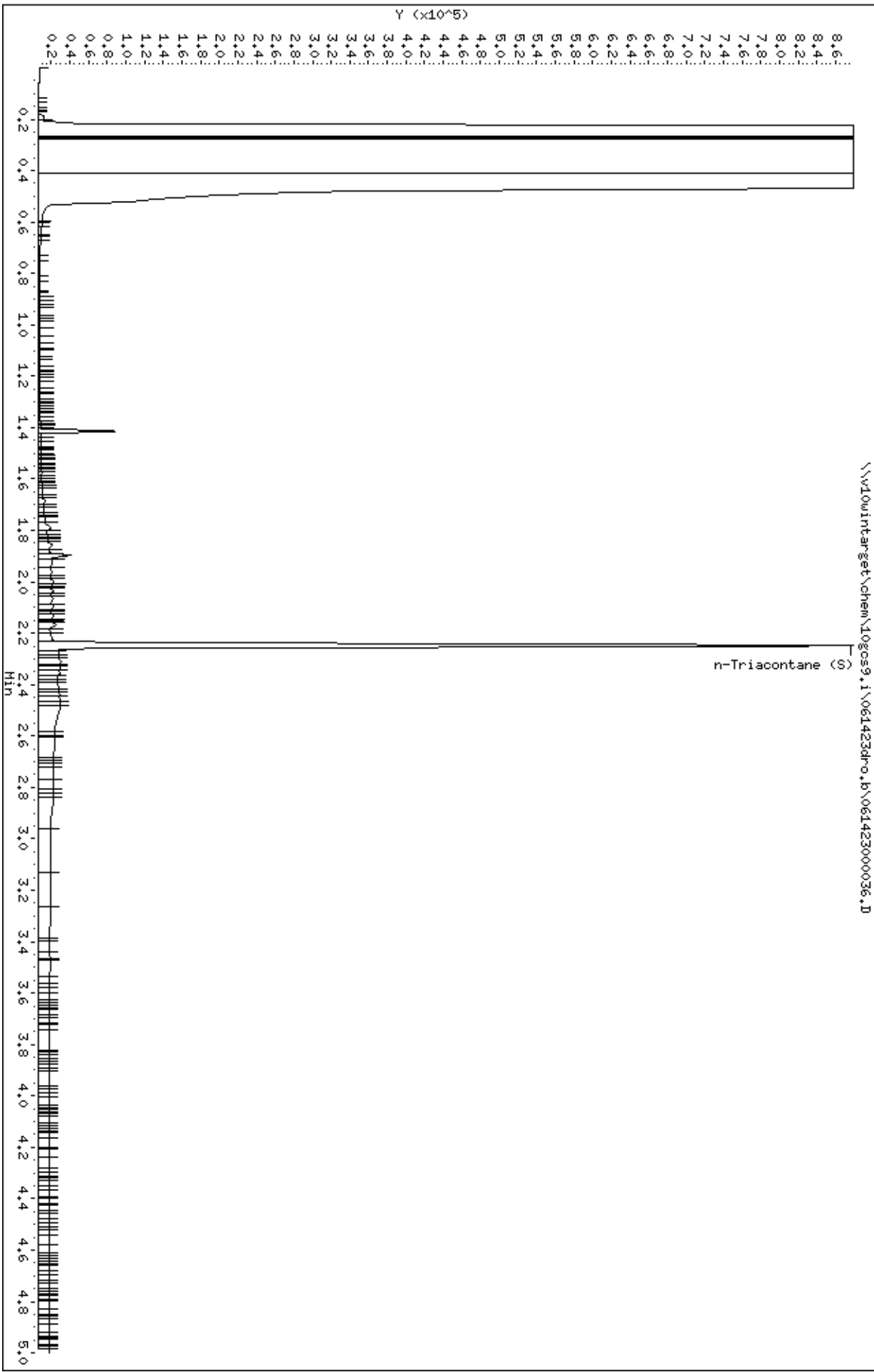
Volume Injected (uL): 1.0

Column phase: DB-5-MS23040003

Instrument: 10gos9.i

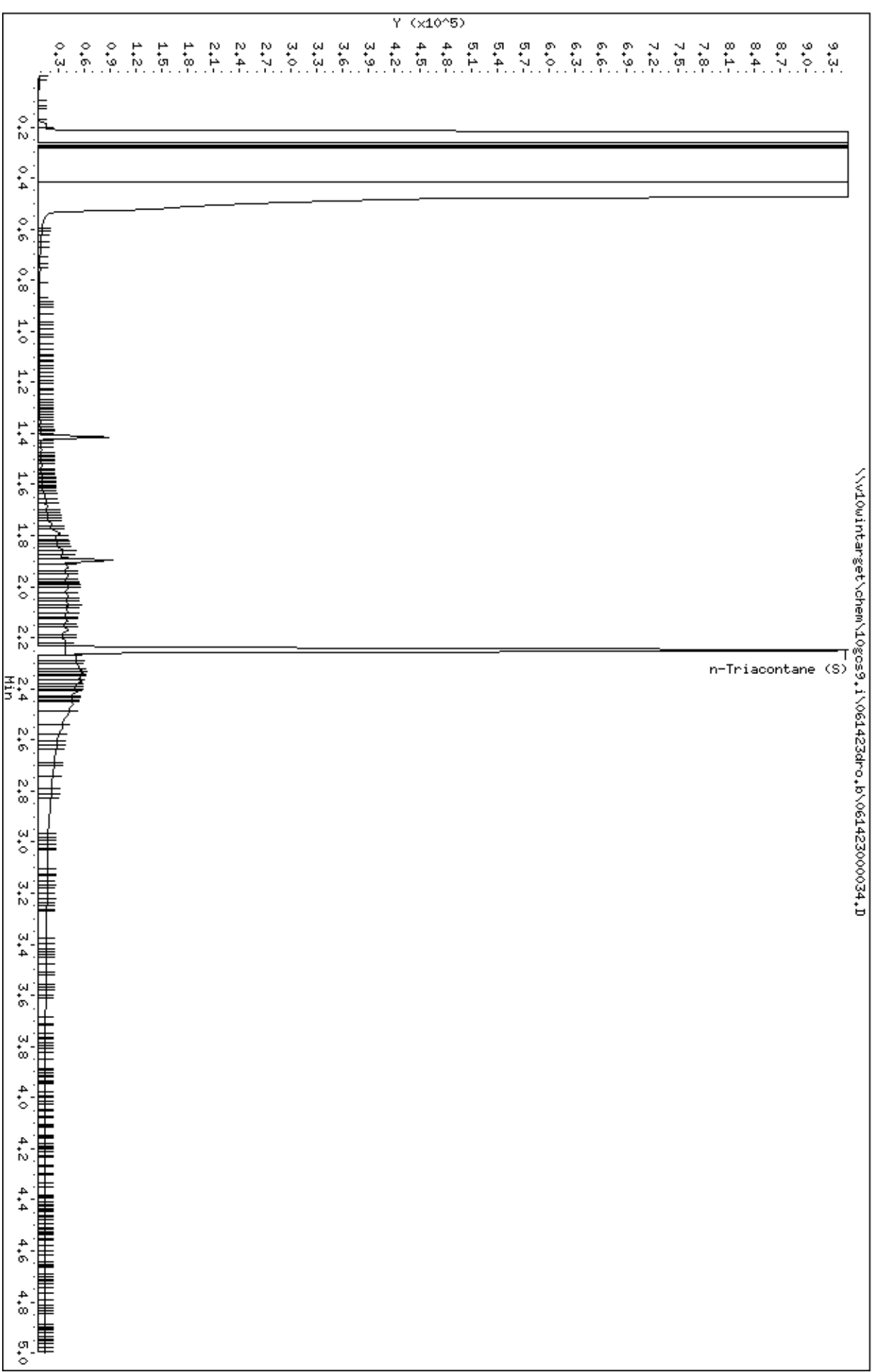
Operator: TT2

Column diameter: 0.32



Data File: \\v10win\target\chem\10gos9.i\061423dro.b\061423000034.D
Date : 14-JUN-2023 13:00
Client ID: SB-5 (28-30')
Sample Info: 10656797005
Volume Injected (uL): 1.0
Column phase: DB-5-MS23040003

Instrument: 10gos9.i
Operator: TT2
Column diameter: 0.32



Date : 15-JUN-2023 05:42

Client ID: SB-1 (28-30')

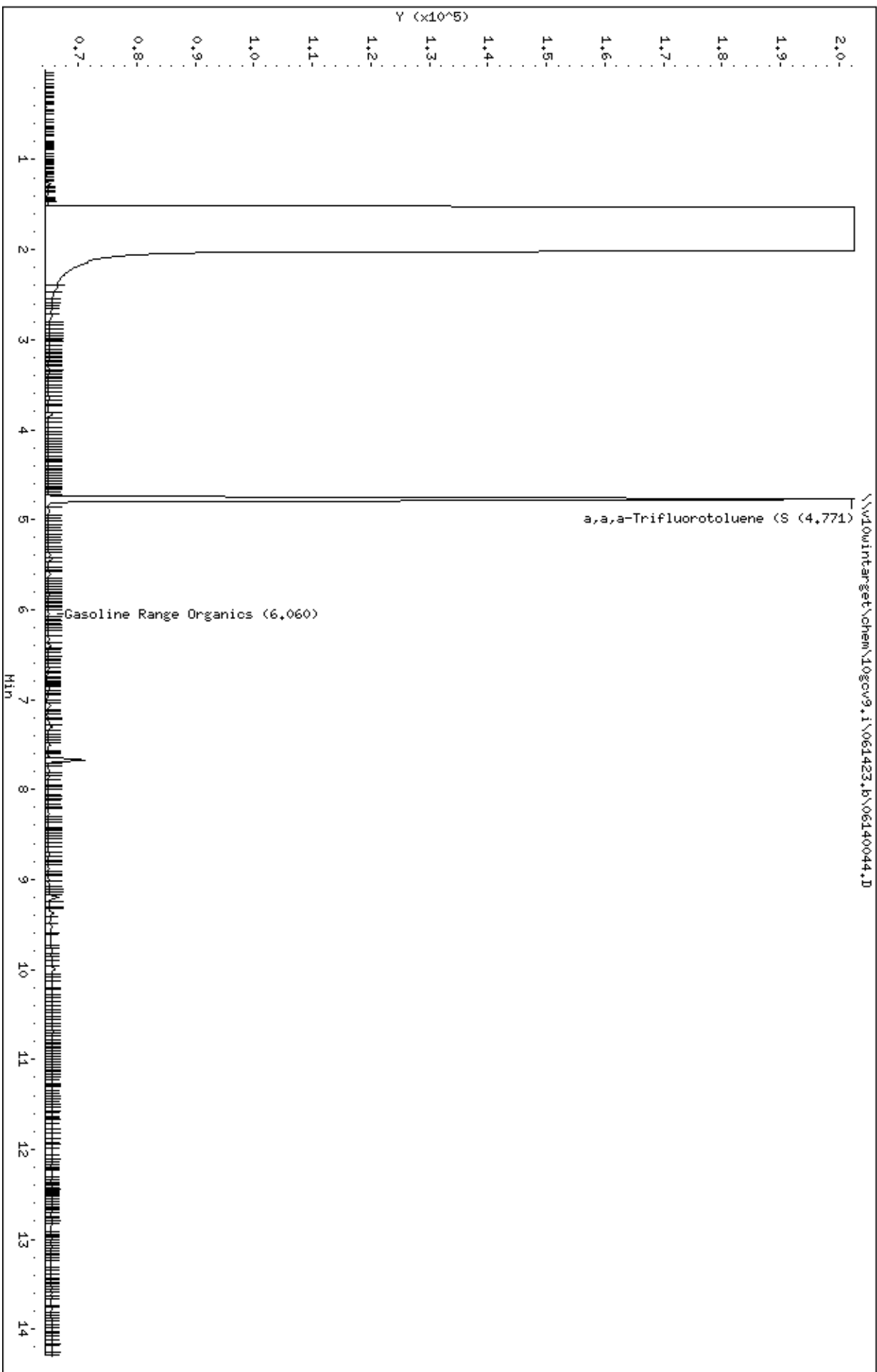
Sample Info: 10656797001,

Instrument: 10gcov9.i

Operator: ALE

Column diameter: 0.53

Column phase: ZB-624 SN1069472



Date : 15-JUN-2023 06:01

Client ID: SB-2 (28-30')

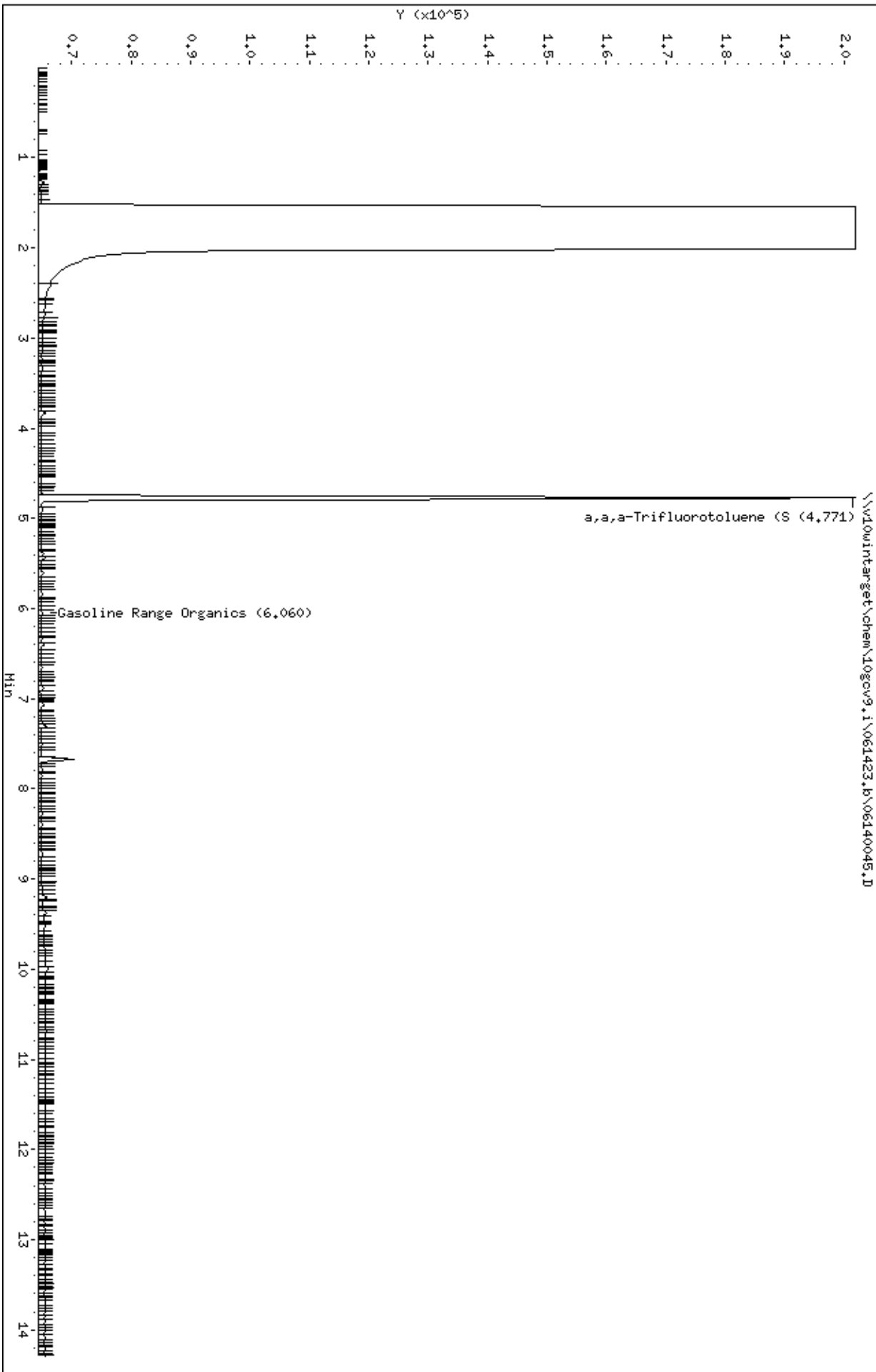
Sample Info: 10656797002,

Column phase: ZB-624 SN1069472

Instrument: 10gcov9.i

Operator: ALE

Column diameter: 0.53



Date : 15-JUN-2023 06:20

Client ID: SB-3 (8-10')

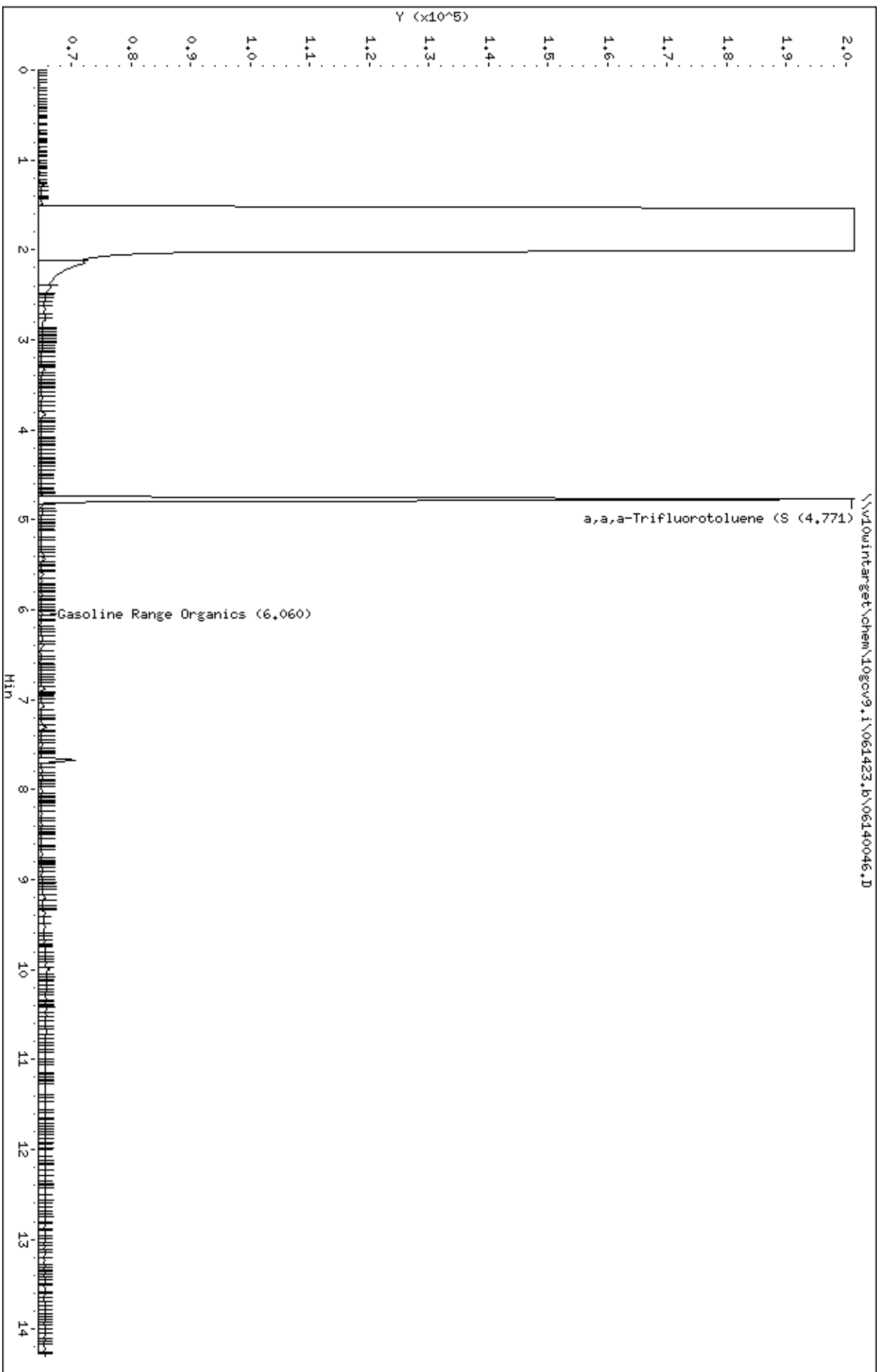
Sample Info: 10656797003,

Instrument: 10gc\9.i

Operator: ALE

Column phase: ZB-624 SMI069472

Column diameter: 0.53



Date : 15-JUN-2023 06:39

Client ID: SB-4 (28-30')

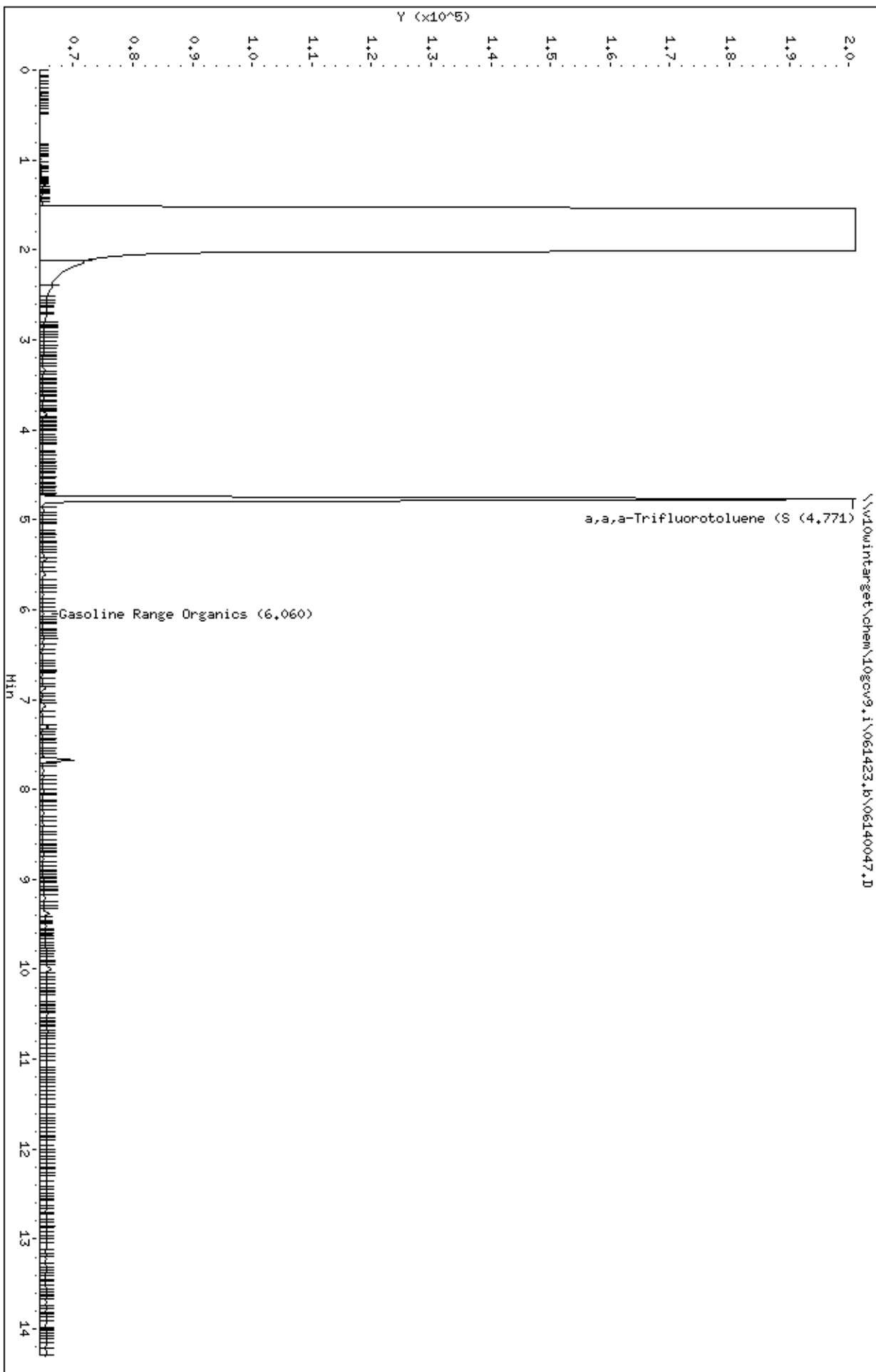
Sample Info: 10656797004,

Instrument: 10gc\9.i

Column phase: ZB-624 SMI069472

Operator: ALE

Column diameter: 0.53



Date : 15-JUN-2023 06:58

Client ID: SB-5 (28-30')

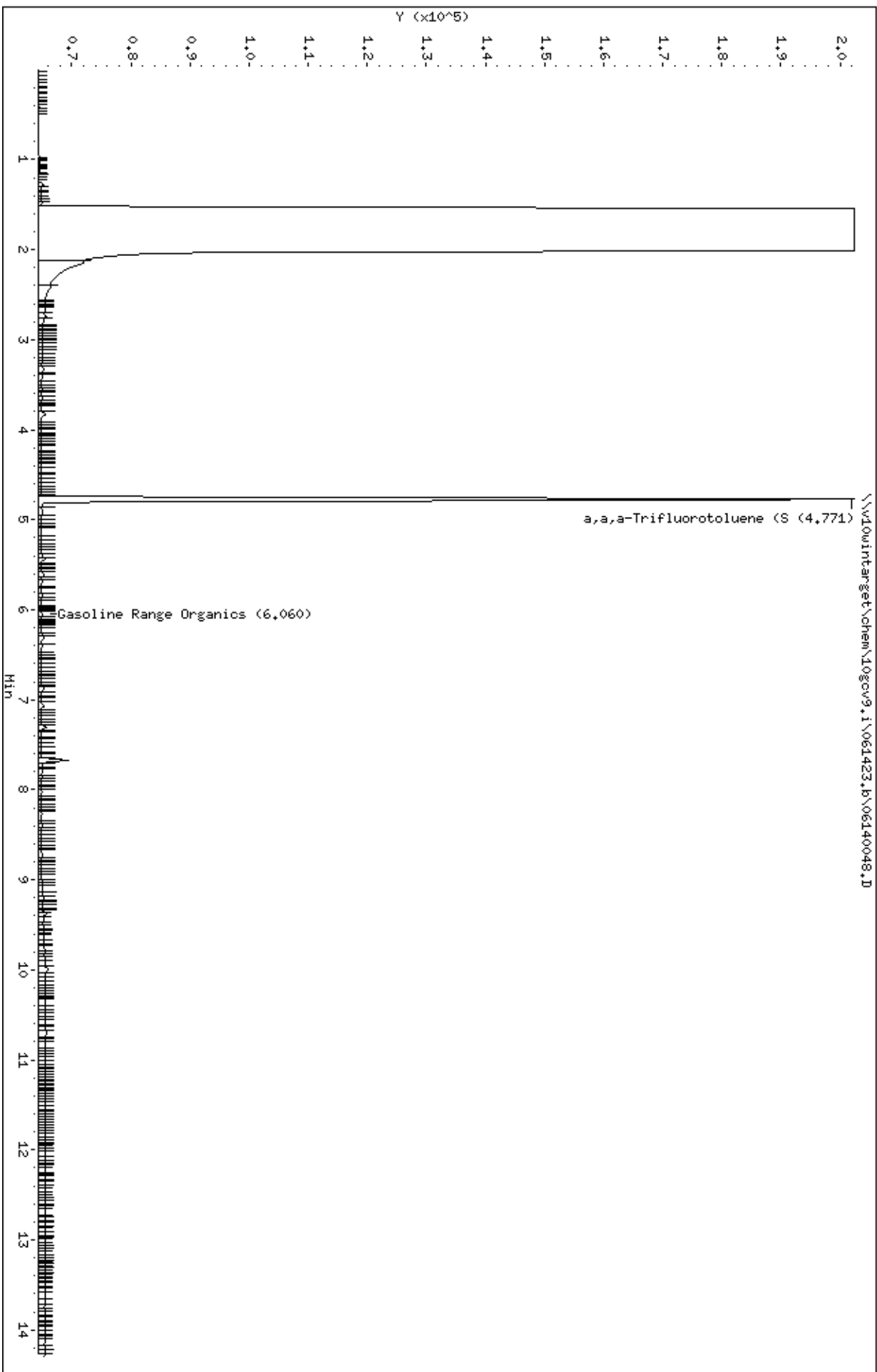
Sample Info: 10656797005,

Instrument: 10gc\9.i

Operator: ALE

Column diameter: 0.53

Column phase: ZB-624 SN1069472



Date : 15-JUN-2023 04:07

Client ID: MeOH Trip Blanks

Sample Info: 10656797006,

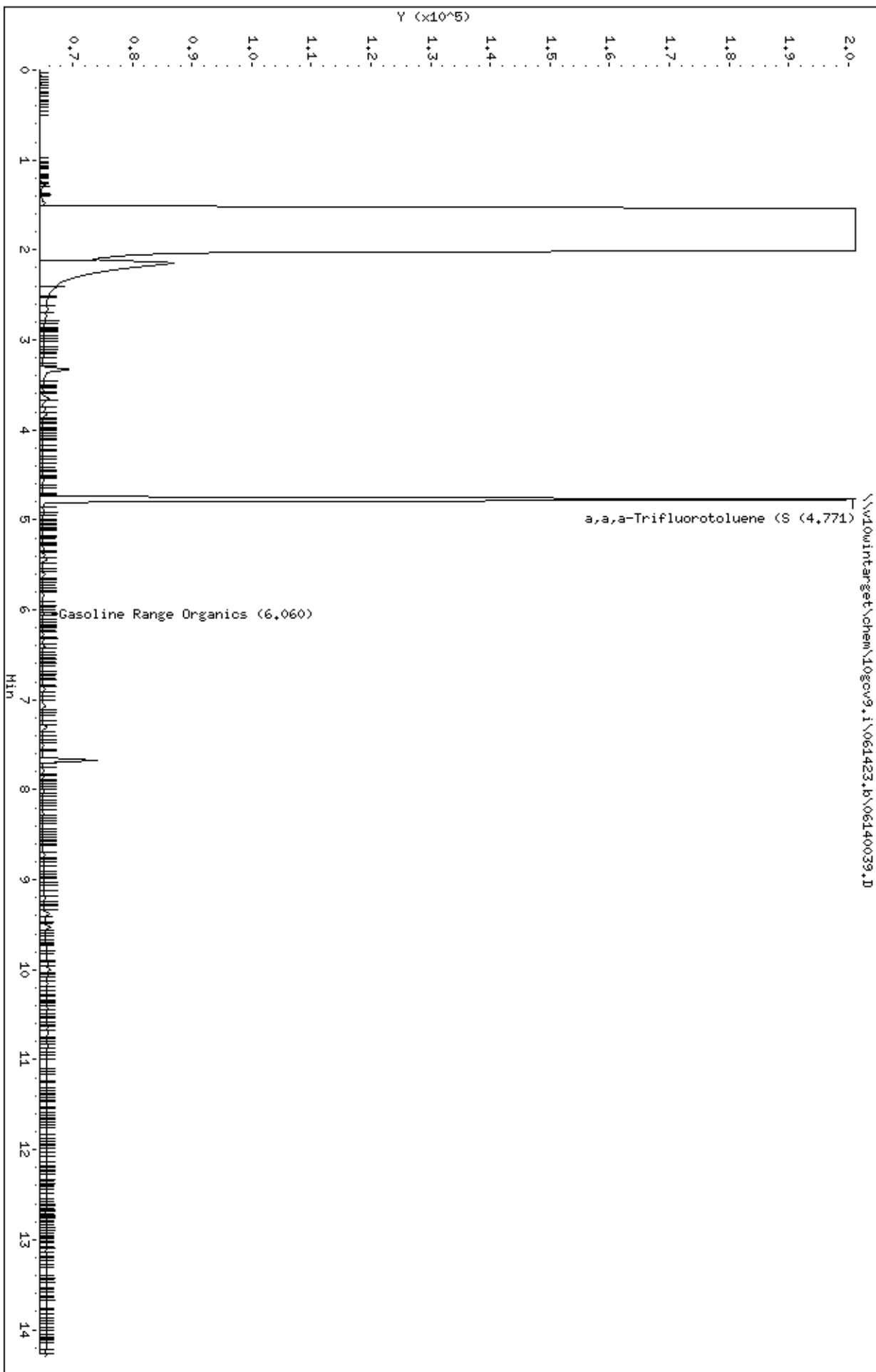
Instrument: 10gcov9.i

Column phase: ZB-624 SMI069472

Operator: ALE

Column phase: ZB-624 SMI069472

Column diameter: 0.53



Appendix E

Standard Operating Procedures

Appendix F

References/Bibliography

References

- Surficial Geology (Patterson, 1992). County Atlas C-4, Plate 3 of 9, University of Minnesota, Minnesota Geological Survey.
- Bedrock Geology (Olson and Bloomgren, 1989), County Atlas C-4, Plate 2 of 9, University of Minnesota, Minnesota Geological Survey.
- Depth to Bedrock (Bloomgren, Cleland, and Olson, 1989). County Atlas C-4, Plate 4 of 9, University of Minnesota, Minnesota Geological Survey.
- Bedrock Geology (Kanivetsky, 1989). County Atlas C-4, Plate 5 of 9, University of Minnesota, Minnesota Geological Survey.
- Quaternary Hydrogeology (Kanivetsky, 1989). County Atlas C-4, Plate 6 of 9, University of Minnesota, Minnesota Geological Survey.