Date: **February 20, 2023**

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From: **Jimmy Kehs, Tetra Tech, Inc. (Tetra Tech)**

Cc: **Elliot Sanders, Tetra Tech, Rafiq Jennings, DOEE, and Stephen Ours, DOEE**

Subject: **Copaltite Air Survey for National Engineering Products located at 1950 Capitol Avenue, NE, Washington, DC 20002**

Introduction

The purpose of this memorandum is to provide the District of Columbia Department of Energy & Environment (DOEE) with Tetra Tech, Inc.'s (Tetra Tech) evaluation of a completed air survey at the National Engineering Products facility located at 1950 Capitol Avenue, NE, Washington, D.C. (Site, **Figure 1** of **Attachment 1**).

Background

The National Engineering Products facility located at 1950 Capitol Avenue, NE, Washington, D.C. (Site, **Figure 1** of **Attachment 1**) is currently used as a manufacturing facility for high pressure and fire-resistant sealants for the U.S. Navy. DOEE has received complaints of odors from neighboring residents, potentially in association with elevated Volatile Organic Compounds (VOCs[†]) related to the manufacturing of company products Copaltite and Nepseal. DOEE requested Tetra Tech complete an air survey of potential contaminants in the Site building, as well as calculate the air flow rates from exhaust fans located in the building to evaluate the contaminant mass released from the building. Tetra Tech understands DOEE will use these data to evaluate applicable regulatory requirements as part of a review to determine permit applicability for the facility. DOEE and Tetra Tech performed a site reconnaissance visit of the facility during mixing activities on March 1, 2022, and has conducted several conference calls with the facility owner and DOEE in preparation of the sampling memorandum provided to DOEE.

Figure 1 of **Attachment 1** shows the location and orientation of the Site. The building footprint is approximately 4,400 square feet, and is located northwest of the intersection of Capitol Avenue, NE, and Fenwick Street, NE. The building is a single-story, slab-on-grade structure with a production floor and storage areas. The northern half of the production floor is where the

[†] For the purposes of this report the term VOC is used to designate Volatile Organic Compounds as it pertains to analytes identified in United States Environmental Protection Agency (EPA) method TO-15 and includes chemicals different from those defined by the same term in District of Columbia Municipal Regulations 20 DCMR 199.

majority of manufacturing activity takes place, including mixing and product packaging. Fifty-five-gallon drums and bags of product ingredients are stored along the northern and northwestern walls of the facility on an elevated platform. The platform contains two mixers and associated ventilation systems with associated exhaust fans situated directly above the mixers on the roof. Roll-up garage doors are present on the northern and eastern walls of the building proximate to the northeastern corner of the facility. They are reportedly opened for additional ventilation when manufacturing activities are not in operation. An additional exhaust fan is located on the roof of the facility in the north/central portion of the roof reportedly associated with a kiln that is no longer in-use. The final exhaust port is associated with a ventilation hood located along the eastern wall on the south end of the building for general building exhaust. This exhaust port is approximately 15 feet above street level along the southeastern corner of the facility.

Screening Level Discussion

The Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) are utilized for site "screening" to help identify contaminants and conditions that may require further attention. The risk-based contaminant concentrations are derived from standardized equations combining exposure information assumptions with EPA toxicity data. These standards were developed by the EPA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for use on Superfund sites to evaluate if contaminants pose a risk to human health and the environment. EPA RSL values are continually updated and re-released every four months and includes a comprehensive list of potential contaminants to ensure these risk-based screening levels continue to be protective based on additional studies of potential contaminants. RSLs are considered by the EPA to be protective for humans (including sensitive groups) over a lifetime. Generally, at sites where contaminant concentrations fall below RSLs, no further action or study is warranted, so long as the exposure assumptions at a site match those taken into account by the RSL calculations. Chemical concentrations above the RSL does not necessarily trigger response actions; however, exceeding a RSL suggests that further evaluation of the potential risks by site contaminants may be appropriate.

Note that the Residential RSLs used in this report assume the community is exposed to 24 hours of continuous exposure to associated chemicals over a period of 26 years for non-carcinogenic chemicals and a period of 70 years for carcinogenic chemicals. The sample period described in this report was intentionally during a period of Site manufacturing operations and is therefore, not representative of chemical concentrations at the Site during day-to-day operations.

Industrial RSLs used in this report assume the workers are exposed to associated chemicals for 8 hours per day for 250 days per year over a 25-year work life for non-carcinogenic chemicals and a period of 70 years for carcinogenic chemicals.

The RSL values selected have a Target Risk (TR) of $1x10^{-6}$ which corresponds to a one-in-a-million cancer risk for chemicals that present a risk of cancerous effects. For chemicals with noncancerous health impacts a Target Hazard Quotient (THQ) of 0.1 was selected. A hazard quotient represents the ratio of potential exposure to a contaminant and the level at which no adverse effects are likely to occur. A THQ of 1.0 is used to identify the levels at which a single chemical will not cause harmful health effects, however because the Site data is being screened against multiple

chemicals of concern, there is a possibility that the effects of multiple chemicals could result in harmful health effects despite the individual chemicals never exceeding their THQ 1.0 screening criteria. The selection of 0.1 THQ adds a layer of protection against this possibility by lowering the screening criteria to account for the potential effects of multiple chemicals of concern. This additional layer of protection also introduces the potential to overestimate the risk that individual contaminants of concern pose, as the 0.1 THQ is an intentionally conservative comparison point to ensure potential risk is identified.

EPA RSLs for Residents and Industrial Workers were used here to account for the residential areas adjacent to the Site and the workers within the facility, respectively. EPA Residential RSLs used in this report take both adult and child receptors into account for the final screening value of air inhalation. Industrial screening levels were utilized for comparison purposes for samples collected in the interior areas of the Site, while residential screening levels were utilized for community exposure samples.

The 2019 Air Toxics Screening Assessment study is the latest of a recurring series of assessments analyzing national ambient air quality performed by the EPA in every state and territory. The Site and the surrounding community are located within 2019 Air Toxics Screening Assessment study area 'District of Columbia tract 11001008803' that encompasses the approximately 0.44 square mile area between Florida Avenue, NE, New York Avenue, NE, and West Virginia Avenue, NE in Northeast Washington D.C. It should be noted that the results of the 2019 Air Toxics Screening Assessment are neither screening values that pertain to risk nor are they regulatory limits. The data from this study are included for additional data context and understanding typical background concentrations as it relates to the results of community exposure sampling.

Copaltite Production Field Summary

On July 14, 2022, Tetra Tech completed air sampling during Copaltite production from the outermost exhaust ports of the three ventilation systems; interior air sampling inside the facility; and four community exposure samples. **Figure 2** of **Attachment 1** shows the sampling locations.

Samples collected at the exhaust ports were intended to assess the contents and concentration of chemicals in the industrial process exhaust produced by typical Site operations on Copaltite production days. In order to assess the representative constituents within air released by the Site, samples were collected at the three observed exhaust points: production associated mixer exhaust port (E1), the unused kiln exhaust port (E2), and the hood ventilator exhaust port (E3) used for general building ventilation. Of note, the kiln was not used in the Copaltite manufacturing process, and the exhaust port where sample E2 was collected was not actively ventilating; however, there was measurable airflow to the exterior.

Interior air samples were collected in the northern portion of the facility where production processes are concentrated (PF-1) in order to assess interior air quality during manufacturing. Another purpose of collecting interior ambient samples was to evaluate compounds remaining within the building by comparing concentrations present on the interior against what was being exhausted.

Based on the ingredient list for Copaltite provided by the owner and the Safety Data Sheets (SDS), sampling analytes consisted of VOCs, cresol, phenol, aniline, quartz, formaldehyde, respirable dust, and total dust. Due to citizen complaints about odor during non-production times, DOEE requested samples be collected for Copaltite constituents that have the potential for volatilization over a 24-hour period from the exhaust with the highest volume. The highest volume exhaust port was determined in the field to be E1, the exhaust associated with the mixer.

Production at the facility lasted from approximately 1200 hours until 1430 hours. Indoor air samples were collected only during times of production based on staff availability. Exterior exhaust port samples and community exposure samples were allowed to complete their run time to simulate a full business day of emissions and exposure. Site staff turned off the hood ventilator (E3) at approximately 1500 hours.

The personal air sampling pumps were calibrated to flow at approximately 0.10 Liters per minute (L/min) for aniline, cresol and phenol, and formaldehyde and sample media was switched out for new media at approximately 4-hours to ensure the media did not exceed the maximum load described in the respective National Institute for Occupational Safety and Health (NIOSH) Method. Sample nomenclature for these analytes had an 'A', 'B', then 'C' appended to the end of the sample identification (ID) to identify the timing of each of the sample ID's associated with the same sample location.

Three community exposure samples were collected from the area downwind of the Site in a semicircle pattern in order to assess the community exposure from Site manufacturing activities. During sampling, the predominant wind direction at the Site was determined using the closest publicly available weather station on the Weather Underground online database located at the intersection of Lyman Place NE and 17th Street NE (Station KDCWASHI460 on Weather Underground), approximately 0.65 miles south-southeast of the Site. Wind generally originated from the northwest during the sampling period and the downwind community exposure samples were collected south-southeast of the Site. See **Table 8** of **Attachment 2** for the complete wind data collected at station KDCWASHI460 during the duration of sampling at the Site. A sample was also collected from an area upwind of the facility in the fenced yard to the north of the building in order to compare these results with community ambient air (**Figure 2** of **Attachment 1**).

While the community exposure samples were collected, Tetra Tech surveyed the surrounding area to identify ongoing activities that had the potential to interfere with the samples as discussed on the following page:

- Adjacent to the north of the Site an auto detailing/body-work facility was observed using aerosolized paint during a portion of the time samples were running. Adjacent to the north of the auto detailing facility was a distillery in operation.
- The vegetated area on the roadside verge was mowed and trimmed using gasoline powered tools during some of the collection time of the community exposure samples.
- The three downwind community exposure sample locations were all located on sidewalks close to the roadways that were observed to have automobile traffic throughout the sample period.

Table 1 lists the samples collected during Copaltite production by location and analysis.

Table 1. Copaltite Sample Count

Analysis	Exhaust Port Samples	Production Floor Samples	Field Blank Samples	24 Hour Sample at Roof Exhaust	Community Exposure Samples
Respirable Dust	3	1	2	0	2
Total Aerosol Mass	3	1	2	0	2
Cresol and Phenol	3	1	2	0	2
Aniline	3	1	2	0	2
Quartz	3	1	2	0	2
VOC	3	2	0	1	4
Formaldehyde	3	2	2	0	4

Tetra Tech measured the dimensions of all exhaust ports at the Site and collected air velocity measurements in a grid pattern to evaluate an average flow rate for each exhaust based on the velocity of air and area of the exhaust ports. The exhaust port associated with the kiln, designated Exhaust 2, was not actively circulating air during Copaltite production. However, air flow was measured exiting the exhaust port during measurement of airflow velocity from all exhaust ports and a sample set was collected from the port to best capture Site mass emissions. Exhaust Ports 1 and 3 were turned off at approximately 1500 hours, based on staff availability. **Table 2** below lists the average air velocity at each exhaust port and the dimensions.

Table 2. Exhaust Port Dimensions and Flow Rate

Exhaust Port	Dimensions (inches)	Average Velocity (feet/Minute)	Air Flow Rate ($meter^3$/Minute)
E1 – Mixer Exhaust	12 x 16	2802.5	105.810
E2 – Kiln Exhaust	24 x 24	27.75	3.143
E3 – Hood Ventilator	16 x 16	876.25	44.111

Prior to and after sample completion, the formaldehyde silica gel sorbent tubes samples were stored on ice to ensure the sample media maintained integrity. All samples were packed in the field and sent via FedEx to EMSL Analytical, Inc. of Cinnaminson, New Jersey, with the exception of Aniline samples, which were sent via FedEx to ALS of Salt Lake City, Utah for analysis. All samples were accompanied by chains of custody during transportation to the laboratories.

Indoor Air Analytical Results

Twelve VOC constituents were detected in the indoor air production floor VOC samples collected during Copaltite production (**Table 1** in **Attachment 2** and **Table 3** below). The indoor air results

were compared to EPA RSLs for Industrial Air. Only acetonitrile exceeded EPA Industrial RSLs in indoor air samples. The Site is currently utilized as an industrial facility.

The production floor sample PF-2 was collected at the south end of the building interior proximate to the offices and facility access from Capital Avenue, NE as an interior background sample to compare against the interior sample collected proximate to the mixers and production activity (PF-1). The VOC analyte concentrations at PF-1 and PF-2 are mainly consistent with each other, however Acetonitrile was detected at concentrations that exceeded the Industrial Air EPA RSL in PF-2 while it was below the Industrial Air RSL in PF-1.

Table 3. Detected VOC Results in Indoor Air Samples

Analyte	CAS#	EPA Industrial RSL	NEP-PF1-071422	NEP-PF2-071422
Freon 12 (Dichlorodifluoromethane)	75-71-8	44	ND	13
Chloromethane	74-87-3	39	1.1	ND
n-Butane	106-97-8	N/A	5.8	7.9
Ethanol	64-17-5	N/A	77 D	220 E
Isopropyl alcohol(2-Propanol)	67-63-0	88	8.5	11
Acetone	67-64-1	N/A	17	18
Acetonitrile	75-05-8	26	11	38
Methylene chloride	75-09-2	260	160 D	190
n-Hexane	110-54-3	310	2.3	ND
2-Butanone(MEK)	78-93-3	2,200	1.5	ND
Ethyl acetate	141-78-6	31	4.5	6.7
Toluene	108-88-3	2,200	6.2	5.9

All results presented in µg/m^3
D – Result qualified due to dilution before analysis.
ND – Analyte Not Detected
Shaded Cells Indicate Exceedance of EPA Industrial RSLs
Samples collected and analyzed according to EPA Method TO-15

Formaldehyde was detected in both PF-1 and PF-2 samples. PF-1 was detected at 0.048 milligrams per cubic meter (mg/m^3) (0.039 parts per million [ppm]) and PF-2 was detected at 0.039 mg/m^3 (0.032 ppm) (**Table 6** in **Attachment 2**). Both of these concentrations are above the EPA RSL for Industrial Air (or 0.000940 mg/m^3); however, the production floor samples are below the US Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limit (PEL) of 0.75 ppm and the action level of 0.5 ppm. Additionally, the sample concentrations do not exceed the American Conference of Governmental Industrial Hygienists (ACGIH) 8-hour time weighted average Threshold Limit Value (TLV) of 0.1 ppm.

Cresol and phenol, total respirable dust, and total aerosol particles were sampled proximate to production activity (1PF-1), and none were detected above the laboratory method detection

thresholds. Quartz was slated to be analyzed from the total aerosol particles as a percentage of the total particles. However, because total aerosol particles were not detected above laboratory method detection thresholds, this analysis was not possible.

Exhaust Ports

Aniline, cresol and phenol, total undifferentiated aerosol particles, and respirable dust samples were not detected above the laboratory method detection threshold at any exhaust port. Because these analytes were undetected the mass emission calculation for these analytes can only be assigned an upper limit based on the laboratory method detection thresholds, the true mass emissions could be anywhere from zero to the upper limit based on the laboratory method detection threshold. See **Tables 2 through 6** of **Attachment 2** for the range of hourly mass emissions for each analyte based on the air flow rates from each exhaust port. Quartz was slated to be analyzed from the total aerosol particles as a percentage of the total particles. However, because total aerosol particulate matter was not detected above laboratory method detection thresholds, this analysis was not possible.

Because exhaust samples were collected at the point of exhaust, which is not representative of exposure to the facility workers or surrounding community, no screening criteria are applied to these samples. These samples were collected to identify the types and concentrations of chemicals originating from the Site for the purpose of identifying the source of any detections found in community exposure samples. Exposure concentrations to the chemicals identified in the exhaust port samples are captured in the upwind and downwind community samples.

Volatile Organic Compounds

Ten VOC constituents were detected in the 8-hour VOC sample collected at exhaust port 1 and 11 were detected in the 24-hour VOC sample (**Table 1** of **Attachment 2**). **Table 4** on the following page lists the analytical result for the concentration and the hourly mass emission rate.

Table 4. Detected VOC Results in Exhaust Port 1

Analyte	CAS#	NEP-E1-071422		NEP-E1-071422-24	
		Result (µg/m³)	Mass Emission (mg/Hour)	Result (µg/m³)	Mass Emission (mg/Hour)
Freon 12(Dichlorodifluoromethane)	75-71-8	ND	N/A	2.6	0.690
Chloromethane	74-87-3	1.2	0.979	1.2	0.318
n-Butane	106-97-8	6.7	5.465	7.4	1.963
Ethanol	64-17-5	55	44.862	41	10.876
Isopropyl alcohol(2-Propanol)	67-63-0	4.1	3.344	4.9	1.300
Acetone	67-64-1	12	9.788	14	3.714
Acetonitrile	75-05-8	2.1	1.713	ND	N/A
Methylene chloride	75-09-2	140 D	114.194	170 D	45.095
n-Hexane	110-54-3	2.5	2.039	3	0.796
2-Butanone (MEK)	78-93-3	ND	N/A	1.7	0.451
Ethyl acetate	141-78-6	2.9	2.365	3.6	0.955
Toluene	108-88-3	5.2	4.241	5.2	1.379

D – Result qualified due to dilution before analysis.
ND – Analyte Not Detected
Samples collected and analyzed according to EPA Method TO-15

Nine VOC's were detected in the 8-hour VOC sample collected at exhaust port 2 (**Table 1** of **Attachment 2**). **Table 5** below lists the analytical result for the concentration and the hourly mass emission rate. Note that this exhaust was not turned on to force air out of the building at any time during the sampling period and it functions solely as passive ventilation.

Table 5. Detected VOC Results in Exhaust Port 2

Analyte	CAS#	NEP-E2-071422	
		Result (µg/m³)	Mass Emission (mg/Hour)
Freon 12(Dichlorodifluoromethane)	75-71-8	2.5	0.062
Chloromethane	74-87-3	1.2	0.030
n-Butane	106-97-8	1.6	0.040
Ethanol	64-17-5	21	0.520
Isopropyl alcohol(2-Propanol)	67-63-0	3.6	0.089
Acetone	67-64-1	12	0.297
Acetonitrile	75-05-8	7.1	0.176
Methylene chloride	75-09-2	4.9	0.121
Ethyl acetate	141-78-6	3.4	0.084

D – Result qualified due to dilution before analysis.
ND – Analyte Not Detected
Samples collected and analyzed according to EPA Method TO-15

Twenty-seven VOC's were detected in the 8-hour VOC sample collected at exhaust port 3 (**Table 1** of **Attachment 2**). **Table 6** below lists the analytical result for the concentration and the hourly mass emission rate.

Table 6. Detected VOC Results in Exhaust Port 3

Analyte	CAS#	NEP-E3-071422	
		Result (µg/m³)	Mass Emission (mg/Hour)
Propylene	115-07-1	29	10.121
Chloromethane	74-87-3	1.4	0.489
Ethanol	64-17-5	92 D	32.109
Freon 11(Trichlorofluoromethane)	75-69-4	35	12.215
Isopropyl alcohol(2-Propanol)	67-63-0	81	28.270
Acetone	67-64-1	310 D	108.194
Acetonitrile	75-05-8	24	8.376
Tertiary butyl alcohol(TBA)	75-65-0	3.9	1.361
Methylene chloride	75-09-2	24	8.376
n-Hexane	110-54-3	11	3.839
Vinyl acetate	108-05-4	7.6	2.653
2-Butanone(MEK)	78-93-3	49	17.102
Ethyl acetate	141-78-6	6	2.094
Tetrahydrofuran	109-99-9	14	4.886
Cyclohexane	110-82-7	1.8	0.628
n-Heptane	142-82-5	37	12.913
Benzene	71-43-2	150 D	52.352
Trichloroethene	79-01-6	4	1.396
4-Methyl-2-pentanone(MIBK)	108-10-1	6.1	2.129
Toluene	108-88-3	100	34.901
2-Hexanone(MBK)	591-78-6	5.3	1.850
Tetrachloroethene	127-18-4	8.2	2.862
Ethylbenzene	100-41-4	8.6	3.001
Xylene (p,m)	1330-20-7	20	6.980
Xylene (Ortho)	95-47-6	6.5	2.269
Styrene	100-42-5	19	6.631
Isopropylbenzene (cumene)	98-82-8	13	4.537

D – Result qualified due to dilution before analysis.
mg/Hour – Milligram per Hour
ND – Analyte Not Detected
µg/m³ – Microgram per Cubic Meter

Samples collected and analyzed according to EPA Method TO-15

Mass emissions were calculated for each chemical detected in exhaust port samples based on the air flow rates and the concentrations of the detected chemicals. Hourly mass emission rates for VOCs are presented in **Table 7** of **Attachment 2.**

Formaldehyde

Formaldehyde was detected above laboratory method detection thresholds in each exhaust port. In exhaust ports E1 and E2 the concentration of formaldehyde at the exhaust port was greater after the production activity at the Site had ceased than during active production. This is in line with the community exposure samples, discussed later, that had detections only after production had ceased at the Site. See **Table 7** below for mass emission rates and time specific results.

Table 7. Formaldehyde at Exhaust Ports

Formaldehyde at Exhaust Ports			
Sample ID	**Sample Time**	**Sample Concentration (mg/m^3)**	**Mass Emission (mg/Hour)**
NEP-E1-071422-AF	1157-1520	<0.012	<22.517
NEP-E1-071422-BF	1528-1820	0.019	47.615
NEP-E1-071422-CF	1820-1930	<0.036	<195.912
NEP-E2-071422-AF	1200-1520	0.0046	0.26
NEP-E2-071422-BF	1531-1824	0.0057	0.373
NEP-E3-071422-AF	1203-1526	0.11	86.05
NEP-E3-071422-BF	1540-1831	<0.0055	<5.108

mg/Hour – Milligram per Hour
mg/m3 – Milligram per Cubic Meter
Samples collected and analyzed according to NIOSH Method 2016

Community Exposure

Three community exposure samples were collected from the area downwind of the Site in a semicircle pattern in order to assess the community exposure from Site manufacturing activities. During sampling, wind direction was towards the south-southeast and the downwind community exposure samples were collected south-southeast of the Site. A sample was also collected from an area upwind of the facility in the fenced yard to the north of the building in order to compare these results with community ambient air (**Figure 2** of **Attachment 1**). Community Exposure 1 (CE-1) was located downwind and to the east of the Site on Fenwick Street NE. CE-2 was located downwind and west of the Site on Capital Ave NE. CE-3 was located directly downwind of the Site on Fenwick Street NE. The upwind sample (CE4) was located in the furthest northwest corner of the Site's fenced yard. Two facilities north of the Site were observed performing activities in which VOCs are utilized during the sample period.

Cresol and phenol, total respirable dust, and total aerosol particles were only sampled at locations CE3 and CE4. None of these analytes were detected above the laboratory method detection thresholds at these locations. Quartz was slated to be analyzed from the total aerosol particles as a percentage of the total particles. However, because total aerosol particles were not detected above laboratory method detection thresholds, this analysis was not possible.

Formaldehyde

Formaldehyde was detected in CE-1, CE-3, and CE-4 at least once during the sampling period and was not detected in CE-2 at all. **Table 8** on the following page lists the results and run times for all community exposure formaldehyde samples. The downwind/east sample (CE-1) had the highest detection of formaldehyde of the community samples and was the only detect during production times. Following production, formaldehyde was detected for the remainder of the simulated 8-hour day at the directly downwind sample location (CE-3.) The formaldehyde community exposure samples are generally elevated compared to both the RSL and the ambient air concentration established by the 2019 EPA Air Toxics Screening Assessment. The Site is located within 2019 Air Toxics Screening Assessment study area 'District of Columbia tract 11001008803' that encompasses the approximately 0.44 square mile area between Florida Ave NE, New York Ave NE, and West Virginia Ave NE in Northeast Washington D.C.

Formaldehyde samples collected in the community exposure set all have laboratory method detection thresholds above the applicable EPA Residential RSL. Some non-detections may be below the RSL but appear to be in exceedance based on the laboratory detection thresholds.

Table 8. Formaldehyde in Community Exposure Samples

Formaldehyde at Community Samples		
Sample ID	**Sample Time**	**Sample Concentration (mg/m^3)**
NEP-CE1-071422-AF	1220-1507	0.01
NEP-CE1-071422-BF	1514-1758	<0.0038
NEP-CE1-071422-CF	1759-1949	<0.0057
NEP-CE2-071422-AF	1215-1450	<0.0046
NEP-CE2-071422-BF	1455-1827	<0.0034
NEP-CE2-071422-CF	1838-1946	<0.012
NEP-CE3-071422-AF	1224-1500	<0.0036
NEP-CE3-071422-BF	1503-1800	0.0033
NEP-CE3-071422-CF	1810-1947	0.0084
NEP-CE4-071422-AF	1204-1513	<0.0044
NEP-CE4-071422-BF	1514-1816	<0.0068
EPA Residential RSL[1]	N/A	0.00022
EPA 2019 Ambient Concentration[2]	N/A	0.0016

Shaded cells indicate exceedance of EPA Residential RSL
mg/Hour – Milligram per Hour
mg/m3 – Milligram per Cubic Meter
Samples collected and analyzed according to NIOSH Method 2016
[1] May 2022 EPA Regional Screening Level for Resident Air. THQ=0.1 and TR=$1x10^{-6}$
[2] EPA 2019 Air Toxics Screening Assessment ambient concentration for Washington, DC tract 11001008803.

Volatile Organic Compounds

Fourteen VOC constituents were detected in community exposure samples with exceedances of screening levels for five chemicals: acetonitrile, isopropyl alcohol (2-Propanol), vinyl acetate, benzene, and ethyl acetate. 2-Propanol, vinyl acetate, benzene, and ethyl acetate exceeded EPA Resident Air RSL at the community exposure sample downwind of the facility. Acetonitrile exceeded the EPA Residential Air RSL at the downwind locations east and west of the facility. A distillery was operating a short distance upwind of the Site during the sample period. This facility may have biased the samples at the Site by emitting various alcohols detected by the exterior VOC samples. **Table 9** on the following page lists the VOCs detected in all community exposure samples.

Table 9. Detected VOCs in Community Exposure Samples

Analyte	CAS#	EPA 2019 Ambient Air[1]	EPA Resident RSL[2]	CE-1	CE-2	CE-3	CE-4
Freon 12(Dichlorodifluoromethane)	75-71-8	N/A	10	ND	2.5	ND	ND
Chloromethane	74-87-3	N/A	9.4	1.2	1.2	1.2	1.2
n-Butane	106-97-8	N/A	N/A	1.9	2	2.1	4.7
Ethanol	64-17-5	N/A	N/A	24	16	17	580 D
Freon 11(Trichlorofluoromethane)	75-69-4	N/A	N/A	ND	ND	ND	3.9
Isopropyl alcohol (2-Propanol)	67-63-0	N/A	21	3.5	2.8	3.7	90
Acetone	67-64-1	N/A	N/A	9.4	9.1	1	33
Acetonitrile	75-05-8	0.0016	6.3	14	19	5.5	ND
Methylene chloride	75-09-2	0.57	63	2.4	ND	34	3.9
Vinyl acetate	108-05-4	0.0032	21	ND	ND	ND	64
2-Butanone(MEK)	78-93-3	N/A	520	ND	ND	ND	2.7
Ethyl acetate	141-78-6	$7.90x10^{-8}$	7.3	5.3	2.6	2.4	1900 D
Benzene	71-43-2	0.51	0.36	ND	ND	ND	12
Toluene	108-88-3	1.74	520	1.9	ND	2	41

All results presented in $\mu g/m^3$
D – Result qualified due to dilution before analysis.
ND – Analyte Not Detected
N/A – Not Available
Shaded Cells Indicate Exceedance of EPA Residential RSLs
Samples collected and analyzed according to EPA Method TO-15
[1] EPA 2019 Air Toxics Screening Assessment ambient air concentration for Washington, DC tract 11001008803
[2] May 2022 EPA Regional Screening Level for Resident Air. THQ=0.1 and TR=$1x10^{-6}$

Data Quality

Air sampling at the community exposure locations, production floor, and exhaust ports was completed in accordance with the methods described in the June 24, 2022, memorandum with the following exceptions:

- Prior to field activities, DOEE agreed to limit the 24-hour samples to only consist of VOC analysis due to issues with access to the facility after business hours that would be required in order to sample for cresol and phenol over that period.
- The personal air sampling pumps were calibrated to flow at approximately 0.10 L/min for aniline, cresol and phenol, and formaldehyde and sample media was switched out for new

media at approximately 4-hours to ensure the media did not exceed the maximum load described in the respective NIOSH Method.

- Cresol and Phenol samples were collected only during the post-production time frame between the hours of approximately 1730 and 1930 hours at the exhaust ports. Cresol and Phenol samples were collected at all other locations for the duration of the 8-hour sample time. Cresol and Phenol were not detected in the samples collected in the interior of the Site or as a part of the community exposure set during or after production at the Site. Based on the lack of detections in community exposure and indoor air samples, potential cresol and phenol exhaust from the Site missed during the production period does not constitute a data gap that indicates future sampling to evaluate risk to human health.
- The production floor samples were ended at approximately 2.5 hours of run time due to the completion of production activity and securing of the facility as National Engineering Products Staff left. Tetra tech could not access the facility to allow the sample run times to complete following staff departure.
- VOC samples PF-1 and PF-2 on the production floor required dilution with clean air by the analytical laboratory in order to meet the minimum volume requirements for analysis. The laboratory has qualified these results but determined no narrative was required.
- Quartz was slated to be analyzed from the total aerosol particles as a percentage of the total particles. However, because total aerosol particles were not detected above laboratory method detection thresholds in any sample, this analysis was not possible.
- Analytical results designated by the analytical laboratory with 'D' qualifiers indicate that the sample had to be diluted with certified clean air before analysis. Lab dilutions of air samples are necessary when there is not enough air in the sample to perform all analyses or when certain chemicals exceed the calibrated range of the instruments used to perform the analyses. These dilutions generally do not introduce any novel chemicals into the air sample but do require the analytical result to be a partially calculated result due to the introduction of additional volume. Chemical concentrations provided by the laboratory where dilution was required are considered reliable data for risk-based screening decisions.
- Formaldehyde samples collected in the community exposure set all have laboratory method detection thresholds above the applicable EPA Residential RSL. Some non-detections may be below the RSL but appear to be in exceedance based on the laboratory detection thresholds.

Applicability

While this assessment was conducted in general conformance with validated sampling and analytical methodologies, the results should not be construed as a constant state of chemical concentrations at the Site and in the community. Sampling design and implementation was directed at assessing and capturing a snapshot during a 'worst-case scenario' of Site production activities. The results from this sampling can be considered as typical when production occurs with similar ingredients and processes. This effort was conducted at a point in time in which specific ingredients would be utilized, mixed, and transferred. Further assessment should be conducted during non-production activities with differing wind patterns, weather, and off-Site

activities in order to gain a better understanding of the longer-term conditions present in the area.

Conclusions

Sampling design and implementation of this effort was directed at components identified from production constituents as described in provided SDS. Several compounds identified at the Site after completion of lab analyses were not listed in the SDS reviewed, including Freon 12, Isopropanol, Acetonitrile, Methylene Chloride, Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), Trichloroethene and Tetrachloroethene.

Cresol and phenol, respirable dust, total undifferentiated aerosol particles, and aniline were not detected above the laboratory method detection thresholds in samples during or after Copaltite production. These results indicate respirable dust, undifferentiated aerosol particles, and aniline emissions are not a concern at the Site or the community. However, considering the data gap associated with cresol/phenol sample deployment, further investigation of these compounds is warranted.

The formaldehyde laboratory method detection threshold in all samples was greater than the EPA Residential RSL (0.00022 mg/m^3) and the ambient concentration found in the area of the Site during the 2019 EPA Air Toxics Screening Assessment (0.0016 mg/m^3). As a result, even non-detected sample results exceed the EPA Residential RSL. Formaldehyde was detected in both the interior air samples at concentrations that exceed the EPA Industrial RSL of 0.00094 mg/m^3, these detections were 0.048 mg/m^3 at PF-1 and 0.039 mg/m^3 at PF-2. Although these concentrations exceed the EPA Industrial RSLs, they do not exceed the ACGIH TLV of 0.123 mg/m^3. Formaldehyde was detected at each exhaust port, the maximum concentration was 0.11 mg/m^3 at exhaust port 3. Formaldehyde was detected directly downwind of the facility in community exposure sample 3 (maximum concentration of 0.0084 mg/m^3) and east of the Site at community exposure sample 1 (maximum concentration of 0.010 mg/m^3). Formaldehyde was below laboratory method detection threshold in the community exposure sample upwind of the facility, indicating the Site is a potential source of formaldehyde detected in the downwind/crosswind samples. It's possible that other sources of formaldehyde are present in the area proximate to the Site contributing to the detections in community exposure samples, but these third-party contributions could have been obscured by the elevated laboratory method detection limits. More testing using a method with a lower laboratory detection threshold is recommended to identify sources of formaldehyde in the community.

Several detections of isopropanol, ethanol, ethyl acetate, and vinyl acetate were reported across community exposure samples at levels greater than those detected at the Site indoor air samples and exhaust ports. The isopropanol, ethyl acetate, and vinyl acetate results that exceeded EPA's RSL for Resident Air in upwind samples were also detected in the community exposure samples downwind of the facility at lower concentrations. This indicates contributions of off-Site sources to the detections of these chemicals found in the downwind samples and that the Site is not the primary source of these detections. A distillery and automotive repair facility were operating a short distance upwind of the Site that may have contributed to the detections in the samples by emitting alcohols, other volatiles and hydrocarbons that were captured by the exterior VOC

samples. Additional community exposure sampling may be required to locate contributing sources for these chemicals in community ambient air.

BTEX compounds were detected in the hood ventilator exhaust sample (E3, closes to Fenwick St NE) and do not have corresponding interior air (production floor) detections, likely indicating these compounds were related to a process or petroleum-based chemicals stored or utilized nearby this exhaust. The community exposure sample upwind of the Site is the only community sample in which BTEX compound (benzene) exceeded the EPA Resident Air RSLs, indicating a non-Site related source; however, the Site's contribution of BTEX concentrations to the community has not been determined considering the highest concentrations of benzene was observed at Exhaust Point E3. Potential sources of the BTEX detection in the community could be leaking petroleum storage tanks or combustion engine use, such as vehicle traffic and the use of gasoline powered landscaping equipment observed along Fenwick Street NE on the day of sampling.

Methylene Chloride was detected in indoor Site air samples at levels that did not exceed industrial RSLs guidelines (260 µg/m^3). The highest concentration of Methylene Chloride detected in the interior of the Site was 190 µg/m^3. Acetonitrile was detected at 38 µg/m^3 in indoor air which exceeds the industrial RSL of 26 µg/m^3. Acetone, for which there are no RSLs, was also detected in indoor air samples. The maximum concentration detected in the indoor air samples was 18 µg/m^3 at PF-2. Similar concentrations of these chemicals were also detected in the exhaust port samples. Acetonitrile was detected and exceeded EPA Resident Air RSLs in two of the community exposure samples (CE-1 and CE-2), at 14 µg/m^3 and 19 µg/m^3 respectively. Methylene Chloride was detected in community samples but did not exceed EPA Resident Air RSLs. Acetone was detected in community samples, however there are no applicable screening criteria for this analyte for community exposure samples. None of these three compounds were identified in the review of ingredient safety data sheets prior to sampling. The sample location and concentrations of Acetonitrile, Methylene Chloride, and Acetone, as compared with the upwind results, indicate the Site is likely the source of these compounds found in the community exposure samples. Further investigation and sampling are necessary to locate the source of these chemicals at the Site and understanding of what process is contributing to those emissions.

Total mass emitted during production over time is provided in the tables and can be extrapolated to the frequency and duration of the Site's planned Copaltite production.

Attachments

Attachment 1: Figures
- Figure 1 – Site Location
- Figure 2 – Site Features and Sample Locations

Attachment 2: Tables
- Table 1 – Detected VOC Results
- Table 2 – Aniline Analytical Results
- Table 3 – Total Undifferentiated Aerosol Particles Analytical Results
- Table 4 – Respirable Dust Analytical Results
- Table 5 – Cresol and Phenol Analytical Results

References:

EPA. 2022. Regional Screening Level (RSL) Tables (TR = 1E-6, HI = 0.1) May 2022 (Revised). www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

EPA. 2019. Air Toxics Screening Assessment. https://www.epa.gov/AirToxScreen/2019-airtoxscreen

OSHA. 2021. OSHA Occupational Chemical Database; PARTICULATES NOT OTHERWISE REGULATED, TOTAL AND RESPIRABLE DUST (PNOR). https://www.osha.gov/chemicaldata/801

OSHA. 2021. OSHA Occupational Chemical Database; FORMALDEHYDE. https://www.osha.gov/chemicaldata/377

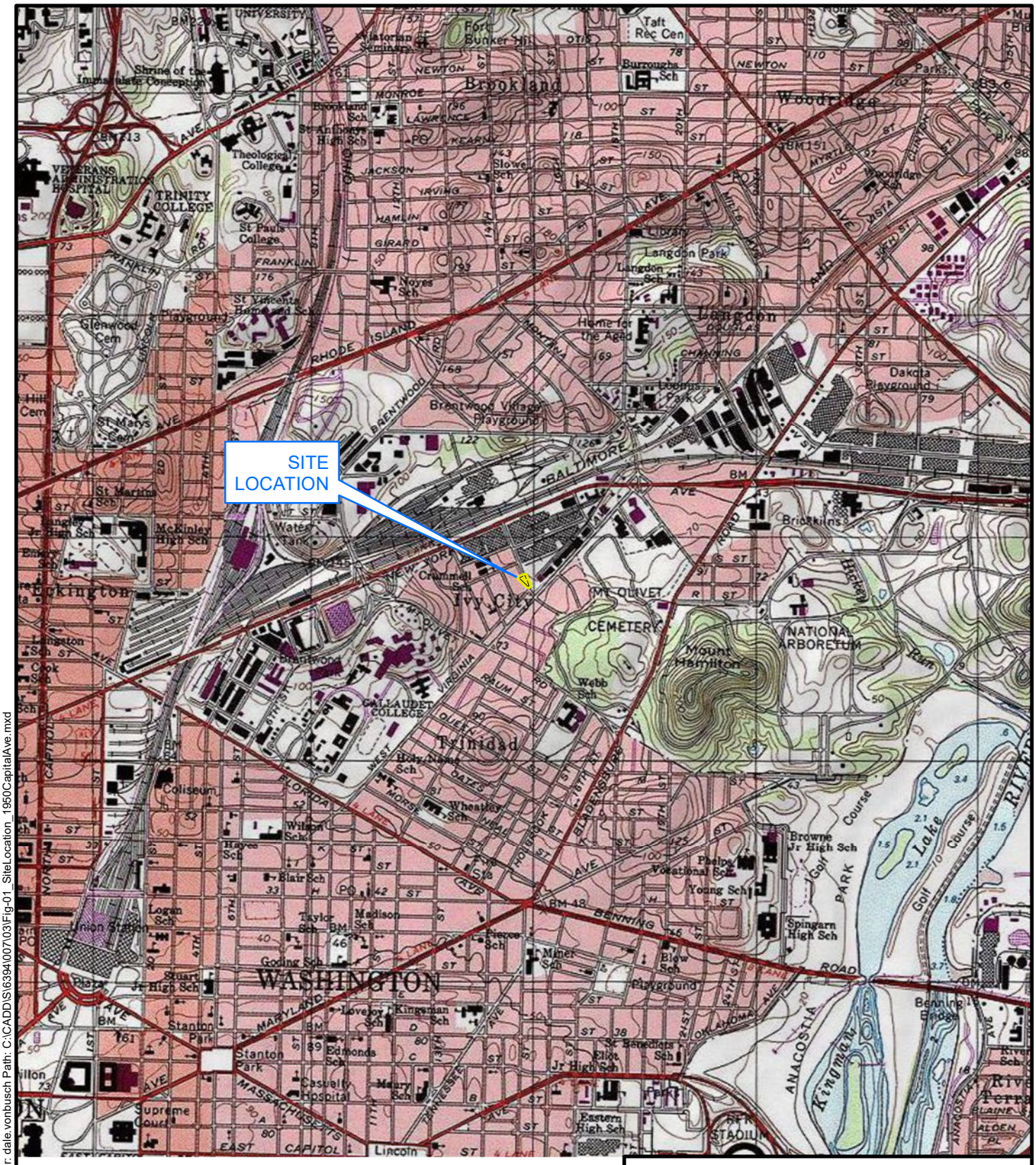
OSHA. 2022. OSHA Occupational Chemical Database; ACETONE. https://www.osha.gov/chemicaldata/476

OSHA. 2022. OSHA Occupational Chemical Database; ACETONITRILE https://www.osha.gov/chemicaldata/569

OSHA. 2022. OSHA Occupational Chemical Database; METHYLENE CHLORIDE (DICHLOROMETHANE) https://www.osha.gov/chemicaldata/572

TETRA TECH

Attachment 1: Figures



Legend

Approximate Property Boundary

N
W E
S

0 1,000 2,000
Feet

SOURCE: MODIFIED FROM USGS TOPOGRAPHIC MAPS; WASHINGTON WEST. DC 1984 AND WASHINGTON WEST, DC 1983.

NATIONAL ENGINEERING PRODUCTS
1950 CAPITOL AVENUE NE
WASHINGTON, DC

FIGURE 1
SITE LOCATION MAP

TETRA TECH

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Legend

- 1 Exhaust Port (E1)
- 2 Exhaust Port (E2)
- 3 Hood Ventilator (E3)
- K Kiln
- M Mixer
- P Product Vats
- 1 PF-1
- 2 PF-2
- Sample Location
- Approximate Property Boundary
- Drum Storage Area
- Garage Door

0 20 40
Feet

NATIONAL ENGINEERING PRODUCTS
1950 CAPITOL AVENUE NE
WASHINGTON, DC

FIGURE 2
SAMPLE LOCATIONS

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TETRA TECH

Attachment 2: Tables

Table 1a. Detected VOC Analytical Results

Sample ID	Analyte / CAS# / Location	Propylene	Freon 12(Dichlorodifluoromethane)	Chloromethane	n-Butane	Ethanol	Freon 11(Trichlorofluoromethane)	Isopropyl alcohol(2-Propanol)	Acetone	Acetonitrile	Tertiary butyl alcohol(TBA)	Methylene chloride	n-Hexane	Vinyl acetate	2-Butanone(MEK)	Ethyl acetate
	CAS#	115-07-1	75-71-8	74-87-3	106-97-8	64-17-5	75-69-4	67-63-0	67-64-1	75-05-8	75-65-0	75-09-2	110-54-3	108-05-4	78-93-3	141-78-6
NEP-CE1-071422	Community Exposure Downwind East	ND	ND	1.2	1.9	24	ND	3.5	9.4	14	ND	2.4	ND	ND	ND	5.3
NEP-CE2-071422	Community Exposure Downwind West	ND	2.5	1.2	2	16	ND	2.8	9.1	19	ND	ND	ND	ND	ND	2.6
NEP-CE3-071422	Community Exposure Downwind	ND	ND	1.2	2.1	17	ND	3.7	11	5.5	ND	34	ND	ND	ND	2.4
NEP-CE4-071422	Community Exposure Upwind	ND	ND	1.2	4.7	580 D	3.9	90	33	ND	ND	3.9	ND	64	2.7	1900 D
NEP-E1-071422	Mixer Exhaust**	ND	ND	1.2	6.7	55	ND	4.1	12	2.1	ND	140 D	2.5	ND	ND	2.9
NEP-E1-071422-24	Mixer Exhaust 24hr Sample**	ND	2.6	1.2	7.4	41	ND	4.9	14	ND	ND	170 D	3	ND	1.7	3.6
NEP-E2-071422	Kiln Exhaust**	ND	2.5	1.2	1.6	21	ND	3.6	12	7.1	ND	4.9	ND	ND	ND	3.4
NEP-E3-071422	Hood Ventilator Exhaust**	29	ND	1.4	ND	92 D	35	81	310 D	24	3.9	24	11	7.6	49	6
EPA RSL [1]	Regional Screening Levels for Residents	310	10	9.4	N/A	N/A	N/A	21	N/A	6.3	520	63	73	21	520	7.3
2019 EPA Air Tox [2]	Ambient Air Concentrations from D.C. Tract 11001008803	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0016	N/A	0.57	N/A	0.0032	N/A	N/A

Notes:
Only detected data is presented
All results presented in µg/m^3
Shaded cells indicate and exceedance of EPA Residenital RSLs in Community Exposure samples.

*The term VOC here is used to designate Volatile Organic Compounds as it pertains to analytes identified in EPA method TO-15 and may include chemicals in addition to those defined by the same term in District of Columbia Municipal Regulations 20 DCMR 199.

** Samples collected at the exhaust ports of the Site are not representative of realistic exposure residential receptors and EPA Regional Screening Levels for Residents are not applicable to these samples.

1. EPA Region 3 Air Regional Screening Levels for Residents, TR=1x10^{-6}, THQ=0.1, November 2022

2. EPA 2019 Air Toxics Screening Assessment ambient concentration for Washington, DC tract 11001008803.

Abbreviations:
CAS - Chemical Abstract Service Registry Number

D - Compound reported from additional diluted analysis
E - Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute
EPA - United States Environmental Protection Agency
N/A - Screening Levels Not Available
ND - Analyte not detected
µg/m3 - Micrograms per cubic meter

Table 1a. Detected VOC Analytical Results

Sample ID	Analyte / CAS# / Location	Tetrahydrofuran	Cyclohexane	n-Heptane	Benzene	Trichloroethene	4-Methyl-2-pentanone(MIBK)	Toluene	2-Hexanone(MBK)	Tetrachloroethene	Ethylbenzene	Xylene (p,m)	Xylene (Ortho)	Styrene	Isopropylbenzene (cumene)
	CAS#	109-99-9	110-82-7	142-82-5	71-43-2	79-01-6	108-10-1	108-88-3	591-78-6	127-18-4	100-41-4	1330-20-7	95-47-6	100-42-5	98-82-8
NEP-CE1-071422	Community Exposure Downwind East	ND	ND	ND	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ND	ND
NEP-CE2-071422	Community Exposure Downwind West	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NEP-CE3-071422	Community Exposure Downwind	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND
NEP-CE4-071422	Community Exposure Upwind	ND	ND	ND	12	ND	ND	41	ND	ND	ND	ND	ND	ND	ND
NEP-E1-071422	Mixer Exhaust**	ND	ND	ND	ND	ND	ND	5.2	ND	ND	ND	ND	ND	ND	ND
NEP-E1-071422-24	Mixer Exhaust 24hr Sample**	ND	ND	ND	ND	ND	ND	5.2	ND	ND	ND	ND	ND	ND	ND
NEP-E2-071422	Kiln Exhaust**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NEP-E3-071422	Hood Ventilator Exhaust**	14	1.8	37	150 D	4	6.1	100	5.3	8.2	8.6	20	6.5	19	13
EPA RSL [1]	Regional Screening Levels for Residents	210	630	42	0.36	0.21	310	520	3.1	4.2	1.1	10	10	100	42
2019 EPA Air Tox [2]	Ambient Air Concentrations from D.C. Tract 11001008803	N/A	N/A	N/A	0.51	0.0057	0.0082	1.74	N/A	0.047	0.27	1.05	1.05	0.0016	0.0057

Notes:
Only detected data is presented
All results presented in µg/m^3
Shaded cells indicate and exceedance of EPA Residenital RSLs in Community Exposure sampl

*The term VOC here is used to designate Volatile Organic Compounds as it pertains to analytes identified in EPA method TO-15 and may include chemicals in addition to those defined by the same term in District of Columbia Municipal Regulations 20 DCMR 199.

** Samples collected at the exhaust ports of the Site are not representative of realistic exposure residential receptors and EPA Regional Screening Levels for Residents are not applicable to these samples.

1. EPA Region 3 Air Regional Screening Levels for Residents, TR=1x10^{-6}, THQ=0.1, November 2022

2. EPA 2019 Air Toxics Screening Assessment ambient concentration for Washington, DC tract 11001008803.

Abbreviations:
CAS - Chemical Abstract Service Registry Number

D - Compound reported from additional diluted analysis
E - Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute
EPA - United States Environmental Protection Agency
N/A - Screening Levels Not Available
ND - Analyte not detected
µg/m3 - Micrograms per cubic meter

Table 1b. Detected VOC Analytical Results

Sample ID	Analyte / CAS# / Location	Propylene	Freon 12(Dichlorodifluoromethane)	Chloromethane	n-Butane	Ethanol	Freon 11(Trichlorofluoromethane)	Isopropyl alcohol(2-Propanol)	Acetone	Acetonitrile	Tertiary butyl alcohol(TBA)	Methylene chloride	n-Hexane	Vinyl acetate
	CAS#	115-07-1	75-71-8	74-87-3	106-97-8	64-17-5	75-69-4	67-63-0	67-64-1	75-05-8	75-65-0	75-09-2	110-54-3	108-05-4
NEP-PF1-071422	Production Floor Mixing Area	ND	ND	**1.1**	**5.8**	**77 D**	ND	**8.5**	**17**	**11**	ND	**160 D**	**2.3**	ND
NEP-PF2-071422	Production Floor Near Offices	ND	**13**	ND	**7.9**	**220 E**	ND	**11**	**18**	**38**	ND	**190**	ND	ND
EPA RSL [1]	Regional Screening Levels for an Industrial Worker	1300	44	39	N/A	N/A	N/A	88	N/A	26	2200	260	310	88

Notes:
Only Detected Data is Presented
All results presented in µg/m^3
Shaded cells indicate and exceedance of RSL or RBSL

*The term VOC here is used to designate Volatile Organic Compounds as it pertains to analytes identified in EPA method TO-15 and may include chemicals in addition to those defined by the same term in District of Columbia Municipal Regulations 20 DCMR 199.
1. EPA Region 3 Air Regional Screening Levels for Industrial Workers,
TR=1x10^{-6}, THQ=0.1, May 2022

Abbreviations:
CAS - Chemical Abstract Service Registry Number
D - Compound reported from additional diluted analysis
E - Estimated value exceeding upper calibration range of
EPA - United States Environmental Protection Agency
N/A - Screening Levels Not Available
ND - Analyte not detected
µg/m3 - Micrograms per cubic meter

Table 1b. Detected VOC Analytical Results

Sample ID	Analyte / CAS# / Location	2-Butanone(MEK)	Ethyl acetate	Tetrahydrofuran	Cyclohexane	n-Heptane	Benzene	Trichloroethene	4-Methyl-2-pentanone(MIBK)	Toluene	2-Hexanone(MBK)	Tetrachloroethene	Ethylbenzene	Xylene (p,m)	Xylene (Ortho)	Styrene	Isopropylbenzene (cumene)
	CAS#	78-93-3	141-78-6	109-99-9	110-82-7	142-82-5	71-43-2	79-01-6	108-10-1	108-88-3	591-78-6	127-18-4	100-41-4	1330-20-7	95-47-6	100-42-5	98-82-8
NEP-PF1-071422	Production Floor Mixing Area	**1.5**	**4.5**	ND	ND	ND	ND	ND	ND	**6.2**	ND	ND	ND	ND	ND	ND	ND
NEP-PF2-071422	Production Floor Near Offices	ND	**6.7**	ND	ND	ND	ND	ND	ND	**5.9**	ND	ND	ND	ND	ND	ND	ND
EPA RSL [1]	Regional Screening Levels for an Industrial Worker	2200	31	880	2600	180	1.6	0.88	1300	2200	13	18	4.9	44	44	440	180

Notes:
Only Detected Data is Presented
All results presented in µg/m^3
Shaded cells indicate and exceedance of RSL or RBSL

*The term VOC here is used to designate Volatile Organic Compounds as it pertains to analytes identified in EPA method TO-15 and may include chemicals in addition to those defined by the same term in District of Columbia Municipal Regulations 20 DCMR 199.
1. EPA Region 3 Air Regional Screening Levels for Industrial Workers,
TR=1x10^{-6}, THQ=0.1, May 2022

Abbreviations:
CAS - Chemical Abstract Service Registry Number
D - Compound reported from additional diluted analysis
E - Estimated value exceeding upper calibration range of
EPA - United States Environmental Protection Agency
N/A - Screening Levels Not Available
ND - Analyte not detected
µg/m3 - Micrograms per cubic meter

Table 2. Aniline Analytical Results

Aniline			
Sample ID	**Result µg/sample**	**Result mg/m^3**	**Mass Emission (mg/Hr)**
NEP-FB-071422-AN1	<0.10	N/A	N/A
NEP-FB-071422-AN2	<0.10	N/A	N/A
NEP-E1-071422-A	<0.10	<0.0030	<2.447
NEP-E1-071422-B	<0.10	<0.0030	<2.447
NEP-E2-071422	<0.10	<0.0031	<0.074
NEP-E3-071422	<0.10	<0.0032	<1.066
NEP-CE3-071422	<0.10	<0.0028	N/A
NEP-CE4-071422	<0.10	<0.0031	N/A

Abbreviations:

N/A - Not Applicable

ND - Analyte not detected

mg - Milligrams

mg/m3 - Milligrams per cubic meter

µg - Micrograms

Table 3. Total Undifferentiated Aerosol Particles Analytical Results

Total Undifferentiated Aerosol Particles			
Sample ID	**Result mg/sample**	**Result mg/m^3**	**Mass Emission (mg/Hour)**
NEP-E1-TOT-071422	<0.050	<0.043	<35.074
NEP-E2-TOT-071422	<0.050	<0.044	<1.089
NEP-E3-TOT-071422	<0.050	<0.045	<15.987
NEP-CE3-TOT-071422	<0.050	<0.045	N/A
NEP-CE4-TOT-071422	<0.050	<0.043	N/A
NEP-PF1-TOT-071422	<0.050	<0.14	N/A
NEP-FB-TOT-071422	<0.050	N/A	N/A

Abbreviations:

N/A - Not Applicable

ND - Analyte not detected

mg - Milligrams

mg/m3 - Milligrams per cubic meter

Table 4. Respirable Dust Analytical Results

Total Respirable Dust				
Sample ID	**Result mg/sample**	**Result mg/m^3**	**% Quartz**	**Mass Emission (mg/Hour)**
NEP-E1-RES-071422	<0.050	<0.043	N/A	<35.074
NEP-E2-RES-071422	<0.050	<0.044	N/A	<1.089
NEP-E3-RES-071422	<0.050	<0.045	N/A	<15.987
NEP-CE3-RES-071422	<0.050	<0.045	N/A	N/A
NEP-CE4-RES-071422	<0.050	<0.043	N/A	N/A
NEP-PF1-RES-071422	<0.050	<0.14	N/A	N/A
NEP-FB-RES-071422	<0.050	N/A	N/A	N/A

Abbreviations:

N/A - Not Applicable

ND - Analyte not detected

mg - Milligrams

mg/m3 - Milligrams per cubic meter

Table 5. Cresol and Phenol Analytical Results

Sample ID	Analyte	Sample Weight (mg)	Sample Conc. (mg/m^3)	Mass Emission (mg/Hour)
NEP-FB-071422- CP1	o-Cresol	<0.010	N/A	N/A
	m,p-Cresol	<0.010	N/A	N/A
	Phenol	<0.010	N/A	N/A
NEP-FB-071422- CP2	o-Cresol	<0.010	N/A	N/A
	m,p-Cresol	<0.010	N/A	N/A
	Phenol	<0.010	N/A	N/A
NEP-PF1-071422- CP	o-Cresol	<0.010	<1.0	N/A
	m,p-Cresol	<0.010	<1.0	N/A
	Phenol	<0.010	<1.0	N/A
NEP-CE3-071422- CPA	o-Cresol	<0.010	<0.40	N/A
	m,p-Cresol	<0.010	<0.40	N/A
	Phenol	<0.010	<0.40	N/A
NEP-CE3-071422- CPB	o-Cresol	<0.010	<0.98	N/A
	m,p-Cresol	<0.010	<0.98	N/A
	Phenol	<0.010	<0.98	N/A
NEP-CE4-071422- CPA	o-Cresol	<0.010	<0.42	N/A
	m,p-Cresol	<0.010	<0.42	N/A
	Phenol	<0.010	<0.42	N/A
NEP-CE4-071422- CPB	o-Cresol	<0.010	<0.71	N/A
	m,p-Cresol	<0.010	<0.71	N/A
	Phenol	<0.010	<0.71	N/A
NEP-E1-071422-CP	o-Cresol	<0.010	<1.1	<310.377
	m,p-Cresol	<0.010	<1.1	<310.377
	Phenol	<0.010	<1.1	<310.377
NEP-E2-071422-CP	o-Cresol	<0.010	<1.1	<98.01
	m,p-Cresol	<0.010	<1.1	<98.01
	Phenol	<0.010	<1.1	<98.01
NEP-E3-071422-CP	o-Cresol	<0.010	<1.2	<1467.907
	m,p-Cresol	<0.010	<1.2	<1467.907
	Phenol	<0.010	<1.2	<1467.907

Abbreviations:

N/A - Not Applicable

ND - Analyte not detected

mg - Milligrams

mg/m3 - Milligrams per cubic meter

Table 6. Formaldehyde Analytical Results

Formaldehyde			
Sample ID	**Sample Weight (µg)**	**Sample Concentration (mg/m3)**	**Mass Emission (mg/Hour)**
NEP-E1-071422-AF	<0.050	<0.012	<22.517
NEP-E1-071422-BF	0.067	0.019	47.615
NEP-E1-071422-CF	<0.050	<0.036	<195.912
NEP-E2-071422-AF	0.055	0.0046	0.26
NEP-E2-071422-BF	0.059	0.0057	0.373
NEP-E3-071422-AF	1.6	0.11	86.05
NEP-E3-071422-BF	<0.050	<0.0055	<5.108
NEP-PF1-071422-F	0.68	0.048	N/A
NEP-PF2-071422-F	0.51	0.039	N/A
NEP-CE1-071422-AF	0.057	0.01	N/A
NEP-CE1-071422-BF	<0.050	<0.0038	N/A
NEP-CE1-071422-CF	<0.050	<0.0057	N/A
NEP-CE2-071422-AF	<0.050	<0.0046	N/A
NEP-CE2-071422-BF	<0.050	<0.0034	N/A
NEP-CE2-071422-CF	<0.050	<0.012	N/A
NEP-CE3-071422-AF	<0.050	<0.0036	N/A
NEP-CE3-071422-BF	0.052	0.0033	N/A
NEP-CE3-071422-CF	0.07	0.0084	N/A
NEP-CE4-071422-AF	<0.050	<0.0044	N/A
NEP-CE4-071422-BF	<0.050	<0.0068	N/A
NEP-FB-071422-F1	<0.050	N/A	N/A
ACGIH TLV	N/A	0.123	N/A
EPA Industrial RSL	N/A	0.00094	N/A

Abbreviations:

N/A - Not Applicable

ND - Analyte not detected

mg - Milligrams

mg/m3 - Milligrams per cubic meter

µg - Micrograms

Table 7. NEP Exhaust Port Mass Emission

Mass Emissions (mg per Hour)					
Analyte	**CAS#**	**NEP-E1-071422**	**NEP-E1-071422-24**	**NEP-E2-071422**	**NEP-E3-071422**
Propylene	115-07-1	ND	ND	ND	10.121
Freon 12(Dichlorodifluoromethane)	75-71-8	ND	0.690	0.062	ND
Chloromethane	74-87-3	0.979	0.318	0.030	0.489
n-Butane	106-97-8	5.465	1.963	0.040	ND
Ethanol	64-17-5	44.862	10.876	0.520	32.109 D
Freon 11(Trichlorofluoromethane)	75-69-4	ND	ND	ND	12.215
Isopropyl alcohol(2-Propanol)	67-63-0	3.344	1.300	0.089	28.270
Acetone	67-64-1	9.788	3.714	0.297	108.194 D
Acetonitrile	75-05-8	1.713	ND	0.176	8.376
Tertiary butyl alcohol(TBA)	75-65-0	ND	ND	ND	1.361
Methylene chloride	75-09-2	114.194 D	45.095 D	0.121	8.376
n-Hexane	110-54-3	2.039	0.796	ND	3.839
Vinyl acetate	108-05-4	ND	ND	ND	2.653
2-Butanone(MEK)	78-93-3	ND	0.451	ND	17.102
Ethyl acetate	141-78-6	2.365	0.955	0.084	2.094
Tetrahydrofuran	109-99-9	ND	ND	ND	4.886
Cyclohexane	110-82-7	ND	ND	ND	0.628
n-Heptane	142-82-5	ND	ND	ND	12.913
Benzene	71-43-2	ND	ND	ND	52.352
Trichloroethene	79-01-6	ND	ND	ND	1.396
4-Methyl-2-pentanone(MIBK)	108-10-1	ND	ND	ND	2.129
Toluene	108-88-3	4.241	1.379	ND	34.901
2-Hexanone(MBK)	591-78-6	ND	ND	ND	1.850
Tetrachloroethene	127-18-4	ND	ND	ND	2.862
Ethylbenzene	100-41-4	ND	ND	ND	3.001
Xylene (p,m)	1330-20-7	ND	ND	ND	6.980
Xylene (Ortho)	95-47-6	ND	ND	ND	2.269
Styrene	100-42-5	ND	ND	ND	6.631
Isopropylbenzene (cumene)	98-82-8	ND	ND	ND	4.537

Abbreviations:

N/A - Not Applicable

ND - Analyte not detected

mg - Milligrams

D - Analytical lab result qualified because of dilution

Table 8. Wind Speed and Direction on July 14, 2022

Time	Wind	Speed	Gust
7:59 AM	NNW	0.6 mph	1.9 mph
8:04 AM	NW	0.7 mph	1.9 mph
8:09 AM	NNW	1.2 mph	3.1 mph
8:14 AM	NNW	1.2 mph	2.3 mph
8:19 AM	NNW	1.1 mph	3.1 mph
8:24 AM	NNW	1.2 mph	3.4 mph
8:29 AM	NNW	0.7 mph	2.5 mph
8:34 AM	NNW	0.7 mph	2.7 mph
8:39 AM	NNW	1.2 mph	2.5 mph
8:44 AM	NNW	1.7 mph	2.9 mph
8:49 AM	NNW	1.4 mph	3.1 mph
8:54 AM	NNW	1.8 mph	3.6 mph
8:59 AM	NNW	1.7 mph	3.3 mph
9:04 AM	NW	1.1 mph	3.4 mph
9:09 AM	NW	1.1 mph	2.5 mph
9:14 AM	NNW	1.3 mph	2.6 mph
9:19 AM	NNW	1.8 mph	3.7 mph
9:24 AM	NNW	1.1 mph	3.0 mph
9:29 AM	NW	1.1 mph	3.0 mph
9:34 AM	NW	1.3 mph	2.3 mph
9:39 AM	NNW	2.7 mph	4.2 mph
9:44 AM	NNW	1.8 mph	3.6 mph
9:49 AM	NNW	1.5 mph	3.3 mph
9:54 AM	NNW	2.2 mph	4.0 mph
9:59 AM	NNW	2.1 mph	4.7 mph
10:04 AM	NNW	1.5 mph	3.3 mph
10:09 AM	NNW	1.7 mph	3.7 mph
10:14 AM	NNW	1.8 mph	3.8 mph
10:19 AM	NW	2.1 mph	5.1 mph
10:24 AM	NNW	2.2 mph	3.9 mph
10:29 AM		2.3 mph	4.6 mph
10:34 AM	NNW	1.9 mph	4.5 mph
10:39 AM	NNW	1.4 mph	3.1 mph
10:44 AM	NNW	1.7 mph	3.6 mph
10:49 AM	NNW	2.6 mph	4.4 mph
10:54 AM	NNW	2.6 mph	5.1 mph
10:59 AM	WNW	2.8 mph	5.0 mph
11:04 AM	NNW	2.7 mph	6.1 mph
11:09 AM	NNW	3.1 mph	6.0 mph
11:14 AM	NNW	2.9 mph	5.6 mph
11:19 AM	NW	1.9 mph	4.8 mph
11:24 AM	NNW	2.4 mph	6.0 mph
11:29 AM	West	1.6 mph	4.2 mph
11:34 AM	South	2.7 mph	6.2 mph
11:39 AM	WNW	1.3 mph	4.3 mph
11:44 AM	NNW	2.0 mph	5.1 mph
11:49 AM	South	2.7 mph	7.1 mph
11:54 AM	NNW	1.9 mph	5.9 mph
11:59 AM	NW	1.6 mph	4.8 mph
12:04 PM	NNW	2.6 mph	5.2 mph
12:09 PM	NNW	1.9 mph	3.9 mph
12:14 PM	NNW	1.7 mph	3.9 mph
12:19 PM	SSW	2.5 mph	5.6 mph
12:24 PM	SSW	3.1 mph	6.7 mph
12:29 PM	West	2.7 mph	6.1 mph
12:34 PM	WNW	2.3 mph	5.1 mph
12:39 PM	NNE	2.2 mph	5.2 mph
12:44 PM	NNW	3.0 mph	6.2 mph
12:49 PM	SSW	3.3 mph	5.6 mph
12:54 PM	WSW	2.4 mph	5.4 mph
12:59 PM	NE	3.8 mph	9.4 mph
1:04 PM	SSW	3.1 mph	7.2 mph
1:09 PM	SSW	2.9 mph	5.8 mph
1:14 PM	NW	1.7 mph	4.5 mph
1:19 PM	West	2.3 mph	4.5 mph
1:24 PM	NW	2.6 mph	5.4 mph
1:29 PM	NW	2.6 mph	5.5 mph
1:34 PM	NW	2.4 mph	4.4 mph
1:39 PM	NNE	3.7 mph	7.8 mph
1:44 PM	NNW	3.0 mph	6.4 mph
1:49 PM	ESE	2.4 mph	6.0 mph
1:54 PM	NNW	3.0 mph	6.8 mph
1:59 PM	NNW	3.2 mph	7.8 mph
2:04 PM		2.5 mph	5.8 mph
2:09 PM	NNW	1.6 mph	4.6 mph
2:14 PM		3.2 mph	5.7 mph
2:19 PM	NNW	3.3 mph	6.6 mph
2:24 PM	NW	2.9 mph	7.1 mph
2:29 PM	NNW	2.8 mph	7.0 mph
2:34 PM	NNW	1.9 mph	5.4 mph
2:39 PM	NW	2.0 mph	5.3 mph
2:44 PM		3.1 mph	7.0 mph
2:49 PM		1.5 mph	3.6 mph
2:54 PM	NNW	3.1 mph	6.4 mph
2:59 PM	NNW	3.3 mph	5.9 mph
3:04 PM		3.6 mph	7.5 mph
3:09 PM		3.1 mph	6.3 mph
3:14 PM	NNW	3.1 mph	6.1 mph
3:19 PM	NNW	2.7 mph	6.6 mph
3:24 PM	NNW	2.9 mph	6.4 mph
3:29 PM		2.3 mph	4.9 mph
3:34 PM	WNW	2.2 mph	5.6 mph
3:39 PM	SE	1.6 mph	4.9 mph
3:44 PM	SW	2.6 mph	6.5 mph
3:49 PM	NW	2.5 mph	5.7 mph
3:54 PM		3.3 mph	5.9 mph
3:59 PM	NNW	2.5 mph	5.1 mph
4:04 PM	West	2.2 mph	4.8 mph
4:09 PM	NNW	2.5 mph	5.4 mph
4:14 PM	NNW	1.3 mph	3.2 mph
4:19 PM	West	1.6 mph	3.2 mph
4:24 PM	SSW	2.0 mph	4.6 mph
4:29 PM	NNW	2.2 mph	4.5 mph
4:34 PM	NNW	2.4 mph	5.0 mph
4:39 PM	NNW	2.2 mph	5.3 mph
4:44 PM	NW	1.4 mph	3.3 mph
4:49 PM	NNW	1.7 mph	3.5 mph
4:54 PM	NNW	2.1 mph	4.3 mph
4:59 PM	NNW	2.0 mph	3.7 mph
5:04 PM	NNW	2.9 mph	5.8 mph
5:09 PM	NW	0.9 mph	3.0 mph
5:14 PM		1.8 mph	3.7 mph
5:19 PM	NNW	2.5 mph	5.0 mph
5:24 PM	NNW	1.7 mph	3.0 mph
5:29 PM	NNW	2.2 mph	4.0 mph
5:34 PM	NNW	1.9 mph	4.8 mph
5:39 PM	NW	1.8 mph	4.0 mph
5:44 PM	NW	1.7 mph	3.1 mph
5:49 PM	South	2.7 mph	4.9 mph
5:54 PM	South	5.0 mph	9.2 mph
5:59 PM	South	4.8 mph	8.8 mph
6:04 PM	South	3.7 mph	8.2 mph
6:09 PM	South	3.6 mph	7.1 mph
6:14 PM	South	3.3 mph	6.6 mph
6:19 PM	SSW	3.6 mph	6.2 mph
6:24 PM	South	3.3 mph	6.1 mph
6:29 PM	South	3.1 mph	4.7 mph
6:34 PM	South	3.1 mph	4.8 mph
6:39 PM	South	2.8 mph	4.7 mph
6:44 PM	SSW	2.2 mph	4.6 mph
6:49 PM	SSW	1.6 mph	3.5 mph
6:54 PM	South	2.1 mph	5.1 mph
6:59 PM	SSW	1.3 mph	2.7 mph
7:04 PM	SSW	2.1 mph	3.6 mph
7:09 PM	SSE	2.9 mph	4.1 mph
7:14 PM	South	2.5 mph	5.0 mph
7:19 PM	South	2.1 mph	3.7 mph
7:24 PM	SSW	1.6 mph	3.3 mph
7:29 PM	West	0.4 mph	1.5 mph
7:34 PM	SSW	1.5 mph	2.3 mph
7:39 PM	South	2.3 mph	3.6 mph
7:44 PM	SSW	2.4 mph	4.3 mph
7:49 PM	SSW	1.5 mph	3.0 mph
7:54 PM	South	2.0 mph	3.5 mph
7:59 PM	WSW	0.8 mph	1.8 mph

Abbreviations:
ESE - East-Southeast
NE - Northeast
NNE - North-Northeast
NNW - North-
NW - Northwest
SE - Southeast
SSE - South-Southeast
SSW - South-Southwest
SW - Southwest
WNW - West-
WSW - West-Southwest
mph - miles per hour

Notes:
1. Data retrieved from weather station KDCWASHI460 located at the intersection of Lyman Place NE and 17th Street NE.

2. Wind direction designates the origin direction of the prevailing wind.

3. Data presented only for the duration of sample collection.

4. Distance to the site from wind this measurement location was approximately 0.65 miles south/southwest of the Site.

TETRA TECH

Attachment 3: Analytical Data

ANALYTICAL REPORT

Report Date: July 28, 2022

Jamie Benson
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone: 703-885-5466

E-mail: jamie.benson@tetratech.com

Workorder: **34-2220050**
Client Project ID: National Engineering Products
Purchase Order: National Engineering
Project Manager: Patrick Noteboom

Analytical Results

Sample ID: **NEP-FB-071422-AN1** Collected: 07/14/2022
Lab ID: 2220050001 Sampling Location: National Engineering Received: 07/19/2022

Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: **1** **Sampling Parameter:** Air Volume 0 L **Analyzed:** 07/27/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	NA	NA	0.10

Sample ID: **NEP-FB-071422-AN2** Collected: 07/14/2022
Lab ID: 2220050002 Sampling Location: National Engineering Received: 07/19/2022

Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: **1** **Sampling Parameter:** Air Volume 0 L **Analyzed:** 07/27/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	NA	NA	0.10

Sample ID: **NEP-E1-071422-A** Collected: 07/14/2022
Lab ID: 2220050003 Sampling Location: National Engineering Received: 07/19/2022

Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: **1** **Sampling Parameter:** Air Volume 33.11 L **Analyzed:** 07/28/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	<0.0030	<0.00079	0.10

ANALYTICAL REPORT

Workorder: **34-2220050**
Client Project ID: National Engineering Products
Purchase Order: National Engineering
Project Manager: Patrick Noteboom

Analytical Results

Sample ID: **NEP-E1-071422-B** Collected: 07/14/2022
Lab ID: 2220050004 Sampling Location: National Engineering Received: 07/19/2022
Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: 1 **Sampling Parameter:** Air Volume 33.11 L **Analyzed:** 07/28/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	<0.0030	<0.00079	0.10

Sample ID: **NEP-E2-071422** Collected: 07/14/2022
Lab ID: 2220050005 Sampling Location: National Engineering Received: 07/19/2022
Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: 1 **Sampling Parameter:** Air Volume 31.99 L **Analyzed:** 07/28/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	<0.0031	<0.00082	0.10

Sample ID: **NEP-E3-071422** Collected: 07/14/2022
Lab ID: 2220050006 Sampling Location: National Engineering Received: 07/19/2022
Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: 1 **Sampling Parameter:** Air Volume 31.01 L **Analyzed:** 07/28/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	<0.0032	<0.00085	0.10

Sample ID: **NEP-CE3-071422** Collected: 07/14/2022
Lab ID: 2220050007 Sampling Location: National Engineering Received: 07/19/2022
Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: 1 **Sampling Parameter:** Air Volume 35.44 L **Analyzed:** 07/28/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	<0.0028	<0.00074	0.10

Sample ID: **NEP-CE4-071422** Collected: 07/14/2022
Lab ID: 2220050008 Sampling Location: National Engineering Received: 07/19/2022
Method: **OSHA PV2079 Mod.** **Media:** SKC 226-98, XAD-7 (Phosphoric Acid) 40/80mg **Instrument:** 5975-A
Dilution: 1 **Sampling Parameter:** Air Volume 32.27 L **Analyzed:** 07/28/2022 (296451)

Analyte	Result (ug/sample)	Result (mg/m³)	Result (ppm)	RL (ug/sample)
Aniline	<0.10	<0.0031	<0.00081	0.10

ANALYTICAL REPORT

Workorder: **34-2220050**
Client Project ID: National Engineering Products
Purchase Order: National Engineering
Project Manager: Patrick Noteboom

Comments

Quality Control: OSHA PV2079 Mod. - (Batch: 296451)

OSHA PV2079 has been modified to use GC-MS for detection and quantitation instead of GC-FID.

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method (Analysis Batch)	Analyst	Peer Review
OSHA PV2079 Mod. (296451)	/S/ David Teynor 07/28/2022 10:01	/S/ Mindy Simmons 07/28/2022 14:15

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsglobal.com/slt

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.
Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.
Samples have not been blank corrected unless otherwise noted.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L22-62	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L22-61	http://www.pjlabs.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.
LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.
ND = Not Detected, Testing result not detected above the LOD or LOQ.
NA = Not Applicable.
** No result could be reported, see sample comments for details.
< Means this testing result is less than the numerical value.
( ) This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.

Quality Control Sample
Batch Report

Analysis Information

Workorder: **2220050**

Limits:	Historical/Performance	**Preparation:**	NA	**Analysis:**	OSHA PV2079 Mod.
Basis:	ALS Laboratory Group	**Batch:**	NA	**Batch:**	ISVO/5841 (HBN: 296451)
		Prepared By:	NA	**Analyzed By:**	David Teynor

Blank

LMB: 792099
Analyzed: 07/27/2022 18:44
Units: ug/sample

Analyte	Result	MDL	RL
Aniline	ND	NA	0.100

Laboratory Control Sample - Laboratory Control Sample Duplicate

LCS: 792100
Analyzed: 07/27/2022 19:14
Dilution: 1
Units: ug/sample

LCSD: 792101
Analyzed: 07/27/2022 19:37
Dilution: 1
Units: ug/sample

Analyte	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Aniline	5.09	5.00	102	50.0	150.0	5.04	101	0.940	0.0	20.0

Comments

OSHA PV2079 has been modified to use GC-MS for detection and quantitation instead of GC-FID.

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Workorder	Analyst	Peer Review
2220050	/S/ David Teynor 07/28/2022 10:01	/S/ Mindy Simmons 07/28/2022 14:15

Symbols and Definitions

* - Analyte above reporting limit or outside of control limits
▲ - Sample result is greater than 4 times the spike added
◓ - Sample and Matrix Duplicate less than 5 times the reporting limit
● - Result is above the calibration range
- The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

ALS
C-111 .b.

EMSL ANALYTICAL LABORATORY • PRODUCTS • TR.

2220050

Industrial Hygiene
Chain of Custody

EMSL Order Number (Lab Use Only): 2220050

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-3502

Report To Contact Name: Jamie Benson		Bill To Company: Tetra Tech	Client ID #:
Company Name: Tetra Tech		Attention To: Jamie Benson	
Street: 14151 Newbrook Drive, Suite 400		Street: 14151 Newbrook Drive, Suite 400	
City: Chantilly	State/Province: VA Zip/Postal Code: 20151	City: Chantilly	State/Province: VA Zip/Postal Code: 20151
Phone: 703-555-5466	Fax: 703-444-1685	Phone: 703-444-7000	Fax: 703-444-1685
Project Name: National Engineering Products		Email Results To: Jamie.Benson@tetratech.com	U.S. State where Samples Collected: D.C.
# Samples in Shipment: 8	Date of Shipment: 7/18/22	Purchase Order:	Sampled By (Signature): [signature]

Turnaround Time (TAT) – Please Check: If No Selection Made, Standard 2 Week TAT Will Apply

☒ 2 Week ☐ 1 Week ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other (Call Lab)

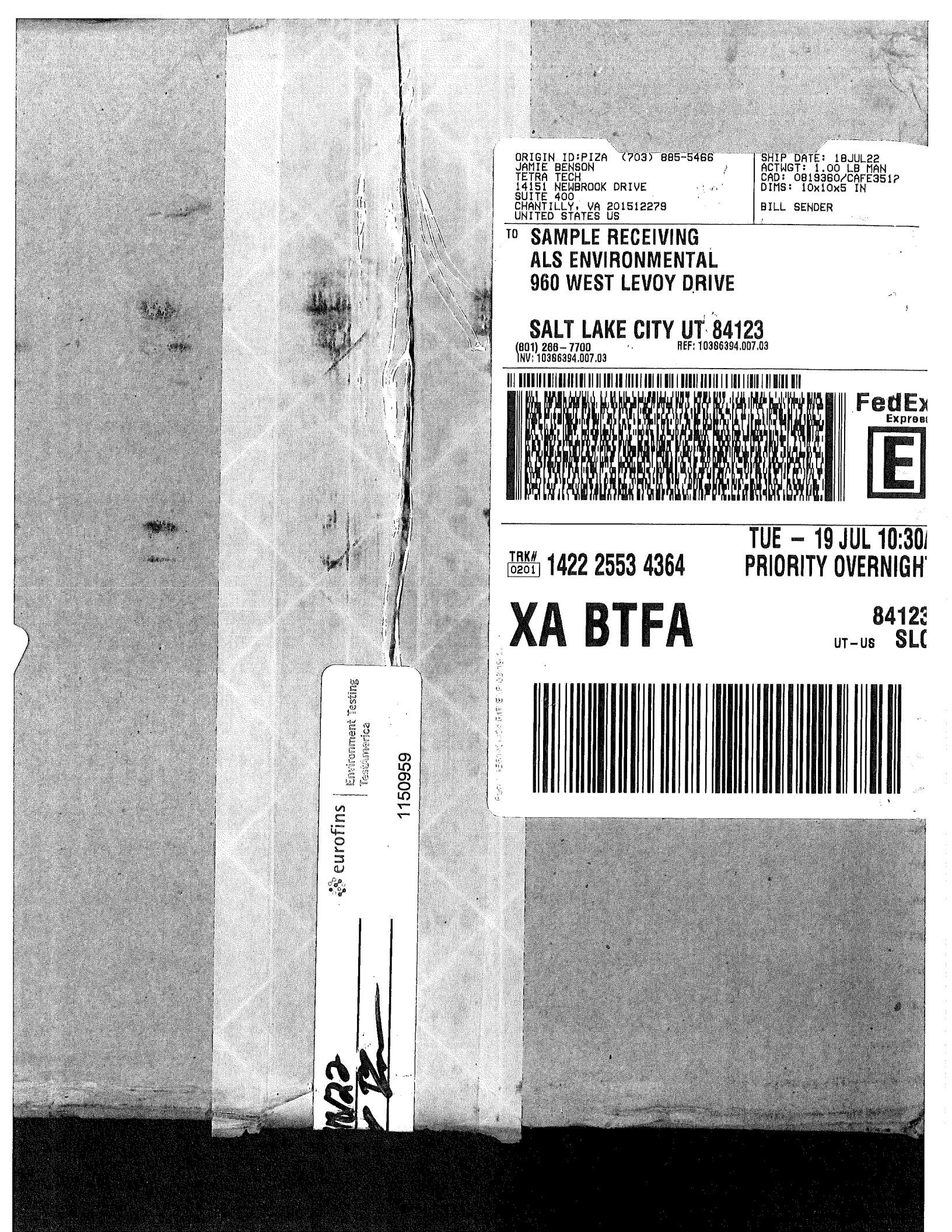
Media Type:
Manufacturer/Part #: Lot #:

Client Sample ID	Sample Date	Location	Description	Sample Type	Flow (lpm)	Sample Time On	Sample Time Off	Air Volume	Analyte Name	Media	Comments
NEP-FB-071422-AN1	7/14	Field Blank	Field Blank	☐ Area ☐ Personal	—			Ø	Aniline	SKC 226-98	
NEP-FB-071922-AN2	↓	↓	↓	☐ Area ☐ Personal	—			Ø	↓	↓	
NEP-E1-071422-A	↓	E1	Exhaust 1	☒ Area ☐ Personal	0.07	1157	1944	33.11	↓	↓	
NEP-E1-071422-B	↓	↓	↓	☒ Area ☐ Personal	0.07	1157	1944	33.11	↓	↓	
NEP-E2-071422	↓	E2	Exhaust 2	☒ Area ☐ Personal	0.07	1200	1937	31.99	↓	↓	
NEP-E3-071422	↓	E3	Exhaust 3	☒ Area ☐ Personal	0.07	1203	1930	31.01	↓	↓	
NEP-CE3-071422	↓	CE3	Community Exp. South	☒ Area ☐ Personal	0.08	1224	1947	35.44	↓	↓	
NEP-CE4-071422	↓	CE4	Com. Exp. North	☒ Area ☐ Personal	0.07	1204	1945	32.27			

Note: Most NIOSH and OSHA methods require field blanks. It is the IH field sampler's responsibility to submit the proper number of field blanks and duplicates.

Released By	Date	Received By	Date
[signature] TT	7/18/22	[signature]	07-19-22 8:55

Comments:


ORIGIN ID:PIZA (703) 885-5466
JAMIE BENSON
TETRA TECH
14151 NEWBROOK DRIVE
SUITE 400
CHANTILLY, VA 201512279
UNITED STATES US
SHIP DATE: 18JUL22
ACTWGT: 1.00 LB MAN
CAD: 0819360/CAFE3512
DIMS: 10x10x5 IN
BILL SENDER
TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 WEST LEVOY DRIVE
SALT LAKE CITY UT 84123
(801) 266-7700
REF: 10386394.007.03
INV: 10386394.007.03
FedEx
TRK# 0201 1422 2553 4364
TUE - 19 JUL 10:30
PRIORITY OVERNIGH
XA BTFA
84123
UT-US SLC
eurofins
Environment Testing
TestAmerica
1150959

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com / IndustrialHygienelab@emsl.com

EMSL Order ID:	282202756
Customer ID:	TTVA42
Customer PO:	
Project ID:	

Attn: Jamie Benson
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone: (703) 885-5465
Fax:
Collected:
Received: 7/19/2022
Analyzed: 7/21/2022

Proj: National Engineering Products

Test Report:Formaldehyde by NIOSH 2016M

Sample ID	Identification	Volume	Sample Weight	Sample Concentration		Reporting Limit
NEP-E1-071422-AF 282202756-0001	E1	4.06 L	<0.050 µg	<0.012 mg/m³	<0.010 ppm	0.012 mg/m³
NEP-E1-071422-BF 282202756-0002	E1	3.44 L	0.067 µg	0.019 mg/m³	0.016 ppm	0.015 mg/m³
NEP-E1-071422-CF 282202756-0003	E1	1.4 L	<0.050 µg	<0.036 mg/m³	<0.029 ppm	0.036 mg/m³
NEP-E2-071422-AF 282202756-0004	E2	12 L	0.055 µg	0.0046 mg/m³	0.0037 ppm	0.0042 mg/m³
NEP-E2-071422-BF 282202756-0005	E2	10.38 L	0.059 µg	0.0057 mg/m³	0.0046 ppm	0.0048 mg/m³
NEP-E3-071422-AF 282202756-0006	E3	14.21 L	1.6 µg	0.11 mg/m³	0.092 ppm	0.0035 mg/m³
NEP-E3-071422-BF 282202756-0007	E3	9.03 L	<0.050 µg	<0.0055 mg/m³	<0.0045 ppm	0.0055 mg/m³
NEP-PF1-071422-F 282202756-0008	PF1	14.1 L	0.68 µg	0.048 mg/m³	0.039 ppm	0.0035 mg/m³
NEP-PF2-071422-F 282202756-0009	PF2	13 L	0.51 µg	0.039 mg/m³	0.032 ppm	0.0038 mg/m³
NEP-CE1-071422-AF 282202756-0010	CE1	5.44 L	0.057 µg	0.010 mg/m³	0.0085 ppm	0.0092 mg/m³
NEP-CE1-071422-BF 282202756-0011	CE1	13.12 L	<0.050 µg	<0.0038 mg/m³	<0.0031 ppm	0.0038 mg/m³
NEP-CE1-071422-CF 282202756-0012	CE1	8.8 L	<0.050 µg	<0.0057 mg/m³	<0.0046 ppm	0.0057 mg/m³

N/A = Not Applicable

Analyst(s)

Brandon Jarmusik

Scott Van Etten, CIH, Laboratory Manager

Any questions please contact Scott VanEtten.

Initial report from: 07/25/2022 13:28:27

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com / IndustrialHygienelab@emsl.com

EMSL Order ID: 282202756
Customer ID: TTVA42
Customer PO:
Project ID:

Attn: Jamie Benson
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone: (703) 885-5465
Fax:
Collected:
Received: 7/19/2022
Analyzed: 7/21/2022

Proj: National Engineering Products

Test Report:Formaldehyde by NIOSH 2016M

Sample ID	Identification	Volume	Sample Weight	Sample Concentration		Reporting Limit
NEP-CE2-071422-AF 282202756-0013	CE2	10.85 L	<0.050 µg	<0.0046 mg/m³	<0.0038 ppm	0.0046 mg/m³
NEP-CE2-071422-BF 282202756-0014	CE2	14.84 L	<0.050 µg	<0.0034 mg/m³	<0.0027 ppm	0.0034 mg/m³
NEP-CE2-071422-CF 282202756-0015	CE2	4.26 L	<0.050 µg	<0.012 mg/m³	<0.0096 ppm	0.012 mg/m³
NEP-CE3-071422-AF 282202756-0016	CE3	14.04 L	<0.050 µg	<0.0036 mg/m³	<0.0029 ppm	0.0036 mg/m³
NEP-CE3-071422-BF 282202756-0017	CE3	15.93 L	0.052 µg	0.0033 mg/m³	0.0027 ppm	0.0031 mg/m³
NEP-CE3-071422-CF 282202756-0018	CE3	8.37 L	0.070 µg	0.0084 mg/m³	0.0068 ppm	0.0060 mg/m³
NEP-CE4-071422-AF 282202756-0019	CE4	11.34 L	<0.050 µg	<0.0044 mg/m³	<0.0036 ppm	0.0044 mg/m³
NEP-CE4-071422-BF 282202756-0020	CE4	7.32 L	<0.050 µg	<0.0068 mg/m³	<0.0056 ppm	0.0068 mg/m³
NEP-FB-071422-F1 282202756-0021	Field Blank	N/A	<0.050 µg			
NEP-FB-071422-F2 282202756-0022	Field Blank	N/A	<0.050 µg			
Media Blank		N/A	<0.050 µg	<0.050 µg	N/A	N/A

N/A = Not Applicable

Analyst(s)
Brandon Jarmusik

Scott Van Etten, CIH, Laboratory Manager

Any questions please contact Scott VanEtten.

Initial report from: 07/25/2022 13:28:27

EMSL Analytical, Inc. 200 Route 130 North Cinnaminson, NJ 08077

Order ID: 282202757

Attn:	Jamie Benson Tetra Tech 14151 Newbrook Drive Suite 400 Chantilly, VA 20151	Customer ID: Customer PO: Date Received:	TTVA42 07/19/22
Project:	**National Engineering Products**	EMSL Project ID:	
Report Date:	07/22/22	Date Analyzed:	07/21/22

Test Report – Cresol and Phenol Analysis by GC/FID of Solid Sorbent tubes via NIOSH Method 2546, Issue 1, 8/15/94

Sample ID	Identification	Component	Volume (L)	Sample Weight (mg)	Sample Conc. (mg/m^3)	Sample Conc. (PPM)	Reporting Limit (mg/m^3)
282202757-0001	NEP-FB-071422-CP1	o-Cresol	0	<0.010	N/A	N/A	N/A
		m,p-Cresol		<0.010	N/A	N/A	N/A
		Phenol		<0.010	N/A	N/A	N/A
282202757-0002	NEP-FB-071422-CP2	o-Cresol	0	<0.010	N/A	N/A	N/A
		m,p-Cresol		<0.010	N/A	N/A	N/A
		Phenol		<0.010	N/A	N/A	N/A
282202757-0003	NEP-PF1-071422-CP	o-Cresol	9.87	<0.010	<1.0	<0.23	1.0
		m,p-Cresol		<0.010	<1.0	<0.23	1.0
		Phenol		<0.010	<1.0	<0.26	1.0
282202757-0004	NEP-CE3-071422-CPA	o-Cresol	24.72	<0.010	<0.40	<0.091	0.40
		m,p-Cresol		<0.010	<0.40	<0.091	0.40
		Phenol		<0.010	<0.40	<0.11	0.40
282202757-0005	NEP-CE3-071422-CPB	o-Cresol	10.24	<0.010	<0.98	<0.22	0.98
		m,p-Cresol		<0.010	<0.98	<0.22	0.98
		Phenol		<0.010	<0.98	<0.25	0.98
282202757-0006	NEP-CE4-071422-CPA	o-Cresol	24.08	<0.010	<0.42	<0.094	0.42
		m,p-Cresol		<0.010	<0.42	<0.094	0.42
		Phenol		<0.010	<0.42	<0.11	0.42
282202757-0007	NEP-CE4-071422-CPB	o-Cresol	14.04	<0.010	<0.71	<0.16	0.71
		m,p-Cresol		<0.010	<0.71	<0.16	0.71
		Phenol		<0.010	<0.71	<0.19	0.71
282202757-0008	NEP-E1-071422-CP	o-Cresol	9.45	<0.010	<1.1	<0.24	1.1
		m,p-Cresol		<0.010	<1.1	<0.24	1.1
		Phenol		<0.010	<1.1	<0.27	1.1

Notes:
1. Samples were received in acceptable condition unless otherwise noted.
2. These results relate only to the samples tested.
3. Sample results are not blank corrected unless otherwise noted.
4. Discernable field blank(s) submitted with samples if listed.

BJ
Analyst

Scott VanEtten, CIH- Lab Manager
Or other approved signatory

EMSL Analytical, Inc. 200 Route 130 North Cinnaminson, NJ 08077

Order ID: 282202757

Attn:	Jamie Benson Tetra Tech 14151 Newbrook Drive Suite 400 Chantilly, VA 20151	Customer ID: Customer PO: Date Received:	TTVA42 07/19/22
Project:	**National Engineering Products**	EMSL Project ID:	
Report Date:	07/22/22	Date Analyzed:	07/21/22

Test Report – Cresol and Phenol Analysis by GC/FID of Solid Sorbent tubes via NIOSH Method 2546, Issue 1, 8/15/94

Sample ID	Identification	Component	Volume (L)	Sample Weight (mg)	Sample Conc. (mg/m^3)	Sample Conc. (PPM)	Reporting Limit (mg/m^3)
282202757-0009	NEP-E2-071422-CP	o-Cresol	9.04	<0.010	<1.1	<0.25	1.1
		m,p-Cresol		<0.010	<1.1	<0.25	1.1
		Phenol		<0.010	<1.1	<0.29	1.1
282202757-0010	NEP-E3-071422-CP	o-Cresol	8.33	<0.010	<1.2	<0.27	1.2
		m,p-Cresol		<0.010	<1.2	<0.27	1.2
		Phenol		<0.010	<1.2	<0.31	1.2
Desorption Blank	-	o-Cresol	0	<0.010	N/A	N/A	N/A
		m,p-Cresol		<0.010	N/A	N/A	N/A
		Phenol		<0.010	N/A	N/A	N/A

** EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.*

Notes:
1. Samples were received in acceptable condition unless otherwise noted.
2. These results relate only to the samples tested.
3. Sample results are not blank corrected unless otherwise noted.
4. Discernable field blank(s) submitted with samples if listed.

BJ
Analyst

Scott VanEtten, CIH- Lab Manager
Or other approved signatory

EMSL ANALYTICAL, INC.
200 Route 130 North
Cinnaminson, NJ 08077
Telephone: (856)858-4800 FAX: (856)858-4571
to15lab@EMSL.com | http://www.EMSL.com

EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Laboratory Report- Sample Summary

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
492200479-0001	NEP-E1-071422-24	7/14/2022	11:57 AM
492200479-0002	NEP-PF1-071422	7/14/2022	12:09 PM
492200479-0003	NEP-PF2-071422	7/14/2022	12:15 PM
492200479-0004	NEP-CE4-071422	7/14/2022	12:04 PM
492200479-0005	NEP-CE1-071422	7/14/2022	12:15 PM
492200479-0006	NEP-CE2-071422	7/14/2022	12:15 PM
492200479-0007	NEP-CE3-071422	7/14/2022	12:24 PM
492200479-0008	NEP-E1-071422	7/14/2022	11:57 AM
492200479-0009	NEP-E2-071422	7/14/2022	12:00 PM
492200479-0010	NEP-E3-071422	7/14/2022	11:55 AM

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

Report Date	Report Revision	Revision Comments
8/1/2022	R0	Initial Report

Owen McKenna, Chemistry Laboratory Director
or other approved signatory

Test results meet all NELAP requirements unless otherwise specified. NJDEP Certification #: 03036

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

EMSL ANALYTICAL, INC.
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Cinnaminson, NJ 08077
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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Case Narrative

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

Column
Restek RTX-502.2, 60m, 0.25mm ID, 1.4um

Concentrator Traps:
Entech Dual Cold Traps: (1) 1/8” No Packing, (2) 1/8” Tenax.

Gas Standards:
Certified Gas standards were used for all analyses.

Sample Volumes:
Sample volume aliquots for this procedure are 250cc for indoor/ ambient air and 25cc for soil gas. Other volumes for sample dilutions are reflected on each result page.

Holding Times:
Standard holding times of 30 days were met for all samples.

Sampling Pressures:
All samples were received at acceptable pressure/vacuum unless listed below.
Several samples were received by the lab under high vacuum. Lab grade air was added prior to analysis. Client notified.

Sample Dilutions:
Dilutions reported are designated by the sample # with a "DL" suffix resulting from initial analysis having compounds exceeding calibration as reported with an "E" qualifier. Ethanol and Isopropanol are not diluted for and may be reported with an "E" qualifier on the final result.

QA/QC criteria outside method specifications are listed below (if applicable).

Initial Calibration
All Initial Calibration criteria met method specification.

Initial Calibration Verification Standard (ICVS)- Second Source
ICVS met method specification with 70-130% recovery for 100% of compounds.

Laboratory Control Sample (LCS)
LCS met method specification with 70-130% recovery for 100% of compounds.*(If the LCS does not meet criteria but any compounds which have recoveries >130% are not found in the samples, samples may be reported)*

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62

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737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Case Narrative

Continuing Calibration Verification Standard (CCVS)

CCVS met method specification with all compounds within 30% deviation.
Ethanol recovered low.

Ending Calibration Verification Standard (ECVS)

ECVS met method specification with all compounds within 30% deviation.
Ethanol recovered low.

Method Blanks (MB)

Method Blank met method specification.

Reporting Limit Laboratory Control Samples (RLLCS)

RLLCS met method specification with 90% of compounds within the 60-140% recovery range. Individual compounds outside of the recovery range may be listed below.

Manual Integration*: -Listed below if applicable. Before and after documentation provided in extended deliverable packages.*

The following data qualifiers that may have been reported with the data,

ND- Non Detect. This notation would be used in the results column in lieu of a "U" qualifier.
U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
J (Target)- Concentration estimated between Reporting Limit and MDL.
J- Estimated value reported below adjusted reporting limit for target compounds or estimating a concentration for TICs where a 1:1 response is assumed
B- Compound found in associated method blank as well as in the sample.
E- Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.
D- Compound reported from additional diluted analysis.
N- indicates presumptive evidence of a compound based on library search match.

EMSL Analytical, Inc. certifies that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer –readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature.

Owen McKenna, Chemistry Laboratory Director
or other approved signatory

EMSL ANALYTICAL, INC.
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Cinnaminson, NJ 08077
Telephone: (856)858-4800 FAX: (856)858-4571
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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0001
CUSTOMER SAMPLE ID: NEP-E1-071422-24

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07888.D	E0289	387.5 cc	1
Dilution1	07/28/2022	KW	y07877.D	E0289	38.75 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**0.52**	0.50		**2.6**	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.59**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**3.1**	0.50		**7.4**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**22**	0.50		**41**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**2.0**	0.50		**4.9**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**6.0**	0.50		**14**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**50**	5.0	D	**170**	17	***Reported Dilution1***
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**0.85**	0.50		**3.0**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	**0.56**	0.50		**1.7**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.99**	0.50		**3.6**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0001
CUSTOMER SAMPLE ID: NEP-E1-071422-24

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
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Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07888.D	E0289	387.5 cc	1
Dilution1	07/28/2022	KW	y07877.D	E0289	38.75 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.4**	0.50		**5.2**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**88**	**ppbv**		**250**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.6	10	96%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0002
CUSTOMER SAMPLE ID: NEP-PF1-071422

Attention: Jimmy Kehs
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Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:09
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW	y07878.D	E0549	615 cc	1
Dilution1	07/28/2022	KW/CP	y07889.D	E0549	339 cc	2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.54**	0.50		**1.1**	1.0	
n-Butane	106-97-8	58.12	**2.5**	0.50		**5.8**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**41**	1.0	D	**77**	1.9	***Reported Dilution1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**3.5**	0.50		**8.5**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**7.4**	0.50		**17**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**6.6**	0.50		**11**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**45**	1.0	D	**160**	3.5	***Reported Dilution1***
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**0.65**	0.50		**2.3**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	**0.50**	0.50		**1.5**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**1.3**	0.50		**4.5**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0002
CUSTOMER SAMPLE ID: NEP-PF1-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Phone: 808-441-6600
Email: 0

Collected: 07/14/2022 12:09
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW	y07878.D	E0549	615 cc	1
Dilution1	07/28/2022	KW/CP	y07889.D	E0549	339 cc	2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.6**	0.50		**6.2**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**110**	**ppbv**		**290**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.8	10	98%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0003
CUSTOMER SAMPLE ID: NEP-PF2-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07879.D	Canister ID E15307	Sample Vol. 510 cc	Dil. Factor 2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	2.0		ND	3.4	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**2.7**	1.0		**13**	4.9	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	1.0		ND	7.0	
Chloromethane	74-87-3	50.49	ND	1.0		ND	2.1	
n-Butane	106-97-8	58.12	**3.3**	1.0		**7.9**	2.4	
Vinyl chloride	75-01-4	62.50	ND	1.0		ND	2.6	
1,3-Butadiene	106-99-0	54.09	ND	1.0		ND	2.2	
Bromomethane	74-83-9	94.94	ND	1.0		ND	3.9	
Chloroethane	75-00-3	64.51	ND	1.0		ND	2.6	
Ethanol	64-17-5	46.07	**110**	1.0	E	**220**	1.9	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	1.0		ND	4.4	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	1.0		ND	5.6	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**4.4**	1.0		**11**	2.5	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	1.0		ND	7.7	
Acetone	67-64-1	58.08	**7.6**	1.0		**18**	2.4	
1,1-Dichloroethene	75-35-4	96.94	ND	1.0		ND	4.0	
Acetonitrile	75-05-8	41.05	**23**	1.0		**38**	1.7	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	1.0		ND	3.0	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	1.0		ND	4.5	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	1.0		ND	3.1	
Carbon disulfide	75-15-0	76.14	ND	1.0		ND	3.1	
Methylene chloride	75-09-2	84.93	**55**	1.0		**190**	3.5	
Acrylonitrile	107-13-1	53.08	ND	1.0		ND	2.2	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	1.0		ND	3.6	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	1.0		ND	4.0	
n-Hexane	110-54-3	86.18	ND	1.0		ND	3.5	
1,1-Dichloroethane	75-34-3	98.96	ND	1.0		ND	4.0	
Vinyl acetate	108-05-4	86.09	ND	1.0		ND	3.5	
2-Butanone(MEK)	78-93-3	72.11	ND	1.0		ND	2.9	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	1.0		ND	4.0	
Ethyl acetate	141-78-6	88.11	**1.8**	1.0		**6.7**	3.6	
Chloroform	67-66-3	119.4	ND	1.0		ND	4.9	
Tetrahydrofuran	109-99-9	72.11	ND	1.0		ND	2.9	
1,1,1-Trichloroethane	71-55-6	133.4	ND	1.0		ND	5.5	
Cyclohexane	110-82-7	84.16	ND	1.0		ND	3.4	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	1.0		ND	4.7	
Carbon tetrachloride	56-23-5	153.8	ND	1.0		ND	6.3	
n-Heptane	142-82-5	100.2	ND	1.0		ND	4.1	
1,2-Dichloroethane	107-06-2	98.96	ND	1.0		ND	4.0	
Benzene	71-43-2	78.11	ND	1.0		ND	3.2	
Trichloroethene	79-01-6	131.4	ND	1.0		ND	5.4	
1,2-Dichloropropane	78-87-5	113.0	ND	1.0		ND	4.6	
Methyl Methacrylate	80-62-6	100.1	ND	1.0		ND	4.1	
Bromodichloromethane	75-27-4	163.8	ND	1.0		ND	6.7	
1,4-Dioxane	123-91-1	88.11	ND	1.0		ND	3.6	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0003
CUSTOMER SAMPLE ID: NEP-PF2-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07879.D	Canister ID E15307	Sample Vol. 510 cc	Dil. Factor 2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	1.0		ND	4.1	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	1.0		ND	4.5	
Toluene	108-88-3	92.14	**1.6**	1.0		**5.9**	3.8	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	1.0		ND	4.5	
1,1,2-Trichloroethane	79-00-5	133.4	ND	1.0		ND	5.5	
2-Hexanone(MBK)	591-78-6	100.2	ND	1.0		ND	4.1	
Tetrachloroethene	127-18-4	165.8	ND	1.0		ND	6.8	
Dibromochloromethane	124-48-1	208.3	ND	1.0		ND	8.5	
1,2-Dibromoethane	106-93-4	187.9	ND	1.0		ND	7.7	
Chlorobenzene	108-90-7	112.6	ND	1.0		ND	4.6	
Ethylbenzene	100-41-4	106.2	ND	1.0		ND	4.3	
Xylene (p,m)	1330-20-7	106.2	ND	2.0		ND	8.7	
Xylene (Ortho)	95-47-6	106.2	ND	1.0		ND	4.3	
Styrene	100-42-5	104.1	ND	1.0		ND	4.3	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	1.0		ND	4.9	
Bromoform	75-25-2	252.7	ND	1.0		ND	10	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	1.0		ND	6.9	
4-Ethyltoluene	622-96-8	120.2	ND	1.0		ND	4.9	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	1.0		ND	4.9	
2-Chlorotoluene	95-49-8	126.6	ND	1.0		ND	5.2	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	1.0		ND	4.9	
1,3-Dichlorobenzene	541-73-1	147.0	ND	1.0		ND	6.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	1.0		ND	6.0	
Benzyl chloride	100-44-7	126.6	ND	1.0		ND	5.2	
1,2-Dichlorobenzene	95-50-1	147.0	ND	1.0		ND	6.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	1.0		ND	7.4	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	1.0		ND	11	
Naphthalene	91-20-3	128.2	ND	1.0		ND	5.2	
Total Target Compound Concentrations:			**210**	**ppbv**		**510**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.7	10	97%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0004
CUSTOMER SAMPLE ID: NEP-CE4-071422

Attention: Jimmy Kehs
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737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:04
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07880.D	E0354	250 cc	1
Dilution1	07/29/2022	KW/CP	y07902.D	E0354	25 cc	30

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.60**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**2.0**	0.50		**4.7**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**310**	15	D	**580**	28	***Reported Dilution1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	**0.70**	0.50		**3.9**	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**37**	0.50		**90**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**14**	0.50		**33**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**1.1**	0.50		**3.9**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	**18**	0.50		**64**	1.8	
2-Butanone(MEK)	78-93-3	72.11	**0.91**	0.50		**2.7**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**520**	15	D	**1900**	54	***Reported Dilution1***
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	**3.8**	0.50		**12**	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:04
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07880.D	E0354	250 cc	1
Dilution1	07/29/2022	KW/CP	y07902.D	E0354	25 cc	30

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	11	0.50		41	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**920**	**ppbv**		**2700**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.5	10	95%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0005
CUSTOMER SAMPLE ID: NEP-CE1-071422

Attention: Jimmy Kehs
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737 Bishop Street
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07882.D	Canister ID E0522	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.58**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.81**	0.50		**1.9**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**13**	0.50		**24**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.4**	0.50		**3.5**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**3.9**	0.50		**9.4**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**8.3**	0.50		**14**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**0.68**	0.50		**2.4**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**1.5**	0.50		**5.3**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0005
CUSTOMER SAMPLE ID: NEP-CE1-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07882.D	Canister ID E0522	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**0.51**	0.50		**1.9**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**31**	**ppbv**		**64**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.4	10	94%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0006
CUSTOMER SAMPLE ID: NEP-CE2-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07883.D	E31283	250 cc	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**0.50**	0.50		**2.5**	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.59**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.83**	0.50		**2.0**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**8.5**	0.50		**16**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.1**	0.50		**2.8**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**3.8**	0.50		**9.1**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**11**	0.50		**19**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.72**	0.50		**2.6**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0006
CUSTOMER SAMPLE ID: NEP-CE2-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07883.D	Canister ID E31283	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**27**	**ppbv**		**55**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.4	10	94%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0007
CUSTOMER SAMPLE ID: NEP-CE3-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:24
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07884.D	Canister ID E0420	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.58**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.89**	0.50		**2.1**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**9.0**	0.50		**17**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.5**	0.50		**3.7**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**4.7**	0.50		**11**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**3.3**	0.50		**5.5**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**9.7**	0.50		**34**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.66**	0.50		**2.4**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0007
CUSTOMER SAMPLE ID: NEP-CE3-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:24
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07884.D	Canister ID E0420	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**0.52**	0.50		**2.0**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**31**	**ppbv**		**79**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.5	10	95%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0008
CUSTOMER SAMPLE ID: NEP-E1-071422

Attention: Jimmy Kehs
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737 Bishop Street
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/29/2022	KW/CP	y07903.D	E31296	250 cc	1
Dilution1	07/28/2022	KW/CP	y07885.D	E31296	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.56**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**2.8**	0.50		**6.7**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**29**	0.50		**55**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.7**	0.50		**4.1**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**5.1**	0.50		**12**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**1.3**	0.50		**2.1**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**41**	5.0	D	**140**	17	***Reported Dilution1***
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**0.71**	0.50		**2.5**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.79**	0.50		**2.9**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/29/2022	KW/CP	y07903.D	E31296	250 cc	1
Dilution1	07/28/2022	KW/CP	y07885.D	E31296	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.4**	0.50		**5.2**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**84**	**ppbv**		**230**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	10	10	100%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0009
CUSTOMER SAMPLE ID: NEP-E2-071422

Attention: Jimmy Kehs
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:00
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/29/2022	KW/CP	y07904.D	E15299	250 cc	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**0.51**	0.50		**2.5**	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.57**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.67**	0.50		**1.6**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**11**	0.50		**21**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.5**	0.50		**3.6**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**4.9**	0.50		**12**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**4.2**	0.50		**7.1**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**1.4**	0.50		**4.9**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.95**	0.50		**3.4**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
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EMSL SAMPLE ID: 492200479-0009
CUSTOMER SAMPLE ID: NEP-E2-071422

Attention: Jimmy Kehs
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Project Name: National Engineering Products

Collected: 07/14/2022 12:00
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/29/2022	Analyst Init. KW/CP	Lab File ID y07904.D	Canister ID E15299	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**26**	**ppbv**		**57**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	10	10	100%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0010
CUSTOMER SAMPLE ID: NEP-E3-071422

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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:55
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/30/2022	KW/CP	y07905.D	E0274	250 cc	1
Dilution1	07/28/2022	KW/CP	y07887.D	E0274	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	**17**	1.0		**29**	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.70**	0.50		**1.4**	1.0	
n-Butane	106-97-8	58.12	ND	0.50		ND	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**49**	5.0	D	**92**	9.4	***Reported Dilution1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	**6.2**	0.50		**35**	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**33**	0.50		**81**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**130**	5.0	D	**310**	12	***Reported Dilution1***
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**15**	0.50		**24**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	**1.3**	0.50		**3.9**	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**7.0**	0.50		**24**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**3.1**	0.50		**11**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	**2.2**	0.50		**7.6**	1.8	
2-Butanone(MEK)	78-93-3	72.11	**17**	0.50		**49**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**1.7**	0.50		**6.0**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	**4.7**	0.50		**14**	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	**0.53**	0.50		**1.8**	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	**9.0**	0.50		**37**	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	**47**	5.0	D	**150**	16	***Reported Dilution1***
Trichloroethene	79-01-6	131.4	**0.75**	0.50		**4.0**	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0010
CUSTOMER SAMPLE ID: NEP-E3-071422

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Project Name: National Engineering Products

Collected: 07/14/2022 11:55
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/30/2022	KW/CP	y07905.D	E0274	250 cc	1
Dilution1	07/28/2022	KW/CP	y07887.D	E0274	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	**1.5**	0.50		**6.1**	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**26**	0.50		**100**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	**1.3**	0.50		**5.3**	2.0	
Tetrachloroethene	127-18-4	165.8	**1.2**	0.50		**8.2**	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	**2.0**	0.50		**8.6**	2.2	
Xylene (p,m)	1330-20-7	106.2	**4.6**	1.0		**20**	4.3	
Xylene (Ortho)	95-47-6	106.2	**1.5**	0.50		**6.5**	2.2	
Styrene	100-42-5	104.1	**4.5**	0.50		**19**	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	**2.6**	0.50		**13**	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**390**	**ppbv**		**1100**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	11	10	110%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

49220047-9

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only
PID: ________ Workorder #: ____________

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Click links below to view:
Canister Sampling Guide
Helium Shroud Video

Client: Tetra Tech PID:
Project Name: National Engineering Products P.O.#
Project Manager: Jimmy Kehs
Sampler: J. Benson
Site Name:

Special Instructions/Notes: Check Regulator 03960
PM email: Jimmy.kehs@tetratech.com

Turnaround Time (Rush surcharges may apply)
Select TAT from drop down box: 10 Day TAT

Lab ID	Sample Identification	Can #	Flow Controller #	Start Sampling Date	Start Sampling Time	Stop Sampling Date	Stop Sampling Time	Canister Vacuum/Pressure Initial (in Hg)	Final (in Hg)	Lab Use Only: Receipt (Inc Press)	Lab Use Only: Final (psig) Gas: N_2 / He	Requested Analyses: TO-15			
1	NEP-E1-071422-24	0289	07942 ✓	7/14	1157	7/15	1153	-30	-8	-10.2					
2	NEP-PF1-071422	0549	7963 ✓	↓	1209	7/14	1430	~~-35~~	-20	-17.4					
3	NEP-PF2-071422	~~0~~ 15307	08040 ✓	↓	1215	↓	1425	~~-30~~	-23	-21.2					
4	NEP-CE4-071422	0354	03960 ✓	↓	1204	↓	1400	-30	-1	-0.4					
5	NEP-CE1-071422	0522	5995 ✓	↓	1215	↓	1946	-30	-10"	-9.0					
6	NEP-CE2-071422	31283	08051 ✓	↓	1215	↓	1949	-30	-5	-5.0					
7	NEP-CE3-071422	0420	3641 ✓	↓	1224	↓	1947	-26	-5	-5.0					
8	NEP-E1-071422	31296	08059 ✓	↓	1157	↓	1944	-30	-6	-7.4					
9	NEP-E2-071422	15299	07882 ✓	↓	1200	↓	1937	-30	-7	-8.0					
10	NEP-E3-071422	0274	03509 ✓	↓	1155	↓	1930	-30	-5	-4.4					

RECEIVED
CINCI... 2022 JUL 18 AM 10:23

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature] TT	7/15/22	1700	[signature] FX	7/18/22	SAH ~~1000~~ 0850
[signature] FX	7/18/22	~~085~~ 0850	R Clayton Air Tox	~~1135~~ RC 7/18/22 ~~9/18/22~~	11 32

Lab Use Only
Shipper Name: | Custody Seals Intact? Yes No None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

FX: 142225534331

USEPA TO-15

External Chain of Custody/ Field Test Data Sheet

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Ph. (800) 220-3675
Fax (856) 786-0327

EMSL ANALYTICAL, INC. LABORATORY • PRODUCTS • TRAINING

EMSL Order Number (Lab Use Only): 492200479

Report To Contact Name:	Bill To Company:	Sampled By (Sign):
Company Name:	Attention To:	Sampled By (Name):
Address 1:	Address 1:	Total # of Samples:
Address 2:	Address 2:	Date Shipped:
Phone No. : Fax :	Phone No.: Fax :	Sample Collection Zip Code:
Email Results To:	**Project Name:**	Purchase Order:

Turnaround Time (in Business Days): ☐ 10 Day Standard ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other

Reporting Format: ☐ Results Only (Standard Lab Report) ☐ Full Deliverables (Surcharge may apply) ☐ Other

Field Use - All Information Required! | **Lab Use Only**

EMSL Sample Identifier	Client Field Sample Identification	Sampling Start Information: Start Date	Start Time (24 hr clock)	Start Canister Pressure ("Hg)	Start Interior Temp. (F)	Sampling Stop Information: Stop Date	Stop Time (24 hr clock)	Stop Canister Pressure ("Hg)	Stop Interior Temp. (F)	Canister Information: Canister ID	Size (L)	Can Cert Batch ID	Outgoing Pressure ("Hg)	Incoming Pressure ("Hg)	Flow Contoller: Reg. ID	Cal Flow (ml/min)
		Barometric Pres. ("Hg):				Barometric Pres. ("Hg):										
										E0274	6	C4007	-30.0	-4.4	7942	8.5
										0289				-10.2	3509	10.6
										0354				-0.4	3691	
										0420				-5.0	5960	
										0522				-9.0	5995	
										0549				-17.4	7882	
										15299				-8.0	7963	
										15307				-21.2	8040	
										21283				-5.0	8051	
										31296				-7.4	8059	

Analysis	Matrix
USEPA TO-15	Indoor/ Ambient Air
NJDEP LLTO-15	Soil Gas/Sub Slab
LIBRARY SEARCH	Other:
ASTM-5504:H2S / S PANEL	
TO-3: METHANE / C1-C6	
NIOSH 3900	
Other:	

Comments:

Check Box if Seal Intact

Lab Canister Certification
Analyst Signature (TO-15):

Relinquished by:	Date/ Time	Received by:	Date/ Time	Seal # / Intact	Reason for Exchange (circle appropriate)
	6/27/22 1142	FX	7/18/22 0850	007-009 ☐	Shipping Courier Receiving Sampling Other:
	7/18/22	Air Tx	7/18/22 11:32	☐	Shipping Courier Receiving Sampling Other: AN
				☐	Shipping Courier Receiving Sampling Other:
				☐	Shipping Courier Receiving Sampling Other:
				☐	Shipping Courier Receiving Sampling Other:

492200479

TO-15 Sample Information

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

Company:

Contact Person:

Name:

E-mail:

Additional E-mails:

Telephone #:

Library Search requested: **[ ] YES [ ] NO**

A library search (*aka Tentatively Identified Compounds*) will identify up to 20 of the largest, non-target peaks that are not part of the standard TO-15 list of 74 compounds. If you are performing an Indoor Air Quality or odor investigation, the library search is recommended to provide you with all available information for your sample.

Sample Type:

[ ] Indoor Air Quality (Home/Office)
[ ] IAQ (Industrial)
[ ] Other:
[ ] Soil Gas/Sub Slab

Sample Description:_____

PLEASE NOTE: The result forms we provide will not indicate whether your results have exceeded any Exposure Limit criteria established by any regulatory agency. If you would like that information, please check off below which regulatory comparison forms you would like to receive.

[ ] OSHA PELs/NIOSH RELs	*combined form*		**[ ] Potential Sources of Compounds found in your IAQ sample**		
[ ] EPA RSLs - *11/2018; default is THQ 0.1*	Residential	Industrial	**[ ] TVOC (Library Search Required for this format)**		
[ ] EPA VISLs - *3/2012*	IA/SG		**[ ] NH DES_WMD** - *2/2013*	Indoor Air	Soil Gas
[ ] NJ DEP - *1/2018* - **Circle one:**	VI-Indoor AQ	VI-Soil Gas	**[ ] Ohio** - *5/2016* - **Circle one:**	Residential	Commercial
[ ] NC DENR - *2/2018* - **Circle one:**	Residential	Non-residential	**[ ] Indiana Dept Env Mgmt Screeening Levels** - *3/2018*		
[ ] PA DEP - *11/2016*	Indoor Air		**[ ] Vermont DEC IROCP** - *7/2017* **(soil gas only)**		
[ ] PA DEP - 11/2016: Sub Slab Soil Gas **OR** Near Source Soil Gas			**[ ] California OEHHA** - *2/2012*		
[ ] CA HHSL - *9/2010* - **Circle one:**	Indoor Air	Soil Gas	**[ ] Other; these are the compounds I want reported:**		

Please note: There is an additional charge for any of the tests below. **USEPA TO-3 AND ASTM 5504 analyses can be performed from your canister at the Cinnaminson NJ Laboratory.**

*Very Important Information for Clients! *Hold time for sulfur gases is 1 day from collection. Please schedule your sample collection so samples are received in the lab prior to noon on Friday. Analysis performed out of hold time will have a notation in the report.*

US EPA TO-3 via GC/FID:	**NIOSH 3900**	**ASTM-D5504** *via GC/SCD:* *
[ ] C_1-C_6 hydrocarbons	**[ ]**	**[ ] Sulfur Scan (H_2S, COS, MeSH, EtSH, DMS)**
[ ] Methane only		**[ ] H_2S only**

We can provide the following CMS tests from your canisters at the **Cinnaminson and Huntington Beach** laboratories. Please note these tests are to be used for IAQ/Screening purposes ONLY. EMSL recommends alternate field sampling techniques for these parameters (with the exception of water vapor); please contact your sales rep for the proper media. Please note: There is an additional charge for any of the tests below.

Draeger CMS Analyzer:

[ ] CO [ ] CO_2 [ ] NH_3 [ ] O2 [ ] Water Vapor

Sample Retention Policy: All canisters are guaranteed to be retained for one day after results are reported. Please review your results promptly to ensure your project scope is fully addressed. Cans may be retained for a longer period of time, but arrangements to hold your cans must be made through your customer account representative quickly. Thank you.

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com / silicaLab@emsl.com

EMSL Order ID: 722200132
Customer ID: TTVA42
Customer PO:
Project ID:

Attn: Jamie Benson
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone: (703) 885-5465
Fax:
Collected: 07/14/2022
Received: 07/19/2022
Analyzed: 07/21/2022

Proj: National Engineering Products

Test Report: Silica w/ Total or Respirable Dust by NIOSH 7500/OSHA ID142-Single Species, Alpha Quartz (QZ)

Sample ID	Collected	Location / Description	Vol (L)	Respirable Dust (mg)	Respirable Dust Concentration (mg/m³)	Silica	% Silica	Weight (µg)	Conc. (µg/m³)	Analytical Sensitivity (µg/m³)
WEP-FB-RES-071422 **722200132-0001**		Field Blank	N/A	<0.050	N/A	α-Quartz	N/A	<5	N/A	N/A
						RCS		<5	N/A	
Comment: Field Blank										
WEP-E1-RES-071422 **722200132-0002**	7/14/2022	Exhaust 1	1167.5	<0.050	<0.043	α-Quartz	N/A	<5	<4.3	4.3
						RCS		<5	<4.3	
WEP-E2-RES-071422 **722200132-0003**	7/14/2022	Exhaust 2	1142.5	<0.050	<0.044	α-Quartz	N/A	<5	<4.4	4.4
						RCS		<5	<4.4	
WEP-E3-RES-071422 **722200132-0004**	7/14/2022	Exhaust 3	1117.5	<0.050	<0.045	α-Quartz	N/A	<5	<4.5	4.5
						RCS		<5	<4.5	
WEP-CE3-RES-071422 **722200132-0005**	7/14/2022	Com Exp South	1112.5	<0.050	<0.045	α-Quartz	N/A	<5	<4.5	4.5
						RCS		<5	<4.5	

Analyst(s)
Emma Muller

Scott Van Etten, CIH, Laboratory Manager
or Other Approved Signatory

Any questions please contact Scott VanEtten.

RCS = Respirable Crystalline Silica

Samples analyzed by EMSL Analytical - Industrial Hygiene Cinnaminson, NJ AIHA-LAP, LLC--IHLAP Accreditated Lab 100194

Initial report from: 07/28/2022 12:00:32

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com / silicaLab@emsl.com

EMSL Order ID: 722200132
Customer ID: TTVA42
Customer PO:
Project ID:

Attn: Jamie Benson
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone: (703) 885-5465
Fax:
Collected: 07/14/2022
Received: 07/19/2022
Analyzed: 07/21/2022

Proj: National Engineering Products

Test Report: Silica w/ Total or Respirable Dust by NIOSH 7500/OSHA ID142-Single Species, Alpha Quartz (QZ)

Sample ID	Collected	Location / Description	Vol (L)	Respirable Dust (mg)	Respirable Dust Concentration (mg/m³)	Silica	% Silica	Weight (µg)	Conc. (µg/m³)	Analytical Sensitivity (µg/m³)
WEP-CE4-RES-071422 **722200132-0006**	7/14/2022	Com Exp North	1152.5	<0.050	<0.043	α-Quartz	N/A	<5	<4.3	4.3
						RCS		<5	<4.3	
WEP-PFI-RES-071422 **722200132-0007**	7/14/2022	Prod Floor North	352	<0.050	<0.14	α-Quartz	N/A	<5	<14	14
						RCS		<5	<14	

Field Blank submitted with sample set. Results are not blank corrected.

Analyst(s)
Emma Muller

Scott Van Etten, CIH, Laboratory Manager
or Other Approved Signatory

Any questions please contact Scott VanEtten.

RCS = Respirable Crystalline Silica

Samples analyzed by EMSL Analytical - Industrial Hygiene Cinnaminson, NJ AIHA-LAP, LLC--IHLAP Accreditated Lab 100194

Initial report from: 07/28/2022 12:00:32

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com / silicaLab@emsl.com

EMSL Order ID: 722200132
Customer ID: TTVA42
Customer PO:
Project ID:

Attn: Jamie Benson
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone: (703) 885-5465
Fax:
Collected: 07/14/2022
Received: 07/19/2022
Analyzed: 07/21/2022

Proj: National Engineering Products

Test Report: Silica w/ Total or Respirable Dust by NIOSH 7500/OSHA ID142-Single Species, Alpha Quartz (QZ)

QC Batch ID: 72Q220728-007

	Collected	Location / Description	Vol (L)	Respirable Dust (mg)	Respirable Dust Concentration (mg/m³)	Silica	% Silica	Weight (µg)	Conc. (µg/m³)	Analytical Sensitivity (µg/m³)
Method Blank			N/A	<0.050	N/A	α-Quartz	N/A	<5	N/A	N/A

Analyst(s)
Emma Muller

Scott Van Etten, CIH, Laboratory Manager
or Other Approved Signatory

Any questions please contact Scott VanEtten.

RCS = Respirable Crystalline Silica

Samples analyzed by EMSL Analytical - Industrial Hygiene Cinnaminson, NJ AIHA-LAP, LLC--IHLAP Accreditated Lab 100194

Initial report from: 07/28/2022 12:00:32

EMSL Analytical - Industrial Hygiene
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 /
http://www.EMSL.com silicaLab@emsl.com

EMSL Order:	722200157
CustomerID:	TTVA42
CustomerPO:	
ProjectID:	

Attn: **Jamie Benson**
Tetra Tech
14151 Newbrook Drive
Suite 400
Chantilly, VA 20151

Phone:	(703) 885-5465
Fax:	
Received:	07/19/22 10:00 AM
Analysis Date:	8/2/2022
Collected:	7/14/2022

Project: **National Engineering Products**

Test Report: Total Dust by NIOSH 0500

Sample	*Location*	*Volume (L)*	*Sample Weight (mg)*	*Concentration (mg/m³)*	*Reporting Limit (mg/m³)*	*Notes*
NEP-E1-TOT-071422 *722200157-0001*	E1	1167.5	<0.050	<0.043	0.043	
NEP-E2-TOT-071422 *722200157-0002*	E2	1142.5	<0.050	<0.044	0.044	
NEP-E3-TOT-071422 *722200157-0003*	E3	1117.5	<0.050	<0.045	0.045	
NEP-CE3-TOT-071422 *722200157-0004*	CE3	1112.5	<0.050	<0.045	0.045	
NEP-CE4-TOT-071422 *722200157-0005*	CE4	1152.5	<0.050	<0.043	0.043	
NEP-PF1-TOT-071422 *722200157-0006*	PF1	352	<0.050	<0.14	0.14	
NEP-FB-TOT-071422 *722200157-0007*	Field Blank		<0.050	N/A	N\A	Field Blank

Notes: Discernable field blank submitted with samples.
Results are not field blank corrected.

Analyst(s)

Emma Muller (7)

Scott Van Etten, CIH, Laboratory Manager
or other approved signatory

Initial report from 08/02/2022 15:45:18

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene Chain of Custody

EMSL Order Number (Lab Use Only): 722200157

~~722200132~~

RECEIVED EMSL CINNAMINSON, N.J. 2022 JUL 19 AM 9:59

Report To Contact Name: Jamie Beason		Bill To Company: Tetra Tech	Client ID #:
Company Name: Tetra Tech		Attention To: Jamie Beason	
Street: 14151 Newbrook Drive, Suite 400		Street: 14151 Newbrook Drive, Suite 400	
City: Chantilly	State/Province: VA	Zip/Postal Code: 20151	City: Chantilly, VA	State/Province: VA	Zip/Postal Code: 20151
Phone: 703-885-5466	Fax: 703-444-1685		Phone: 703-444-7000	Fax: 703-444-1685
Project Name: National Engineering Products		Email Results To: Jamie.Beason@Tetratech.com	U.S. State where Samples Collected: D.C.
# Samples in Shipment: 46	Date of Shipment: 7/18/22	Purchase Order:	Sampled By (Signature): Jam Be

Turnaround Time (TAT) – Please Check: If No Selection Made, Standard 2 Week TAT Will Apply

☒ 2 Week ☐ 1 Week ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other (Call Lab)

Media Type: Air

Manufacturer/Part #: Lot #:

Client Sample ID	Sample Date	Location	Description	Sample Type	Flow (lpm)	Sample Time On	Sample Time Off	Air Volume	Analyte Name	Media	Comments
NEP-E1-071422-AF	7/14	E1	Exhaust 1	☒ Area ☐ Personal	0.02	1157	1520	4.06	Formaldehyde	SKC 226-119	
NEP-E1-071422-BF		↓	↓	☒ Area ☐ Personal	0.07	1528	1800	3.44			
NEP-E1-071422-CF		↓	↓	☒ Area ☐ Personal	0.02	1820	1930	1.4			
NEP-E2-071422-AF		E2	Exhaust 2	☒ Area ☐ Personal	0.06	1200	1520	12			
NEP-E2-071422-BF		↓	↓	☒ Area ☐ Personal	0.06	1531	1824	10.38			
NEP-E3-071422-AF		E3	Exhaust 3	☒ Area ☐ Personal	0.07	1203	1526	14.21			
NEP-E3-071422-BF		↓		☒ Area ☐ Personal	0.07	1540	1831	9.03			
NEP-PF1-071422-F	↓	PF1	North production floor	☒ Area ☐ Personal	0.10	1209	1430	14.1	↓	↓	

Note: Most NIOSH and OSHA methods require field blanks. It is the IH field sampler's responsibility to submit the proper number of field blanks and duplicates.

Released By	Date	Received By	Date
	7/18/22		7-19-22

Comments: Split EH/S.L.

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene Chain of Custody

7/19/22 EMSL Order Number (Lab Use Only): 722200157

(14) 7220 722200132

EMSL ANALYTICAL, INC
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX (856) 858-3502

2022 JUL 19 AM 9:59

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Client Sample ID	Sample Date	Location	Description	Sample Type	Flow (lpm)	Sample Time On	Sample Time Off	Air Volume (L)	Analyte Name	Media	Comments
NEP-PF2-071422-P	7/14	PF2	South Prod. Floor	☒ Area ☐ Personal	0.10	1215	1425	13	Formaldehyde	SKC 226-19	
NEP-CE1-071422-AF		CE1	Community Exposure East	☒ Area ☐ Personal	0.08	~~1220~~ 1228	~~1507~~ 1513	5.44			
NEP-CE1-071422-BF		↓	↓	☒ Area ☐ Personal	0.08	1514	~~1816~~ 1758	~~9.76~~			Vol: 13.12 L
NEP-CE1-071422-CF		↓	↓	☒ Area ☐ Personal	0.08	1759	1949	8.8			
NEP-CE2-071422-AF		CE2	Community Exp. West	☒ Area ☐ Personal	0.07	1215	1450	10.85			
NEP-CE2-071422-BF		↓	↓	☒ Area ☐ Personal	0.07	1455	1827	14.84			
NEP-CE2-071422-CF		↓	↓	☒ Area ☐ Personal	0.07	1838	1996	4.76			
NEP-CE3-071422-AF		CE3	Community Exp. South	☒ Area ☐ Personal	0.09	1224	1500	14.04			
NEP-CE3-071422-BF		↓	↓	☒ Area ☐ Personal	0.09	1503	1800	15.93			
NEP-CE3-071422-CF		↓	↓	☒ Area ☐ Personal	0.09	1810	1947	8.37			
NEP-CE4-071422-AF		CE4	Community Exp. North	☒ Area ☐ Personal	0.06	1204	1515	11.34			
NEP-CE4-071422-BF		↓	↓	☒ Area ☐ Personal	0.06	1514	1816	7.32			
NEP-FB-071422-F1		Field Blank	Field Blank 1	☒ Area ☐ Personal	—			0			
NEP-FB-071422-F2		↓	Field Blank 2	☒ Area ☐ Personal	—			0	↓	↓	
NEP-FB-071422-CP1		Field Blank	Field Blank 1	☒ Area ☐ Personal	—			0	Cresol/Phenol	SKC 226-95	

Comments:

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene
Chain of Custody

EMSL Order Number (Lab Use Only): ~~722200132~~ 722200157

EMSL ANALYTICAL, INC.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675
FAX (856) 858-3502

2022 JUL 19 AM 9:59

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

	Client Sample ID	Sample Date	Location	Description	Sample Type	Flow (lpm)	Sample Time On	Sample Time Off	Air(L) Volume	Analyte Name	Media	Comments
	NEP-FB-071422-CP2	7/14	Field Blank	Field Blank 2	☐ Area ☐ Personal	—	~~1209~~		G	Cr(VI)/phenol	Stc 226-95	
	NEP-PF1-071422-CP		PF-1	Production floor North	☒ Area ☐ Personal	0.07	1209	1430	~~0.07~~ 28			Vol: 9.87L
	NEP-CE3-071422-CPA		CE3	Com. Exp. South	☒ Area ☐ Personal	0.08	1229	1738	24.72			
	NEP-CE3-071422-CPB		↓	↓	☒ Area ☐ Personal	0.08	1739	1947	10.24			
	NEP-CE4-071422-CPA		CE4	Com. Exp. North	☒ Area ☐ Personal	0.08	1204	1705	24.08			
	NEP-CE4-071422-CPB		↓	↓	☒ Area ☐ Personal	0.09	1709	1945	14.04			
	NEP-E1-071422-CP		E1	Exhaust 1	☒ Area ☐ Personal	~~0.08~~ 0.07	1729	1944	9.45			
	NEP-E2-071422-CP		E2	Exhaust 2	☒ Area ☐ Personal	0.08	1730	1937	9.04			
	NEP-E3-071422-CP		E3	Exhaust 3	☒ Area ☐ Personal	0.07	1731	1930	8.33	↓	↓	
1	NEP-E1-TOT-071422		E1	Exhaust 1	☒ Area ☐ Personal	2.5	1157	1944	1167.5	Total Aerosol	Cassette	
2	NEP-E2-TOT-071422		E2	Exhaust 2	☒ Area ☐ Personal	2.5	1200	1937	1142.5			
3	NEP-E3-TOT-071422		E3	Exhaust 3	☒ Area ☐ Personal	2.5	1203	1930	1117.5			
4	NEP-CE3-TOT-071422		CE3	Com. Exp. South	☒ Area ☐ Personal	2.5	1224	1947	1112.5			
5	NEP-CE4-TOT-071422		CE4	Com. Exp. North	☒ Area ☐ Personal	2.5	1204	1945	1152.5			
6	NEP-PF1-TOT-071422	↓	PF1	Prod. floor north	☒ Area ☐ Personal	2.5	1209	1430	352	↓	↓	

Comments:

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene Chain of Custody

EMSL Order Number (Lab Use Only): 722200157

A222200132

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-3502

2022 JUL 19 AM 9:59

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

	Client Sample ID	Sample Date	Location	Description	Sample Type	Flow (lpm)	Sample Time On	Sample Time Off	Air (L) Volume	Analyte Name	Media	Comments
7	WEP-FB-TOT-071422	7/14	Field Blank	Field Blank	☒ Area ☐ Personal	—			Ø	TOTAL Asbestos	Cassette	
8	WEP-FB-Res-071422		↓	↓	☒ Area ☐ Personal	—			Ø	Resp. Dust Chrysotile	↓	
9	WEP-E1-Res-071422		E1	Exhaust 1	☒ Area ☐ Personal	2.5	1157	1944	1167.5	↓	↓	
10	WEP-E2-Res-071422		E2	Exhaust 2	☒ Area ☐ Personal	2.5	1200	1937	1142.5			
11	WEP-E3-Res-071422		E3	Exhaust 3	☒ Area ☐ Personal	2.5	1203	1930	1117.5			
12	WEP-CE3-Res-071422		CE3	Con. Exp. South	☒ Area ☐ Personal	2.5	1224	1947	1112.5			
13	WEP-CE4-Res-071422		CE4	Con. Exp. North	☒ Area ☐ Personal	2.5	1204	1945	1,152.5			
14	WEP-PF1-Res-071422		PF1	Prod. Floor North	☒ Area ☐ Personal	2.5	1209	1430	352	↓	↓	
					☐ Area ☐ Personal							
					☐ Area ☐ Personal							
					☐ Area ☐ Personal							
					☐ Area ☐ Personal							
					☐ Area ☐ Personal							
					☐ Area ☐ Personal							
					☐ Area ☐ Personal							

Comments:

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200 Route 130 North
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to15lab@EMSL.com | http://www.EMSL.com

EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Laboratory Report- Sample Summary

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
492200479-0001	NEP-E1-071422-24	7/14/2022	11:57 AM
492200479-0002	NEP-PF1-071422	7/14/2022	12:09 PM
492200479-0003	NEP-PF2-071422	7/14/2022	12:15 PM
492200479-0004	NEP-CE4-071422	7/14/2022	12:04 PM
492200479-0005	NEP-CE1-071422	7/14/2022	12:15 PM
492200479-0006	NEP-CE2-071422	7/14/2022	12:15 PM
492200479-0007	NEP-CE3-071422	7/14/2022	12:24 PM
492200479-0008	NEP-E1-071422	7/14/2022	11:57 AM
492200479-0009	NEP-E2-071422	7/14/2022	12:00 PM
492200479-0010	NEP-E3-071422	7/14/2022	11:55 AM

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

Report Date	Report Revision	Revision Comments
8/1/2022	R0	Initial Report

Owen McKenna, Chemistry Laboratory Director
or other approved signatory

Test results meet all NELAP requirements unless otherwise specified. NJDEP Certification #: 03036

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

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Reported: 8/1/2022

Case Narrative

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

Column
Restek RTX-502.2, 60m, 0.25mm ID, 1.4um

Concentrator Traps:
Entech Dual Cold Traps: (1) 1/8” No Packing, (2) 1/8” Tenax.

Gas Standards:
Certified Gas standards were used for all analyses.

Sample Volumes:
Sample volume aliquots for this procedure are 250cc for indoor/ ambient air and 25cc for soil gas. Other volumes for sample dilutions are reflected on each result page.

Holding Times:
Standard holding times of 30 days were met for all samples.

Sampling Pressures:
All samples were received at acceptable pressure/vacuum unless listed below.
Several samples were received by the lab under high vacuum. Lab grade air was added prior to analysis. Client notified.

Sample Dilutions:
Dilutions reported are designated by the sample # with a "DL" suffix resulting from initial analysis having compounds exceeding calibration as reported with an "E" qualifier. Ethanol and Isopropanol are not diluted for and may be reported with an "E" qualifier on the final result.

QA/QC criteria outside method specifications are listed below (if applicable).

Initial Calibration
All Initial Calibration criteria met method specification.

Initial Calibration Verification Standard (ICVS)- Second Source
ICVS met method specification with 70-130% recovery for 100% of compounds.

Laboratory Control Sample (LCS)
LCS met method specification with 70-130% recovery for 100% of compounds.*(If the LCS does not meet criteria but any compounds which have recoveries >130% are not found in the samples, samples may be reported)*

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EMSL ORDER ID: 492200479
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Case Narrative

Continuing Calibration Verification Standard (CCVS)

CCVS met method specification with all compounds within 30% deviation.
Ethanol recovered low.

Ending Calibration Verification Standard (ECVS)

ECVS met method specification with all compounds within 30% deviation.
Ethanol recovered low.

Method Blanks (MB)

Method Blank met method specification.

Reporting Limit Laboratory Control Samples (RLLCS)

RLLCS met method specification with 90% of compounds within the 60-140% recovery range. Individual compounds outside of the recovery range may be listed below.

Manual Integration*: -Listed below if applicable. Before and after documentation provided in extended deliverable packages.*

The following data qualifiers that may have been reported with the data,

ND- Non Detect. This notation would be used in the results column in lieu of a "U" qualifier.
U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
J (Target)- Concentration estimated between Reporting Limit and MDL.
J- Estimated value reported below adjusted reporting limit for target compounds or estimating a concentration for TICs where a 1:1 response is assumed
B- Compound found in associated method blank as well as in the sample.
E- Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.
D- Compound reported from additional diluted analysis.
N- indicates presumptive evidence of a compound based on library search match.

EMSL Analytical, Inc. certifies that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer –readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature.

Owen McKenna, Chemistry Laboratory Director
or other approved signatory

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0001
CUSTOMER SAMPLE ID: NEP-E1-071422-24

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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07888.D	E0289	387.5 cc	1
Dilution1	07/28/2022	KW	y07877.D	E0289	38.75 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**0.52**	0.50		**2.6**	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.59**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**3.1**	0.50		**7.4**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**22**	0.50		**41**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**2.0**	0.50		**4.9**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**6.0**	0.50		**14**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**50**	5.0	D	**170**	17	***Reported Dilution1***
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**0.85**	0.50		**3.0**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	**0.56**	0.50		**1.7**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.99**	0.50		**3.6**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0001
CUSTOMER SAMPLE ID: NEP-E1-071422-24

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07888.D	E0289	387.5 cc	1
Dilution1	07/28/2022	KW	y07877.D	E0289	38.75 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.4**	0.50		**5.2**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**88**	**ppbv**		**250**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.6	10	96%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
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CUSTOMER SAMPLE ID: NEP-PF1-071422

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Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:09
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW	y07878.D	E0549	615 cc	1
Dilution1	07/28/2022	KW/CP	y07889.D	E0549	339 cc	2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.54**	0.50		**1.1**	1.0	
n-Butane	106-97-8	58.12	**2.5**	0.50		**5.8**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**41**	1.0	D	**77**	1.9	***Reported Dilution1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**3.5**	0.50		**8.5**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**7.4**	0.50		**17**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**6.6**	0.50		**11**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**45**	1.0	D	**160**	3.5	***Reported Dilution1***
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**0.65**	0.50		**2.3**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	**0.50**	0.50		**1.5**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**1.3**	0.50		**4.5**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0002
CUSTOMER SAMPLE ID: NEP-PF1-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Phone: 808-441-6600
Email: 0

Collected: 07/14/2022 12:09
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW	y07878.D	E0549	615 cc	1
Dilution1	07/28/2022	KW/CP	y07889.D	E0549	339 cc	2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.6**	0.50		**6.2**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**110**	**ppbv**		**290**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.8	10	98%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0003
CUSTOMER SAMPLE ID: NEP-PF2-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
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Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07879.D	Canister ID E15307	Sample Vol. 510 cc	Dil. Factor 2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	2.0		ND	3.4	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**2.7**	1.0		**13**	4.9	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	1.0		ND	7.0	
Chloromethane	74-87-3	50.49	ND	1.0		ND	2.1	
n-Butane	106-97-8	58.12	**3.3**	1.0		**7.9**	2.4	
Vinyl chloride	75-01-4	62.50	ND	1.0		ND	2.6	
1,3-Butadiene	106-99-0	54.09	ND	1.0		ND	2.2	
Bromomethane	74-83-9	94.94	ND	1.0		ND	3.9	
Chloroethane	75-00-3	64.51	ND	1.0		ND	2.6	
Ethanol	64-17-5	46.07	**110**	1.0	E	**220**	1.9	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	1.0		ND	4.4	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	1.0		ND	5.6	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**4.4**	1.0		**11**	2.5	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	1.0		ND	7.7	
Acetone	67-64-1	58.08	**7.6**	1.0		**18**	2.4	
1,1-Dichloroethene	75-35-4	96.94	ND	1.0		ND	4.0	
Acetonitrile	75-05-8	41.05	**23**	1.0		**38**	1.7	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	1.0		ND	3.0	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	1.0		ND	4.5	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	1.0		ND	3.1	
Carbon disulfide	75-15-0	76.14	ND	1.0		ND	3.1	
Methylene chloride	75-09-2	84.93	**55**	1.0		**190**	3.5	
Acrylonitrile	107-13-1	53.08	ND	1.0		ND	2.2	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	1.0		ND	3.6	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	1.0		ND	4.0	
n-Hexane	110-54-3	86.18	ND	1.0		ND	3.5	
1,1-Dichloroethane	75-34-3	98.96	ND	1.0		ND	4.0	
Vinyl acetate	108-05-4	86.09	ND	1.0		ND	3.5	
2-Butanone(MEK)	78-93-3	72.11	ND	1.0		ND	2.9	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	1.0		ND	4.0	
Ethyl acetate	141-78-6	88.11	**1.8**	1.0		**6.7**	3.6	
Chloroform	67-66-3	119.4	ND	1.0		ND	4.9	
Tetrahydrofuran	109-99-9	72.11	ND	1.0		ND	2.9	
1,1,1-Trichloroethane	71-55-6	133.4	ND	1.0		ND	5.5	
Cyclohexane	110-82-7	84.16	ND	1.0		ND	3.4	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	1.0		ND	4.7	
Carbon tetrachloride	56-23-5	153.8	ND	1.0		ND	6.3	
n-Heptane	142-82-5	100.2	ND	1.0		ND	4.1	
1,2-Dichloroethane	107-06-2	98.96	ND	1.0		ND	4.0	
Benzene	71-43-2	78.11	ND	1.0		ND	3.2	
Trichloroethene	79-01-6	131.4	ND	1.0		ND	5.4	
1,2-Dichloropropane	78-87-5	113.0	ND	1.0		ND	4.6	
Methyl Methacrylate	80-62-6	100.1	ND	1.0		ND	4.1	
Bromodichloromethane	75-27-4	163.8	ND	1.0		ND	6.7	
1,4-Dioxane	123-91-1	88.11	ND	1.0		ND	3.6	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0003
CUSTOMER SAMPLE ID: NEP-PF2-071422

Attention: Jimmy Kehs
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737 Bishop Street
Suite 2340
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07879.D	Canister ID E15307	Sample Vol. 510 cc	Dil. Factor 2

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	1.0		ND	4.1	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	1.0		ND	4.5	
Toluene	108-88-3	92.14	**1.6**	1.0		**5.9**	3.8	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	1.0		ND	4.5	
1,1,2-Trichloroethane	79-00-5	133.4	ND	1.0		ND	5.5	
2-Hexanone(MBK)	591-78-6	100.2	ND	1.0		ND	4.1	
Tetrachloroethene	127-18-4	165.8	ND	1.0		ND	6.8	
Dibromochloromethane	124-48-1	208.3	ND	1.0		ND	8.5	
1,2-Dibromoethane	106-93-4	187.9	ND	1.0		ND	7.7	
Chlorobenzene	108-90-7	112.6	ND	1.0		ND	4.6	
Ethylbenzene	100-41-4	106.2	ND	1.0		ND	4.3	
Xylene (p,m)	1330-20-7	106.2	ND	2.0		ND	8.7	
Xylene (Ortho)	95-47-6	106.2	ND	1.0		ND	4.3	
Styrene	100-42-5	104.1	ND	1.0		ND	4.3	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	1.0		ND	4.9	
Bromoform	75-25-2	252.7	ND	1.0		ND	10	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	1.0		ND	6.9	
4-Ethyltoluene	622-96-8	120.2	ND	1.0		ND	4.9	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	1.0		ND	4.9	
2-Chlorotoluene	95-49-8	126.6	ND	1.0		ND	5.2	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	1.0		ND	4.9	
1,3-Dichlorobenzene	541-73-1	147.0	ND	1.0		ND	6.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	1.0		ND	6.0	
Benzyl chloride	100-44-7	126.6	ND	1.0		ND	5.2	
1,2-Dichlorobenzene	95-50-1	147.0	ND	1.0		ND	6.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	1.0		ND	7.4	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	1.0		ND	11	
Naphthalene	91-20-3	128.2	ND	1.0		ND	5.2	
Total Target Compound Concentrations:			**210**	**ppbv**		**510**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.7	10	97%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0004
CUSTOMER SAMPLE ID: NEP-CE4-071422

Attention: Jimmy Kehs
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737 Bishop Street
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:04
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07880.D	E0354	250 cc	1
Dilution1	07/29/2022	KW/CP	y07902.D	E0354	25 cc	30

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.60**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**2.0**	0.50		**4.7**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**310**	15	D	**580**	28	***Reported Dilution1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	**0.70**	0.50		**3.9**	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**37**	0.50		**90**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**14**	0.50		**33**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**1.1**	0.50		**3.9**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	**18**	0.50		**64**	1.8	
2-Butanone(MEK)	78-93-3	72.11	**0.91**	0.50		**2.7**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**520**	15	D	**1900**	54	***Reported Dilution1***
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	**3.8**	0.50		**12**	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
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CUSTOMER SAMPLE ID: NEP-CE4-071422

Attention: Jimmy Kehs
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:04
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07880.D	E0354	250 cc	1
Dilution1	07/29/2022	KW/CP	y07902.D	E0354	25 cc	30

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	11	0.50		41	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**920**	**ppbv**		**2700**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.5	10	95%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, “Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0005
CUSTOMER SAMPLE ID: NEP-CE1-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07882.D	Canister ID E0522	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.58**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.81**	0.50		**1.9**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**13**	0.50		**24**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.4**	0.50		**3.5**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**3.9**	0.50		**9.4**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**8.3**	0.50		**14**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**0.68**	0.50		**2.4**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**1.5**	0.50		**5.3**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0005
CUSTOMER SAMPLE ID: NEP-CE1-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07882.D	Canister ID E0522	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**0.51**	0.50		**1.9**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**31**	**ppbv**		**64**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.4	10	94%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0006
CUSTOMER SAMPLE ID: NEP-CE2-071422

Attention: Jimmy Kehs
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737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/28/2022	KW/CP	y07883.D	E31283	250 cc	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**0.50**	0.50		**2.5**	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.59**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.83**	0.50		**2.0**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**8.5**	0.50		**16**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.1**	0.50		**2.8**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**3.8**	0.50		**9.1**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**11**	0.50		**19**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.72**	0.50		**2.6**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL CUSTOMER ID: TTRA62
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Attention: Jimmy Kehs
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:15
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07883.D	Canister ID E31283	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**27**	**ppbv**		**55**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.4	10	94%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0007
CUSTOMER SAMPLE ID: NEP-CE3-071422

Attention: Jimmy Kehs
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:24
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07884.D	Canister ID E0420	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.58**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.89**	0.50		**2.1**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**9.0**	0.50		**17**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.5**	0.50		**3.7**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**4.7**	0.50		**11**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**3.3**	0.50		**5.5**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**9.7**	0.50		**34**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.66**	0.50		**2.4**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0007
CUSTOMER SAMPLE ID: NEP-CE3-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:24
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/28/2022	Analyst Init. KW/CP	Lab File ID y07884.D	Canister ID E0420	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**0.52**	0.50		**2.0**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**31**	**ppbv**		**79**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	9.5	10	95%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0008
CUSTOMER SAMPLE ID: NEP-E1-071422

Attention: Jimmy Kehs
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737 Bishop Street
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/29/2022	KW/CP	y07903.D	E31296	250 cc	1
Dilution1	07/28/2022	KW/CP	y07885.D	E31296	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.56**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**2.8**	0.50		**6.7**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**29**	0.50		**55**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.7**	0.50		**4.1**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**5.1**	0.50		**12**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**1.3**	0.50		**2.1**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**41**	5.0	D	**140**	17	***Reported Dilution1***
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**0.71**	0.50		**2.5**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.79**	0.50		**2.9**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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EMSL ORDER ID: 492200479
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Attention: Jimmy Kehs
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737 Bishop Street
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Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:57
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/29/2022	KW/CP	y07903.D	E31296	250 cc	1
Dilution1	07/28/2022	KW/CP	y07885.D	E31296	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**1.4**	0.50		**5.2**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**84**	**ppbv**		**230**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	10	10	100%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0009
CUSTOMER SAMPLE ID: NEP-E2-071422

Attention: Jimmy Kehs
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Phone: 808-441-6600
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Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 12:00
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/29/2022	KW/CP	y07904.D	E15299	250 cc	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	**0.51**	0.50		**2.5**	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.57**	0.50		**1.2**	1.0	
n-Butane	106-97-8	58.12	**0.67**	0.50		**1.6**	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**11**	0.50		**21**	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**1.5**	0.50		**3.6**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**4.9**	0.50		**12**	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**4.2**	0.50		**7.1**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**1.4**	0.50		**4.9**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.11	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**0.95**	0.50		**3.4**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

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Project Name: National Engineering Products

Collected: 07/14/2022 12:00
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis Initial	Analysis Date 07/29/2022	Analyst Init. KW/CP	Lab File ID y07904.D	Canister ID E15299	Sample Vol. 250 cc	Dil. Factor 1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**26**	**ppbv**		**57**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	10	10	100%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

EMSL ANALYTICAL, INC.
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to15lab@EMSL.com | http://www.EMSL.com

EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0010
CUSTOMER SAMPLE ID: NEP-E3-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:55
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/30/2022	KW/CP	y07905.D	E0274	250 cc	1
Dilution1	07/28/2022	KW/CP	y07887.D	E0274	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	**17**	1.0		**29**	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	**0.70**	0.50		**1.4**	1.0	
n-Butane	106-97-8	58.12	ND	0.50		ND	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.51	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	**49**	5.0	D	**92**	9.4	***Reported Dilution1***
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	**6.2**	0.50		**35**	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.09	**33**	0.50		**81**	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	**130**	5.0	D	**310**	12	***Reported Dilution1***
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.05	**15**	0.50		**24**	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	**1.3**	0.50		**3.9**	1.5	
Bromoethane(Ethyl bromide)	74-96-4	109.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.52	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.93	**7.0**	0.50		**24**	1.7	
Acrylonitrile	107-13-1	53.08	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.18	**3.1**	0.50		**11**	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.09	**2.2**	0.50		**7.6**	1.8	
2-Butanone(MEK)	78-93-3	72.11	**17**	0.50		**49**	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.11	**1.7**	0.50		**6.0**	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	**4.7**	0.50		**14**	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	**0.53**	0.50		**1.8**	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	**9.0**	0.50		**37**	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	**47**	5.0	D	**150**	16	***Reported Dilution1***
Trichloroethene	79-01-6	131.4	**0.75**	0.50		**4.0**	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.1	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.11	ND	0.50		ND	1.8	

EMSL ANALYTICAL, INC.
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EMSL ORDER ID: 492200479
EMSL CUSTOMER ID: TTRA62
EMSL SAMPLE ID: 492200479-0010
CUSTOMER SAMPLE ID: NEP-E3-071422

Attention: Jimmy Kehs
Tetra Tech EMI, Inc.
737 Bishop Street
Suite 2340
Honolulu, HI 96813

Phone: 808-441-6600
Email: 0

Customer PO:
EMSL Project ID:
Project Name: National Engineering Products

Collected: 07/14/2022 11:55
Received: 07/18/2022 08:50
Analyzed: See Results
Reported: 8/1/2022

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	07/30/2022	KW/CP	y07905.D	E0274	250 cc	1
Dilution1	07/28/2022	KW/CP	y07887.D	E0274	25 cc	10

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	**1.5**	0.50		**6.1**	2.0	
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	**26**	0.50		**100**	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.2	**1.3**	0.50		**5.3**	2.0	
Tetrachloroethene	127-18-4	165.8	**1.2**	0.50		**8.2**	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.9	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	**2.0**	0.50		**8.6**	2.2	
Xylene (p,m)	1330-20-7	106.2	**4.6**	1.0		**20**	4.3	
Xylene (Ortho)	95-47-6	106.2	**1.5**	0.50		**6.5**	2.2	
Styrene	100-42-5	104.1	**4.5**	0.50		**19**	2.1	
Isopropylbenzene (cumene)	98-82-8	120.2	**2.6**	0.50		**13**	2.5	
Bromoform	75-25-2	252.7	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.6	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.4	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.2	ND	0.50		ND	2.6	
Total Target Compound Concentrations:			**390**	**ppbv**		**1100**	**ug/m3**	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	11	10	110%

Qualifier Definitions
ND = Non Detect
B = Compound also found in method blank.
E= Estimated concentration exceeding upper calibration range.
D= Result reported from diluted analysis.
J= Concentration estimated between Reporting Limit and MDL.

Method Reference
USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air…" Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

49220047-9

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

PID: ________ Workorder #: ________

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Click links below to view:
Canister Sampling Guide
Helium Shroud Video

Client: Tetra Tech PID:
Project Name: National Engineering Products P.O.#
Project Manager: Jimmy Hehs
Sampler: J. Benson
Site Name:

Special Instructions/Notes: Check Regulator 03960
PM email: Jimmy.hehs@tetratech.com

Turnaround Time (Rush surcharges may apply)
Select TAT from drop down box: 10 Day TAT

Lab ID	Sample Identification	Can #	Flow Controller #	Start Sampling Date	Start Sampling Time	Stop Sampling Date	Stop Sampling Time	Initial (in Hg)	Final (in Hg)	Receipt (Lab Use Only)	Final (psig) Gas: N_2 / He (Lab Use Only)	Requested Analyses: TO-15			
1	NEP-E1-071422-24	0289	07942	7/14	1157	7/15	1153	-30	-8	-10.2					
2	NEP-PF1-071422	0549	7963		1209	7/14	1430	-35	-20	-17.4					
3	NEP-PF2-071422	15307	08040		1215		1425	-30	-23	-21.2					
4	NEP-CE4-071422	0354	03960		1204		1400	-30	-1	-0.4					
5	NEP-CE1-071422	0522	5995		1215		1946	-30	-10	-9.0					
6	NEP-CE2-071422	31283	08051		1215		1949	-30	-5	-5.0					
7	NEP-CE3-071422	0420	3641		1224		1947	-26	-5	-5.0					
8	NEP-E1-071422	31296	08059		1157		1944	-30	-6	-7.4					
9	NEP-E2-071422	15299	07882		1200		1937	-30	-7	-8.0					
10	NEP-E3-071422	0274	03509	↓	1155	↓	1930	-30	-5	-4.4					

2022 JUL 18 AM 10:23 RECEIVED

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature] TT	7/15/22	1700	S. Henley FX	7/18/22	~~1000~~ 0850
S. Henley FX	7/18/22	0850	R. Clayton Air Tox ~~1125~~	7/18/22	11 32

Lab Use Only

Shipper Name: | Custody Seals Intact? Yes No None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

FX: 1422255334331

USEPA TO-15

External Chain of Custody/ Field Test Data Sheet

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Ph. (800) 220-3675
Fax (856) 786-0327

EMSL ANALYTICAL, INC. LABORATORY • PRODUCTS • TRAINING

EMSL Order Number (Lab Use Only): 492200479

Report To Contact Name:	Bill To Company:	Sampled By (Sign):
Company Name:	Attention To:	Sampled By (Name):
Address 1:	Address 1:	Total # of Samples:
Address 2:	Address 2:	Date Shipped:
Phone No. : Fax :	Phone No.: Fax :	Sample Collection Zip Code:
Email Results To:	**Project Name:**	Purchase Order:

Turnaround Time (in Business Days): ☐ 10 Day Standard ☐ 5 Day ☐ 4 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day ☐ Other

Reporting Format: ☐ Results Only (Standard Lab Report) ☐ Full Deliverables (Surcharge may apply) ☐ Other

Field Use - All Information Required! | **Lab Use Only**

EMSL Sample Identifier	Client Field Sample Identification	Sampling Start Information: Start Date	Start Time (24 hr clock)	Start Canister Pressure ("Hg)	Start Interior Temp. (F)	Sampling Stop Information: Stop Date	Stop Time (24 hr clock)	Stop Canister Pressure ("Hg)	Stop Interior Temp. (F)	Canister Information: Canister ID	Size (L)	Can Cert Batch ID	Outgoing Pressure ("Hg)	Incoming Pressure ("Hg)	Flow Contoller: Reg. ID	Cal Flow (ml/min)
		Barometric Pres. ("Hg):				Barometric Pres. ("Hg):										
										E0274	6	C4007	-30.0	-4.4	7942	8.5
										0289				-10.2	3509	10.6
										0354				-0.4	3691	
										0420				-5.0	5960	
										0522				-9.0	5995	
										0549				-17.4	7882	
										15299				-8.0	7963	
										15307				-21.2	8040	
										21283				-5.0	8051	
										31296				-7.4	8059	

Analysis	Matrix
USEPA TO-15	Indoor/ Ambient Air
NJDEP LLTO-15	Soil Gas/Sub Slab
LIBRARY SEARCH	Other:
ASTM-5504:H2S / S PANEL	
TO-3: METHANE / C1-C6	
NIOSH 3900	
Other:	

Comments:

Check Box if Seal Intact

Lab Canister Certification
Analyst Signature (TO-15):

Relinquished by:	Date/ Time	Received by:	Date/ Time	Seal # / Intact	Reason for Exchange (circle appropriate)
	6/27/22 1142	FX	7/18/22 0850	007-009 ☐	Shipping Courier Receiving Sampling Other:
	7/18/22	Air Tx	7/18/22 11:32	☐	Shipping Courier Receiving Sampling Other: AN
				☐	Shipping Courier Receiving Sampling Other:
				☐	Shipping Courier Receiving Sampling Other:
				☐	Shipping Courier Receiving Sampling Other:

492200479

TO-15 Sample Information

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT, and provide you with helpful interpretation information.

Company:

Contact Person:

Name:

E-mail:

Additional E-mails:

Telephone #:

Library Search requested: **[ ] YES [ ] NO**

A library search (*aka Tentatively Identified Compounds*) will identify up to 20 of the largest, non-target peaks that are not part of the standard TO-15 list of 74 compounds. If you are performing an Indoor Air Quality or odor investigation, the library search is recommended to provide you with all available information for your sample.

Sample Type:

[ ] Indoor Air Quality (Home/Office)
[ ] IAQ (Industrial)
[ ] Other:
[ ] Soil Gas/Sub Slab

Sample Description:_____

PLEASE NOTE: The result forms we provide will not indicate whether your results have exceeded any Exposure Limit criteria established by any regulatory agency. If you would like that information, please check off below which regulatory comparison forms you would like to receive.

[ ] OSHA PELs/NIOSH RELs	*combined form*		**[ ] Potential Sources of Compounds found in your IAQ sample**		
[ ] EPA RSLs - *11/2018; default is THQ 0.1*	Residential	Industrial	**[ ] TVOC (Library Search Required for this format)**		
[ ] EPA VISLs - *3/2012*	IA/SG		**[ ] NH DES_WMD** - *2/2013*	Indoor Air	Soil Gas
[ ] NJ DEP - *1/2018* - **Circle one:**	VI-Indoor AQ	VI-Soil Gas	**[ ] Ohio** - *5/2016* - **Circle one:**	Residential	Commercial
[ ] NC DENR - *2/2018* - **Circle one:**	Residential	Non-residential	**[ ] Indiana Dept Env Mgmt Screeening Levels** - *3/2018*		
[ ] PA DEP - *11/2016*	Indoor Air		**[ ] Vermont DEC IROCP** - *7/2017* **(soil gas only)**		
[ ] PA DEP - 11/2016: Sub Slab Soil Gas **OR** Near Source Soil Gas			**[ ] California OEHHA** - *2/2012*		
[ ] CA HHSL - *9/2010* - **Circle one:**	Indoor Air	Soil Gas	**[ ] Other; these are the compounds I want reported:**		

Please note: There is an additional charge for any of the tests below. **USEPA TO-3 AND ASTM 5504 analyses can be performed from your canister at the Cinnaminson NJ Laboratory.**

*Very Important Information for Clients! *Hold time for sulfur gases is 1 day from collection. Please schedule your sample collection so samples are received in the lab prior to noon on Friday. Analysis performed out of hold time will have a notation in the report.*

US EPA TO-3 via GC/FID:	**NIOSH 3900**	**ASTM-D5504** *via GC/SCD:* *
[ ] C_1-C_6 hydrocarbons	**[ ]**	**[ ] Sulfur Scan (H_2S, COS, MeSH, EtSH, DMS)**
[ ] Methane only		**[ ] H_2S only**

We can provide the following CMS tests from your canisters at the **Cinnaminson and Huntington Beach** laboratories. Please note these tests are to be used for IAQ/Screening purposes ONLY. EMSL recommends alternate field sampling techniques for these parameters (with the exception of water vapor); please contact your sales rep for the proper media. Please note: There is an additional charge for any of the tests below.

Draeger CMS Analyzer:

[ ] CO [ ] CO_2 [ ] NH_3 [ ] O2 [ ] Water Vapor

Sample Retention Policy: All canisters are guaranteed to be retained for one day after results are reported. Please review your results promptly to ensure your project scope is fully addressed. Cans may be retained for a longer period of time, but arrangements to hold your cans must be made through your customer account representative quickly. Thank you.